MODERATING EFFECT OF DIGITALIZATION ON THE DETERMINANTS OF EXCISE DUTY COMPLIANCE AMONG MANUFACTURING FIRMS IN EMBAKASI WEST NAIROBI COUNTY, KENYA

BY

GATIMU FLAVIAN KUNG'U

A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS AND ECONOMICS IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER IN TAX AND CUSTOMS ADMINISTRATION

MOI UNIVERSITY

2024

DECLARATION

Declaration by Candidate

This research project is my original work and has not been presented for any degree award at any other University. No part of the project should be reproduced without the prior permission of the author and/or Moi University.

Signature …………………………………………………Date ……...………………

GATIMU FLAVIAN KUNG'U

KESRA105/0070/2021

Declaration by the Supervisors

This research project has been submitted with our approval as University supervisors:

Signature …………………………………………………Date ……...………………

DR BRUCE OGAGA

Kenya School of Revenue Administration

Signature …………………………………………………Date ……...………………

DR. JOHN TARUS

Moi University

DEDICATION

This research study is dedicated to my family members for their prayers, love and encouragement without whom this success could not be realized.

ACKNOWLEDGEMENT

I appreciate The Almighty God for the knowledge, wisdom and ability that He has given me to come up with this project. I also extend my sincere thanks to my family, friends and fellow students for the continuous support and encouragement. My special thanks go to my supervisors, Dr. Bruce Ogaga and Dr. John Tarus for their guidance and support in developing the project.

May God bless you abundantly.

ABSTRACT

Although the implementation of the excise tax has the potential to enhance revenue collection, its contribution to the GDP has remained negligible in comparison to other forms of taxation. Consistently, the total amount of the excise tax collected has been below the set targets. The broad objective of the study was to determine the moderating role of digitalization on factors affecting excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya. The research was guided by three specific objectives: to determine the effect of Tax audit, taxpayer sensitization and social norms on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya. While the moderating variable was digitalization. The study was guided by the following theories, Technology Acceptance Theory, Theory of Planned Behaviour and Economic Deterrence Theory. The study adopted explanatory research design and target a population was 416 manufacturing firms in Embakasi west Nairobi. A sample size of 203 was drawn from this population and a response of 173which was 85% response rate. Primary data collection was employed using closed structured questionnaires based on the study's objectives. The data was analyzed using descriptive, inferential statistics and multiple linear regression analysis. The study found that tax audits have a positive and significant effect on excise duty compliance $\beta=0.558$ p-value=0.000<0.05. The study further showed that taxpayer sensitization positively affects excise duty compliance $\beta=0.023$ p-value=0.031<0.05. The study also indicated that social norms have a positive effect on excise duty compliance $\beta=0.288$ p-value=0.000<0.05. The study further found that digitization positively affects excise duty compliance $\beta=0.125$ p-value=0.028<0.05. Lastly digitization moderates the relationships between tax audit, taxpayer sensitization and social norms on excise duty compliance $\beta=0.239$ p-value=0.000<0.05, $\beta=0.128$ p-value=0.000<0.05 and $\beta=0.076$ p-value=0.000<0.05 respectively. To enhance excise duty compliance, the government should increase funding for tax audits, launch educational campaigns, and invest in digital tax infrastructure. Management should adopt internal audits, while KRA should offer regular training. Taxpayers should use digital tools for compliance. The study supports Deterrence Theory, Social Influence Theory, and the Technology Acceptance Model. Future research should explore tax reforms, incentives, and technology integration in tax administration.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

DEFINITIONS OF TERMS

Digitalization   refers to the process of using digital technologies to change business models, improve processes, and create new value by integrating digital tools into everyday operations, OECD, (2022)

Excise Duty Tax Compliance This is how much tax payers understand the prevailing tax laws, regulations and how they can carry out the procedure and of submitting the tax correctly. (OECD iLibrary, 2022).

Social norms: Social norms are the perceived informal, mostly unwritten, rules that define acceptable and appropriate actions within a given group or community, thus guiding human behaviour. They consist of what we do, what we believe others do, and what we believe others approve of Smith, (2019).

Tax Audits   A tax audit is an examination of whether a taxpayer has correctly reported his tax liability and fulfilled other obligations. It is often more detailed and extensive than other types of examination such as general desk checks, compliance visits or document matching programs (OECD, 2006).

Taxpayer sensitization: This refers to programs and initiatives aimed at creating awareness about taxes, why taxes are paid, how and when to pay taxes (Willey, 2017).

ABBREVIATIONS AND ACRONYMS

KRA   Kenya Revenue Authority

SMEs-   Small and Medium Enterprises

SPSS: Statistical Package for Social Sciences

VAT   Value Added Tax

CHAPTER ONE

INTRODUCTION

1.0 Overview

This chapter discussed the background of the study, the statement of the problem, the general objective of the study, specific objectives, research hypotheses, meaning and scope of thisresearch

1.1 Background of the Study

Governments all over the world depend on tax revenue to provide public goods and services. To meet the growing need for economic development and growth, these governments had come up with various tax regimes, systems, and bases (Linegar and Walbeek (2020). Collecting taxes and fees is a fundamental task for countries to generate public revenue that makes it possible to finance investments in human capital, infrastructure, and the provision of services for citizens and businesses (IMF, 2020).

Every government's desire is to collect enough revenue that would sustain the government goals for the country by ensuring enhanced tax compliance (Hoek & Smith, 2016). Excise duty being a key player in broader government policies as a form of taxation can be used to influence consumption of certain products, generally on health or environmental protection grounds. Governments are therefore placing increasing importance on excise taxation as a means of generating a reliable stream of sustainable income (Scholes, Wolfson, Erickson, Maydew & Shevlin, 2019).

Globally, in EU countries, the imposition of excise duty encompasses a variety of commodities, such as wine, made-wine, beer, spirits, cider and perry, low alcoholic beverages, imported composite items including alcohol, tobacco products, hydrocarbon oil, climate change charge, and biofuels (UK Trade Tariff, 2021). Prior to the occurrence of Brexit, the excise tax was subjected to harmonization within the

European Union (EU). However, at now, the government of the United Kingdom (UK) is actively engaged in the process of restructuring its excise tax legislation (HM Revenue & Customs (HMRC) & HM Treasury, 2023). According to Hines (2017), the average proportion of overall tax revenues derived from these taxes in OECD countries was 5.5 percent in 2015. European Union members, on the other hand, exhibited a higher average of 6.8 percent, while the United States had the lowest proportion within the OECD at 3.4 percent

Regionally, The South African government imposes excise taxes in order to generate tax revenue and regulate the consumption of goods that possess potential adverse impacts on society. According to the Republic of South Africa (2014), excise taxes are imposed on alcoholic products and cigarettes in the country. The excise tax receipts in South Africa typically amount to approximately 3.5% of the country's (GDP and account for 12% of the overall tax revenue (International Monetary Fund, 2018). A study conducted by Linegar and Walbeek (2018) concluded that an increase in excise tax increases the price of cigarette which in turn has an impact on the producing firms. It is clear from the above perspectives that there is a concern on collection of excise duty and the impact that it comes with it.

Locally, the excise tax income in Kenya exhibited growth in both real and nominal terms from 1980 to 1996. This growth was observed in two aspects: as a proportion of total ordinary revenue and as a proportion of the country's GDP. When compared to other forms of taxation, excise taxes have consistently demonstrated an upward trajectory in terms of their performance as a proportion of the GDP. In this context, the efficacy of alternative tax structures, such as income taxes, has seen a marginal increase or even a drop in recent years (value-added taxes and import duties).

Ochieng and Agwaya (2020) assert that excise taxes serve as a substantial revenue stream in Kenya. Excise taxes in Kenya have always played a substantial role in the country's overall tax revenue generation. Excise taxes provide a significant proportion of the overall revenue in the country of Kenya. Between the years 1980 and 2018, the imposition of excise taxes in Kenya resulted in an average contribution of 3.1 percent towards the nation's GDP. However, this contribution is still below the expected contribution of 4.5 percent towards the nation's GDP. This shows that the taxpayers' compliance with excise duty tax is still low.

1.1.1 Excise Taxes

Excise taxes are taxes imposed per unit of a commodity of a certain product sold, such as alcohol and cigarettes, differing from sales taxes since they are imposed per unit of commodity rather than being based on a percentage of a product. One of the main purposes of excise is to prevent consumption of any particular good although they also act as revenue generation for government consumption of a particular good although they are also a source of income for government (Fitcher, 2021). According to OECD, however (2018), it means that an excise tax refers to "a tax levied on an occupation, act, privilege, sales, or manufacture and it is selectively imposed in specific goods and services.".

Excise taxes are one of the important means whereby local and national governments can raise additional revenue that is necessary for major projects. As a rule, excise taxes fall upon such goods as alcohol, cigarettes, and also gambling because these are considered superfluous services and goods. Raising such taxes results in the price being raised, therefore reducing the amount being used, which is the other important function of this tax. Excise taxes result in reduced quantity sold because the prices that

consumers pay increase and revenues produced get reduced as demand falls (Needles, Anderson, & Caldwell, 2022).

Each country in the OECD uses consumption taxes, but reliance on consumption taxes varies. Consumption taxes account for more than half of government revenue in Chile, at 53.1 percent. They account for less than 20 percent of revenues in Switzerland—19.6 percent—and the United States—16.6 percent. At least 170 countries across the globe levy some sort of excise tax. The application of excise tax in the Gulf Cooperation Council (GCC) countries involves the imposition of varying rates, as stipulated in the Common Excise Tax Agreement of the States of the GCC (Federal Tax Authority, 2017). The excise duty is imposed on energy drinks (100%), carbonated drinks (50%), and tobacco products (100%) in the United Arab Emirates, Saudi Arabia, Bahrain, Oman, and Qatar. In the United Arab Emirates and Saudi Arabia, there are excise taxes imposed on sweetened beverages at a rate of 50%.

1.2 Statement of the Problem

Tax plays an important role in the growth of any economy so tax evasion is harmful to the economy. Tax evasion hampers government revenue collection thus inefficiency in Government spending because it diminishes the capacity of the state to mobilize domestic revenues, resources that are needed for investments OECD, (2016). Excise Duty is charge on excisable goods and services. Some of the excisable goods include bottled water, juice, cigarettes, second motor vehicle not to forget alcoholic beverages. Excise Duty compliance has remained low, contributing to only 40% of total revenue collected in Kenya. KRA expects to obtain a 65% Excise Duty compliance and to increase the Excise Duty to total revenue ratio to 55% by 2024 (KRA 7th Corporate Plan, 2018-2021).

According to Hines (2017), the average proportion of overall tax revenues derived from these taxes in OECD countries was 5.5 percent in 2015 with European Union members exhibiting a higher average of 6.8 percent, while the United States had the lowest proportion within the OECD at 3.4 percent. In Zimbabwe, there is low compliance in excise duty tax as indicated by data from ZIMRA Revenue Performance Report 2022 where Zimbabwe Revenue Authority missed the excise duty tax target by 21.14% despite revenue growth by 12.54%.

For example, Excise Duty reforms have formed part of the overall reform package; this includes the implementation of the excisable goods management system in 2018, the addition of other goods and services to its tax base, and the increase in excise tax rates over the years. Despite these reforms, compliance with Excise Duty has remained low; the overriding objective of excise taxes in Kenya is to raise tax revenues, but the performance has been weak, Deloitte, 2019.

The collection of Excise Duty in the financial year 2021/2022 was Ksh.662,350,000 compared to a target of Ksh.705,150,000 falling short of the target by Ksh 87,800,000 million (KRA, 2022). In the financial year 2022/2023, the set target was Kshs.195,220,000 million, yet the revenue authority only collected Kshs.183,250,000 again falling short of the target by Ksh 11,970,000 (KRA, 2023) This has raised a concern especially on excise duty which has been declining over the years.

The effect of non-compliance is giving the government hard time in performing its obligation such as offering services as well and infrastructure development. Complicating it all of course is the fact that it is quite obvious that taxpayers in this sector have yet to fully comply with the requirements of the respective tax laws. For instance, Bidin, Sinnasamy and Othman, 2018 drew determinants of importers

excise duty compliance in Malaysia from literature. For example, Chesire, 2019, studied the relationship between excise tax regimes and the listed sin products alcohol and cigarette manufacturers' profitability in Kenya. It is against this backdrop that the present study will fill the knowledge gap in literature by establishing the moderation effect of digitalization on those factors affecting excise duty compliance among the manufacturing firms in Embakasi West, Nairobi County, Kenya.

1.3 Objectives of the Study

The study was guided by main objective and specific objectives.

1.3.1 General Objective

The main objective of the study was to established moderating effect of digitalization on factors affecting excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya

1.3.2 Specific Objectives

The study was guided by the following specific objectives:

i. To determine the effect of Tax audit on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya

ii. To establish the effect of taxpayer sensitization on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya

iii. To determine the effect of social norms on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya

iv. To determine the moderating effect of digitalization on relationship between tax audit, taxpayer sensitization and social norms on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya

a) To establish the moderating effect of digitalization on relationship tax audit on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya

b) To establish the moderating effect of digitalization on relationship taxpayer sensitization on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya

c) To establish the moderating effect of digitalization on relationship social norms on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya

1.4 Research Hypotheses

The study was guided by following null hypothesis:

i. **H_{01}**: Tax audit has no significant effect on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya

ii. **H_{02}**: Sensitization of taxpayers does not significantly influence excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya.

iii. **H_{03}**: Social norms do not significantly influence the compliance of excise duty among manufacturing firms in Embakasi west Nairobi County, Kenya.

iv. **H_{04}**: Digitalization does not significantly moderate the relationship between tax audit, taxpayer sensitization, and social norms concerning excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya.

a) **H_{04a}**: Digitalization is not likely to have a significant moderating effect in the relationship between tax audit and excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya.

b) **H04b**: Digitalization does not significantly moderate the relationship between taxpayer sensitization and excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya.

c) **H04c**: Digitalization does not significantly moderate the relationship between social norms and excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya.

1.5 Significance of the Study

This study was of importance to policy maker, KRA and future researchers

The findings of the research provided useful suggestions to key policy makers and players to enable them to put in place proper mechanisms to encourage voluntary compliance which contributed to significant increase of excise duty collection thus, economic stability and growth. This includes Ministry of Finance, Parliament, and other relevant policy makers.

The findings of the study will go a long way to improve management of taxation in Kenya. The Kenyan government relies heavily on taxes to fund its recurrent and development expenditure. An increase or decline in tax revenues has a direct bearing on the economy of Kenya as a country. The findings from this study provided critical information that enhanced excise duty compliance.

It will, therefore, add to the already available literature on this area of compliance. The study perhaps based on such findings made a foundation for further research into the same subject area. Such research would reduce the need always to reinvent the wheel whenever a study on excise duty on manufacturing firms is done.

1.6 Scope of the Study

The key objective of this study was to established moderating effect of digitalization on factors affecting excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya. The predictor variables were tax audit, taxpayer sensitization and social norms on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya. The dependent variable was excise duty compliance While digitalization was the moderator. The target population was 416 manufacturing firms in Embakasi west Nairobi County, Kenya, while the sample size was 203 respondents. The study focused fiscal years 2022/2023.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents the reviewed literature on concepts, theoretically and empirical review in line with the study objectives as follows. Tax audit, taxpayer sensitization and social norms on excise duty compliance. Additionally, the chapter presents research gap and finally conceptual frameworks that guided the study.

2.1 Review of the Concepts

This section discusses on the concepts of the dependent and the independent variables.

2.1.1 The Concept of Excise Duty Compliance

Excise duty is the tax on goods manufactured in Kenya or imported into Kenya, whose specification is outlined in the first schedule of the Excise Duty Act, 2015. Excise taxes are one of the ways governments may apply the benefits-received principle of taxation. An example is the taxes charged on petroleum products. There is a very close relationship between use of petroleum and highway travel, hence it offers a link between taxes paid and benefits derived from the highways. The link is strengthened further by specifying areas where such taxes are to be used in offering government services relating to the activity; for example, using fuel taxes on highways construction and maintenance (Cordes, Ebel & Gravelle, 2020).

The excise tax income in Kenya exhibited growth in both real and nominal terms from 1980 to 1996. This growth was observed in two aspects: as a proportion of total ordinary revenue and as a proportion of the country's GDP. When compared to other forms of taxation, excise taxes have consistently demonstrated an upward trajectory in terms of their performance as a proportion of the GDP. In this context, the efficacy of alternative

tax structures, such as income taxes, has seen a marginal increase or even a drop in recent years (value-added taxes and import duties).

Ochieng and Agwaya (2020) assert that excise taxes serve as a substantial revenue stream in Kenya. Excise taxes in Kenya have always played a substantial role in the country's overall tax revenue generation. Excise taxes provide a significant proportion of the overall revenue in the country of Kenya. Between the years 1980 and 2018, the imposition of excise taxes in Kenya resulted in an average contribution of 3.1 percent towards the nation's GDP. However, this contribution is still below the expected contribution of 4.5 percent towards the nation's GDP. This shows that the taxpayers' compliance with excise duty tax is still low.

