MODERATING EFFECT OF COMPLIANCE COST ON DETERMINANTS OF EXCISE DUTY COMPLIANCE AMONG SMALL AND MEDIUM WATER BOTTLING COMPANIES IN NAIROBI, KENYA.

BY

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DECLARATION

This research project is my original work and has not been presented for a Degree in any other University.

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DEDICATION

This research project is dedicated to my family. My wife, my son and my daughter for their continuous encouragement and assistance. Thank you for giving me all the support to complete my research.

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ABSTRACT

Over the years, full Compliance on excise tax by bottled water manufacturers has not been achieved despite several efforts by KRA to seal the loopholes. The general objective of this study was to establish the moderating effect of compliance cost on the determinants of excise duty compliance among water bottling companies by small and medium enterprises in Nairobi, Kenya. The study was guided by the following specific objectives: to determine the effect of tax Knowledge on excise tax compliance, to establish the effect of tax audits on excise tax compliance, to determine the effect of digitization on excise tax compliance and to find out the moderating effect of compliance costs on determinants of excise duty compliance. The study was anchored by the following theories, ability to pay theory, economic deterrence theory, attribution theory, unified theory of acceptance & digitization and transaction cost theory. The research employed explanatory research design. The population comprised of 110 SMEs bottling water companies, due to size of the population, the study employed census. Primary data was used and structured questionnaire employed to collect data. Data findings was presented in the form of tables and figures. The study adopted multiple regression analysis to confirm factors affecting excise tax compliance and SPSS software used to analyse the data. The study found that Tax knowledge had a positive and significant effect on excise duty compliance among Nairobi water bottling SMEs. $\beta_1 = .360$ p = 0.000<0.05. The study also found that tax audits had a positive and significant effect on excise duty compliance SME $\beta_2 = .189$ p = 0.000<0.05. Further the study found that digitization had a positive and significant effect on excise duty compliance $\beta_3 = .344$ p = 0.035<0.05. The study finally found that compliance cost had a negative and statistically significant moderating effect on relationship between tax knowledge, tax audit, digitization and excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya. $\beta_4 = -.153$ p = 0.000<0.05. The study further found that the moderating effect of compliance cost on relationship between tax knowledge and excise duty compliance by the small and medium water bottling water companies in Nairobi was significant $\beta_5 = .101$ p = 0.000<0.05. Further the study found that the moderating effect of compliance cost on relationship between tax audit and excise duty compliance, was statistically significant $\beta_6 = .019$ p = 0.000<0.05. Lastly the study found that moderating effect of compliance cost on relationship between digitization and excise duty compliance by the small and medium water bottling water companies in Nairobi was significant $\beta_7 = .081$ p = 0.000<0.05. R square change was 0.3% showing that the variation caused was reduced from 0.466 to 0.460. The study recommends more education on tax and compliance and improved digitization. Future research could compare the factors affecting excise duty compliance across different industries and sectors in Kenya. This would provide a more comprehensive understanding of excise tax compliance behaviour in Kenya

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ABBREVIATIONS AND ACRONYMS

EGMS	Excisable Goods Management System
ITAX	KRA tax filling system
KRA	Kenya revenue authority
KEBS	Kenya bureau of standards
KNBS	Kenya National Bureau of statistics
OECD	Organisation for economic cooperation and development
SMEs	Small and medium enterprises
UNICEF	United Nations Children's Fund
WCO	World custom organisation

OPERATIONAL DEFINITION OF TERMS

Compliance cost. It is the cost incurred by taxpayers in meeting the requirements laid on them by the tax law and the revenue authorities (Coolidge, 2018).

Excise duty: Excise duty relates to a form of taxation which is applied to a narrow base of goods (and services) which primarily are seen to have a level of harm associated with their consumption, typically tobacco, alcohol, fuel, motor vehicles, and gambling (World Custom Organization, 2013). It's also levied to luxurious items, such as motor vehicles, Bottled water, beverages, amongst other products. Excise duty is also taxed on financial transactions. Imported products or services. Excise duty is a tax imposed on goods and services manufactured in Kenya or imported into Kenya and specified in the first schedule of the Excise Duty Act (2015) (KRA, 2020).

Excise stamp. It is a revenue stamp affixed to some excisable goods to indicate that the required excise tax has been paid by the manufacturer (KRA, 2021).

Excise tax Legal framework: Legal frameworks comprise a set of documents that include the constitution, legislation, regulations, and contracts. Under the Excise duty, they include Kenya constitution, Excise duty Act 2015, Income tax Act Cap 470, Tax procedures Act 2015, Public notices, regulations amongst others (Natural Resource Governance institute, 2015)

Tax Audit   This is examination of an individual or organization's tax report by the relevant tax authorities in order to ascertain compliance with applicable tax laws and regulations of state (Okonkwo, 2014)

Taxpayer knowledge Tax knowledge is the taxpayer ability to understand the tax laws and regulations. Tax knowledge is also a level of knowledge of basic tax concept that consists of tax rules and financial knowledge that needs to be understood by taxpayers in order to fulfil their tax obligations (Pratama. 2018).

Digitalization   This is the process of using information communication technology systems including mobile capabilities to register for tax obligations, compute tax due, file taxes and make payments of amounts owed to the tax authority (Kenya Revenue Authority, 2020).

Medium Enterprises Medium-sized enterprises are defined as enterprises which employ fewer than 50-99 people and whose annual turnover does not exceed 50 million (KRA, 2012).

Small enterprise   According to Micro and Small Enterprises Act No. 55 of 2012, small enterprise means a firm, trade, service, industry or a business activity whose annual turnover ranges between five hundred and five million shillings and which employs between ten and fifty people (KRA, 2012).

Water bottling SMEs According to Kra (2020) water bottlers could either use digitized stamps or physical stamps. SME water bottlers are those therefore using affixing physical stamps to account for excise tax on each bottle of water packaged.

CHAPTER ONE

INTRODUCTION

1.0 Overview

This chapter presents an introduction to the study on determinants of excise duty compliance among small and medium water bottling companies in Nairobi, Kenya. The chapter begins with the background of the study, followed by the problem statement, objectives of the study, study hypothesis, significance of the study and scope of the study.

1.1 Background of the study

Income taxes are the major sources of revenue for the government in any developing country. However, the revenue amounts the relevant authorities generate for government expenditures by far does depend numerous factors, especially on the readiness of tax payers to comply with the laws of a country. It can be generally termed is an act of being non-compliant if a tax payer fails to abide by stipulated provisions (Kirchler, 2007).

The compliance to tax needs that two forms of compliance that are distinct and reporting for organizations. These categories are divided into either administrative or technical compliance. The first category refers the compliance with all administrative roles of not only lodging but also of paying taxes. The administrative form of compliance is also known as reporting compliance. Technical compliance refers to the requirements of the tax laws on a technical perspective, such as in the calculations of taxes or understanding the provisions of tax laws in paying their share of the tax (Brown & Mazor, 2003).

Excise duty is one of the oldest taxes levied worldwide on selected products. The earliest products to be levied excise duty included alcohol and tobacco. Excise taxes are mainly levied at relatively high rates on a few commodities, which are produced by a few large producers. According to Pomaskow (2016) an excise tax is identified as a levy

applied selectively on goods and services. The main characteristic of such commodities is that they tend to have a low own-price elasticity of demand. This is to mean therefore that prices of the excise will be pushed forward to the consumers. This leads to higher prices of the commodities, and due to their price elasticity, consumers still consume such products. However, different products under excise have been found to have different price elasticity (Deakin, 2018).

Linegar and Walbeek (2018) conducted a study to establish the effects of excise tax rates increase on the price of cigarrete in South Africa. Data on the excise tax rate per cigarette were obtained from Budget Reviews prepared by the National Treasury of South Africa. The study concluded that excise tax rates increases, causes increase in the prices of cigarrete thus also has an impact on the producing firms. In a study conducted by Munyoro, Chiinze and Dzapasi (2016) aimed at establishing the effects of excise duty rate on the profitability and growth of small manufacturing firms in Zimbabwe. To achieve this, a qualitative 6 research methodology centered on the positivist philosophy was adopted. The research design involved a case study approach where data was obtained through self-administered questionnaire. The study findings indicate that excise tax rates have a negative impact on the financial performance of small manufacturing firms in Zimbabwe.

Locally, the Excise duty Act 2015 came into force on enactment of the Excise duty bill which was tabled in parliament on 11 June 2015. Excise duty was introduced into Kenya during colonial times initially charged on beer, wine, spirits and tobacco. Overtime the list of products charged excise duty has been growing as government tries to expand the tax base. In 1973, EAC enacted the East African Excise Management Act to exclusively administer excise duty in the region under a Director-General After the collapse of EAC in 1977, Kenya enacted the Customs and Excise Management Act, 1978 administered

under the Customs Services Department (CSD). The last consolidated edition of the Act was issued in 2010. Ever since so many amendments have been made to take care of modern business practices and technology In CSD Excise was the 'side business' coming second after import taxes. It therefore did not get adequate accommodation in the Customs Reform Process. Moved to DTD in 2005 in line with KRA Administrative Reforms that put all domestic taxes under one administrative unit From 2005, excise duty was introduced on services - wireless telephone services and gambling. The Excise Duty Act, 2015 whose commencement date was 1st December 2015 enacted to achieve; - international best practice, Simplicity, Certainty, Revenue Mobilization and Leverage use of Technology.

1.1.1 Excise duty

In Kenya, Excise duty is imposed on goods and services manufactured in Kenya or imported into Kenya and specified in the first schedule of the Excise Duty Act (2015). (KRA, 2020). Historically, excise taxes in Kenya were levied on the domestic production of only four product groups, namely cigarettes and tobacco, sugar, beer and spirits, and matches. In 1994, the coverage of excise taxes was extended to mineral and aerated waters (Ministry of Finance, 2001). In understanding the commodity elasticity, Okello and Ochieng (2001) concluded that from a policy perspective, commodities such as mineral water, squashes, sodas, beer and petroleum products are price inelastic, indicating that increases in their prices will not lower their consumption significantly. However, any increase in excise duty should take into account the likely negative effect it may have on consumer pattern.

Excise taxes are equally levied to products which cause negative externality. The Excise Duty Act (2015) introduced a new tax based on units of quantity on harmful goods so as to compensate for harmful effects caused by production, supply, consumption or use of

goods whose costs are not directly reflected in their price (Deloitte & Touche, 2015) other Such products include tobacco and alcohol. Excise taxes are as well applied to improve the vertical equity of the tax system in the economy. This is seen when excise is levied to commodities seen as luxurious. Bottled water however cannot be classified wholly as a luxurious, nor can it be classified as harmful product. It is estimated that about 17 million Kenyans or 43 per cent of the country's population do not have access to clean water (UNICEF, 2022). It is however noted that water has been included in the list of excisable products despite the fact that the Cabinet Secretary in his budget statement mentioned that bottled water will not be excisable. This is perhaps based on the view that bottled water is in a sense a luxury item and as such not consumed by the average man (Deloitte & Touche, 2015).

Excise taxes on water was first introduced in 1994. There are two key levels in the water industry; bottlers and re-fillers, however our focus was on the bottlers, though both are required to comply with excise duty. Kenya revenue authority introduced new generation excise stamps effective 28th December 2021. This is an improvement from stamps previously in use, which were introduced on 3rd November, 2019. In a public notice dated 26th may 2021, Kenya revenue authority warned public of being in possession of excisable goods affixed with counterfeit excise stamps, after increased number of products with fake stamps (KRA, 2021). By affixing excise stamps on bottled water, the traders are required to activate the stamp to match the size of water quantity, ranging from 300 ml to 20 Litres. The reorder level of stamps from KRA is when a trader has accounted at least 75% of the previous issued stamps, and have paid or committed to pay the already declared taxes. KRA is the only agency mandated with the issuance of excise stamps. Excise stamps for water bottlers go for Kshs. 0.50 per stamp (KRA, 2021).

Kenya revenue authority is closely working to close the gap, and ensure that the bottlers comply with the excise tax laws .KRA in its communication to the public stated that it has identified various tax evasion schemes that have been utilised by some taxpayers in this sector which include use of counterfeit excise stamps on excisable products, sale of excisable goods without stamps, sale of vatable goods without issuance of a proper tax invoice, manufacturing of excisable products without excise licenses and use of proxy companies to procure raw materials (KRA, 2021).

1.1.2 Determinants of Tax Compliance

Tax compliance refers to the accomplishing of all tax processes and obligations as required by law. Tax compliance is a major problem for many tax authorities and it is not easy task to persuade taxpayers to comply with tax requirements even though tax laws are not always easy (Sumartaya & Hafidiah, 2018). Thiga and Muturi (2017) observed that there is a general association between tax understanding, technology, tax rates, compliance costs, high fines and penalties and the general level of compliance.

According to Okoye and Ezejiofor (2014); Yesegat and Fjeldstad (2016) knowledge about taxation, personal and social norms of tax compliance, personal attitudes such as risk attitudes or egoism, tax rates and (perceived) audit and detection probabilities combined with deterring fines relates to compliance. Alshira'h (2018) noted that economic factors in the form of penalties, the audit rate and the tax rate, are factors that affect tax compliance. Hence, tax compliance is an area of concern for all government and tax authorities, and it continues to be an important issue that must be addressed.

1.1.3 Small And Medium Water Bottling Companies in Nairobi

Small and Medium sized Enterprises (SMEs) is made up of an enterprise which employ less than 300. Kenya's Micro, Small and Medium Enterprises (MSMEs) contribute approximately 40% of the GDP with the majority falling in the informal sector

(Wakiaga, 2021). The Small and Medium Enterprises (SMEs) are considered as sources of employment generation, economic growth, and social transformation. A significant proportion of the SMEs are formal, while majority fall within the informal economy based on their size, location, ownership, status of formality and economic activity, together, as major job providers, they produce a significant share of total value added, and provide a large segment of the poor and middle-income populations with affordable goods and services (KNBS, 2016). It is also estimated that the sector employs over 15 million people and contributes about 30% to the national value-added in Kenya (KNBS, 2016).

The water bottling companies can be categorised into two, large water bottlers and small & medium water bottlers. Large companies have a higher competitive capacity than small businesses. They may operate several production facilities and rely on advanced production technology and techniques. They also have more access to capital and are easy to attract specialists or professionals. Companies such as Coca-Cola who produce Dasani and Keringet bottled water enjoy economies of scale through their transportation network from their main production of sodas. Their products are equally perceived as of high quality, even from their packaging. This therefore makes large bottling water companies compete amongst themselves. In contrast, the small and medium water bottling companies often rely with only one product in their production line, Bottled water. Most of their process are human controlled, including excise stamps which are affixed by individuals. Pricing for their products are competitive with other small and medium traders as they target the middle and low-end consumers. Their price is market controlled, an increase in price leads to consumer shift to other products, as they are not royal to one brand. The market may not allow in all cases, for this full cost to be passed

on and the result is a fall in the manufacturer's profit margins (World Custom organisation, 2013).

This character of consumers can change the price elasticity of the bottled water. When the large producers push price upwards, to cover for any additional taxes which may include excise duty, the small and medium producers are not able to push their prices up with the same margin, and most often, end up selling their products at similar prices, and finding other ways of improving profits which include reducing expenditures. When expenditures cannot be reduced further, they employ tax cheats as a way to keep their businesses alive. In fact, they are more likely to face decision frames that render taxes as painful losses (Kamleitner, 2012).

1.2 Problem Statement

Excise duty compliance remains low in many economies world over, with revenue authorities failing to achieve their yearly targets (Dutkowsky 2014). It is therefore important to educate taxpayers on their Excise duty obligations in order to have a fully functional tax system (Lloyd 2015). Countries around the globe are facing a common threat posed by increasingly complex and innovative forms of financial crime and tax evasion (OECD, 2022). This means fewer resources for infrastructure and services such as education and health, lowering standards of living in both developed and developing economies.

Compliance by bottled water manufacturers has been below 30 Percent. There is therefore a need for a plan to seal the loophole, which has been exploited for several years by hundreds of bottled water firms, to mint millions of shillings without paying taxes (KRA, 2019). In year 2022 KRA destroyed non-complaint beverages seized from two different markets worth Kshs 30 million and Shs3.4 million in taxes. The products, comprising of various brands of bottled water seized in various operations around the

country and had no stamps while others affixed with counterfeit excise stamps (KRA, 2022).

Excise tax reforms have been a key component of overall tax reform package, for example, implementation of excise goods management system (EGMS) in 2013, widening of excise tax base to include other goods and services. increasing of excise tax rates over the years, and use of new generation excise stamps. Despite these reforms, overall tax revenue mobilization, including excise taxation remains low. Excise taxes as a percentage of total tax revenue averaged 13 per cent between 1980 and 2018. It portrays a consistent upward trend from an average of 8.2 per cent between 1980 and 1990, to 16 per cent between 1991 and 2000, before beginning to decline to an average of 14.3 per cent between 2001 and 2018. (KNBS Economic Surveys, 2020).

It is clear that taxpayers in this sector are yet to fully comply with the requirements of the respective tax laws. Bidin, Sinnasamy and Othman (2018) conducted research investigating determinants of importers excise duty compliance in Malaysia. This study context was in Malaysia, hence a contextual gap. Kakra (2020) researched on dimensions of tax payers compliance in Ghana. Mohamed (2019) studied the factors affecting excise duty compliance among water manufacturing companies in Mombasa. The research used compliance cost as a variable hence a methodological gap. Ndumia (2015) studied effect of enforcement measures on Value Added Tax revenue for firms in the large corporate taxpayer category in Kenya. This study was in VAT hence a contextual gap. This study targeted large corporate taxpayer category hence a conceptual gap. Fauziati (2020) researched on the impact of tax knowledge on tax compliance case study in Kota Padang, Indonesia. However, this study context was Indonesia hence a contextual gap. This study seeks to establish factors that affect excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya. The study

went also to see if tax knowledge, tax audit, digitization and compliance cost as a moderating variable affect excise duty compliance among small and medium water bottling water companies in Nairobi,

1.3 Objectives of the study

This section outlines the objectives which were addressed by the study. The objectives were categorized into general objective and specific objectives

1.3.1 General Objective

The general objective was to establish the moderating effect of compliance cost on the determinants of excise duty compliance among the small and medium water bottling water companies in Nairobi, Kenya.

1.3.2 Specific objectives

The specific objectives of this study were:

i. To establish effect of tax knowledge on excise duty compliance among Nairobi water bottling SME.

ii. To determine the effect of tax audits on excise duty compliance among Nairobi water bottling SMEs.

iii. To establish the effect of digitalization on excise duty compliance among Nairobi water bottling SMEs.

iv. To determine the moderating effect of compliance costs on relationship between tax knowledge, tax audit, digitization and excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya.

a) To establish the moderating effect of compliance cost on relationship between tax knowledge and excise duty compliance by the small and medium water bottling water companies in Nairobi.

b)   To determine the moderating effect of compliance cost on relationship between tax audit and excise duty compliance by the small and medium water bottling water companies in Nairobi.

c)   To establish the moderating effect of compliance cost on relationship between digitization and excise duty compliance by the small and medium water bottling water companies in Nairobi.

1.4 Research Hypotheses

The research hypotheses of this study were:

H01: Tax Knowledge has no significant effect on excise duty compliance among Nairobi water bottling SMEs.

H02: Tax audits have no significant effect on excise duty compliance among Nairobi water bottling SMEs.

H03: Digitization has no significant effect on excise duty compliance among Nairobi water bottling SMEs.