2.1.2 The Concept of Tax Audit

The tax audit can be described as the examination of the tax report of an individual or corporation by the relevant tax authorities with an emphasis on ensuring that there is compliance with the set laws and regulations regarding taxes of a country. On the other hand, a tax audit can be referred to as the process where the revenue authority tries to confirm the numbers that a taxpayer has reported on his or her tax return forms (Kircher, 2021). Frank (2020) concludes that the design of audit policies by tax authorities can have significant effects on a firm's production decisions; such impacts, however, strongly depend on whether firms compete or collude. In this sense, an appropriately designed tax audit policy would have the potential to achieve not only greater compliance and higher net revenue for a given output and resources spent on audit, but also would have other effects that in themselves would be typically considered desirable in a broader economic setting.

Tax audit is usually a routine exercise, but the outcome sometimes forms the basis for reevaluation or recommendation for a particular investigation, especially when tax fraud is suspected. The chief purpose of the tax audit, therefore, would be to determine an extent to which the taxpayers could have adhered to the relevant statutory provisions of the Tax Act in their audited financial statements and other related supporting documents for taxation. This audit process of tax thereby aims to preserve the trust and credibility of the self-assessment system presently in a place thus improving voluntary enforcement. However, how effectively the implementation of tax audit has served to implement corporate tax enforcement has also elicited opinions and controversies in developing economies (Whait et al., 2019).

Tax audit is one of the best tools that can be used to detect and control behavior. The level of tax audit is basically measured in light of two sets of elements: one by the number of taxpayers selected for audit, and the second by the intensity of tax audit. Whereas the first element can simply be measured by the number of audited taxpayers divided by the total number of taxpayers registered, the second element is quite difficult to measure due to a lack of the existence of published information concerning the process of a tax audit. Therefore, a tax audit is measured by the first element as a common indicator of the level of tax audit for practical comparison, (Hyun, 2013).

2.1.3 The Concept of taxpayer Sensitization

Taxpayer sensitization refers to the process of educating and informing taxpayers about their rights, responsibilities, and obligations regarding taxation. It aims to enhance taxpayers' awareness and understanding of tax laws, regulations, and procedures to promote compliance and minimize tax evasion OECD, (2020). Taxpayer sensitization plays a crucial role in promoting voluntary compliance, reducing tax evasion, and building trust between taxpayers and tax authorities. By empowering taxpayers with

knowledge and support, tax administrations can enhance revenue collection efficiency and contribute to sustainable economic development. The tax knowledge gained by the taxpayers would be a determining factor toward the behavior of the taxpayers. Akintoye and Tashie (2019) emphasized that in Nigeria, tax education is attached to a significant association towards compliance behavior. Tax officials had to realize that the easier it is for them to effectively comply, the more educated the taxpayers are.

General information on taxes is an appreciation of the core principles of tax policy applied to a country, (Fauziati et al., 2016). The enforcement of a tax system describes an interpretation of SMEs' tax policies in an area. In a compliance tax system, tax education for multiples of SMEs is one of the essential ingredients in coming up with an accurate tax liability, (Baru, 2016). Tax knowledge has indeed been proved to be a variable influencing compliance behavior, (Isa, 2012). In other words, the taxpayers' knowledge is important to both the Authority administering tax and the organization, (Sapiei & Kasipillai, 2016). There is literature such as Palil 2010, that note the taxpayer's knowledge found significant to taxpayers' compliance with tax.

2.1.4 The Concept of Social Norms

Social norms denote injunctive norms (Cialdini, Kallgren, & Reno, 2021); that is, normative prescriptions with regard to tax compliance or, conversely, the normative acceptability of noncompliance. In the same vein, it has been put forward that social norm, that is, the perceived practice or endorsement of evasion among reference others, have an effect on tax compliance (Wenzel, 2021). Social norms-if internalized-should reduce the perceived opportunity structure and as noted above, decrease the will to cheat on taxes.

As stated by Leslie, Larson & Gorman (2022) "…social norms are rules developed by a group that specify how people must, should, may, should not, and must not behave in various situations". These rules of behavior are based on interests, values, and attitudes developed within the group. Thus, social norms refer to what individuals' think most other people believe is appropriate, (Wenzel, 2021).

Social norms play a significant role in shaping individuals' attitudes and behaviors towards tax compliance. These norms are the unwritten rules and expectations within a society regarding what is considered acceptable or unacceptable behavior in relation to paying taxes. Understanding and leveraging social norms can be a powerful tool for tax authorities to encourage voluntary compliance and deter tax evasion OECD, (2020)

On the other hand, Edlund & Åberg (2022)defines it that social norms are typically accepted ways of thinking, feeling, or acting that people in a group accept and agree as right and proper. Thus, what is ordinarily essential to a social norm is not basically what is legally defined, but rather informal or socially defined rules stipulating what actions are regarded appropriate and correct, or improper or incorrect. These are the rules resulting from interests, values, and attitudes developed in the group. A social norm, therefore, consists of a socially defined rule of behavior based on common values.

Fehr & Gächter (2020), define social norm as a behavioral regularity that is based on a socially shared belief of how one ought to behave which triggers the enforcement of the prescribed behaviour by informal social sanctions. Speaking of a social norm implies the concept of a sanction; the latter refers to punishments given by the group for the violation of social norms. A social norm consists of a socially defined rule of behavior based on common values, which is backed up by a system of sanctions.

2.1.5 The Concept of Digitalization

Digitization is the process of converting analog data into a binary electronic, or digital state, especially for use in a computer or storage form (Pearce, 2005). Digitization usually refers to "the process of converting materials from an analog state that can be read directly by a human into a digital state that is directly readable only by machines.". Tax administration digitization is a rather challenging task that requires dizzying changes in the way it is organized and delivered to the intended users. Digital technology is a rather strong tool of management; however, the encounter of tax administration with this mode of work often proved to be complex and sometimes not very successful. The problem is that tax administration wants-like any other sector-to create an electronic management and information system working for them, and they spend a lot of money for it, effort, and technology. (Lipniewicz, R. 2017).

According to Alm, et al. (2021), Digitization enables taxpayers to file tax returns and make payments electronically, simplifying the compliance process and reducing errors associated with manual paper-based systems. Electronic filing platforms often provide built-in checks and calculations, improving accuracy and efficiency. Digital systems facilitate the automated processing of tax data, enabling tax authorities to efficiently handle large volumes of information, detect discrepancies, and identify potential non-compliance.

Martinez- et al. (2021), argued that automated data processing can streamline tax audits and investigations, enhancing enforcement efforts. Tax authorities can provide online tax services and portals where taxpayers can access tax forms, information, and resources, submit filings, track their tax obligations, and communicate with tax authorities. These portals enhance taxpayer convenience and accessibility, encouraging compliance.

2.2 Theoretical Review

The theories that guided the study were included Technology Acceptance Theory, Theory of Planned Behaviour and Economic Deterrence Theory.

2.2.1 Technology Acceptance Theory

According to Davis et al (2003) TAT theorizes that an individual's intention to use a system is jointly decided by perceived usefulness, the user's ''subjective probability that using a specific application system will increase his or her job performance'' and perceived ease of use (PEOU), ''the degree to which the user expects the target system to be free of effort.'' These beliefs mediate the influences of external variables system design characteristics-on behavioral intention, BI. According to PEOU, there is also a direct effect on PU. Usage prediction: TAT models can be valuable not only within organizations but also across organizations for application or technology evaluation, and also for user group or application comparisons. However, TAT can be totally limiting in the application beyond a workplace due to the fact that its core construct cannot fully represent the variety of the user task environment and constraints. However, Paul and John (2003) suggested that in as much as the TAT is a useful model, it had to be integrated into a broader one that could encompass variables related to both human and social factors.

TAT was first advanced by David in 1986. This theory is important in explaining and determining technological behaviour Chem Shing-itan and Chien-Yi 2011. The acceptance and rejection of technology can be used by this approach. The model implies that once a customer is given is exposed to alternative innovations, some components affect their choices on the time and means of utilization. This constitutes its apparently seen helpfulness and convenient. This was derived from the perceived hypothesis

activity by social clinicals. In Davis', two basic components are identified, perceived helpfulness, and convenience (Davis, Foxall & Pallister, 2002).

TAT has been widely adopted because it can predict individual's use of technology (Fishbein & Ajzen, 2010). According to Davis, 1989, the perceived ease of use affects intention for adoption sand perceived usefulness. TAM has, however been associated with haddocks despite being resourceful in the study of adoption and use of technology such as failure to consider the organization's setting, generality and parsimony at the initial stages of designing the model and also the disregard for the factors which moderate ICT adoption (Sun & Zhang, 2006).

The theory of planned behavior takes into account the above-stated factors. In a bid to improve financial collection and administration, Kenya Revenue Authority has introduced an electronic tax management system. In doing so, services will be available to the tax payers all the time from anywhere, means reducing costs of compliance hence improves tax compliance. However, the levels of tax compliance stand low and tax collections below the targets set by Kenya Revenue Authority. With the increasing need to increase revenue collection and enforcement in providing public services, and the introduction of electronic tax systems in most countries across the global divide, developing countries like Kenya still grapple with the challenges of low tax compliance and tax administration. Muita (2011) indicated that electronic tax systems are rapidly replacing paper-based tax reporting systems with promises of quite a number of advantages over hard copy tax filing. The systems promise faster process, lower costs, and increased efficiency. In the previous years, the Kenya Revenue Authority has revised all its targets downwards in the last four years.

It nonetheless did not meet the target of 2011/12. For the target of 2014/ 15, with a record of Sh1.18 trillion, the amount of tax collected had to be raised over 20 per cent through new efficient measures that depend heavily on the introduction of electronic tax management system. However, as it is they are complaining by the taxpayers, KRA staff, and even other government bodies since the processes of tax payment filing and compliance through the electronic system is cumbersome. Some argued that this increase of revenue collection is not related to the electronic tax system but correlate to other factors like stable economy population growth, and an increase in donor borrowing. Scarce research has been carried out to determine the impact an electronic tax management system would have on improving the efficiency of tax collection.

Duncan, 2000 looked into the facilitative factors leading to successful adaptability of technology as an enhance tool for tax compliance. In this work, he came up with a conclusion that there are three pre-requisites which must come into play if this objective is to be realized and these include flexible Information Technology structure, competent IT skill base and strong customer orientation.

A theory that influences explorations on technology acceptance. This study has utilized TAT to explore the way persons have how individuals, through the use of mobile banking, have been embracing time and cost-cutting in order to achieve better performance in business. In this survey, the technology acceptance model will be applied in establishing how the use of technology enhances voluntary tax compliance in Kenya, and how technology use influences the adoption of technological innovations by Kenya Revenue Authority.

2.2.2 Theory of Planned Behaviour

This theory was developed by Ajzen in 1991. It is of the view that, some definite factors influence the behavior of individuals. These factors originate from certain reasons and are usually planned by these individuals. The essential thrust of this approach is that individuals are not risk neutral or risk averse but simply make decisions based on their cost benefit analysis of the gains verses the projected losses. Ajzen's (1991) theory of planned behaviour posits that individuals make rational choices to engage (or not engage) in the behaviour of interest. The choices made are influenced by individuals' own beliefs about the outcome and the evaluation of the favorableness (or unfavourableness) of the outcomes from engaging in the target behaviour. These beliefs and expected outcomes underlie three conceptually distinct salient beliefs, which are central to the theory of planned behaviour. These are: behavioral beliefs (perceived beliefs about the likely outcomes from engaging in the target behaviour and the evaluation of the desirability of these outcomes); normative beliefs (perceived social pressure); and control beliefs (perceived ease or difficulty of engaging in a desired/undesired behaviour).

 Behavioral intention will influence the behavior of such individual and that behavioral intention is determined by readiness attitude to respond to the positive or negative objects or situations. Therefore, taxpayers have an awareness that taxes paid for the benefit of the public in general give a positive response to the taxpayers' behavior to taxes paid (Nurwanah, 2018). Taxpayers' behavior includes their intention to make tax payments, which has an impact on tax compliance behavior (Novianti & Dewi, 2018). Ullah (2019) recommended that subjective norm has a meaningful connection with individual taxpayer's intention to comply. Intention to pay taxes means that taxpayers are ready to pay those taxes and fulfill all their tax obligations (Dobos & Takács-

György, 2020; Tambun & Haryati, 2022). The theory supports that compliance costs influence taxpayer compliance

The theory links belief with behaviour and tries to explain human behaviour from a psychological point of view.

It was proposed by Icek Ajzen to improve the predictive power of the theory of reasoned action by addition of perceived behavioural control. This theory postulates that the behaviour of persons in society is at the mercy of definite factors that have certain roots in reasons and come out in a planned manner. The ability to perform a particular behaviour depends on the fact that the individual has a purpose towards that behaviour (behavioural intention). Behavioural intention in turn depends upon three factors, viz. Attitude towards the behaviour, Subjective norms and Perceived behavioural control.

2.2.3 Economic Deterrence Theory

The other one is the Allingham-Sandmo theory, which is also named as the economic deterrence theory emanated from the seminal work of Allingham and Sandmo (1972). This model assumes that factors influencing behavior are tax rate determining the benefits of tax evasion and penalties for fraud and probability of detection determining costs Allingham and Sandmo, 1972 over time it evolved as Fiscal Exchange theory. This view is based on basic form of deterrence model in which an individual tax payer is taken as a rational economic agent who weighs the costs on one side, determined by the probability of detection and penalties for fraud, against the benefits of tax evasion on the other, opting not to pay if the benefits of the non-compliance outweigh the cost Walsh, 2012.

This is a concept of the theory in that it believes that, if the consequence of committing a crime outweighs the benefit of the crime itself, it will eventually deter the individual from committing the crime.

This is based on the basis that everyone has a conscious understanding of what is right from wrong and further the consequences involved with wrong or criminal actions. The advocates of deterrence theory argue that individual decide either to comply or break the law after weighing the benefits and costs involved in their undertakings.

The Economic Deterrence model, one of the economic-based models, developed by Allingham and Sandmo (1972), extended the expected utility model of criminal activity originated by Becker (1968) to the tax arena. Entailed in this model is a notion of an economically rational taxpayer who will evade taxation as long as the pay-off from evading is greater than the expected cost of being caught (Kramer).

The model thus thereby reduces the problem to that of rational decision making under uncertainty whereby tax evasion pays off either in terms of lower taxes or subject one to sanctions Fjeldstad, Schule-Herenberg and Sjursen, 2012). This implication assumption of means, this in assumption simple is words, that when if there the penalties are low penalties, the tendency for detection is high, and the penalties for on evasion are severe, fewer people will be non-compliant complaints. This theory, therefore, concludes that tax compliance depends more on tax audit and the penalties or fines. This implies postulates that, all taxpayers only pay their taxes because they fear being sanctioned. Thus, in this increase case in increasing sanctions or fines and penalties will increase tax revenue Awa &Ikpor, (2015). It is on the basis of this assumption that the model advocates stricter audit and heavy penalties for offenders as a basis for reducing non- compliance Fjeldstad, et al (2012). This theory is trying to

link benefits property owners will accrue when they evade tax or the losses they will incur when they are found to be non- complaint and penalties imposed on them.The relevance of this theory in excise duty compliance is that when there is low probability of audit and penalties, tendency for evasion by manufacturers will be higher, while if there is a high tendency for detection and penalties are severe, fewer manufacturers will evade excise duty tax. This theory therefore highlights that the knowledge a taxpayer has on taxation influences their ability to comply or not.

2.3 Empirical Literature Review

The review of empirical studies focused mainly on the themes drawn from the research objectives and they include; tax audit, taxpayer sensitization social norms and digitalization as a moderator

2.3.1 Tax audit and excise duty compliance

As noted by Biber (2020), the role of an audit program in a modern tax administration goes beyond checking on taxpayers' reported obligations and detecting discrepancies between a taxpayer's declaration and supporting documentation. Tax audits are considered to increase tax revenues in two ways: directly through assessment of additional taxes, and indirectly by improving taxpayer compliance with the tax laws and regulations (Barreca and Ramachandran, 2004). Thus, effective taxation in both the short and long run in any economy can be achieved only when the level of compliance improves for efficient tax administration. Among one of the measures that can be used to improve the level of compliance is to perform tax audits.

According to Ola (2021), tax audit serves in improving voluntary compliance through the detection and bringing into account of those who do not pay the right amount of tax. To that effect, Slemrod (2000) stated that tax audit is amongst the most formidable

policies in deterring tax evasion behaviour, and as such, this study will try to examine the impact of tax audit on tax compliance in Ethiopia.

Bernasconi & Bernhofer, (2020) examined the reduction axiom in an tax compliance decision problem wherein the audit tax rate and the detection rate are separated in a two-stage lottery process. They showed that subjects comply more in the two-stage lottery set-up than they do in the one-stage equivalent. Zakir, (2019) also indicated that large corporate tax payers tend to comply with tax laws due to rigorous tax audit in Bangladesh.

Basically, it finds the positive relationship between audit and cooperative enforcement in the report. The result shows that a few published studies undervalue the efficacy of audit. It is good and quality proof of the audit job, so it is also necessary to take into consideration the effect of audits on voluntary compliance in comparison with individual reports. For this reason, the outcomes have been such as to give ample opportunity to the tax practitioners and tax authorities for the development of audit powers and further organization of auditing organizations in such a way that more income is generated for the state.