H04: There is no significant moderating effect of compliance costs on relationship between tax knowledge, tax audit, and digitization on excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya.

a)   **H04a** Compliance cost has no significant moderating effect on the relationship between tax knowledge and excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya.

b)   **H04b** Compliance cost has no significant moderating effect on the relationship between tax audit and excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya.

c)   **H04c** Compliance cost has no significant moderating effect on the relationship between digitization and excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya

1.5 Significance of the Study

The findings of this study will be useful to the government, SMEs and future researchers.

Through the study findings, the government will be able to formulate policies, enact and implement excise duty regulations that generate revenues for implementation of government projects and expenditure while also ensuring that water bottling companies in Kenya remain profitable. Equally considering water is a basic necessity to all citizens, government will use this reach to ensure that most of its citizens have access to clean drinking water, so that the bottled water can remain as a luxury product, or equally abolish the excise tax to make the product more affordable, and reduce the non-compliance cases. Equally, the KRA will be able to offer trainings on specific areas that shows reasonable causes for non-compliance All this will be of great importance to the Kenyan economy.

From this study, The SMEs will evaluate their level of understanding on the current legal framework of excise duty which regulates their products- Bottled mineral water. They also understood the impact of compliance cost on excise duty compliance. SMEs reviewed their general contribution to tax compliance. This research offered an insight on the same and educate the taxpayers on its consequences, and eventual costs that can follow.

From the study findings, SME bottling water firms will be able to come up with favourable excise duty planning policies that ensured that they meet the regulatory requirement on payment of excise duty and at the same time avoid being tax ignorant. It

also may be likely that KRA maybe be considerate to offer more compliance solutions to the industry.

Researchers and academicians will find the study of great significance. From the study findings, researchers and academicians will able to get recommendations on areas of further studies related to excise duty and Compliance. Researchers and academicians will also be able to use the study as a point of reference on any other academic document or publication related to excise duty and how it affects compliance.

1.6 Scope of the study

The study was conducted within Nairobi County. The target population was 220 respondents from 110 small and medium water bottling water companies in Nairobi. A census survey was used in this study since the target population was small. The study focused on all 17 Sub counties within Nairobi County. The study was conducted from January 2023 to July 2023.This study was within fiscal year 2022/2023.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter looks at the tax compliance models and respective theories, concept of excise tax compliance, conceptual framework, factors influencing tax non- compliance and the critique of existing literature.

2.1 Review of Concepts

This section is a review of concepts of tax compliance, tax payer knowledge, tax audits, digitization and compliance costs.

2.1.1 Concept of Tax Compliance

Tax compliance refers to fulfilling all tax obligations as specified by the law freely and completely. It means submitting a tax return within the stipulated period, correctly stating income and deductions, paying assessed taxes by due date and paying levied taxes. If a taxpayer fails to meet any of the above obligations, then they may be considered to be non-compliant (OECD 2004).Tax compliance was measured with excise tax registration, filling of returns and payments of excise tax. In Kenya, taxpayers are issued with a Tax compliance certificate as a proof of having filed and paid all your taxes (KRA, 2015)

2.1.2 Concept of Taxpayers' Knowledge

Tax knowledge is the ability of a taxpayer to know the tax regulations regarding tax rates and also the benefits that are obtained when they pay taxes. With the increasing knowledge of taxation society through formal and non-formal taxation education will have a positive impact on the understanding and awareness of taxpayers in paying taxes (Sudaryo, Purnamasari and Yoyo, 2018). In Kenya, most taxpayers and learners have basic knowledge in taxation; however, there are repeated gaps in terms of meaning, sources, uses and administration of tax. To combat this disparity, KRA in the year 2005

embarked on a mission to educate, sensitize and demystify taxation to the public and enhance voluntary compliance (KRA, 2020). In every day of the week, there online programmes on going, all focusing on training taxpayers in different area of taxation. Indeed, after COVID-19, most people adopted to use online, and accept it as a mean to access information, a change for previous culture on physical meetings. With the knowledge in excise tax legal frame work, then, the question would be why still the taxpayers fail to comply. Taxpayer compliance is strongly influenced by the morality of the taxpayer. This is because paying taxes is an activity that can't be separated from the condition of the taxpayer's behaviour itself (Sudaryo, Purnamasari & Yoyo 2018). Tax Knowledge was measured in terms of knowledge on excise legal framework, knowledge on use of EGMS & Itax platforms and knowledge on taxpayers' rights.

2.1.3 Concept of Tax Audits

Bassey (2016) observed that tax audit is an essential compliance tool in most tax jurisdiction all over the word as it maximizes the expected tax revenue to the government both in developed and in developing countries. Okonkwo (2014) revealed that tax audit revolves examination of an individual or organization's tax report by the relevant tax authorities in order to ascertain compliance with applicable tax laws and regulations of state. Similarly, Kircher (2018) submitted that tax audit ensure that satisfactory returns are submitted by the tax payers, to organize the degree of tax avoidance and tax evasion, to ensure strict compliance with tax laws by tax payers, to improve the degree of voluntary compliance by tax payers and to ensure that the amount due is collected and remitted to government (Slemrod, 2019).

The Tax Procedures Act of 2015 requires that taxpayers must keep records that enable the person's tax liability to be readily ascertained, for a period of a minimum of 5 years, in either of the official languages, from the end of the reporting period to which it relates

(KRA, 2020). To meet revenue targets KRA undertakes in-depth compliance audits on all taxpayers through the investigation enforcement unit. The outcome of a KRA Audit includes additional assessments or in the case of fraud; prosecution of the offenders. Additional assessment happens when a taxpayer is unable to support all the claimed expenses and/or the taxpayer has underdeclared income. The additional assessment is raised by KRA officials for the under-declared income and/or the over-claimed expenses. The taxpayer is expected to pay the resultant tax including interest and penalties (KRA, 2020). Tax audit was measured in terms of Desk audits, field audits, excise stamps audit

2.1.4 Concept of Digitization in Taxation

Digitization can be defined as the process of transforming analog data into binary electronic (digital state) especially use in a computer or storage (Pearce, 2005). Digitization entails the conversion of materials from analog state that can be read by individuals to a digital state that is only readable by machines. Digitization of tax administration is a difficult task that requires radical changes in the way it is organized and delivered to its intended users. Digital technology is a powerful tool of management, but tax administration's encounter with this mode of work has often proved to be complex, sometimes unsuccessful. The problem is that tax administration, like any other sector, often wants to create an electronic management and information system that works for them, and a lot of money, effort and technology is spent (Lipniewicz,. 2017).

The rapidly increasing pace of digitalization will have a significant impact on tax compliance. Information technology, which includes telecommunications and computerized systems, looks set to increase tax processes substantially, with savings in time as well as money, while at the same time affording customers a better service (Olaoye & Kehinde, 2017). All the tax information systems and data bases should be

integrated and have available the tools required. Through technology, tax administrations have streamlined tax operations to broaden tax bases and cushion tax evasion which has consequently increased tax collection. The Kenya Revenue Authority, a recognized leading technology-driven revenue administrator, has implemented online platforms such as i-Tax, integrated customs management system (i-CMS), customer relationship management system, cargo scanner management solution and excisable goods management system among others as strategic instruments to improve tax compliance and minimizing operation costs (KRA, 2020).

Since employing online systems in tax administration, tax revenue and levels of compliance have steadily improved in Kenya over the years. Equally, KRA has rolled out a new generation of excise stamps for excisable goods as part of its strategy to continuously review and improve the security features of excise stamps to deter counterfeiting. The excisable products covered include alcoholic beverages, tobacco and tobacco products, water, soft drinks and juices (KRA,2021). The autonomic transformation of the KRA procedures has also led to notable success in filing returns, remitting payments, applying tax refunds, lodging tax objections, applying tax waivers and requesting tax compliance certificates among others. Systems such as i-Tax and EGMs provide real time updates of tax accounts which have eased reconciliation of statements with the tax authority. As a result, this has built trust among taxpayers through the enhancement of transparency and promotion of accountability (KRA, 2020). Technology was measured in terms of real time stamps reporting through use of EGMs, online tax payments and unique serialised code excise stamps.

2.1.5 Concept of Compliance Costs

Coolidge (2018) defined tax compliance costs as the costs incurred by taxpayers in meeting the requirements laid on them by the tax law and the revenue authorities.

Eichfelder and Kegels, (2019) identified compliance costs as one of the three components of the social costs of taxation. These social costs are the ones incurred by society in the process of transferring purchasing power from the taxpayers to the government. The other elements are administrative costs and deadweight efficiency loss from taxation. Administrative costs are the costs that exist besides the occurrence of compliance costs that are borne by the companies. These costs are cited as costs that the government must also take into account as a public cost to ensure that the tax legislation is obeyed. For example, it obtains the costs to collect taxes and to maintain the system to collect the taxes. The compliance cost and administrative costs are defined as the operating cost of taxation. Compliance costs was measured in terms of cost of book keeping, cost incurred during tax audits and cost of tax agents. Compliance costs affects tax audits, digitization and tax knowledge and therefore relevant as moderator in this research.

2.2 Theoretical Literature Review

This study focuses on five theories; ability to pay theory, economic deterrence theory, Optimal Tax Theory, unified theory of acceptance and digitization and transaction cost theory.

2.2.1 Ability to pay theory

The tax should come from him that has, not from him that has not. This theory was espoused by Adams smith in 1776. This therefore means that taxation should be a function of income, as it's known to be. If the prices are not shifted upwards with the same margin as that of excise, does the taxpayer suffer loses, or there is enough for taxpayer to pay the tax and have profits. It can therefore be argued and appears reasonable and just that taxes should be levied on the basis of the taxable capacity of an individual (Chauke, 2016). While others have argued that it penalizes hard work and success and reduces the incentive to make more money, (opt for flat rate of taxation),

others argue that those who have benefitted most from the nation's way of life in the form of higher incomes and greater wealth can afford and should be obligated to give back a little more to keep the system running (Kagan, 2020). This theory expounded on whether the excise duty on water has been based on the ability to pay and its general compliance.

2.2.2 Deterrence theory

The classical theory of deterrence developed from the work of three modern philosophers Hobbes (1651), Beccaria (1872) and Bentham (1789). They believed that if punishment is severe, certain and swift, a rational individual will weigh potential gains and losses before engaging in illegal activity and will be discouraged from breaking the law if the loss is greater than the gain (European Society of Criminology, 2022). This theory is based on the benefit paradigm. This theory illustrates a model that takes into account the potential costs and benefits to be derived from a chosen action (Surdayo, Purnamasari & Yoyo, 2018).

The theory can be achieved through a number of approaches and these could be both punitive and persuasive. This theory supported the independent variable on tax Knowledge as a persuasive measure and whether it can deter the non-compliance behaviour, especially when the taxpayer has full knowledge of how the tax systems work. If tax taxpayers are well knowledgeable, there is a likely chance the taxpayer will have improved tax planning and well prepared psychologically.

2.2.3 Optimal Tax Theory

According to Ramsey (1927) and Mirrlees (1971) optimal tax theory is concerned with the ideal level and form of economic redistribution. The optimal tax theory seeks to establish how government can maximize social welfare through taxes and transfers, without increasing the sacrifice on the part of tax payers. Whether conscious or not, optimal tax theory actually embodies a resource egalitarian view of distributive justice to

a large extent. However, the reasoning behind the theory's principles emphasizes incentives, efficiency, and the information that choices reveal about individual well-being.

This theory indicates that optimal taxation is a function of tax charge and how this tax is collected to ensure fair redistribution of welfare. E Hassan et al (2021) study on tax compliance found that the tax rate is a significant predictor of voluntary tax compliance behaviour. This is to therefore mean that in the event taxpayers perceive tax rates as high, they tend to find means of evading taxes. Tax audits are applied to enhance tax collection and provide KRA with sufficient data on general compliance. To ensure optimal taxation KRA evaluates how taxpayers file returns and how they adhere to the set taxation requirements through effective audits. A complete analysis of a revenue-maximizing audit strategy requires consideration of behavioural responses to audit effectiveness as well as recognition of differential responses of compliant and noncompliant taxpayers (Kasper and Alm 2022). The optimal tax theory is used in this study to explain the effects of tax audits on tax compliance.

2.2.4 Unified Theory of Acceptance and Digitization (UTAUT)

This theory was advanced by Venkatesh, Morris, Davis and Davis (2003) and suggests that the actual digitization is determined by behavioural intention. According to the theory the acceptance of technology, is determined by the effects of performance expectancy, effort expectancy, social influence and facilitating conditions. The effect of predictors is moderated by age, gender, experience and voluntariness of use.

Performance expectancy is the degree to which an individual believes that using the system will help him or her to attain gains in job performance. Effort expectancy is the degree of ease associated with the use of the system. Social influence is the degree to which an individual perceives how important others believe he or she should use the

new system. Facilitating conditions is the degree to which an individual believes that an organisation's and technical infrastructure exists to support the use of the system (Venkatesh et al., 2003). Internet technology is one of the most essential technologies that can be used by individuals, organisations and countries, for increasing their growth and prosperity. Furthermore, the users must be properly introduced to the system, and also proper back-up must be provided before the organisations expect that users to use any innovative technology, for ensuring that the system was well-utilised (Isaac et al. 2019)

In relation to the study performance expectancy, ease of use, social influence and individual believe will influence tax payer's willingness to utilize the tax system technology. Hence, this theory elaborates on effect of digitization on tax compliance.

2.2.5 Transaction Cost Theory

This theory was advanced by Williamson (1981). Transaction cost theory is part of corporate governance and agency theory. It is based on the principle that costs will arise when a firm employs someone else to do something for the company like tax agents to file returns. The theory describes governance frameworks as being based on the net effects of internal and external transactions, rather than as contractual relationships outside the firm (i.e. with shareholders). Transaction costs will occur when dealing with another external party: Search and information costs, bargaining and decision costs and policing and enforcement costs.

The way in which a company is organised can determine its control over transactions, and hence costs. It is in the interests of management to internalise transactions as much as possible, to remove these costs and the resulting risks and uncertainties about prices and quality. The corporate governance problem of transaction cost theory is, however, not the protection of ownership rights of shareholders (as is the agency theory focus),

rather the effective and efficient accomplishment of transactions by firms (Williamson, 1991). Taxpayers face transaction costs from complying, in addition to financial costs. Firms that face the lowest cost from tax compliance are the most likely to respond to credible, non-deterrence nudges. (Hoy, McKenzie & Sinning, 2021).

According to the theory, an organization can determine its control over costs, in this case compliance costs. This can be achieved through compliance of taxation to reduce costs that arise due to non-compliance. This theory supports the variable compliance costs.

2.3 Empirical Literature Review

The empirical review explores the findings of other scholars on the excise tax compliance in Kenya and beyond.

2.3.1 Excise tax compliance

Bidin, Sinnasamy and Othman (2018) conducted research investigating determinants of importers excise duty compliance in Malaysia. Using the deterrence theory as their basis of their study's framework. Data was collected from 500 useable excise duty offenders scattered throughout Malaysia. Findings from partial least square analysis revealed that penalty rate, probability of detection and tax knowledge exhibited a positive and significant impact on excise duty compliance. This study focused on Malaysia, the findings cannot be generalised to Kenya due to the difference in the tax systems.

Mohamedali (2019) led a study on factors affecting excise duty compliance among water manufacturing companies in Mombasa County. He focused on business automation, to include ITAX, system efficiency and system effectiveness. Taxpayer knowledge, focusing on tax returns, availability of information and education programmes, compliance costs on cost of filling, cost of record keeping and cost of audit. The study concluded that business automation, tax knowledge and compliance cost have a positive and significant effect on compliance on excise duty. The study

variables only accounted for 89.4% of the variation of compliance on excise duty. This study focused on the manufacturing sector, the current study focused on small and medium bottling companies.

2.3.2 Taxpayer Knowledge and Excise tax compliance

Kakra, et al. (2020) carried a study aimed at examining the effect of dimensions of tax knowledge on tax compliance in the Ghanaian context using small and medium enterprises. They observed that Tax knowledge is about knowledge of tax responsibilities and rights, knowledge about employment income, knowledge about business income, and awareness of sanctions. The survey includes 130 managers of small business enterprises (SMEs) in Ghana, who had been part of a tax education campaign by the Ghana Revenue Authority in the Nkawkaw Municipality. The findings of the study suggest that knowledge of tax rights and responsibilities, and awareness of sanctions are the strongest determinants of tax compliance in the SME sector.

Chandra (2020) studied the effect of tax payer awareness, taxation knowledge and the implementation of modern tax administration system on taxpayer compliance. The number of samples taken was from owners of the Land Transportation Bureau in Palu City. The data analysis techniques that was used in this study were multiple regression analyses with the help of SPSS program version 21.0. The results of this study showed that taxpayer awareness, taxation knowledge, and the application of modern taxation administration system have a positive and significant effect on taxpayer compliance both partially and simultaneously.

Fauziati (2020) researched on the impact of tax knowledge on tax compliance case study in Kota Padang, Indonesia. The survey research design was used in conducting the investigation. The primary source of data was used and three hundred (300) copies of self- administered questionnaire were distributed. The number of questionnaire

completed and returned was two hundred and thirty-seven (237), constituting 79% response rate. The simple linier regression models were used to estimate the relationship between tax knowledge and tax compliance. The t-statistics was used to test the significance of the study variables. It was revealed that; tax knowledge has no impact on tax compliance.

Oliver (2011) led a study in finding out the effect of taxpayer education on excise duty compliance among small and medium enterprises in upper eastern region, Kenya. The study results showed that indeed; mobile tax clinics, print electronic media adverts and tax training seminar enhances excise duty compliance on entrepreneurs in upper Eastern. The study recommends that there is need to enhance taxpayer education among entrepreneur in upper Eastern region using tax training seminars, since more tax training seminar enables them understand tax laws and hence comply with them. The current study focused on small and medium bottling companies

2.3.3 Tax Audits and Excise tax compliance

Kasper and Alm (2022) researched on audits, audit effectiveness, and post-audit tax compliance. This study used a laboratory experiment to investigate the effect of audit effectiveness, or the share of undeclared income that the tax agency detects in an audit, on post-audit tax compliance. The findings show that tax audits have differential effects on post-audit compliance and that the effectiveness of audits determines these responses; that is, while effective audits increase post-audit tax compliance, ineffective audits have the opposite effect. It was also find that relatively compliant taxpayers exhibit the strongest behavioural response to audits. Further, the specific deterrent effects of tax audits are more ambiguous than standard and behavioural models of tax compliance , with these effects dependent on the effectiveness of audits and on the taxpayer's prior reporting behaviour.

D'Agosto (2017) explored the compliance behaviours of small businesses by means of unique datasets from the Italian Revenue Agency. The analysis focused on the tax compliance effects of various enforcement policies: field audit (i.e., soft audit), desk audit (i.e., deep audit), and a combination of field and desk audit activities, over the period 2004–2009. The authors measured the impact on individual tax compliance in terms of changes in the tax declared by the audited taxpayers with respect to the non-audited ones. Findings show that each policy has a positive and significant effect on compliance, although with different magnitudes.

Mebratu (2016) did an evaluation on the impact of tax audit on tax compliance in Ethiopia, at federal level by using secondary macro data. To analyse the data the partial coefficient regression statistical analysis method was employed. The Pearson correlation and bivariate regression result shows, there is a strong association between probability of audit detection and the level of tax compliance. The regression result also reveals that there is a strong association between the number of audited files and the level of tax compliance. Pearson Correlation and partial regression coefficient result shows that the there is a strong association between probability of audit detection and the number of audited files with the level of tax compliance.