In Rwanda, Ordinary least square regression was used, and the analysis found an important positive relationship between Rwanda's tax audit and collection of revenues. It concluded that tax audit affects revenue collection and helps to encourage voluntary taxpayer enforcements that in turn increases revenue substantially. Jimenez & Iyer, (2021) assessed individual compliance responses to some degree of audit likelihood. They found that the compliance rate of taxpayers increases when they know they will be audited. When they know the tax audit will not be conducted, the rate of compliance decreases.

However, in Nigeria, Olaoye et al., (2019) conducted an investigation into the effect which a tax audit has on productivity and performance of taxes within Lagos State. In this work, tax audit is considered across three levels, namely: desk auditing, back-duty audit, and field auditing. The authors employed logistic regression techniques, and results portray that auditing of taxes has a significant effect on the productivity of tax and tax enforcement in Lagos State. The study concluded that this could mean an improvement in tax enforcement among taxpayers; tax audits should be routine.

Badara in 2022 conducted a study to assess the impact of Tax audit on tax compliance in Bauchi State of Nigeria. He employed primary data from the revenue staff, and his study had 48 respondents with some selected individual taxpayers and forms. The research hypotheses showed that the Tax Authority achieves its target revenue through tax audits, that tax audit mitigates tax evasion, and that there is a lack of cooperation from taxpayers with tax audit staff during the process.

The research study by Nurebo et al. (2019) was conducted in Kembata Tembaro Zone –Southern Ethiopia to determine what contributes to the factors that affect tax audit effectiveness towards compliance. The qualitative and quantitative approaches applied to this study had a sample size of 146 respondents, consisting exclusively of tax officials from the Tax Authority. They found that management support, quality of audit, awareness of the taxpayers, and system of tax administration relates directly to the effectiveness of an audit, while complexity in tax law and accounting/reporting of taxes relates inversely with the effectiveness of a tax audit.

Mirera, 2020, examined the impact of tax audit on revenue collected by Kenya Revenue Authority, Nairobi West Tax station. The study adopted a descriptive research design where secondary data sources for audit reports from Kenya Revenue Authority covered

a period of 2008-2012. The data analysis was done and the results indicated there was an increase in the tax paid after audit especially random tax audit, cut off tax audit and conditional tax audit. Analysis of tax revenue from a particular firm few years before audit and two years after the audit, showed tax collected increased after audit. On the basis of this analysis, it was established that there is a direct relationship between tax audit and tax revenue collected.

2.3.2 Taxpayer Sensitization and excise duty compliance

As such, according to the researchers Tukur and Onyegbule (2011), taxpayer education forms the basis for understanding the tax laws thereby ensuring that there is timeliness in filing tax returns/payments. The more tax knowledge one has, the better their compliance in paying taxes; it also helps the tax authority in designing certain tax education programs and developing an understanding of the behaviors of the taxpayers. Though, Sapiei & Kasipillai (2020) noted that taxpayers have knowledge of SAS as seminars and training are being facilitated by the tax authority to fulfill its responsibilities to the taxpayers. Lai, Zalilawati, Amran and Choong (2019) stressed that studies in regards to tax education among emerging economy is rare. This is because tax awareness in most developing countries may possibly be below average.

Kasper, Kogler, and Kirchler (2019) using a survey-based experiment in Austria show that tax-related media coverage can affect taxpayers' intentions to comply. Taxpayers' trust of tax authorities may increase when exposed to media content that highlights the trustworthy nature of the tax authority or its power to prevent tax evasion. Alm et al., (2010) provide evidence from lab experiments that agency-provided information can have a positive and significant impact on the likelihood of filing a tax return as well as accurate income tax reporting by individuals.

Aside from that, Atawodi and Ojeka (2012) reiterated that the absence of proper awareness hurts tax compliance in SMEs in Zaria north central Nigeria. Even in Nigeria, tax practitioners will include accountants, tax agents, and professionals who are encouraged to embrace the system based on their tax knowledge. Its advantages in the country's tax administration have also been interpreted Cupa, 2003; Okello 2014. The official in charge of tax administration needs to realise that the easier it is for them to comply effectively, the more competent taxpayers are. It is, therefore very vital for tax officers to implement continuous programmes in educating the taxpayers. Besides, the lack of knowledge and expertise from the corporate taxpayers have the possibility of influencing compliance behaviour noted by Sapiei and Kasipillai, 2013.

Gitaru, 2018 narrated how electronic taxpayer education, print media tax payer education and involvement of stakeholders affected tax compliance. The targeted population consisted of SMEs in the CBD Tax Area of Nairobi. In this research, the concentration will be on SMEs operating within Nairobi CBD. Data was collected through the use of pre-tested questionnaires on the owners of the SME businesses. Both Descriptive and inferential statistics have been used to analyze findings. The findings indeed showed that electronic taxpayer education, print media taxpayer education, and stakeholder sensitization affect tax compliance in SMEs' CBD region, Nairobi. In testing the relationship between the independent variables, the Correlation Matrix was applied. The findings obtained showed that stakeholder sensitization was positively related to education of taxpayers.

Karanja, 2020 Outdoor campaign to publicize tax and sensitize tax payers need to be carried out. This can take the form of regular radio programs, banners and permanent signs, ward meeting, street theatre, announcement at local church, mosque or football

match, town-crier, vehicle signs, poster newspapers and business promotion. More so, the revenue authority can apply focused education on certain areas of tax generation as was the case by KRA who has focused on education on rental income and the importance of compliance (KRA, 2012).

2.3.3 Social Norms and Excise Duty Compliance

Social norms or peer influence is defined as the influence of other people who are important to the individual, such as family, friends, and colleagues, in whom one is more likely to share the tax compliance choices (Bobek, Hageman, & Kelliher, 2021). Most previous literatures have identified that there is a significant influence of peer influence in making compliance decisions, (Blanthorne & Kaplan, 2018; Bobek, Roberts, & Sweeney, 2019). It was also suggested that peer influence has 'substantial impact' on tax compliance behaviour. Thus, peer influence plays an important role in determining the actual behavior of taxpayers apart from other measures imposed by the tax authority in deterring non-compliance, (Prinz, Muehlbacher, & Kirchler, 2019).

According to Feinstein 2020, "adding moral and social dynamics to models of tax compliance is as yet a largely undeveloped area of research.". Following the work by Pommerehne (2021), it extends to supposed factors influencing tax morale, particularly the subjective sense of tax burden, that is, the individual perception of fairness of the tax system, relationship between taxpayer and administration but also to what is seen as a fair exchange between the subjective sense of tax burden and the service offered by the state.

As Slemrod, 2020 claims, the social capital resulting from tax voluntary compliance lowers the cost of operating a government and of equitably allocating its cost to all of its citizens. In a cross-section analysis of 29 countries, Knack and Keefer, 2019 tested

the impact of civic duty and trust on growth and investment rates. One of the five specific actions to measure the strength of civic norm was "cheating on taxes if you have the chance". Thus, tax compliance is one dimension of civic norm. Knack and Keefer (2019) find a strong and significant positive relationship between social capital variables and economic growth.

Fehr and Gächter, (2021), define that "one can define a social norm as: "behaviour regularity that is based on a socially shared belief how one ought to behave which triggers the enforcement of the prescribed behaviour by informal social sanctions" and state: "Reciprocity is thus a major mechanism for the enforcement of social norms. Given that most social relations in neighborhoods, families, and workplaces are governed not by explicit agreements but by social norms, the role of reciprocity as a norm enforcing device is arguably its most important function.

According to McNeil, 2020 there are ten dimensions of social norms which include norms of reciprocity, contractual solidarity, role integrity, flexibility, and long term orientation, implementation of planning, the linking norms, creation and restraint of power, harmonization with the social matrix and Propriety of means. However, in this study, five dimensions are identified in highlighting social norms, which include the following: norms of reciprocity, contractual solidarity, role integrity, flexibility, and long-term orientation as some of the most critical dimensions concerning social norms, (Ivens, 2019).

2.3.4 Digitalization as a moderator

The digital age is rapidly changing the relationship that exists between tax authorities and the taxpayers. In the words of Ernst & Young, 2019, the drivers for tax agencies include their need for more revenue collection, improved compliance, and greater

efficiency in an environment of fast diminishing resources. Tax agencies are increasingly depending upon digital tax data collection and analysis via digital platforms, which allow for real-time evaluation of the taxpayers' data. This enables the tax authorities to respond in a far more timely and effective manner to the compliance risks that are likely to arise. The organizations which have still their legacy systems or which are slow to change, face quite a few surprises while on the verge, such as cost, compliance risks, and unexpected issues in compliance. The research study has focused on only four facilitating dimensions of digitization which are leading to better tax compliance, to wit, real-time, data analytics and management of tax risks.

With digital transformations, tax institutions can turn data into business assets through predictive modeling and the examination of macro-economic trends and policies contributing to the workforce capability development in real time. It simplifies compliance and is bound to make fraud and tax errors less likely. It improves taxpayer services by enhancing payment procedures, issuing refunds, and by improving access to useful information. Administrations make use of the provided information to reduce costs, cut operation time, enhance risk management methods, better incentivize international priorities, and efficiency audit, (Mathai, 2019).

Nawawi and Ling (2020) conducted a study where they integrated ICT Skills into tax software in tax education. They used tax practitioners as their respondents, where the aim of the research was to, from the taxpayers in member states, assess the skills they required so as to have full use of the online tax platform. The research identified three skills that taxpayers need to interact fully with technology-based tax systems, namely word-processing software, e-mail, and spread sheet software. The results of this study should be correlated with the current investigation because, while analyzing the

effectiveness of an electronic system, consideration of failure of past technologies is paramount, failure to which might lead to not fully leveraging on the benefits.

Makanga (2021) examined technology adoption as a strategic tool for improving tax compliance in Kenya: a case of Large Taxpayer companies with a turn in excess of Kshs. 750 million. The aim of this study was to analyze the influence of Technology on tax compliance by the large taxpayers. The investigation established that in the highly dynamic world, technology is important for the growth of business. Either Large Taxpayers or KRA have to adopt modern technology so that it improves the efficiencies of tax compliance.

2.4 Summary of Literature and Research Gaps

Nurebo et al. (2019) conducted research in the Kembata Tembaro Zone, Southern Ethiopia, with the aim of assessing those factors that affect the effectiveness of tax audit in compliance with taxes. The research methods employed were qualitative and quantitative, while the sample size was 146, comprising respondents who were tax officials in the tax authority alone. They concluded that managerial support, quality of the audit, awareness of the taxpayers, and the system of tax administration relate directly to audit effectiveness, while the complexity of tax law and accounting/reporting of taxes relate inversely to tax audit effectiveness.

The study focused on tax audit effectiveness on tax compliance while the current study was the effects of tax audit on excise duty tax compliance thus conceptual gap. For this, an OLS was used in Rwanda. The analysis found a significant positive relationship that existed between Rwanda's tax audit and the collection of revenues. They concluded that tax audit affects revenue collection and encourages voluntary taxpayer enforcement that raised revenue significantly. The current study used multilinear regression hence

methodology gap. The study by Bidin, Sinnasamy, and Othman 2018 was on investigating determinants of importers excise duty compliance in Malaysia; this study will be done in Kenya hence contextual gap.

2.5 Conceptual Framework

It is a multifunctional analytical tool with numerous contexts and variations. Therefore, it is majorly used to make conceptual distinctions and the organization of ideas so that they are easily remembered and applied. Conceptual framework explains either graphically, or in narrative form, the main things to be studied, the key factors, concepts or variables and the presumed relationship among them (Miles et al, 1999). According to Miles, et al. In this study, the independent variables were tax audit measured by field audits and excise stamps audit.

Taxpayer sensitization measured by seminar and print media. Social Norms will be measured by social pressure and reputation. Dependent variable was excise duty compliance measured by Timely Filling and Tax payment while the moderating variable was digitalization measured by online payment and online registration.

Independent Variables   **Dependent Variables**

Tax Audit

- Field audits

- Desk audits
- In-depth audit

H_{01}

Excise Duty Compliance
- Timely Filling
- Tax payment
- Tax declaration

Taxpayer Sensitization

- Seminar

- Print media

- workshop

H_{02}

Social norms

- Social pressure
- Reputation
- beliefs

H_{03}

H_{04a} H_{04b} H_{04c} **Moderating variable**

Digitalization

- Online payment
- Online registration
- Online monitoring
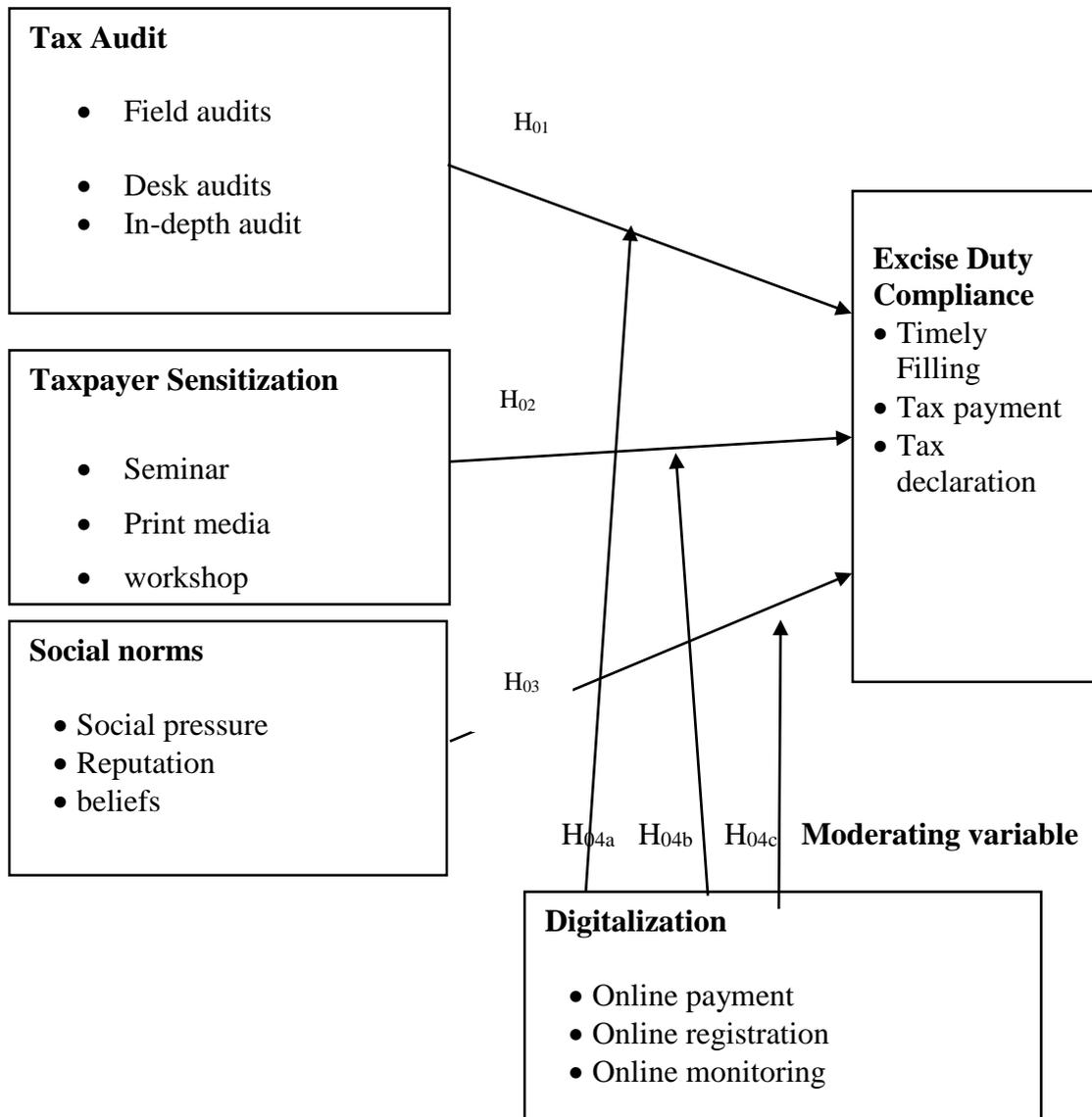
Figure 2.1: Conceptual Framework

Source: Author, 2024

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter comprises the research design, target population, sampling frame, sample size and sampling technique, data collection method, pilot testing and data analysis and presentation.

3.2 Research Design

A research design is the plan and structure of investigation so conceived as to obtain answers to study objectives (Bryman & Cramer, 2012). Simply put, research design is a logical strategy used by a researcher in ensuring that the research problem is effectively addressed. The study employed the explanatory research design. This design seeks to find out what is causing a certain occurrence to happen. It explains the effect of one variable on another (Gray 2013).

3.3 Target Population

Creswell and Creswell (2019) describe target population as the complete set of elements or objects that have the same recognizable characteristics. A population is a group of elements-objects or persons-sharing some common characteristics as defined by the sampling criteria set by the researcher. It also includes all those people or items having the characteristic the researcher wants to understand. In this research, the target population was 416 manufacturing firms in Embakasi west Nairobi County, KRA (2023).

3.4 Sampling Technique and Sample Size

Kothari and Gang (2014) defined sampling as the process of selecting a sample from a population. It is a list of all those within a population who can be sampled, and may include individuals, households or institutions. The sample size for this study was

determined using Yamane (1967) formula. This is a formula that assumes its distribution to be normal on the basis of an assumption that the manufacturing firms were normally distributed in relation to the parameters under study. Using Yamane formula at a precision level of 5%, the desired sample size determined to be as follows (Yamane, 1967).

Yamane (1967) formula was adopted in computation of the sample size.

$$n = \frac{N}{(1 + N(e)^2)}$$

Where:

'n' = sample size,

'N' = population

'e' = margin error

1 = constant

This study assumed a level of precision of 5%

The sample size therefore is:

$$n = \frac{416}{(1 + 416(e)^2)}$$

$$n = 203$$

The study sample size was 203 manufacturing firms in Embakasi west Nairobi County KRA (2023).

3.5 Data Collection Procedure

The study collected primary data. Questionnaires was used and had close-ended questions for quantitative data. Questionnaire was preferred because they are effective data collection instruments that allow respondents to give much of their opinions pertaining to the research problem. The questionnaire had five Likert scale (from

strongly agree to strongly disagree). The Likert scale measured the level of agreement or disagreement. The Likert scale has scales that assist in converting the qualitative responses into quantitative values (Mugenda & Mugenda, 2013).

3.6 Data collection method

This study used primary data to effectively address the objective of the study. Primary data are collected in the process of this research. Since the type of interaction during the questionnaire survey, the researcher had to physically distribute the questionnaires among the respondents-thereby follow up for completion and ensure that they are completed and returned back.

3.7 Pilot test

Pilot testing enables the researcher to modify and remove ambiguous items on research measures (Kothari & Gang, 2014). A pilot testing is often done before the actual activity of data gathering to ensure that vital aspects of the study with respect to the tool used in data collection have not been overlooked, (Cooper & Schindler, 2012). In order to ascertain the validity and reliability of the study, a pilot test was conducted on manufacturing firms in Thika Town. A 10% of the sample size is adequate for pilot, (Neuman, 2011). This study therefore pilot tested 20 manufacturing firms in Thika representing 10% of the sample population.

3.7.1 Reliability Test

According to McMillan & Schumacher, (2010) reliability of research instruments means the repeatability, stability or internal consistency of a questionnaire. The reliability of the questionnaire was measured to establish the reliability using Cronbach's alpha. Bryman (2008) suggests that where Cronbach's alpha is used for reliability test, alpha values for items included in a study should not be lower than 0.70.

Also, Cronbach's coefficient alpha were computed to determine if the instrument met the reliability coefficient of 0.7.

3.7.2 Validity test

Validity is the accuracy and meaningfulness of inferences, which are based on the research result or the degree to which results obtained from the analysis of the data actually represent the phenomenon under study (Mugenda 2003). The content validity was tested in this study since it tests appropriateness of words, phrases, and sentences as used to indicate the variables in the questionnaire. Content validity which is the extent to which a measure "covers" the construct of interest was tested (Straub, Boudreau et al. 2004). Content validity is not usually assessed quantitatively. Instead, it is assessed by carefully checking the measurement method against the conceptual definition of the construct. Further factor analysis was tested to determine the validity of the questionnaires.

3.8 Diagnostic Test

The regression model undergone diagnostic tests to determine the model assumptions and to determine whether or not there observations with big undue effect of the analysis this included the normality test and multi-collinearity

3.8.1 Normality Test

McInnes (2018) states that the normality test determines whether the sample data is taken from a population with a normal distribution The normality test was used to determine whether a set of data has been modeled by a normal distribution (Doornik & Hansen, 2008). In this study, normality tests were performed using the Shapiro-Wilk statistic. Priyatno (2017) said that the test decision criterion is the null hypothesis that the data from a population with a normal distribution cannot be rejected if the significance level is > 0.05.

3.8.2 Multicollinearity Test

Multicollinearity refers to the condition of high degree of association between independent variables (Kothari, 2012). Multicollinearity tests allowed researchers to determine whether two independent variables are intrinsically related. The consequences of Multicollinearity are increased standard error of estimates of the Betas, meaning decreased reliability and often confusing and misleading results. We carried out the multicollinearity test to verify if high correlation existed between one or more variables in the study with one or more of the other independent variables. VIF estimated the level of correlation between the predictor variables and measured the inflated variances due to linear dependence with other explanatory variables. It was tested by computing the Variance Inflation Factors (VIF) and its reciprocal, the tolerance. To test for multicollinearity of the predictors, a variance inflation factor test was conducted, and the value has to be below 10.

3.8.3 Autocorrelation tests

Autocorrelation tests assess whether a relationship exists between error terms, either in the time series or panel data analysis. Among the most common of these tests to identify autocorrelation is the Durbin-Watson test (Durbin & Watson, 1951). It considers the null hypothesis of no first-order autocorrelation. The presence of autocorrelation hence violates the assumption of independent observation and may privilege the researcher to adopt a different model specification. A Durbin Watson statistic between 1.5 and 2.0 indicates no presence of autocorrelation, a number less than 1.5 or greater than 2.0 indicates violation of the assumption.

3.8.4 Homoscedasticity Test

The even distribution of residual or error term across the graph is a very important assumption for this method. Normally, if supposition on error variance being equal is violated, Evans, (2016), states that distorted statistical conclusions will results due to biased outcomes of the analysis. A good way used in checking for homoscedasticity is by using a scatterplot of residuals versus predicted values. In this research, the Breusch Pagan test was used for the probability of the Chi-square test. From the p value >0.05 result, it can be concluded that the assumption of homoscedasticity is not violated.

3.8.5 Linearity Test

Tests of linearity are conducted to ascertain whether there is a linear relationship between the dependent variable and the independent variables within a regression model. The rationale behind tests of linearity is that most methods employed in statistics have the prerequisite of data being linear. This would, of course, be the case when data is sampled from a population where the relationship between the involved variables is linear. This means that before using common methods such as linear regression, tests for linearity can be performed (Geiger, Parthasarathy, Kuyel, Jin, &Chen, 2005). Linearity test was done for each variable and graphs was drawn to check on the possibility that the data arriving is from a linear population. The p-value using deviation from linearity at a 95% confidence level presented: if the p value >0.05, the linearity assumption is not violated, and p value <0.05, which indicates violation of the assumption for linearity.

3.9 Data Analysis

Data analysis process entails the process of packaging the collected data, putting it in order and structuring its major elements in a way that the results can be easily and efficiently communicated (Kothari, 2012). The questionnaires were

collected from the respondents were checked for completeness and consistency. After data entry, data cleaning will be done to ensure correct entries were made and each question has responses that are consistent with the options provided in the questionnaire. After data cleaning, the researcher did data analysis. The close ended questions (quantitative data) were analyzed using both descriptive and inferential statistics. The descriptive statistics included in frequencies, mean score and standard deviation and the data presented in tables and graphs. Inferential data analysis was carried out by use of correlation and multiple regression model.

The study used a multiple linear which was performed using the multiple regression equation as shown below:

regression model equation

The regression model was used to establish the link between the independent variable and the dependent variable as follows.

$\beta_1, \beta_2, \text{and} \beta_3$ = regression coefficient of three independent variables

β_0 = Constant term

Equation (i)

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon,$$

Equation (ii)

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + M + \varepsilon$$

Equation (iii)

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + M + M * X_1 + \varepsilon$$

Equation (iv)

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + M + M*X_1 + M*X_2 + \varepsilon$$

Equation (v)

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + M + M*X_1 + M*X_2 + M*X_3 + \varepsilon$$

Where: Y = Excise duty compliance

X_1 = Tax audit

X_2 = Taxpayer sensitization

X_3 = Social norms

M = Digitalization

M_1 = Tax audit * Digitalization

M_2 = Taxpayer sensitization * Digitalization

M_3 = Social norms * Digitalization

ε = error term

3.10 Operationalization and Measurement of Variables

Table 3.1 lists the study variables which include the dependent and independent variables. The operationalization captures the operational representation, and the measurements were used to estimate the variables. The measures included are the ones that have been validated by past researchers.

Table 3.1: Measurement of Variables

Variable	Type of variable	Indicators	Source	Measurement	Tool of Analysis
Tax audit	Independent	Field audit Excise stamps audit	Bernasconi & Bernhofer, (2020)	Questionnaire 5-Point Likert's scale	Regression analysis Correlation analysis.
Taxpayer sensitization	Independent	Seminar Print media	Palil & Mustapha, 2021	Questionnaire 5-Point Likert's scale	Regression analysis Correlation analysis.
Social norms	Independent	Social pressure Reputation	Wenzel, (2021)	Questionnaire 5-Point Likert's scale	Regression analysis Correlation analysis.
Digitalization	Moderator	Online payment Online registration	Nawawi and Ling (2020)	Questionnaire 5-Point Likert's scale	Regression analysis Correlation analysis.
Excise duty compliance	Dependent	Timely Filling Tax payment	KRA (2023)	Questionnaire 5-Point Likert's scale	Regression analysis Correlation analysis.

3.11 Ethical Consideration

Ethical Issues are norms governing human conduct which have a significant impact on human welfare. It involves making a judgment about right and wrong behaviour (Kumar, 2011). Ethics refers to the moral rules and guidelines that control the behavior of people in social affairs (Graham and Benett, 2015). Before data collection, the researcher got introductory letters from Moi University and approved permit from NACOSTI. The researcher collected the data with integrity, honesty and also ensure confidentiality of data provided by the participants and their anonymity and all major statements in the study were cited to avoid plagiarism. The researcher was bound to adhere to all ethical issues of honesty, privacy, cultural sensitivity, informed consent, and voluntary participation. Ethics of the study were ascertained by protecting the rights of the respondents that is anonymity and confidentiality. This was done through advance informing them of the importance of the study and participation was on willing

basis. The respondents were allowed to withdraw from the study anytime they feel not comfortable proceeding with the survey. Personal information such as name and address is not disclosed.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION OF FINDINGS

4.1 Introduction

This section of the report explains how the findings received from the respondents relate to the objectives and hypothesis of the study. It encompasses descriptive and inferential statistics of the respondents and opinions on the excise duty compliance, Tax audit, taxpayer sensitization, social norms and digitalization.

4.2 Pilot Testing

In order to ascertain the validity and reliability of the study, a pilot test was conducted on manufacturing firms in Thika Town. A 10% of the sample size is adequate for pilot, (Neuman, 2011). This study therefore pilot tested 20 manufacturing firms in Thika representing 10% of the sample population. According to the pilot test conducted with 17 respondents the data for excise duty, Tax audit, taxpayer sensitization, social norms and digitalization had a reliability result of 0.970, 0.773, 0.917, 0.938 and 0.971 respectively indicating that the data is reliable $\alpha > 0.7$. The validity test indicated Bartlett's test shows that p-values for excise duty Tax audit, taxpayer sensitization, social norms and digitalization are 0.001, 0.000, 0.000, 0000 and 0.044 respectively.

4.3 Reliability Test

Cronbach's reliability test checks if a measurement scale or questionnaire is consistent. It checks how closely related the items in a scale are. High Cronbach's alpha values (usually greater than (0.7) show that the test is reliable. Table 4.1 shows that excise duty $\alpha=0.975$, Tax audit $\alpha=0.893$, taxpayer sensitization $\alpha=0.962$, social norms $\alpha=0.984$ and digitalization $\alpha=0.988$. The results indicates that Cronbach's Alphas are >0.7 indicating reliability in the questionnaire responses.

Table 4.1: Reliability test

Variable	Cronbach's Alpha	N of Items
excise duty	0.975	5
Tax audit	0.893	5
taxpayer sensitization	0.962	5
social norms	0.984	5
Digitalization	0.988	5

(Source: Research 2024)

4.4 Response Rate

The response rate in questionnaire data analysis refers to the proportion of individuals who completed a survey or questionnaire. It is important in research because it affects the quality of data and how well the sample represents the population. When the response rate exceeds 60%, it improves the validity and pertinence of the research outcomes. It is essential for the researcher to reveal the survey's sample size in order to ensure its credibility and the strength of data collection. 203 questionnaires were issued, and 173 respondents filled the questionnaire and returned showing a 85% response rate as shown on figure 4.1
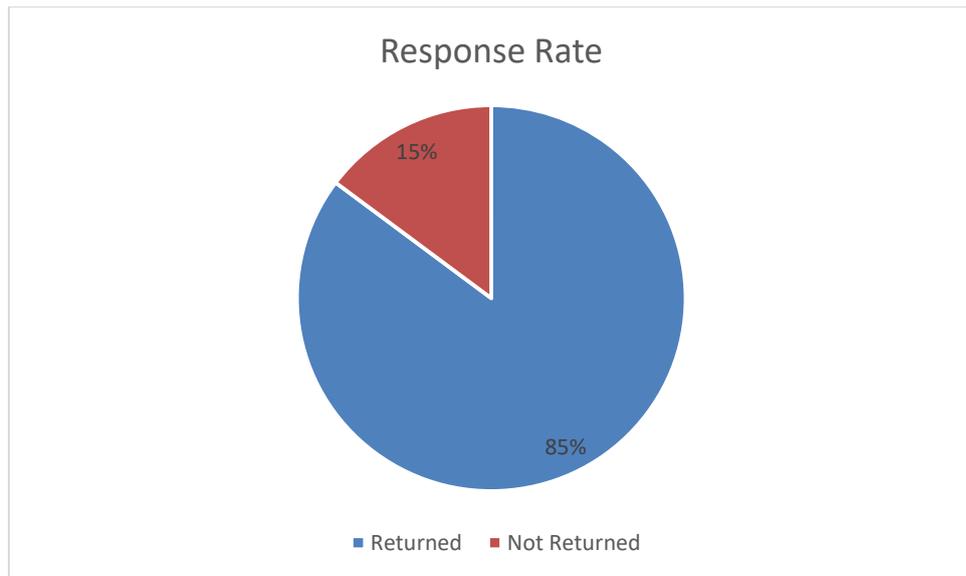
Figure 4.1: Response Rate

(Source: Research 2024)

4.5 Demographics Data

Table 4.2 indicates demographics data categorized through For Gender Distribution, The data indicates a nearly equal representation of genders, with 48.6% identified as female and 51.4% as male. This suggests a balanced gender distribution within the surveyed population.

For Age Composition the age distribution shows that the largest segment falls within the age group of below 30 years, comprising 30.6% of the respondents, the age groups of 31 to 40 years and 51 to 60 years represent 26.6% and 24.9% respectively. The age group of 41 to 50 years is the smallest, constituting 17.9% of the surveyed population. This distribution suggests a relatively young demographic profile, with a significant portion falling in the below 30 years category.

For Education Level: The majority of respondents have education levels at the secondary level, comprising 39.3% of the total. This is followed by individuals with diploma-level education, constituting 32.4%. The smallest proportion of respondents

possess bachelor's degrees, accounting for 28.3%. This distribution indicates a diverse educational background, with a notable portion having completed education up to the secondary level.

Table 4.2: Demographics Data

	Frequency	Percent
Gender		
Female	84	48.6
Male	89	51.4
Age		
31 to 40 years	46	26.6
41 to 50 years	31	17.9
51 to 60 years	43	24.9
Below 30 years	53	30.6
Education Level		
Bachelor degree	49	28.3
Diploma level	56	32.4
Secondary level	68	39.3
Total	173	100.0

(Source: Research 2024)

4.6 Descriptive Statistics

Descriptive statistics are essentially techniques employed to compute, portray, and condense gathered research data in a coherent, significant, and effective manner. The research utilizes these methods to present findings concerning the descriptive characteristics of the collected data, including measures such as standard deviations, maximums, means, and minimums of the variables.

4.6.1 Descriptive statistics for Tax audit

Table 4.3 indicates that for the descriptive statistics for Tax audit

For Tax audit is necessary for tax compliance the respondents generally strongly agree (Mean = 4.09) that tax audit is necessary for tax compliance. The low Std. Deviation of 0.999 indicates that the responses have low variability the skewness of -0.813 value indicates a slight negative skew, suggesting that the distribution is slightly left-skewed, meaning that more respondents tend to strongly agree rather than strongly disagree. The kurtosis value of -0.316 indicates that the distribution is slightly platykurtic, implying that it is slightly less peaked than a normal distribution.

Tax audit procedures by KRA to manufacturers are friendly and effective Respondents, on average, agree (Mean = 3.75) that tax audit procedures by KRA to manufacturers are friendly and effective. The standard deviation Std. Deviation: 1.074 indicates low levels of variability from the mean. The skewness of -0.430 value indicates a slight negative skew, suggesting that more respondents tend to agree rather than disagree. The kurtosis of -0.839 value indicates that the distribution is slightly platykurtic, similar to the previous item.

For Increased number of annual tax audits has effect on excise duty compliance the respondents generally agree (Mean = 4.05) that an increased number of annual tax audits has an effect on excise duty compliance. Std. Deviation of 0.996 indicates low variability of responses the skewness of -0.749value indicates a slight negative skew, suggesting that more respondents tend to agree rather than disagree. The kurtosis of -0.540 value indicates that the distribution is slightly platykurtic.

For KRA has audited our stamps usage and declaration in the past the respondents, on average, agree (Mean = 3.79) that KRA has audited their stamps usage and declaration

in the past. The Standard deviation of 1.058 indicates a low level of variability in the responses from the mean the skewness of -0.438 value indicates a slight negative skew, suggesting that more respondents tend to agree rather than disagree. The kurtosis value of -0.899 indicates that the distribution is slightly platykurtic.