A study by Olaoye and Ekundayo (2019) evaluated the effects of tax audit on tax compliance and remittance of tax revenue in Ekiti State. It specifically investigated the effect of desk audit, field audit, back duty audit and registration audit on tax compliance and remittance of tax revenue in Ekiti State. A close-ended questionnaire was used to gather the needed data and an analysis was carried out through correlation matrix and multiple regression. It was discovered that desk audit, field audit, back duty audit and registration audit had a positive significant effect on tax compliance and remittance in Ekiti State. Worthy of note was that field audit was the most significant predictor out of

all the predictor variables. It was concluded that tax audit could engender tax compliance and remittance in Ekiti State.

Mburugu (2019) researched on effect of tax audit on excise duty collection in Kenya. This study aim was to establish the effects of the tax audit on excise duty in Nairobi. To determine the significance level, descriptive statistics and regression analysis were used. The study was conducted over a period of 5 years in which secondary data were used in the analysis for the period 2013 to 2018. The study found that the tax audit had a positive effect on the collection of excise duty. The study revealed that tax audit had an effect of 71.8 percent of the collection of excise duty.

2.3.4 Digitization and Excise tax compliance

A study by Gangodawilage, Madurapperuma and Aluthge (2021) evaluated the digitization to manage tax compliance behaviour of entrepreneurs in the digital economy. This study aim was to investigate how the digitization in taxation influences the compliance decision of entrepreneurs in the digital economy. The study employed phenomenological inquiry to conduct qualitative research. This findings revealed that trust in the technology used by the tax authority and the power of tax authority in implementing the technology-driven tax system influence maintaining tax compliance, and it breads confirmatory compliance as a new compliance strategy in the digital economy.

Oeta (2017) studied the effects of technology adoption on vat and excise duty compliance at Kenya Revenue Authority. The study was conducted in Nairobi in the main offices of the KRA, domestic taxes department large taxpayer office. This study was based mainly on primary research and therefore the most appropriate instrument to collect data for the study was questionnaires. The quantitative data collected was analysed using the basic analysis procedures such as tabulating which is the best method

when it comes to the comparison of figures. It was shown that adoption of technology has had a positive impact on VAT and Excise duty compliance levels.

Olonde (2019) researched on the effect of information technology on tax compliance by KRA. The study employed a descriptive survey research design to get the good description of the phenomenon under study. The target population was all the I.T staff at the Kenya Revenue Authority who are based at The Times Towers who were 65 in number. A questionnaire was the tool for data collection and was sent to the respondents through email. The data was thereafter analysed using descriptive statistics which include means and standard deviation, and inferential statistics which was regression analysis. The study findings indicated that in general, information technology has effect on tax compliance that is taxpayers' registration, filing of returns, and income declaration. The study also found that iTax system has an effect on tax compliance to a very great extent and also well accepted by users, while data analytics and block chain technology have an effect on tax compliance to a great extent and also the acceptance of the technologies are well accepted.

Kabaka (2019) researched on effect of (iTax) system on tax compliance in Kenya: a case study of selected large taxpayers in Kenya. The objective of this study was to examine the effect of iTax system on tax compliance levels in Kenya. The research problem was solved using descriptive survey design. The main source of data was primary data. The study population comprised mainly 1,238 large taxpayers. Presentation of the analysed data was done in form of tables, charts, and graphs so as to help provide a clear understanding and interpretation of the study findings. The study also revealed that tax compliance is influenced by taxpayer registration, verification, enforcement as well as reporting. The study concludes that tax compliance in Kenya is influenced by taxpayer registration, taxpayer verification, taxpayer enforcement and taxpayer reporting.

2.3.5 Moderating effect of compliance cost on Excise Tax Compliance

Generally, tax compliance costs tend to be regressive in nature (Sandford & Hasseldine, 1992; Pope,95; Schoonjans, van Cauwenberge, Reekmans, & Simoens, 2011) In fact, SME taxpayers may face economic hardship as a result of proportionately higher compliance costs (Schoonjans et al, 2011) and their tax compliance levels may be lower (Arachi & Santoro, 2007) High tax compliance costs may explain why SMEs' tax compliance levels are lower than expected, as many of these business entities may perceive the tax systems to be unfair. Subsequently, knowing whether tax compliance costs impact on the SMEs' tax compliance is useful when considering how to combat their tax non-compliance. In this regard, this paper explores whether or not an increase in income tax compliance costs leads to a decrease in levels of in excise duty compliance.

Most researchers in the field, reveal that the costs of all tax related activities (whether unavoidable/compliance-induced or avoidable/planning induced) should be included in the measurement of tax compliance costs (Chepkrui, 2016). A comprehensive inclusion of all tax related activities is consistent with the broad definition of tax compliance costs.

According to Chigbu *et al.,* (2016), this avoids the need to make a discretionary choice of what is and what is not a component of tax compliance costs. Hence, tax planning should be regarded as a legitimate activity of tax compliance. Denny *et al.,* (2017) asserts that tax dispute resolution should also be treated as a legitimate tax compliance activity and incorporated into any comprehensive study of tax compliance costs.

2.4 Summary of Literature and Research Gaps

In a summary, this chapter outlines the theoretical framework, which establishes the theories and concepts that govern this research. The five theories anchoring this study

are ability to pay theory that purports that taxes should be levied on those who have income, and in this context, the compliance of excise tax by the taxpayers was based on their ability to pay, deterrence theory purports that taxpayers are influenced by economic motives and trade on the probability that their actions will not be detected. Optimal tax theory, which seeks to establish how government can maximize social welfare through taxes and transfers, without increasing the sacrifice on the part of tax payers. Unified Theory of Acceptance and Digitization which, according to the theory the acceptance of technology, is determined by the effects of performance expectancy, effort expectancy, social influence and facilitating conditions. Transaction cost theory which is part of corporate governance and agency theory. It is based on the principle that costs will arise when a firm employs someone else to do something for the company like tax agents to file returns.

Fauziati (2020) researched on the impact of tax knowledge on tax compliance case study in Kota Padang, Indonesia. However, this study context was Indonesia hence a contextual gap. Chandra (2020) studied the effect of tax payer awareness, taxation knowledge and the implementation of modern tax administration system on taxpayer compliance in Indonesia. However, this study focused on modern tax implementation hence a conceptual gap. Mebratu (2016) did an evaluation on the impact of tax audit on tax compliance in Ethiopia, at federal level by using secondary macro data. This study collected only secondary data hence a methodological gap.

Ogutu (2019) researched on effect of tax audit on excise duty collection in Kenya. This study focus was on tax collection hence a conceptual gap. Ndumia (2015) studied effect of enforcement measures on Value Added Tax revenue for firms in the large corporate taxpayer category in Kenya. This study targeted large corporate taxpayer category hence a conceptual gap. Kisaale (2017) researched on effect of customs enforcement measures

on taxpayer compliance in the payment of customs duties in Uganda Revenue Authority. This study focus was on customs tax hence a conceptual gap. Kabaka (2019) researched on effect of iTax system on tax compliance in Kenya: a case study of selected large taxpayers in Kenya. This study focus was on large taxpayers in Kenya hence a conceptual gap.

Bidin, Sinnasamy and Othman (2018) research on deterrence measures indicated that penalty rate, probability of detection and tax knowledge contribute significantly to importers excise duty compliance in Malaysia. This study was focused in Malaysia hence a contextual gap. Kakra, et al. (2020) research on dimensions of tax payers compliance.

This research was however carried out in Ghana hence a contextual gap. Kiogora (2019) researched on bottling water companies and excise compliance in Nairobi focused tax Knowledge hence a conceptual gap. Macharia (2019) studied the impact of taxpayer education on excise duty compliance among small and medium enterprises in upper eastern region. This study focused in Nairobi County hence a contextual gap. Mohamed (2019) researched on factors affecting excise duty compliance among water manufacturing companies in Mombasa county, and using compliance cost as an independent variable hence methodological gap.

2.5 Conceptual framework

Cooper and Schindler (2018) defines a conceptual framework as a construct that shows the relationship between the variables in a study. The framework helps specify and define the concepts within the problem of the study. Independent variables are those factors affecting excise tax compliance, and this study, the focus is on tax Knowledge which is the ability of a taxpayer to know the tax regulations regarding tax rates and also the benefits that are obtained when they pay taxes. Taxpayer knowledge has an impact

on the understanding and awareness of taxpayers in paying taxes (Sudaryo, Purnamasari & Yoyo 2018). This was measured by knowledge on excise legal framework, EGMS & Itax, and taxpayer rights. Tax audits is the examination of an individual or organization's tax report by the relevant tax authorities in order to ascertain compliance. Tax audit ensure that satisfactory returns are submitted by the tax payers, and improves the degree of voluntary compliance by tax payers (Slemrod, 2019). This was measured by desk audit, field audits and excise stamp usage audits. Digitization implies the use of advanced systems in the provision of tax services. Digitization in taxation helps to broaden tax bases and cushion tax evasion which has consequently increased tax collection (Kegels, 2019). Technology was measured by EGMS, online tax payments and unique serialised excise stamps. Moderating variable is compliance cost. Tax compliance costs as the costs incurred by taxpayers in meeting the requirements laid on them by the tax law and the revenue authorities (Coolidge, 2018). This was measured by cost of book keeping, tax audit costs and Cost of hiring agent. The dependent variable is excise duty compliance measured by Registration, Timely Filling, and Timely payment. Figure 2.1 conceptualizes moderating effect on compliance costs on factors affecting excise duty compliance among water manufacturing companies in Nairobi, Kenya.