For Tax audits increase the probability of being penalized, thus our business is obliged to abide by the tax law Respondents generally agree (Mean = 4.01) that tax audits increase the probability of being penalized, thus their business is obliged to abide by the tax law. The standard deviation of 0.952 indicates low levels of variability from the mean. The skewness value -0.881 indicates a slight negative skew, suggesting that more respondents tend to agree rather than disagree. The kurtosis value0.328 indicates that the distribution is slightly leptokurtic, implying that it is slightly more peaked than a normal distribution.

The aggregate mean of all the items is 3.94, indicating that, on average, respondents agree with the statements regarding tax audits and compliance.

Table 4.3: Descriptive statistics Tax audit

	N	Mean	Std. Dev	Skewness	Kurtosis
Tax audit is necessary for tax compliance	173	4.09	.999	-.813	-.316
Tax audit procedures by KRA to manufacturers are friendly and effective		3.75	1.074	-.430	-.839
Increased number of annual tax audits has effect on excise duty compliance		4.05	.996	-.749	-.540
KRA has audited our stamps usage and declaration in the past		3.79	1.058	-.438	-.899
Tax audits increase the probability of being penalized, thus our business is obliged to be abide by the tax law		4.01	.952	-.881	.328
Aggregate Mean		3.94			

4.6.2 Descriptive statistics for Taxpayer Sensitization

Table 4.4 shows the descriptive statistics for taxpayer sensitization

Overall, participants showed a positive attitude towards tax sensitization efforts. The mean scores suggest a generally high level of agreement with the statements. Specifically, participants reported a mean score of 3.83 (SD = 1.089) for understanding their tax obligations, indicating a moderate to strong agreement. Similarly, they reported a mean score of 3.87 (SD = 1.089) for the effectiveness of KRA workshops in improving their knowledge of tax laws. Furthermore, respondents expressed strong agreement (M = 4.00, SD = 1.078) regarding their perception that their businesses have been sufficiently sensitized by KRA about changes in tax laws. Similarly, they indicated high levels of agreement with KRA's efforts in organizing workshops to sensitize manufacturers about excise duty compliance (M = 4.05, SD = 1.083) and the resultant improvement in their knowledge of excise duty compliance (M = 4.06, SD = 1.074). The skewness values (-0.507 to -0.812) indicate a slight negative skew in the distribution of responses, suggesting a tendency towards higher agreement ratings. Kurtosis values (-1.037 to -0.672) indicate that the distributions are relatively platykurtic, indicating moderate to light-tailedness. Overall, the aggregate mean score of 3.96 suggests a high level of agreement among participants regarding the effectiveness of KRA's tax sensitization efforts. These findings indicate a positive perception of KRA's initiatives in enhancing taxpayers' awareness and compliance with tax laws and regulations.

Table 4.4: Descriptive statistics Taxpayer Sensitization

	N	Mean	Std. Dev	Skewness	Kurtosis
I understand my Tax Obligations	173	3.83	1.089	-.507	-1.037
KRA workshops have improved my knowledge of tax laws		3.87	1.089	-.552	-.994
Our business has been sufficiently sensitized by KRA about the changes in the Act		4.00	1.078	-.732	-.773
KRA organizes workshops to sensitize manufacturers about excise duty compliance		4.05	1.083	-.788	-.727
KRA sensitization have improved my knowledge of excise duty compliance		4.06	1.074	-.812	-.672
Aggregate Mean		3.96			

(Source: Research 2024)

4.6.3 Descriptive statistics for Social Norms

Table 4.5 indicates descriptive statistics of social Norms indicates that the mean score for the statement "Relationship between the manufacturers and tax authorities influences the willingness of tax payers to comply" was 4.06 (SD = 1.071), indicating a relatively high level of agreement among participants. Similarly, respondents displayed a high level of agreement with the statement "I see no point of paying taxes when it is being misused by individuals in government," with a mean score of 4.07 (SD = 1.081). Regarding the perceived effectiveness of tax utilization, participants, on average, moderately agreed that "The taxes collected by the government are being put into good use in terms of service provision and infrastructural development" (M = 3.92, SD = 1.059). Furthermore, participants expressed a moderate level of agreement with the statement "I view the amount paid as lost profit that I would have used in other activities or products" (M = 3.91, SD = 1.069). Lastly, participants strongly agreed with the notion that "Taxpayers who perceive the tax authority's enforcement actions to be ineffective are less compliant," with a mean score of 4.07 (SD = 1.049). The aggregate

mean score across all items was 4.01, indicating a generally positive perception of the relationship between taxpayers and tax authorities among the participants. Skewness values ranged from -.805 to -.813, suggesting a slight negative skewness in the distribution of responses for all items. Kurtosis values ranged from -.809 to -.600, indicating a platykurtic distribution for all items, albeit within an acceptable range.

Table 4.5: Descriptive statistics Social Norms

	N	Mean	Std. Dev	Skewness	Kurtosis
Relationship between the manufacturers and tax authorities influences the willingness of tax payers to comply	173	4.06	1.071	-.805	-.672
I see no point of paying taxes when it is being misused by individuals in government.		4.07	1.081	-.809	-.710
The taxes collected by the government are being put into good use in terms of service provision and infrastructural development		3.92	1.059	-.639	-.809
I view the amount paid as lost profit that I would have used in other activities in other products.		3.91	1.069	-.681	-.657
Taxpayers who perceive the tax authority's enforcement actions to be ineffective are less compliant.		4.07	1.049	-.813	-.600
Aggregate Mean		4.01			

(Source: Research 2024)

4.6.4 Descriptive statistics for Digitization

Table 4.6 indicates the descriptive statistics of digitization Table 4.6 illustrate various aspects related to the use and effectiveness of digital tools in tax-related processes. The mean score for the statement "The use of iTax system for self-registration has helped reduce the cost incurred during the registration process" was 4.01 (SD = .952), indicating that respondents generally agreed that utilizing the iTax system for self-registration has led to cost reduction during registration. The skewness value of -.881

suggests a slight negative skew, indicating a tendency towards higher agreement. The kurtosis value of .328 indicates a relatively normal distribution. Similarly, respondents provided a mean score of 3.94 (SD = 1.016) for the statement "KRA M-App is easy to use," indicating overall agreement with the ease of use of the application. The skewness (-.759) and kurtosis (-.206) values indicate a slightly negatively skewed and platykurtic distribution, respectively. For the statement "The Online filing of tax returns through iTax system has led to faster and more convenient submission of returns as compared to the manual system," the mean score was 3.92 (SD = 1.006), suggesting general agreement with the statement. The skewness (-.750) and kurtosis (-.171) values indicate a slightly negatively skewed and relatively normal distribution, respectively. Furthermore, respondents provided a mean score of 4.00 (SD = 1.034) for the statement "Tax adverts on social media has helped me as a taxpayer file tax returns on time," indicating agreement with the effectiveness of social media adverts in facilitating timely tax return filing. The skewness (-.829) and kurtosis (-.191) values suggest a slightly negatively skewed and relatively normal distribution, respectively. Lastly, for the statement "Tax adverts on television has helped me in the declaration of excise duty," respondents provided a mean score of 4.05 (SD = .966), indicating agreement with the effectiveness of television adverts in aiding excise duty declaration. The skewness (-.927) and kurtosis (.319) values suggest a slightly negatively skewed and relatively normal distribution, respectively. The aggregate mean score across all statements was 3.98.

Table 4.6: Descriptive statistics Digitization

	N	Mean	Std. Dev	Skewness	Kurtosis
The use of iTax system for self-registration has helped reduce the cost incurred during the registration process.	173	4.01	.952	-.881	.328
KRA M-App is easy to use		3.94	1.016	-.759	-.206
The Online filing of tax returns through iTax system has led to faster and more convenient submission of returns as compared to the manual system		3.92	1.006	-.750	-.171
Tax adverts on social media has helped me as a taxpayer file tax returns on time.		4.00	1.034	-.829	-.191
Tax adverts on the television has helped me in the declaration of excise duty		4.05	.966	-.927	.319
Aggregate Mean		3.98			

(Source: Research 2024)

4.6.5 Descriptive statistics for Excise Duty Compliance

Table 4.7 shows the statistics on excise duty compliance

Specifically, participants reported strong agreement with being registered for the correct tax obligation (M = 4.07, SD = 1.081) and consistently filing taxes by the due date (M = 4.13, SD = 1.038). Similarly, participants demonstrated high levels of agreement with paying the correct tax amount by the due date (M = 4.09, SD = 1.083) and being always compliant with tax policies, including timely tax return filing (M = 4.02, SD = 1.067). Despite the overall positive trend, there were slight variations in attitudes, as indicated by standard deviations ranging from 1.038 to 1.086. Skewness values ranged from -0.809 to -0.897, suggesting a slight negative skew, implying a slight tendency for participants to report higher levels of compliance. Kurtosis values ranged from -0.334 to -0.710, indicating relatively flat distributions with minimal

outliers. The aggregate mean for all compliance measures was 4.06, further indicating a strong tendency towards compliance with excise duty obligations.

Table 4.7: Descriptive statistics Excise Duty Compliance

	N	Mean	Std. Dev	Skewness	Kurtosis
I'm registered for the correct tax obligation	173	4.07	1.081	-.809	-.710
I always file tax by the due date		4.13	1.038	-.890	-.478
I always declare the correct amount		3.98	1.086	-.736	-.564
I pay the correct tax by due date		4.09	1.083	-.897	-.334
I'm always compliant with all tax policies and files tax return on time		4.02	1.067	-.801	-.405
Aggregate Mean		4.06			

(Source: Research 2024)

4.7 Factor Analysis for dimension reduction

The KMO and Bartlett's test were used to determine the validity of the questionnaire responses to perform dimension reduction through factor analysis. Table 4.8 shows that excise duty KMO=0.819, Tax audit KMO =0.825, taxpayer sensitization KMO =0.830, social norms KMO =0.817 and digitalization KMO =0.793. The KMO values are greater than 0.5 indicating that they are considered suitable for factor analysis, according to KMO (1986).

Table 4.8: KMO& Bartlett's test

	Excise Duty Compliance	Tax Audit	Taxpayer Sensitization	Social Norms	Digitalization
KMO	0.819	0.825	0.830	0.817	0.793
Bartlett's test for sphericity (sig)	0.000	0.000	0.000	0.000	0.000

(Source: Research 2024)

4.7.1 Dimensions Reduction

By lowering the number of variables, PCA aids in simplifying data analysis and making it more efficient. It takes a group of related variables and turns them into a smaller set of independent variables. The aim is to keep most of the same information but make the dataset simpler by reducing its size. The main components are made by adding together the original features in a straight line. The first principal component shows the biggest difference, the second shows the next biggest, and so on. By choosing some parts of these things, we can show the information in a smaller space. The numbers in the table show how much each variable affects the main parts. Factor loadings show how strong and in which way each variable is related to the main factor. The bigger the number for the factor loading, the more the variable is linked to that factor.

Table 4.9 shows the factor loadings factors lower than 0.6 were not captured and used for creation of the variables for regression. The factor loadings for (Excise Duty Compliance) were, EDC1: 0.830, EDC2: 0.913, EDC3: 0.973, EDC4: 0.894 and lastly EDC5: 0.826. The factor loadings for (Tax Audit): TA1: 0.332, TA2: 0.745, TA3: 0.700, TA4: 0.728 and lastly TA5: 0.702. The factor loading for (Taxpayer Sensitization) where TPS1: 0.842, TPS2: 0.933, TPS3: 0.935, TPS4: 0.921, and lastly TPS5: 0.942 The factor loading for (Social Norms) were SN1: 0.977, SN2: 0.975, SN3: 0.946, SN4: 0.943 and SN5: 0.967 Lastly the factor loadings for (Digitalization) where DIG1: 0.965, DIG2: 0.988, DIG3: 0.980, DIG4: 0.969 and DIG5: 0.951. This breakdown shows the specific factor loadings for each variable, highlighting those above the threshold of 0.6, which indicates a strong relationship with the respective factor. The factor loadings for items above 0.6 were selected for each construct, and the standardized versions of each item were used to generate an aggregate mean which was to be used as the representative variable for excise duty s Scores for EDC1, EDC2,

EDC3, EDC4 and EDC5/5 for each respondent /Number or respondents of the study to the subsequent resulting variable were tested for normality, heteroscedasticity, multicollinearity and linearity before subsequent regression.

Table 4.9: Dimension Reduction

	Excise Duty Compliance	Tax Audit	Taxpayer Sensitization	Social Norms	Digitalization
EDC1	.830				
EDC2	.913				
EDC3	.973				
EDC4	.894				
EDC5	.826				
TA1		.332			
TA2		.745			
TA3		.700			
TA4		.728			
TA5		.702			
TPS1			.842		
TPS2			.933		
TPS3			.935		
TPS4			.921		
TPS5			.942		
SN1				.977	
SN2				.975	
SN3				.946	
SN4				.943	
SN5				.967	
DIG1					.965
DIG2					.988
DIG3					.980
DIG4					.969
DIG5					.951

(Source: Research 2024)

4.8 Statistical Assumptions

Regression assumptions are tested using diagnostic test they include tests for heteroscedasticity, normality, linearity, and multicollinearity.

4.8.1 Normality test

The normality test used a Shapiro-Wilk test to determine whether the data follows a normal distribution Table 4.10 shows, that Tax audit p-value=0.452>0.05, taxpayer

sensitization p-value =0.075, social norms p-value =0.066 and digitalization p-value

=0.071 The Shapiro-Wilk test indicate that the data from the independent variables do

not significantly deviate from normal distribution.

Table 4.10: Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Tax Audits	.215	173	.074	.856	173	.452
Taxpayer Sensitization	.259	173	.061	.799	173	.075
Social Norms	.263	173	.055	.782	173	.066
Digitization	.278	173	.060	.788	173	.071

a. Lilliefors Significance Correction
(Source: Research 2024)

4.8.2 Heteroscedasticity test

The heteroscedasticity test was conducted to determine whether there is constant

variance in the standard errors of the variables. The table 4.11, the F statistic for the

0.67115 and p-value of 0.6129 >0.05 indicating that the data is heteroscedastic.

Table 4.11: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.671157	Prob. F(4,168)	0.6129
Obs*R-squared	2.721045	Prob. Chi-Square(4)	0.6055
Scaled explained SS	4.931790	Prob. Chi-Square(4)	0.2944

(Source: Research 2024)

4.8.3 Multicollinearity test

The multicollinearity test was conducted to determine whether the independent

variables in a regression model are highly correlated. The assumption was tested on

table 4.12 shows that tax audits have a tolerance and VIF of 0.557, and 1.797

respectively. Taxpayer sensitization has tolerance of 0.523 and VIF of 1.912. Social

norms recorder a tolerance of 0.604, and VIF of 1.656. Lastly Digitization has tolerance

of 0.971, and VIF of 1.030. Tolerances were >0.1 and VIFs <10 indicated that the assumption for low correlation between independent variables.

Table 4.12: Multicollinearity test

Model		Collinearity Statistics	
		Tolerance	VIF
1	Tax Audits	0.557	1.797
	Taxpayer Sensitization	0.523	1.912
	Social Norms	0.604	1.656
	Digitization	0.971	1.030

a. Dependent Variable: excise duty compliance

(Source: Research 2024)

4.8.4 Linearity test

Linearity test was conducted using the Deviation from linearity test ANOVA table where the nature of linear relationships between predictor variables and predicted variable are tested.

P-values >0.05 indicated that the relationship is linear Table 4.13 indicates a test for linearity shows that the F statistic for Deviation from linearity is 2.070, p-value of 0.129>0.05 indicating that the assumption for linearity was not violated.

Table 4.13: Test for linearity

			Sum of Squares	df	Mean Square	F	Sig.
excise_duty_compliance * Tax audit	Between Groups	(Combined)	105.495	3	35.165	38.545	.000
		Linearity	101.718	1	101.718	111.494	.000
		Deviation from Linearity	3.776	2	1.888	2.070	.129
	Within Groups		154.182	169	.912		
	Total		259.676	172			

(Source: Research 2024)

4.9 Correlation Analysis

Correlation analysis was conducted to determine the nature of the relationship between the variables in the regression. Table 4.14 indicates that tax audits correlates positively with excise duty compliance r= 0.626 the correlation is significant p-value =0.000<0.05. This means that as tax audits increase, excise duty compliance also tends to increase Further investigation shows that taxpayer sensitization correlates to with excise duty compliance significantly r =0.605 p-value =0.000<0.05. This means that as taxpayer sensitization increases, excise duty compliance also tends to increase. The study shows that social norms have a positive and significant correlation with excise duty compliance r =0.571, p-value =0.001<0.05. This means that as social norms increase, excise duty compliance also tends to increase. Lastly digitization has a positive and significant correlation with excise duty compliance r =0.221, p-value =0.003<0.05 meaning that as digitization increases, excise duty compliance also tends to increase. The correlation analysis asserts that as levels of tax audits, taxpayer sensitization, social norms and digitization increases excise duty compliance tends to increase proportionally.

Table 4.14: Correlation Matrix

		EDC	TA	TPS	SN	DIG
excise duty compliance	Pearson Correlation	1				
	Sig. (2-tailed)					
Tax audit	Pearson Correlation	0.626	1			
	Sig. (2-tailed)	0.000				
taxpayer sensitization	Pearson Correlation	0.605	0.423	1		
	Sig. (2-tailed)	0.000	0.012			
social norms	Pearson Correlation	0.571	0.252	0.379	1	
	Sig. (2-tailed)	0.001	0.123	0.020		
digitalization	Pearson Correlation	0.221	0.108	0.166	0.066	1
	Sig. (2-tailed)	0.003	.157	0.029	0.389	
	N	173	173	173	173	173

Correlation is significant if sig< 0.05 level (2-tailed).

Key EDC: excise duty compliance, TA: Tax audits, TPS: Taxpayer sensitization, SN: Social Norms, DIG: digitization

(Source: Research 2024)

4.10 Regression Analysis

Regression analysis was initially conducted to determine the effect of Tax audits, Taxpayer sensitization and Social Norms on Excise Duty Compliance. The model summary, ANOVA and coefficient analysis distinctively facilitated the investigation.

4.10.1 Model summary factors affecting Excise Duty Compliance

Table 4.15 shows that Tax audits, Taxpayer sensitization and Social Norms on Excise Duty Compliance positively correlates with Excise Duty Compliance up to 70.8%. The coefficient of determination R Square of 0.501 indicates that 50.1% of variation is caused by Tax audits, Taxpayer sensitization and Social Norms, the remaining 49.9% of the variation is caused by factors not captured in the model.

Table 4.15: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.708[a]	0.501	0.492	.87565

 a. Predictors: (Constant), Tax audit, taxpayer_sensitization. social norms
(Source: Research 2024)

4.10.2 ANOVA factors affecting Excise Duty Compliance

The two-way ANOVA was used to determine whether the variation caused on Excise Duty Compliance by Tax audits, Taxpayer sensitization and Social Norm. Table 4.16 shows F statistic of 56,556, and p-value of 0.000<0.05 indicating that the model summary significantly showed the effects of factors affecting Excise Duty Compliance.

Table 4.16: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	130.094	3	43.365	56.556	.000[b]
1	Residual	129.582	169	.767		
	Total	259.676	172			

 a. Dependent Variable: excise_duty_compliance
 b. Predictors: (Constant), Tax audit, taxpayer sensitization, social norms,

4.10.3 Coefficient regression analysis

The regression equation for the coefficient model was

$$Y = 0.571 + 0.347X_1 + 0.270X_2 + 0.242X_3$$

Table 4.17 indicates that a unit change in tax audit results in 0.347 significant increase in Excise Duty Compliance p-value=0.000<0.05. The study further showed that a unit change in taxpayer sensitization causes a significant increase in Excise Duty Compliance of 0.270 p-value=0.001<0.05. Lastly a unit change in social norms causes a significant increase of 0.242 p-value =0.001<0.05 the results indicates that in absence of a moderator the effects of the factors affecting Excise Duty Compliance are significantly positive.

Table 4.17: Coefficient's regression Analysis

		Standardized Coefficients β	Std. Error	Unstandardized Coefficients β	t	Sig.
1	(Constant)	.571	.242		2.360	.020
	Tax Audit	.347	.076	.353	4.566	.000
	Taxpayer Sensitization	.270	.077	.281	3.506	.001
	Social Norms	.242	.072	.251	3.361	.001

a. Dependent Variable: excise_duty_compliance
(Source: Research 2024)

4.11 Hierarchical Regression Analysis

According to Baron (1986) use of hierarchical model to assess the moderating effect of digitalization on relation between tax audit, taxpayer sensitization and social norms on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya.

The steps for moderation were as follows.

The first step involved demonstrating the relationship between the independent variables (tax audit, taxpayer sensitization and social norms.) and the dependent variable (excise duty compliance) without considering the moderator.

The second step involved determining the whether the effects of the moderator on the dependent variable is statistically significant, if the effect is significant then the moderator can be used to generate interaction terms

Lastly the interaction terms are created by multiplying the independent variable terms with the moderator each. (tax audit * digitization) (taxpayer sensitization* digitization) and (social norms* digitization)

The interaction terms are added to the regression model hierarchically starting with the first one and adding them progressively until all variables are included.

Finally, the significance of the interactions is tested to determine whether digitization moderates each of the relationships among independent variables and dependant variables.

Figure 4.2 illustrates the moderation hierarchical process
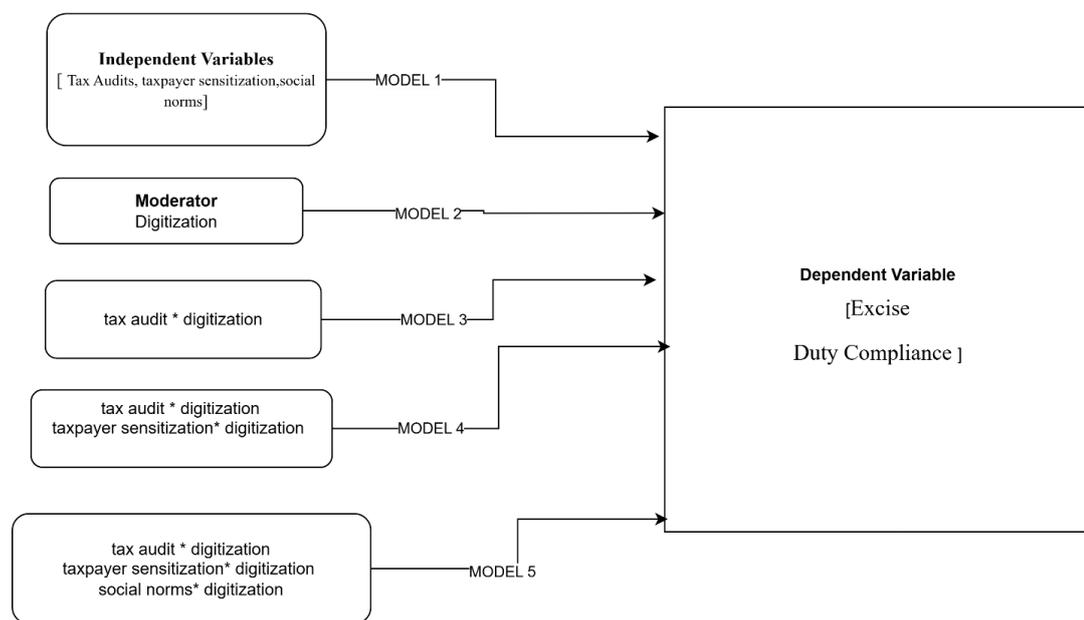
Figure 4.2: Hierarchical Model

(Source: Baron& Kenny (1986))

4.11.1 Model Summary moderating effect of digitalization on factors affecting excise duty compliance

Table 4.18 shows the model summary indicates that there is consistent decrease in variation and correlation between factors affecting excise duty The Initial regression indicated that Tax audits, Taxpayer sensitization and Social Norms on Excise Duty Compliance positively correlates to Excise Duty Compliance at 70%, and the final model after moderation indicated that there is 64.1% correlation. The coefficient of

determination indicates that there is a R square of 0.411 indicating that after moderating the relationships between Tax audits, Taxpayer sensitization and Social Norms and Excise Duty compliance caused a 41.1% variation on Excise Duty. The remaining 58.9% variation are caused by factors that are not caught within the model.

Table 4.18: Model Summary moderating effect of digitalization on factors affecting excise duty compliance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Sig. F Change
1	0.708	0.501	0.492	0.87565		0.000
2	0.704	0.496	0.486	0.86376	0.005	0.018
3	0.666	0.444	0.436	0.36838	0.052	0.000
4	0.645	0.416	0.400	0.27606	0.028	0.000
5	0.641	0.411	0.398	0.26057	0.005	0.000

(Source: Research 2024)

4.11.2 ANOVA moderating effect of digitalization on factors affecting excise duty compliance

The ANOVA table 4.19 indicates that there is a significant the model summary significantly explains the variation caused on the excise duty compliance by moderating the relationships between Tax audits, Taxpayer sensitization and Social Norms and Excise Duty compliance F statistic reduces progressively through the model 1 to model 5. The model 5 shows F statistic of 16.440 and p-value $= 0.000 < 0.05$.

Table 4.19: ANOVA moderating effect of digitalization on factors affecting excise duty compliance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	130.094	3	43.365	56.556	0.000
	Residual	129.582	169	0.767		
	Total	259.676	172			
2	Regression	128.700	4	32.175	41.270	0.000
	Residual	130.976	168	0.780		
	Total	259.676	172			
3	Regression	115.181	5	23.036	26.624	0.000
	Residual	144.495	167	0.865		
	Total	259.676	172			
4	Regression	108.032	6	18.005	19.710	0.000
	Residual	151.644	166	0.914		
	Total	259.676	172			
5	Regression	106.696	7	15.242	16.440	0.000
	Residual	152.980	165	0.927		
	Total	259.676	172			

f. Predictors: (Constant), social norms, Tax audit, taxpayer sensitization, digitalization, TA_DIG, TPS_DIG, SN_DIG

(Source: Research 2024)

4.11.3 Overall Coefficient regression analysis

An overall coefficient regression analysis was conducted to determine the effects of Tax audits, Taxpayer sensitization and Social Norms and Excise Duty compliance, and finally to determine the moderating effect of digitalization on relation between tax audit, taxpayer sensitization and social norms on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya.

The regression equations for each of the regression models showing hierarchical regression were used to express the process of moderation.

Equation (i)

$$Y = 0.571 + 0.347X_1 + 0.270X_2 + 0.242X_3$$

Equation (ii)

$$Y = 0.182 + 0.344X_1 + 0.245X_2 + 0.249X_3 + 0.130M_4$$

Equation (iii)

$$Y = 2.587 + 0.112X_1 + 0.058X_2 + 0.054X_3 + 0.753M_4 + 0.221M_4*X_1$$

Equation (iv)

$$Y = 0.755 + 0.718X_1 + 0.025X_2 + 0.028X_3 + 0.220M_4 + 0.233M_4*X_1 + 0.170M_4*X_2$$

Equation (v)

$$Y = 0.429 + 0.558X_1 + 0.023X_2 + 0.288X_3 + 0.125M_4 + 0.239M_4*X_1 + 0.128M_4*X_2 + 0.076M_4*X_3$$

Table 4.20 shows that unit change in tax audit causes 0.558 significant increase in Excise Duty Compliance p-value=0.000<0.05. The study further showed that a unit change in taxpayer sensitization causes a significant increase in Excise Duty Compliance of 0.023 p-value=0.031<0.05. Further investigation shows that a unit change in social norms causes a significant increase of 0.288 p-value =0.000<0.05. The study also shows that unit change in digitization causes a positive change in Excise Duty Compliance 0.125 p-value=0.028<0.05. The investigation lastly shows that digitization moderates the relation between tax audit and Excise Duty Compliance positively β =0.239 p-value=0.000<0.05. Further the regression model indicates that digitization also moderates the relationship between taxpayer sensitization and Excise Duty Compliance β =0.128 p-value=0.000. Lastly the study found that digitization moderates the relationship between social norms and Excise Duty Compliance β =0.076 p-value=0.000<0.05   the results indicates that in absence of a moderator the effects of the factors affecting Excise Duty Compliance are significantly positive.

Table 4.20: Overall Coefficients Regression Analysis

Model		Standardized Coefficients		Unstandardized Coefficients	t	Sig.
		β	Std. Error	β		
1	(Constant)	0.571	0.242		2.360	0.020
	Tax audit	0.347	0.076	0.353	4.566	0.000
	taxpayer sensitization	0.270	0.077	0.281	3.506	0.001
	social norms	0.242	0.072	0.251	3.361	0.001
2	(Constant)	0.182	0.090		2.022	0.045
	Tax audit	0.344	0.075	0.343	4.587	0.000
	taxpayer sensitization	0.245	0.076	0.280	3.224	0.002
	social norms	0.249	0.071	0.272	3.507	0.001
	digitalization	0.130	0.055	0.130	2.364	0.018
3	(Constant)	2.587	0.151		17.132	0.000
	Tax audit	0.112	0.033	0.118	3.394	0.001
	taxpayer sensitization	0.058	0.024	0.059	2.417	0.033
	social norms	0.054	0.021	0.057	2.571	0.043
	digitalization	0.753	0.040	0.759	18.825	0.000
	TA_DIG	0.221	0.008	0.243	27.625	0.000
4	(Constant)	0.755	0.196		3.852	0.000
	Tax audit	0.718	0.058	0.789	12.379	0.000
	taxpayer sensitization	0.025	0.009	0.029	2.778	0.032
	social norms	0.028	0.011	0.028	2.545	0.023
	digitalization	0.220	0.055	0.239	4.000	0.000
	TA_DIG	0.233	0.006	1.312	38.833	0.000
	TPS_DIG	0.170	0.015	0.880	11.333	0.000
5	(Constant)	0.429	0.198		2.167	0.032
	Tax audit	0.558	0.065	0.566	8.585	0.000
	taxpayer sensitization	0.023	0.008	0.028	2.875	0.031
	social norms	0.288	0.060	0.281	4.800	0.000
	digitalization	0.125	0.056	0.124	2.232	0.028
	TA_DIG	0.239	0.006	1.345	39.833	0.000
	TPS_DIG	0.128	0.017	0.664	7.529	0.000
	SN_DIG	0.076	0.017	0.386	4.471	0.000

a. Dependent Variable: excise_duty_compliance

4.11.4 Modi graph analysis

Dawson (2014) examined the Modi graphs to investigate a potential relationship between X and Y, and how it may be influenced by a moderator variable Z. The three-way interaction term is important in the regression equation because it helps us understand how different factors interact with each other.

Moderating effect of digitization on the relationship between tax audit and Excise Duty Compliance

Figure 4.3 Shows that digitization moderates the relationship between tax audit and Excise Duty Compliance, the illustration indicates that digitization highly improves the effects of tax audit on excise duty.

Figure 4.3: Moderating effect of digitization on the relationship between tax audit and Excise Duty Compliance

(Source: Research 2024)

Moderating effect of digitization on the relationship between taxpayer sensitization and Excise Duty Compliance

Figure 4.4 Shows that digitization moderates the relationship between taxpayer sensitization and Excise Duty Compliance, the illustration indicates that digitization improves the effects of taxpayer sensitization on excise duty since the high digitization has steeper slope

Figure 4.4: Moderating effect of digitization on the relationship between taxpayer sensitization and Excise Duty Compliance

(Source: Research 2024)

Moderating effect of digitization on the relationship between social norms and Excise Duty Compliance