Independent Variables   **Dependent Variables**

```
┌─────────────────────────────┐
│ Tax knowledge               │
│   • Excise legal framework  │              H01
│   • Use of EGMS & Itax      │
│     Platforms               │
│   • Taxpayer rights         │
└─────────────────────────────┘
                                                    ┌─────────────────────────┐
┌─────────────────────────────┐                     │   Excise duty           │
│ Tax Audits                  │              H02     │   compliance            │
│   • Desk audits             │                      │   • Registration        │
│   • Field audits            │                      │   • Timely Filling      │
│   • Excise stamps audit     │                      │   • Tax payment         │
└─────────────────────────────┘              H04     └─────────────────────────┘
┌─────────────────────────────┐
│ Digitalization              │
│   • EGMS use in Real time   │              H03
│     stamps reporting        │
│   • Online Tax payments     │
│   • Unique serialised code  │
│     excise stamps           │
└─────────────────────────────┘

        H04a    H04b    H04c   Moderating variable

                      ┌─────────────────────────────┐
                      │ Compliance costs            │
                      │   • Cost of Book keeping     │
                      │   • Audit costs              │
                      │   • Cost of hiring agent     │
                      └─────────────────────────────┘
```

Figure 2.1 Conceptual Framework

Source: **Author (2023)**

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter contain the research design, target population, sample size and sample selection. It also captured data collection instruments together with the questionnaire validity and reliability. Furthermore, the chapter highlights the data collection procedures, measurement of variables, data analysis and presentation, model specification and underlying assumptions of the regression model.

3.1 Research design

According to Bougie and Sekaran (2013) a research design as the scheme, outlines or shows the plan that is used to generate answers to a research problem. Its therefore the overall plan and strategy adopted to integrate the different components of this study in a structured way for collecting and analysing the needed information. This study adopted the explanatory research design. Explanatory study was carried out to construct concepts that clarify and forecast normal and collective actions (McNabb, 2017). This design is suitable for this study because study is extensive in terms of scope than descriptive research technique. Hence, this design helped to give a detailed insight as to why some events occurred, or do occur, deducing the causes and effects among many constructs, and clarifying the variances in more than a cluster of answers. The design will therefore help find answers to research questions (McNabb 2017).

3.2 Target population

McMillan (2010) defined population as the universe of units from which the sample is to be selected. Population can also be defined as the entire group of people, events, or things of interest that the researcher wishes to investigate. This study focus was on small and medium water bottling water companies in Nairobi County because it is within a

major town in Kenya in which SME are available thus access to iTax system is possible to most businesses. In Nairobi, there are 110 small and medium water bottling water companies (KRA 2023). The respondents was 1 Manager and 1 supervisor from accounts departments respectively which was a total of 220 respondents from small and medium water bottling water companies in Nairobi. A census survey was used in this study

3.3 Data Collection

Collection of data plays a very crucial role in the statistical analysis. There are two main sources of data in research, primary and secondary data (Mugenda 2003). The study used primary data as the method to collect data. A structured questionnaire was the data collection instrument. The questionnaire provided first-hand information which was collected from the respondents.

The questionnaire was structured in line with the study objectives. The structure of the questions was adapted from previous studies in the field of taxation There were 5 items used to measure digitization and factors affecting excise duty compliance as adapted from (Chauke 2016). Taxpayers knowledge was measured by 5 items as adapted by (Olsen 2018), tax audits was measured using 5 items as adapted from (Wenzel 2004), compliance cost was measured by 5 items, as adopted from (Mwangi 2019). The study used Likert scale in structuring the questionnaire. Questionnaires were answered on a 5-point Likert scale ranging Strongly Agree=1, Agree= 2, Uncertain=3, Disagree=4 and Strongly Disagree=5. This helped code and classify the results and analyse the result of each company.

The study respondents were two from each company, the owners/managers of the companies and accountants, since they are responsible and significantly involved in excise tax declarations and decisions on payments. A total of 220 questionnaires were

therefore administered. The respondents participated in the study voluntarily. The researcher engaged two qualified research assistants who. The questionnaires were administered by the researcher using the drop and pick later method.

3.4 Pilot test

Pilot test is a small-scale preliminary study conducted before any large-scale research in order to evaluate the potential for a future, full-scale project. It is an activity that assists the research in determining if there are flaws, limitations, or other weaknesses within the data collection instruments (Harun 2020). The study conducted a pilot test with 22 water bottling companies within Kiambu county which is neighbouring to Nairobi County. The pilot study helped administer effective and fulfilling data collection by testing the reliability and validity of research questionnaires.

3.4.1 Validity of the Research Instrument

Validity explains how well the collected data covers the actual area of investigation (Ghauri & Gronhaug, 2005). The are different ways of determining validity. Face validity is a subjective judgment on the operationalization of a construct. It is the degree to which a measure appears to be related to a specific construct. Face validity ensured by structuring research questions in line with the study objectives. Content validity is defined as the degree to which items in an instrument reflect the content universe to which the instrument will be generalized (Straub, 2004). To ensure content validity, expert opinion from the supervisors on the questionnaire was sought. This helped to improve on the questionnaire before data collection.

3.4.2 Reliability of the Research Instrument

Reliability concerns the extent to which a measurement of a phenomenon provides stable and consist result. Reliability is also concerned with repeatability (Creswell, 2013). For example, a scale or test is said to be reliable if repeat measurement made by

it under constant conditions will give the same result. Cronbach's alpha based on internal consistency was computed to determine the reliability of the instrument. This methodology gauges the mean of measurable items and its correlation. Cronbach's alpha is a number that varies from 0 to 1. Instruments with scores of 0-0.6 have poor reliability, whereas those with scores of 0.7 and above have a high degree of reliability. The threshold for this study was above 0.7.

3.5 Statistical assumptions

Glasser, (2008), States that all statistical procedures have certain underlying assumptions, which can vary in their strictness. While the violation of these assumptions may not affect the substantive conclusions of the research in some cases, in other cases it can significantly undermine the validity and meaningfulness of the research findings. (Garson, 2012) Verifying that one's data fulfils the assumptions of the statistical procedure being used is a standard requirement in all journal articles, theses, and dissertations based on quantitative research. The study conducted diagnostic tests before using an ordinary least square regression model to test the study hypotheses. This ensured that assumptions of classical regressions were not violated. The tests of normality, heteroscedasticity & homoscedasticity as well as multicollinearity were conducted before running the respective regression models.

3.5.1 Normality test

Normality tests assess whether a dataset follows a normal distribution. Commonly used tests include the Shapiro-Wilk test (Shapiro & Wilk, 1965) and the Kolmogorov-Smirnov test (Kolmogorov, 1933). These tests evaluate the null hypothesis that the data are normally distributed when p value >0.05. Deviations from normality may impact the validity of certain statistical techniques, such as parametric tests.

3.5.2 Homoscedasticity Test

The even distribution of residual or error term across the graph is a crucial assumption for this method. If this assumption is not met and the variance of errors from the regression line is not constant, (Paper, 2016) the results of the analysis may be biased, causing distorted statistical conclusion. A scatterplot of residuals versus predicted values is a good way used in checking for homoscedasticity. In this research, Probability of Chi square was used. Result of p value >0.05 shows that assumption of homoscedasticity was not violated.

3.5.3 Multicollinearity Test

Multicollinearity tests assess the presence of high correlations between independent variables in a regression model. The most common diagnostic measure is the variance inflation factor (VIF), which quantifies the extent of multicollinearity (Neter et al., 1996). Multicollinearity can distort coefficient estimates and hinder interpretation, requiring corrective actions such as variable selection or data transformation. VIF less than 10 mean there is no violation of collinearity, VIF higher than 10 indicate that the assumption has been violated.

3.5.4 Autocorrelation tests

Autocorrelation tests examine whether there is a correlation between error terms in a time series or panel data analysis. The Durbin-Watson test (Durbin & Watson, 1951) is frequently used to detect autocorrelation. It tests the null hypothesis that there is no first-order autocorrelation. Autocorrelation violates the assumption of independent observations and may necessitate adjustments to the model specification. A Durim Watson statistic between 1.5 and 2.0 indicates no presence of autocorrelation a number less than 1.5 or more than 2.0 indicates violation of the assumption.

3.5.5 Linearity Test

Linearity tests assess whether the relationship between the dependent variable and the independent variable(s) in a regression model is linear. The Ramsey's RESET test (Ramsey, 1969) is commonly employed to detect nonlinearities. It tests the null hypothesis that the model is correctly specified as linear. Nonlinearity can lead to biased coefficient estimates and inaccurate predictions. using deviation from linearity at a 95% confidence level, if the p value >0.05, the linearity assumption has not been violated, p value <0.05 indicates violation of the assumption for linearity.

3.6 Data Analysis and Presentation

According to Cooper and Schindler (2018), data analysis is the process of reviewing, cleaning, converting and displaying data with the main purpose of reporting useful information and suggesting conclusions and recommendations. A careful analysis of the completed questionnaires was done to ensure that the collected data was accurate and consistent with other information gathered in. Pre-processing of collected data was done through editing to detect errors and omissions and making of corrections where necessary. This entails generation of descriptive statistics after data collection, estimation of population parameters from the statistics, and making of inferences based on the statistical findings. Once is collected, and it was coded based on the Likert Scale. Data collected was analysed by the use of descriptive statistics which included percentages, means, standard deviations and frequencies. The information was displayed by use of bar charts, graphs and pie charts -form.