Figure 4.5 Shows that digitization moderates the relationship between social norms and Excise Duty Compliance, the illustration indicates that digitization improves the effects of social norms on excise duty since the high digitization has steeper slope
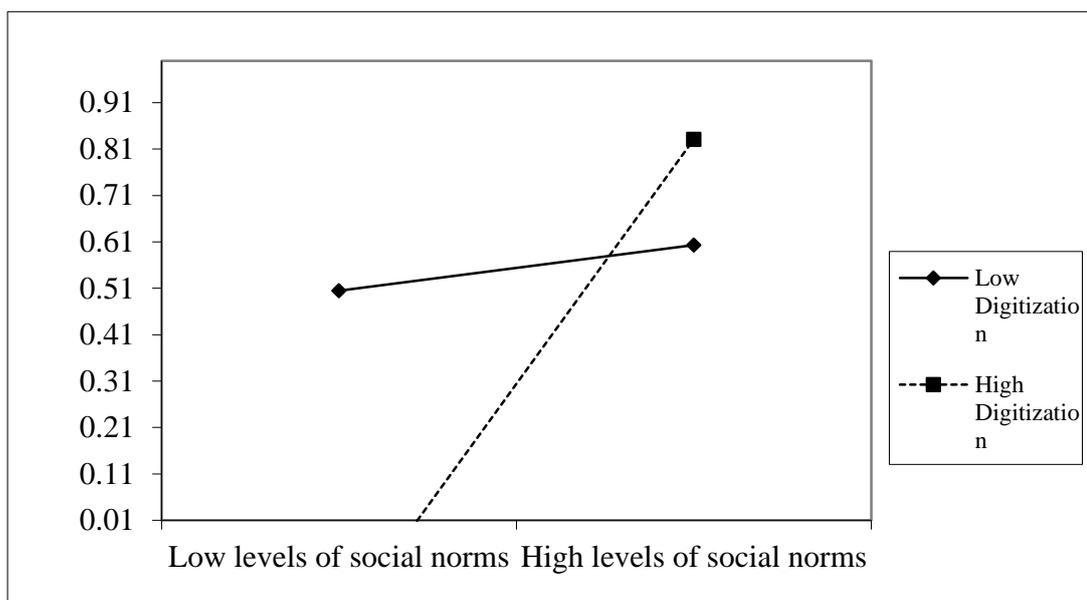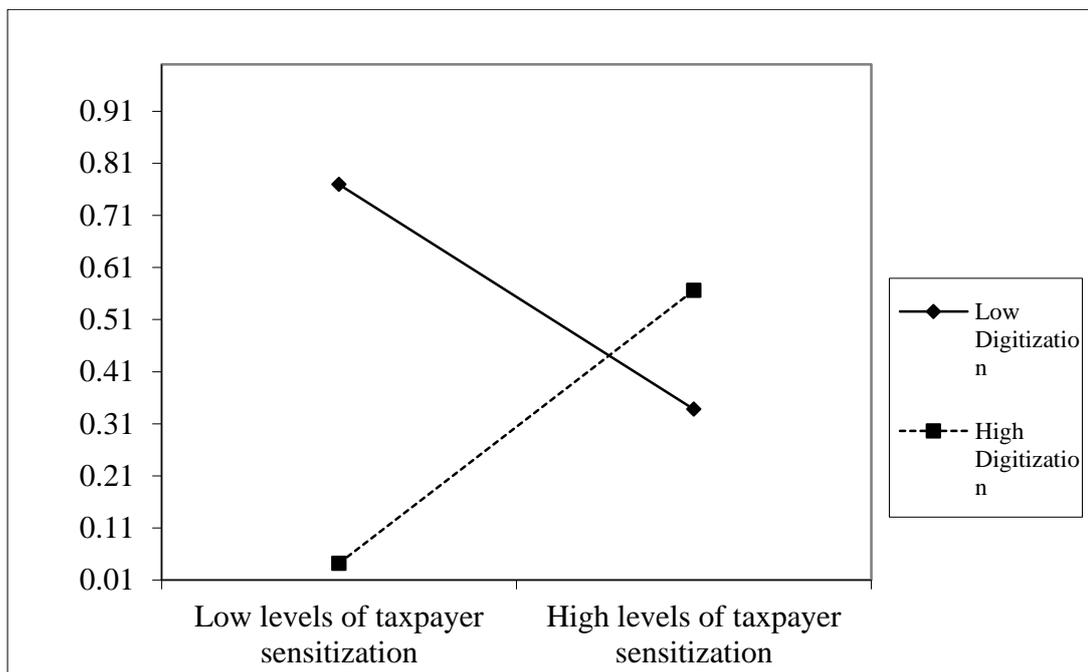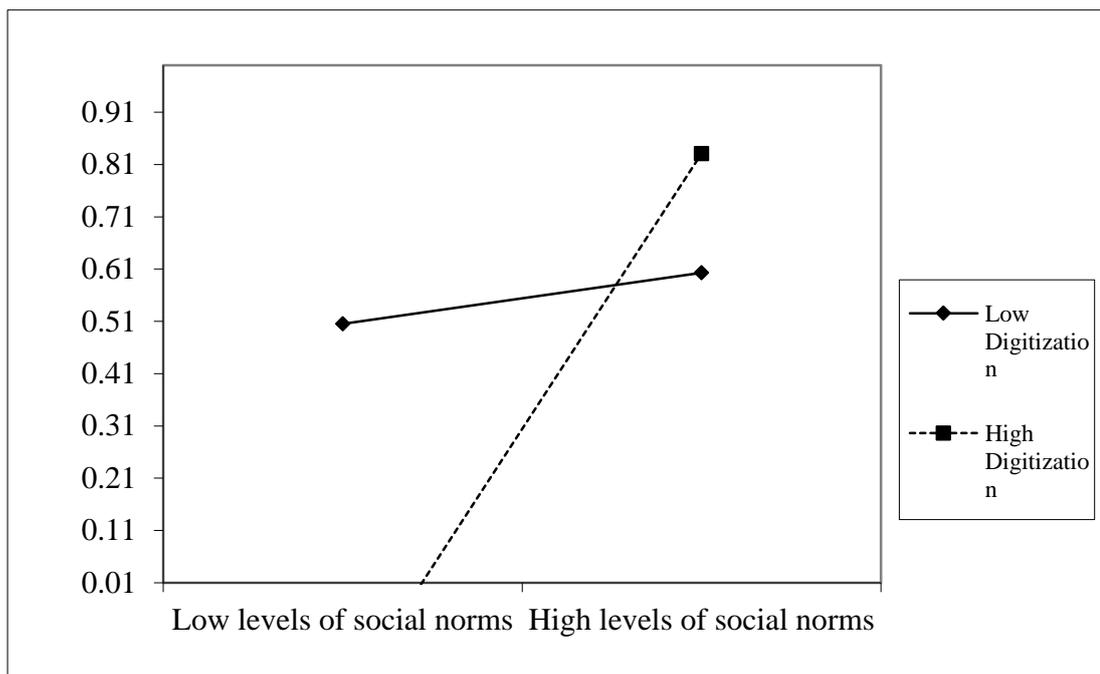

Figure 4.5: Moderating effect of digitization on the relationship between social norms and Excise Duty Compliance

(Source: Research 2024)

4.12 Hypothesis Testing

The hypotheses tests were summarized on table 4.21

The first hypothesis was that Tax audit has no significant effect on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya. The study showed that Tax audit has a positive and significant effect on excise duty compliance p-value $=0.000<0.05$. The null hypothesis H_{01} is rejected.

The second hypothesis was that taxpayer sensitization has no significant effect on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya. The study showed that taxpayer sensitization has a positive and significant effect on excise duty compliance p-value $=0.031<0.05$. The null hypothesis H_{02} is rejected.

The third null hypothesis stated that social norms have no significant effect on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya. The study showed that social norms have a positive and significant effect on excise duty compliance p-value $=0.000<0.05$. The null hypothesis H_{03} is rejected.

Hypothesis four stated that there digitalization is no significant moderating effect of relationship between tax audit, taxpayer sensitization and social norms on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya.

The study observed that Digitalization is a significant moderator in the association between tax audit and excise duty compliance among the manufacturing firms in Embakasi west Nairobi County, Kenya p-value $=0.000<0.05$. Reject null hypothesis H04a.

The findings of the study showed that digitalization significantly moderated the association between the sensitization of the taxpayer and excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya. As indicated by the p-value $=0.000<0.05$, the null hypothesis H04b is therefore rejected.

Last but not least, the study established that Digitalization is significantly moderating the relationship between social norms and excise duty compliance among the

manufacturing firms in Embakasi west Nairobi County, Kenya p-value =0.000<0.05.

Hence, null hypothesis H04c is rejected.

Table 4.21: Summary of Hypotheses testing

Null Hypotheses	Sig.	Result
H_{01} Tax audit does not significantly influence compliance on excise duty among manufacturing firms within Embakasi west Nairobi County, Kenya.	0.000<0.05	**Reject H_{01}**
H_{02} Sensitization of taxpayers does not largely influence the compliance of excise duty among manufacturing firms in Embakasi West, Nairobi County, Kenya	0.031<0.05	**Reject H_{02}**
H_{03} Social norms have a negligible influence on compliance to excise duty amongst the manufacturing firms in Embakasi west Nairobi County, Kenya	0.000<0.05	**Reject H_{03}**
H_{04} It implies that digitalization has no significant moderating influence on the relationship between tax audit, taxpayer sensitization, and social norms on excise duty compliance among manufacturing firms in Embakasi West Nairobi County	0.028<0.05	**Reject H_{04}**
H_{04a} The digitalization has a non-significant moderating level of influence on the relationship between tax audit and excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya.	0.000<0.05	**Reject H_{04a}**
H_{04b} Digitalization is insignificantly moderating the sensitization of taxpayers in ensuring that manufacturing firms in West Embakasi, Nairobi County, Kenya, comply with excise duty	0.000<0.05	**Reject H_{04b}**
H_{04c} Digitalization does not significantly moderate the relationship between social norms and excise duty compliance in manufacturing firms in Embakasi west Nairobi County, Kenya.	0.000<0.05	**Reject H_{04c}**

(Source: Research 2024)

4.13 Discussion of Findings

This section entails evaluation of the findings

4.13.1 Tax Audit and Excise Duty Compliance

The first specific objective was to establish the effect of tax audit on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya. The study found that tax audit correlates positively to excise duty compliance at 62.6% p-value=0.000<0.05. This infers that when tax authorities conduct more frequent or rigorous audits on businesses regarding excise duties, those businesses tend to exhibit higher levels of compliance with excise duty regulations

The coefficient regression found that tax audit has a positive and significant effect on excise duty compliance $\beta=0.558$ p-value =0.000<0.05. These findings may advocate that apportioning resources towards enhancing tax audit mechanisms could be an effective strategy for improving excise duty compliance rates. The current study agrees with a study by Barreca and Ramachandran, 2004). In this respect, therefore, taxation can only be effective in achieving both the short and long-term goals it was set for in any economy if the level of tax compliance is enhanced for efficient tax administration. Therefore, one measure that can be employed in enhancing the level of tax compliance is a tax audit. Moreover, Ola, (2021) indicated that tax audit improves voluntary compliance through detection and bringing into account of non-payment or correct amount of tax payment. In the same vein, Slemrod, 2000 noted that one of the most effective policy in deterring tax evasion behavior is tax audit.

4.13.2 Taxpayer Sensitization and Excise Duty Compliance

The second objective was to establish the effect of taxpayer sensitization on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya. The

correlation matrix showed that taxpayer sensitization has a positive and significant relationship with excise duty compliance at 60.5% p-value=0.000<0.05. These findings suggest that efforts aimed at sensitizing taxpayers about their obligations regarding excise duties have a meaningful impact on their compliance behaviour. The coefficient analysis indicated that taxpayer sensitization has a positive impact on excised duty compliance β=0.023 p-value =0.031<0.05. This finding implies that educational campaigns, outreach programs, or other initiatives designed to increase taxpayer sensitization and understanding of excise duty regulations among taxpayers are effective in promoting compliance with these obligations. The study agreed with Tukur and Onyegbule 2011, who stated that education of a taxpayer is key in understanding the tax laws which guarantee timely filing of tax returns/payments. Tax knowledge boosts compliance; it also helps the authority to develop tax education programmes, shaping the understanding of the taxpayers' behaviours.

4.13.3 Social Norms and Excise Duty Compliance

The third specific objective was to determine the effect of social norms on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya. The study found that social norms have a positive correlation with excise duty compliance at 57.1% p-value=0.000<0.05. This infers that social norm such as societal expectations, peer influence, or cultural values surrounding tax compliance, play a considerable role in shaping individuals' behaviour towards fulfilling their excise duty obligations. The coefficient analysis indicates that social norms impact excise duty compliance positively in a significant manner β=0.288 p-value =0.000<0.05. Understanding the influence of social norms allows for the development of targeted interventions that aim to reinforce positive social attitudes towards tax compliance, potentially leading to higher compliance rates and increased revenue collection. The

study agrees with (Bobek, Hageman, & Kelliher, 2021). Most of the prior literatures have identified the peer influence to have the most decisive influence in determining the compliance decision. Further, there are suggestions that the peer influence has a 'substantial impact' on the tax compliance behaviour, Wenzel, 2021.

4.13.4 Digitization on Tax Audit, Taxpayer Sensitization Social Norms and Excise Duty Compliance

The fourth particular objective was to establish the moderating influence of digitization on the relationship between tax audit, taxpayer sensitization and social norms on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya.

The study found that digitization correlates positively to excise duty compliance at 22.1% p-value =0.003. The coefficient study further found that digitization has appositive impact on excise duty compliance $\beta=0.125$ p-value =0.028<0.05. This suggests that digitization of tax systems positively contributes to excise duty compliance.

The study found that digitization positively moderates the effect of tax audit on excise duty compliance. $\beta=0.239$ p-value =0.000<0.05. This suggests that when tax audits are conducted in an environment where digitization is prevalent, they are more effective in ensuring compliance with excise duty laws compared to environments with less digitization. The study also found that that digitization positively moderates the effect of taxpayer sensitization on excise duty compliance. $\beta=0.128$ p-value =0.000<0.05. The positive moderation suggests that when digitization is implemented, it enhances the influence of taxpayer sensitization on excise duty compliance. In other words, the efforts made to educate taxpayers about their obligations regarding excise duties have a more pronounced effect when supported by digital tools and systems. Lastly the study

found that digitization positively moderates the effect of social norms on excise duty compliance. $\beta=0.076$ p-value $=0.000<0.05$. Since the coefficient is positive, it implies that as digitization increases, so does the effect of social norms on excise duty compliance. In other words, the more digital the environment becomes, the more likely individuals are to comply with excise duty regulations when influenced by social norms.

The study's major finding was that digitization enhances the positive effects of factors affecting excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya.

By so doing, the study agrees with Makanga (2021), who assessed the adoption of technology as a strategic tool for improving tax compliance in Kenya-a case of Large Taxpayer companies with an annual turn in excess of Kshs. 750 million. The aim of the study was to assess the contribution of Technology to tax compliance by large taxpayers. The findings showed that in the world, which is highly dynamic, technology is key for business development.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section deconstructs a summary of the research findings, makes conclusions associated with the research objectives, and propositions recommendations. Furthermore, the section summaries suggestions for further research.

5.2 Summary of Findings

5.2.1 Tax Audit and Excise Duty Compliance

This study determined the impact of Tax audit on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya. The results showed a positive relationship between tax audits and compliance with respect to excise duty at a very significant degree, suggesting that more rigorous tax audits lead to higher levels of compliance with excise duty regulations. Regression analysis further supported this, indicating a significant positive impact of tax audits on excise duty compliance. These results advocate for allocating resources to enhance tax audit mechanisms as a strategy to improve excise duty compliance rates among businesses.

5.2.2 Taxpayer Sensitization and Excise Duty Compliance

The objective here to establish the sensitization of taxpayers and its effect on excise duty compliance, among manufacturing firms in Embakasi west Nairobi County, Kenya. Results indicated that there is a strong positive relation between taxpayer sensitization and compliance, this could suggest that efforts to educate taxpayers about their excise duty obligations effectively influence compliance behaviour. Coefficient analysis supported this, showing a positive impact of taxpayer sensitization on compliance indicating that educational campaigns and outreach programs play a crucial role in promoting compliance with excise duty regulations.

5.2.3 Social Norms and Excise Duty Compliance

The study aimed to determine the influence of social norms on Excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya. Results indicated a positive correlation between social norms and compliance suggesting that societal expectations, peer influence, and cultural values significantly shape individuals' compliance behaviour regarding excise duties. Coefficient analysis confirmed this relationship, showing a positive and significant impact of social norms on compliance. Understanding these influences allows for targeted interventions to reinforce positive social attitudes toward tax compliance, potentially leading to higher compliance rates and increased revenue collection.

5.2.4 Digitization on Tax Audit, Taxpayer Sensitization, and Social Norms and Excise Duty Compliance

The study lastly aimed to determine the moderating effect of digitalization on relationship between tax audit, taxpayer sensitization and social norms on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya. Findings revealed a positive correlation between digitization and compliance, indicating that digital tax systems contribute to enhanced compliance. Moreover, digitization positively moderated the effects of tax audits, taxpayer sensitization, and social norms on compliance, suggesting that a digital environment strengthens the impact of these factors on excise duty compliance. This underscores the importance of integrating digital tools and systems to augment efforts aimed at improving compliance behaviour among taxpayers in the studied context.

The study's major finding was that digitization enhances the positive effects of factors affecting excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya. This suggests that the integration of technological systems in business

operations can enhance compliance, thereby leading to increased revenue and improved stakeholder relationships. In a practical context, this implies that manufacturing firms aiming to boost compliance should consider adopting digital tools and strategies, as these can potentially leverage and maximize the positive effects of other contributing elements.

5.3 Conclusions

In conclusion, this study sought to established moderating effect of digitalization on factors that influence excise duty compliance amongst the manufacturing firms in Embakasi West, Nairobi County. Through a rigorous investigation into tax audit, taxpayer sensitization, social norms, and the moderating effect of digitization on the on relationship between tax audit, taxpayer sensitization and social norms on excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya

The findings highlight the importance of tax audit as a catalyst for enhancing excise duty compliance. There was a positive correlation in the relationship between tax audit and excise duty compliance rates. Moreover, the regression analysis revealed that allocating resources to bolster tax audit mechanisms could serve as a viable strategy for improving compliance outcomes.

Furthermore, the study highlights the critical role of taxpayer sensitization in promoting excise duty compliance. Efforts to educate taxpayers about their obligations regarding excise duties were found to positively influence compliance behaviour. This underscores the significance of educational campaigns and outreach programs in fostering a culture of compliance among taxpayers.

Additionally, social norms emerged as influential in shaping excise duty compliance behaviour. Societal expectations, peer influence, and cultural values surrounding tax

compliance were found to significantly impact compliance rates. Understanding these norms allows for the development of targeted interventions aimed at reinforcing positive attitudes towards tax compliance, ultimately leading to higher compliance rates.

Moreover, the study explicated the moderating effect of digitization on the relationship between tax audit, taxpayer sensitization and social norms and excise duty compliance. A more digital environment was associated with more effective tax audits, enhanced influence of taxpayer sensitization, and increased impact of social norms on compliance. This underscores the importance of embracing technological advancements in tax administration to streamline processes and improve compliance outcomes.

The study's major finding was that digitization enhances the positive effects of factors affecting excise duty compliance among manufacturing firms in Embakasi west Nairobi County, Kenya.

5.4 Limitations of Study

The study may be susceptible to variability in response rates across different survey items or demographic groups. Factors such as respondent fatigue, time constraints, or lack of interest may influence participation rates and lead to non-responses in the questionnaires. Another limitation is the reliance on self-reported data obtained through questionnaires, which may be subject to response bias. Respondents may provide inaccurate or socially desirable responses, leading to measurement error and potential distortions in the results.

5.5 Recommendations

5.5.1 Policy Implications

The government should boost funding and resources for tax audit departments. Stronger audits increase excise duty compliance, as per the study's positive correlation.

The government should implement nationwide educational campaigns to inform taxpayers about their excise duty obligations.

Invest in digital tax infrastructure to streamline tax processes. Digital tools enhance the effectiveness of tax audits, taxpayer sensitization, and social norms, leading to better compliance rates.