The study used a multiple linear regression to establish the relationship between tax Knowledge, tax audits, and digitization and excise duty compliance in small and medium bottling companies. This was performed using the multiple regression model equation as shown below:

Equation interaction between before (i)

$$Y = \beta_0 + \beta_1 TK_1 + \beta_2 TA_2 + \beta_3 DI_3 + \varepsilon$$

Equation (ii)

$$Y = \beta_0 + \beta_1 TK_1 + \beta_2 TA_2 + \beta_3 DI_3 + M + \varepsilon$$

Equation (iii)

$$Y = \beta_0 + \beta_1 TK_1 + \beta_2 TA_2 + \beta_3 DI_3 + M + M*IV_1 + \varepsilon$$

Equation (iv)

$$Y = \beta_0 + \beta_1 TK_1 + \beta_2 TA_2 + \beta_3 DI_3 + M + M*IV_1 + M*IV_2 + \varepsilon$$

Equation (v)

$$Y = \beta_0 + \beta_1 TK_1 + \beta_2 TA_2 + \beta_3 DI_3 + M + M*IV_1 + M*IV_2 + M*IV_3 + \varepsilon$$

Where:

Y = Excise duty compliance

α is a constant,

$\beta_1, \beta_2, \beta_3, \beta_4$ is the beta coefficients of the variables

TK_1 is Tax knowledge

TA_2 is Tax audits

DI_3 is Digitization

M is Compliance cost (Moderator variable)

$M*IV_1$ = Tax knowledge * Compliance cost (interaction term)

$M*IV_2$ = Tax Audit * Compliance cost (interaction term)

$M*IV_3$ = Digitization * Compliance cost (interaction term)

e is the error term, representing independent factors that may have been omitted in this study.

Coefficient of determination (R2) was used to show the percentage for which the excise tax knowledge, tax audits, and digitization explains the Excise duty compliance. ANOVA was used to test for the significance of the model. The data from the study findings was presented in the form of tables and graphs as this was easier in interpretation and understanding of the research findings.

3.8 Operationalization and Measurement of Variables

Table 3.1: Operationalization and Measurement of variables

Variable	Indicator	Source/ Author	Measurement	Data analysis
Tax knowledge	• Knowledge on excise tax legal framework • Knowledge on use of EGMS & Itax Platforms • Knowledge on taxpayers' rights	(Olsen, 2018)	5-point Likert scale	Multiple regression
Tax audits	• Desk audit • Field audit • Excise stamps audit	(Wenzel, 2016)	5-point Likert scale	Multiple regression
Digitization	• Real time stamps reporting • Tax revenue system calculation	(Chauke, 2016)	5-point Likert scale	Multiple regression

	• Unique serialized code excise stamps			
Compliance costs	• Cost of Book keeping • Cost incurred by paying excise tax before payment by customers • Cost of Tax agents	(Mwangi, 2019)	5-point Likert scale	Multiple regression
Excise tax compliance	• Excise tax registration • Timely Filling • Tax payments	(Chauke, 2016)	5-point Likert scale	Multiple regression

3.9 Ethical Issues

Before data collection, a research permit was obtained from NACOSTI; also obtained introductory letters from Moi University. The respondents participated in the study voluntarily and in line with this, the consent and permission from the respondents before undertaking to collect data was sought. Research assistants were vetted by the research to ensure they were competence in qualification and experience. The respondents were assured high level of confidentiality at all times by using codes on the data instruments thus names of respondents was not written and anonymity of the identity of the respondents safeguarded using numbers. Integrity and honesty ensured confidentiality of data provided by the participants and their anonymity. All major statements in the study is cited to avoid plagiarism.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION OF FINDINGS

4.0 Introduction

This section of the report outlines how the results obtained from the questionnaire respondents in conjunction to the specific and general objectives of the research. It includes the descriptive and inferential statistics of the respondents and views on tax knowledge, tax audits, digitization, compliance cost, and excise duty compliance.

4.2 Response rate

Questionnaires were used to seek views of the taxpayer on the determinants of excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya. 180 of respondents out of the 220, were able to fully participate in the study by completing the questionnaires and returning them. The response rate shown in figure 4.1 of 81.5% was deemed to be a highly favorable outcome. Mugenda and Mugenda (2003) support the idea that achieving a response rate of 70% or higher is excellent for an unbiased analysis. Based on these assertions, this implies that the response rate for this study was adequate. Figure 4.1 illustrate the level of response rate
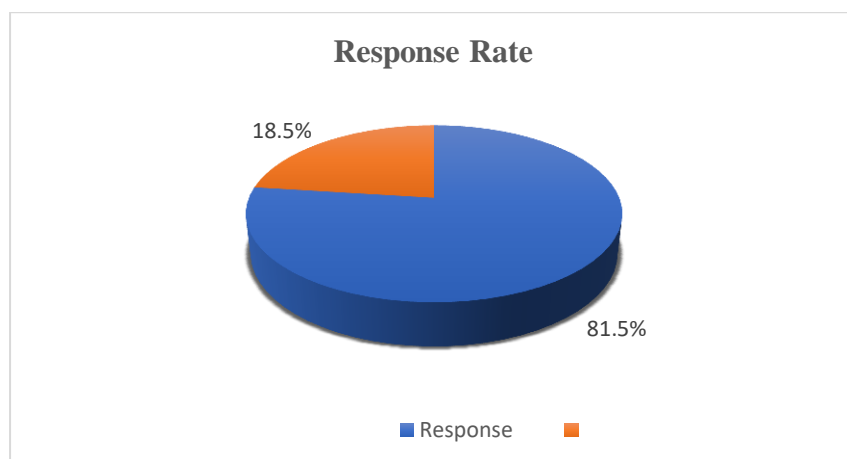
Figure 4.1 Response rate

Survey Data (2023)

4.3 Demographic information

The respondents stated what the business was registered as. and the outcomes from table 4.1 indicated that Limited Company 46.1%, Partnership 32.2% followed by Sole Proprietorship 21.7%

Table 4.1: Demographics on business is Registered as

	Frequency	Percentage%
Limited Company	83	46.1
Partnership	58	32.2
Sole Proprietorship	39	21.7
Total	180	100.0

Survey Data (2023)

The researcher sought to find out on the highest level of education of respondents. Table 4.2 showed that the Undergraduate level had 36.7%, Diploma/ professional 17.8%, Graduate 17.8%, certificate 16.1% and doctorate 11.7%.

Table 4.2: Demographics on level of education

	Frequency	Percentage %
Undergraduate	66	36.7
Diploma/Professional	32	17.8
Graduate	32	17.8
Certificate	29	16.1
Doctorate	21	11.7
Total	180	100.0

Survey Data (2023)

Lastly the researcher requested the respondents to give the duration of operation that the business had existed for the findings from table 4.3 indicated that Between 1 and 2 years 30.0 %, Between 3 and 4 years 27.2%, Below 1 year 22.2%, Above 5 years 20.6%

Table 4.3: Demographics on Duration of operation

	Frequency	Percentage %
Between 1 and 2 years	54	30.0
Between 3 and 4 years	49	27.2
Below 1 year	40	22.2
Above 5 years	37	20.6
Total	180	100.0

Survey Data (2023)

4.4 Descriptive statistics

The findings are derived from a Likert scale in the questionnaires. The respondents were supposed to indicate their level of agreement or otherwise with a given statement. The descriptive statistics was done based on each independent variable/objective.

4.4.1 Tax knowledge on Excise Duty Compliance

The study sought to find out effect of tax knowledge on excise duty compliance among Nairobi water bottling SME. the results from the summary descriptive statistics on table 4.4 showed that on the responses I know all excise tax laws mean of 3.2389, Excise tax laws are complicated mean response of 3.2333, I know how to effectively use EGMs mean =2.9111, I know how to use the itax platform to file returns mean = 3.0278, I am aware of all of my rights as mean =3.4444

Table 4.4 Descriptive on tax knowledge

Strongly Agree=5, Agree = 4, Uncertain=3, Disagree=2 and Strongly Disagree=1

	Mean	Std. Deviation	Skewness	Kurtosis
I know all excise tax laws	3.2389	1.41959	-.193	-1.269
Excise tax laws are complicated	3.2333	1.45356	-.237	-1.280
I know how to effectively use EGMs	2.9111	1.46577	.177	-1.375
I know how to use the itax platform to file returns	3.0278	1.40004	-.050	-1.295
I am aware of all of my rights as a taxpayer	3.4444	.99284	.121	-.728
N				**180**

Survey Data (2023)

4.4.2 Tax audits on Excise Duty Compliance

The study sought to gather information on the effect of tax audits on excise duty compliance among Nairobi water bottling SMEs. The descriptive statistics results from table 4.5 I have been audited in the past by KRA mean =3.2111, KRA has audited our stamps usage and declaration in the past mean= 3.2333, KRA is able to pick up excise inconsistency by comparing filled data mean=3.1056, We have been audited on our claimed expenses for our business in the past mean=2.9556, Our water product has been questioned by KRA filed officers mean =3.0333

Table 4.5 Descriptive on tax audits

Strongly Agree=5, Agree = 4, Uncertain=3, Disagree=2 and Strongly Disagree=1

	Mean	Std. Deviation	Skewness	Kurtosis
I have been audited in the past by KRA	3.2111	1.32862	-.178	-1.135
KRA has audited our stamps usage and declaration in the past	3.2333	1.40669	-.191	-1.263
KRA is able to pick up excise inconsistency by comparing filled data	3.1056	1.35571	-.098	-1.198
We have been audited on our claimed expenses for our business in the past	2.9556	1.40955	.007	-1.306
Our water product has been questioned by KRA filed officers	3.0333	1.35737	-.047	-1.161
N				**180**

Survey Data (2023)

4.4.3 Digitization on Excise Duty Compliance

The research also sought to establish the effect of digitization on excise duty compliance among Nairobi water bottling SMEs. The descriptive statistics summarized in table 4.6 indicated that; The unique serialized excise stamps make it easy to know fake stamps through soma label application. Mean=3.0222, I know how to calculate excise tax using EGMS mean=3.2611, I am able to amend errors made using EGMs mean=3.0722, EGMS allows one to activate stamps usage 7 days after usage mean=3.0056, I have made payments for taxes online mean = 3.1611

Table 4.6 Descriptive on digitization

Strongly Agree=5, Agree = 4, Uncertain=3, Disagree=2 and Strongly Disagree=1

	Mean	Std. Deviation	Skewness	Kurtosis
The unique serialized excise stamps make it easy to know fake stamps through soma label application.	3.0222	1.42584	-.039	-1.334
I know how to calculate excise tax using EGMS	3.2611	1.42744	-.190	-1.357
I am able to amend errors made using EGMs	3.0722	1.42613	-.117	-1.276
EGMS allows one to activate stamps usage 7 days after usage	3.0056	1.40429	-.047	-1.296
I have made payments for taxes online	3.1611	1.43057	-.195	-1.270
N				**180**

Survey Data (2023)

4.4.4 Compliance cost on Excise Duty Compliance

The study sought to find out the moderating effect of compliance costs on relationship between tax knowledge, tax audit, technology on excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya. table 4.7 indicated the descriptive statistics results as; Record keeping for 5 years is expensive to maintain mean =2.0278, Cost of hiring professionals tax agents is expensive to the firm mean= 2.0778, I have not incurred any extra cost to obtain tax compliance certificate mean=2.1667

Tax audits are expensive to the company mean= 2.1167, Cost of acquiring excise stamps

is not significant to the company mean= 1.9889.