5.5.2 Practical Implications - For Management, KRA, or Taxpayers

Management should adopt internal audit practices to ensure compliance with excise duty regulations.

KRA should conduct regular workshops and training sessions for businesses on excise duty compliance. Continuous education and sensitization efforts by KRA can reinforce compliance behavior among taxpayers.

Taxpayers should utilize available digital tools and platforms for tax filing and compliance. Digital solutions can simplify compliance processes and reduce errors, as per the study's findings on digitization.

5.5.3 Theoretical Implications - Supporting Theories and New Knowledge

The study supports the Deterrence Theory, indicating that increased monitoring and enforcement (tax audits) lead to higher compliance.

The study aligns with the Social Influence Theory, highlighting the importance of societal and cultural factors in shaping tax compliance behavior.

The study contributes to the Technology Acceptance Model (TAM), underscoring the critical role of digital tools in enhancing tax compliance.

5.6 Suggestions for Further Research

A study should be conducted on the effects of tax reforms on Excise Duty compliance. Another study should also be on the effects of tax incentives on Excise Duty compliance should be conducted. Future research should explore technology's integration in tax administration.

REFERENCES

Allingham, M.G., and Sandmo, A. (1972)."Income tax evasion: A theoretical analysis". *Journal of Public Economics,* 1(3-4), 323-38.

Alm, J., Blackwell,C.& Mckee, M(2005). *Audit Selection and Firm Compliance with a Broad-based Sales Tax*. NewMexico-USA.

Alm, J., Jackson, B. and M. McKee, (2021), Audit Information Dissemination Taxpayer Communication and Compliance: An Experimental Approach', paper presented at 2004 IRS Research Conference, Washington D.C., June.

Alm, James, et al. (2021). Information Reporting and Tax Compliance. *Journal of Economic Perspectives,* vol. 25, no. 3, 2021, pp. 145-68. JSTOR, www.jstor.org/stable/41327491.

Alon, A., & Hageman, A. M. (2020). The impact of corruption on firm tax compliance in transition economies: Whom do you trust? *Journal of Business Ethics*, 116(3), 479-494.

Azjen, I. and Fishbein, M. (1980), *Understanding Attitudes and Predicting Social Behaviour*, Prentice Hall Englewood Cliffs, NJ.

Badara, M.S. (2022). The Effect of Tax Audit on Tax Compliance in Nigeria. *J. Finance. Accounting*, Vol 3(4)

Becker, G. (1968). Crime and Punishment: An Economic Approach. *Journal of Political Economy*, vol. 76

Bernasconi, M., & Bernhofer, J. (2020). Catch me if you can: Testing the reduction of compound lotteries axiom in a tax compliance experiment. *Journal of Behavioural and Experimental Economics*, 84, 101479.

Blanthorne, C., & Kaplan, S. (2018). An egocentric model of the relations among the opportunity to underreport, social norms, ethical beliefs, and underreporting behavior. *Accounting, Organizations and Society*, 33(7), 684-703.

Bobek, D. D., Roberts, R. W., & Sweeney, J. T. (2019). The social norms of tax compliance: Evidence from Australia, Singapore, and the United States. *Journal of Business Ethics*, 74(1), 49-64.

Braithwaite, V., & Ahmed, E (2005). A Threat to Tax Morale: the Case of Australian Higher Education Policy. *Journal of Economic Psychology* 26, 523–40

Cialdini, R., & Trost, M. (2021). *The Handbook of Social Psychology*, Oxford University Press, New York.

Cooper, W. & Schindler, D. (2014). *Approaches to Social Research*. New York: Oxford University Press.

Coppel, J. (2010). *E-Commerce: Impacts and Policy Challenges.*

Creswell, J. W., & Creswell, J. D. (2017). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches.* Sage Publications

Csörgo, S. (1985). Testing for linearity. *Statistics and Probability Letters,* 3(1), 45–49. https://doi.org/10.1016/0167-7152(85)90011-2

Cummings, R. G., Martinez – Vazquez, J., Mckee, M., Torgler, B. (2004). Effects of Culture on Tax Compliance; A Cross Check of Environmental and Survey Evidence, School of Policy Studies, Georgia state University.

Cyan, M.R., Koumpias, A.M., & Martinez-vazquez, J. (2016). The determinants of tax morale in Pakistan. *Journal of Asian Economics*, 47, 23–34.

Davis, J.H., Schoolman, F., & Donaldson, L. (1997). Toward a stewardship theory of management, *Academy of Management Review*, 22(1),20-47.

Davis,F. D., 20 (1989)"A Technology Acceptance Model for Empirically Testing New End-User Information Systems: Theory and Results," Doctoral dissertation, Sloan School of Management, Massachusetts Institute of Technology

Dubin, & Jeffrey, (2012). The Causes and Consequences of Income Tax Noncompliance Economics. *Financial Economics* 61

Durbin, J., & Watson, G. S. (1951). Testing for serial correlation in least squares regression. I. *Biometrika*, 38(1-2), 159-177

Edlund, J., & Åberg, R. (2022), Social Norms and Tax Compliance, *Swedish economic policy review* 9 (1): 201-228

Fjeldstad, O.-H., & Semboja, J. (2001). Why people pay taxes: The case of the development levy in Tanzania. World Development

Frey, B. S., & Torgler, B. (2018). Tax morale and conditional cooperation. *Journal of Comparative Economics,* 35(1), 136-159

Gitaru, K. (2019). The Effect of Taxpayer Education on Tax Compliance in Kenya. (A case study of SME's in Nairobi Central Business District). UTC.

Gupta, M., & Nagadevara, V. (2019). Proceeding of the eleventh International Conference on e-Governance, Audit selection strategy for improving tax compliance-Application of data mining techniques. In Foundations of Risk-Based Audits. Hyderabad, India, December (pp. 28–30).

Jimenez, P., & Iyer, G.S. (2021). Tax compliance in a social setting : The influence of social norms, trust in government, and perceived fairness on taxpayer compliance. *Advances in Accounting, incorporating Advances in International Accounting*, 34, 17–26.

Karingi, S.A., Wanjala, A., Kamau E., Nyakang'o, A., Mwangi, M. M., &Nyamunga, J. (2014). Fiscal Architecture and Revenue Capacity in Kenya, KIPPRA Discussion Paper DP/45/2004, Nairobi, Kenya.

Kothari, C. R., & Gang, W. (2014). *Research Methodology: Methods and Techniques*. New Delhi: New Age International (P) Ltd Publishers

Leslie, G.R., Larson, R.F., & Gorman, B.L. (2022). *Order and Change,* Oxford University Press, New York.

Lumumba, M. O., Wanjohi, M. S., Magutu, P. O., and Mokoro, J. M. (2010). Taxpayers' Attitudes and Tax Compliance Behaviour in Kenya: How The Taxpayers Attitudes Influence Compliance Behavior among SMEs Business Income Earners in Kerugoya Town, Kirinyaga District. *African Journal of Business and Management*

Martinez-Vazquez, Jorge, and Mark Rider, (2021). Improving Tax Administration in Developing Countries through Information Technology. *World Development,* 35,(11).

Mirera, N. D. (2013).The effects of tax audit on revenue collection. The University of Nairobi.

Moyi (2003). Tax reforms and revenue mobilization in Kenya, AERC

Moyi, E., & Ronge, E. (2006). Taxation and Tax Modernization in Kenya: A Diagnosis of Performance and Options for Further Reform, Institute of Economic Affairs, Kenya Muriithi, M. & E.

Mugenda O. & Mugenda A. (2003). *Research Methods. Quantitative and Qualitative Approaches*

Niu, Y. (2020). Tax audit impact on voluntary compliance. New York State Department of Taxation and Finance, MPRA Paper No. 22651.

Nurebo, B.Y, Lekaw, D.M & Mariam, M.(2019). Effectiveness tax audit in Ethiopia. *Journal of Commerce and Finance,* 5(1), 34-50

OECD (2019), Compliance Risk Management: Audit Case Selection Method, Information Notes, October 2019, Tax Administration Compliance Sub-group.

OECD. (2004). Taxpayers' rights and obligations- Practice note. Tax guidance series, 1-13.

Oladipo, O.A., Iyoha, F., Fakile, A., Asaleye, A.J., & Eluyela, D.F. (2019). Tax revenue and agricultural performance: evidence from Nigeria. *Problems and Perspectives in Management*, 17(3), 342-349.

Olaoye, C.O., & Ekundayo, A.T. (2019). Effects of Tax Audit on Tax Compliance and Remittance of Tax Revenue in Ekiti State. *European Journal of Accounting, Auditing and Finance Research,* 6(5), 13–19.

Olaoye, C.O., Ogunleye, S.A., Solanke, F.T. (2019). Tax audit and tax productivity in Lagos state, Nigeria. *Asian Journal of Accounting Research*, 3(2), 202-210.

Palil, M. R. & Mustapha, A. F. (2021) Tax audit and tax compliance in Asia: A case study of Malaysia. *European Journal of Social Sciences*, 24(1), 7-32

Prinz, A., Muehlbacher, S., & Kirchler, E. (2019). The slippery slope framework on tax compliance: An attempt to formalization. *Journal of Economic Psychology*, 40, 20-34.

Pukeliene, V., & Kažemekaityte, A. (2019). Tax behaviour: assessment of tax compliance in European Union countries. *Ekonomika,* 95(2), 30-56.

Torgler, B. (2002). Speaking to Theorists and Searching for Facts: Tax Morale and Tax Compliance in Experiments, *Journal of Economic Surveys,* 16, 657-684.

Walsh, K. (2012). Understanding taxpayer behaviour: new opportunities for tax administration. *The Economic and Social Review*, 43(3), 451-475.

Walter, T., Balunywa, W., Rosa, P., Sserwanga, A., Barabas, S., & Namatovu, R. (2019). Global Entrepreneurship Monitor: GEM Uganda 2003 Executive Report.

Wenzel M (2021), The Impact of outcome orientation and justice concerns on tax compliance; the role of taxpayers' identity. Centre for Tax System Integrity, working paper No. 6 Can berra; The Australian National University

Wenzel, M. (2021a). An analysis of norm processes in tax compliance. *Journal of Economic Psychology*, 25(2), 213-228.

Whait, R.B., Christ, K.L., Ortas, E., & Burritt, R.L. (2019). What do we know about tax aggressiveness and corporate social responsibility? An integrative review. *Journal of Cleaner Production*, 204, 542–552.

Zakir, A. (2019). The influence of the corporate sector on the effectiveness of tax compliance instruments, in John Hasseldine (ed.), *Advances in Taxation,* 25, Emerald Publishing Limited, 119-146

Zhang, Y., Zhou, J, & Zhou, N. (2018). Audit committee quality, auditor independence, and internal control weaknesses, *J. Account. Pub. Policy* 26(3):300-327.

APPENDICES

Appendix I: Letter of Introduction

Dear Respondent,

RE: Request to Participate in a Study and Data Collection

My name is Gatimu Flavian Kung'u pursuing a Master degree in tax administration offered by Kenya Revenue School of Revenue Administration (KESRA) in collaboration with Moi University. I am undertaking research on "**MODERATING EFFECT OF DIGITALIZATION ON FACTORS AFFECTING EXCISE DUTY COMPLIANCE AMONG MANUFACTURING FIRMS IN EMBAKASI WEST NAIROBI COUNTY, KENYA**" This letter is to request you to participate in the study by filling the questionnaire. I pledge to you that the information gathered is for academic use only and that I will uphold confidentiality during and after the study.

Kind Regards,

Gatimu Flavian Kung'u

Appendix II: Questionnaire

You are requested to participate in this study by filing this questionnaire. Kindly fill by ticking ($\sqrt{}$) in line with your agreement to the statement or questions. All data and information is for academic use only.

SECTION A: GENERAL INFORMATION

1. Gender

   Male   (   )

   Female (   )

2. Age:

 Below 30 years (   )

 31-40 years   (   )

 41-50 years   (   )

 51-60 years   (   )

3. Education level

  Secondary level (   )

  Diploma level   (   )

  Bachelor degree (   )

SECTION B

TAX AUDIT

Kindly rate them on a scale of 1 to 5 where 1= strongly disagree, 2=disagree, 3=indifferent, 4=agree and 5=strongly agreed.

	1	2	3	4	5
Tax audit is necessary for tax compliance					
Tax audit procedures by KRA to manufacturers are friendly and effective					
Increased number of annual tax audits has effect on excise duty compliance					
KRA has audited our stamps usage and declaration in the past					
Tax audits increase the probability of being penalized, thus our business is obliged to be abide by the tax law					

TAXPAYER SENSITIZATION

Kindly rate them on a scale of 1 to 5 where 1= strongly disagree, 2=disagree, 3=indifferent, 4=agree and 5=strongly agreed.

	1	2	3	4	5
I understand my Tax Obligations					
KRA workshops have improved my knowledge of tax laws					
Our business has been sufficiently sensitized by KRA about the changes in the Act					
KRA organizes workshops to sensitize manufacturers about excise duty compliance					
KRA sensitization have improved my knowledge of excise duty compliance					

SOCIAL NORMS

Kindly rate them on a scale of 1 to 5 where 1= strongly disagree, 2=disagree, 3=indifferent, 4=agree and 5=strongly agreed.

	1	2	3	4	5
Relationship between the manufacturers and tax authorities influences the willingness of tax payers to comply					
I see no point of paying taxes when it is being misused by individuals in government.					
The taxes collected by the government are being put into good use in terms of service provision and infrastructural development					
I view the amount paid as lost profit that I would have used in other activities in other products.					
Taxpayers who perceive the tax authority's enforcement actions to be ineffective are less compliant.					

EXCISE DUTY COMPLIANCE

Kindly rate them on a scale of 1 to 5 where 1= strongly disagree, 2=disagree, 3=indifferent, 4=agree and 5=strongly agreed.

	1	2	3	4	5
I'm registered for the correct tax obligation					
I always file tax by the due date					
I always declare the correct amount					
I pay the correct tax by due date					
I'm always compliant with all tax policies and files tax return on time					

DIGITALIZATION AS A MODERATOR

Kindly rate them on a scale of 1 to 5 where 1= strongly disagree, 2=disagree, 3=indifferent, 4=agree and 5=strongly agreed.

	1	2	3	4	5
The use of iTax system for self-registration has helped reduce the cost incurred during the registration process.					
KRA M-App is easy to use					
The Online filing of tax returns through iTax system has led to faster and more convenient submission of returns as compared to the manual system					
Tax adverts on social media has helped me as a taxpayer file tax returns on time.					
Tax adverts on the television has helped me in the declaration of excise duty					

Appendix III: Data Collection Letter

KENYA REVENUE AUTHORITY

ISO 9001:2015 CERTIFIED

PUBLIC

KENYA SCHOOL OF REVENUE ADMINISTRATION

REF: KESRA/NBI/036

7th May 2024

TO: WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: REQUEST FOR ASSISTANCE TO FLAVIAN KUNG'U GATIMU OF REGISTRATION NO.: KESRA105/0070/2021 UNDERTAKING MASTERS AT KESRA

This is to confirm that the above named is a student at Kenya School of Revenue Administration (KESRA) Nairobi Campus pursuing Masters in Tax and Customs Administration.

The named student is undertaking Research on TOPIC: *"Moderating effect of digitalization on factors affecting excise duty compliance among manufacturing firms in Embakasi West Nairobi county, Kenya ."*

The purpose of this letter is to request for your kind facilitation in enabling the student progress in his research project by allowing access to any relevant information and/or conduct interviews, which are relevant to the project.

Your support to the student in this regard will be highly appreciated.

Thank you.

DEAN OF STUDIES

Damacrine Masira

Manager Academic Research,

KESRA ACADEMIC AFFAIRS DIVISION

Tulipe Ushuru, Tujitegemee!

Appendix IV: Data Collection Letter

REPUBLIC OF KENYA

**NATIONAL COMMISSION FOR
SCIENCE,TECHNOLOGY & INNOVATION**

Ref No: **934260**

Date of Issue: **23/May/2024**

RESEARCH LICENSE

This is to Certify that Mr.. Flavian Kungu Gatimu of Moi University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: **Moderating Effect of Digitalization on Factors affecting Excise Duty Compliance Among Manufacturing Firms In Embakasi West Nairobi County, Kenya** for the period ending : **23/May/2025.**

License No: **NACOSTI/P/24/35686**

934260

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR
SCIENCE,TECHNOLOGY &
INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document,
Scan the QR Code using QR scanner application.

See overleaf for conditions

Appendix V: Plagiarism Awareness Certificate

SR699

ISO 9001:2019 Certified Institution

THESIS WRITING COURSE

PLAGIARISM AWARENESS CERTIFICATE

This certificate is awarded to

GATIMU FLAVIAN KUNG'U

KESRA105/0070/2021

In recognition for passing the University's plagiarism

Awareness test for Thesis **entitled:** MODERATING EFFECT OF DIGITALIZATION ON THE DETERMINANTS OF EXCISE DUTY COMPLIANCE AMONG MANUFACTURING FIRMS IN EMBAKASI WEST NAIROBI COUNTY, KENYA similarity index of 20% and striving to maintain academic integrity.

Word count:20475

Awarded by

Prof. Anne Syomwene Kisilu
CERM-ESA Project Leader   Date: 20/09//2024