Table 4.7 Descriptive on compliance cost

Strongly Agree=1, Agree = 2, Uncertain=3, Disagree=4 and Strongly Disagree=5

	Mean	Std. Deviation	Skewness	Kurtosis
Record keeping for 5 years is expensive to maintain	2.0278	1.04871	.561	-.857
Cost of hiring professionals tax agents is expensive to the firm	2.0778	1.05415	.567	-.917
I have not incurred any extra cost to obtain tax compliance certificate	2.1667	1.15066	.492	-.975
Tax audits are expensive to the company	2.1167	1.10497	.520	-1.093
Cost of acquiring excise stamps is not significant to the company	1.9889	1.07271	.681	-.867
N				**180**

Survey Data (2023)

4.4.5 Excise Duty Compliance

The study sought to find out the summary statistics for Excise duty compliance, table 4.8

indicated that responses were; I am registered for excise duty obligation   3.6556,   I

submit my business tax returns on the set period   mean=3.2056, I have been charged

late payment interest in the past   mean=3.3222, I pay my taxes by the due date

mean =3.3500, I have been charged with a late filling penalty in the past mean=3.1444.

Table 4.8 Descriptive on Excise duty compliance

Strongly Agree=5, Agree = 4, Uncertain=3, Disagree=2 and Strongly Disagree=1

	Mean	Std. Deviation	Skewness	Kurtosis
I am registered for excise duty obligation	3.6556	.97064	-.336	-.835
I submit my business tax returns on the set period	3.2056	1.31895	-.120	-1.188
I have been charged late payment interest in the past	3.3222	1.35637	-.345	-1.062
I pay my taxes by the due date	3.3500	1.37201	-.272	-1.201
I have been charged with a late filling penalty in the past	3.1444	1.38678	-.084	-1.264
N				**180**

Survey Data (2023)

4.6 Reliability test

This study employed the Cronbach's alpha in evaluating the reliability of the questionnaire. Table 4.9 presents Cronbach's alpha statistics which was used to test the reliability of the data collection instrument. The results emanating from the reliability tests indicated that all the responses were reliable as the Cronbach's alpha indicated a values higher than 0.7 indicating reliability, as shown in table 4.0 (Excise duty compliance α=0.753; Tax knowledge α=0.911; Tax audits α=0.745; digitization α=0.709; Compliance cost α=0.981). Reliability level of 0.7 and below is deemed to be weak (Cooper & Schindler, 2011). For the purpose of this study, Cronbach alpha coefficient of 0.7 was adopted to enhance reliability

Table 4.9 Reliability tests

Reliability Statistics		
Variable	**Cronbach's Alpha**	**N of Items**
Excise duty compliance	0.753	5
Tax Knowledge	0.911	5
Tax audits	0.745	5
Digitization	0.709	5
Compliance cost	0.981	5

4.6.1 Factor Analysis

According to Mayer, 2001) factor analysis is a method used to determine whether a group of variables of interest (Y1, Y2, ..., Yl) are connected in a linear fashion to a set of underlying, unobservable factors (F1, F2, ..., Fk). Since these factors are not directly observable, previously examined techniques such as regression are not applicable.

Factor analysis is to test the accuracy of the data to make the research credible and the extent to which a test measures what we want it to measure. One widely accepted classification of validity consists of content validity to test which is the degree to which the content of the items adequately represents the universe of all relevant items under Cooper and Schindler (2014).

The principal component extraction method was utilized in this study. This technique involves selecting factors one at a time, with each factor being chosen to best fit the data. The initial factor created represents the most highly correlated group of variables, while each subsequent factor explains progressively less variance than the previous one. This process continues until all factors have been selected. Overall, the selected factors explain the highest amount of residual variance within the standardized response scores.

In factor analysis, a factor loading table 4.10, 0.4 is considered weak, and those falling between 0.5 and 0.6 are considered moderate. However, values that are below 0.3 may not be particularly useful for the research, as they are likely to have limited practical significance(Mayer, 2006). The factor analysis captured on Table 4.10 indicates that the values were between 0.557 and 0.973 which indicate that the factor strongly influences the variable.

Table 4.10 Factor Analysis

	Tax Knowledge	Tax Audits	Digitization	Compliance cost	Excise duty Compliance
TK1	.885				
TK2	.594				
TK3	.749				
TK4	.709				
TK5	.929				
TA1		.557			
TA2		.681			
TA3		.597			
TA4		.679			
TA5		.883			
TEC1			.988		
TEC2			.749		
TEC3			.581		
TEC4			.625		
TEC5			.660		
CC1				.704	
CC2				.843	
CC3				.934	
CC4				.625	
CC5				.973	
EDC1					.837
EDC2					.650
EDC3					.616
EDC4					.570
EDC5					.573

Survey Data (2023)

4.7 Statistical assumptions

In order to ensure that assumptions of classical regressions were not violated, Various tests were performed, including those for normal distribution, homoscedasticity, serial correlation, and multicollinearity.

4.7.1 Test for Normality

Based on the results in table 4.10, all p-values were greater than 0.05, indicating that the data followed a normal distribution. Tax knowledge p=0.078>0.05, tax audits p=0.065>0.05, digitization p=0.079>0.05, and compliance cost p =0.063>0.05.

Table 4.11 Normality test

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
TaxKnowledge	.113	180	.154	.832	180	.078
TaxAudits	.189	180	.321	.900	180	.065
Digitization	.201	180	.134	.731	180	.079
Cost of Compliance	.101	180	.502	.945	180	.063

Survey Data (2023)

4.7.2 Multicollinearity tests

Table 4.12 shows VIFs Tax Knowledge 1.027 Tax audits was 1.007, Digitization, 1.112 and Compliance cost 1.003. The data did not have multicollinearity since all the VIF<10

Table 4.12: Multicollinearity Test

Collinearity Statistics		
Variable	Tolerance	VIF
Tax Knowledge	.817	1.027
Tax audits	.993	1.007
Digitization	.974	1.112
Compliance cost	.997	1.003

Survey Data (2023)

4.7.3 Homoscedasticity test

This phenomenon is known as heteroscedastic dispersion. Table 4.13 shows a p value of 0.544>0.05 therefore the assumption of homoscedasticity was not violated.

Table 4.13: Homoscedasticity test

Ho: Constant variance	
Variables: fitted values of excise duty compliance	
chi2(1)	=1.56
Prob > chi2	= 0.5446

Survey Data (2023)

4.7.4 Autocorrelation test

Table 4.14 shows a Durbin-Watson statistic of 1.614, indicating that there was no autocorrelation in the data.

Table 4.14: Autocorrelation test

Durbin- Watson statistic	1.614

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4.7.5 Linearity test

To ensure the existence of a linear correlation between the dependent and independent variables, tests for linearity were performed.

Based on Table 4.15, all independent variables satisfied the normality assumption, with p-values .235 > 0.05.

Table 4.15 Linearity Test

			Sum of Squares	df	Mean Square	F	Sig.
		(Combined)	11.389	14	.813	1.196	.283
Excise Duty	Between	Linearity	.148	1	.148	.218	.642
Compliance *	Groups	Deviation from					
Cost of		Linearity	11.241	13	.865	1.271	.235
Compliance	Within Groups		112.272	165	.680		
	Total		123.661	179			

Survey Data (2023)

4.7.6 Correlation Analysis

To examine the strength of the linear relationship between two variables, the Pearson product moment correlation coefficient was employed in this study. Table 4.16 showed that tax knowledge had a positive and significant correlation with excise duty compliance (r =.513 p=0.000), tax audits correlated to excise duty compliance positively and in significant nature (r=.669 p=0.000). The study found that digitization had a positive and statistically significant correlation with excise duty compliance (r=0.716,

p=0.000). Compliance cost was found to have a negative and statistically significant correlation with excise duty compliance (r=-.633 p=0.000).

Table 4.16: Correlation Analysis

		EDC	TK	TA	TEC	CC
Excise Duty Compliance	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	180				
Tax Knowledge	Pearson Correlation	.513**	1			
	Sig. (2-tailed)	.000				
	N	180				
Tax Audits	Pearson Correlation	.669**	.389**	1		
	Sig. (2-tailed)	.000	.000			
	N	180				
Digitization	Pearson Correlation	.716**	.466**	.456**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	180				
Cost of Compliance	Pearson Correlation	-.633**	-.201**	-.413**	-.332**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	180	180	180	180	

**. Correlation is significant at the 0.05 level (2-tailed).

Survey Data (2023)

4.8 Regression Analysis

The main objective of this study was establish the moderating role of compliance cost on the determinants of excise duty compliance by small and medium water bottling companies located in Nairobi, Kenya. To accomplish this objective, four specific objectives and their corresponding hypotheses were established. The study utilized various inferential statistical tools to achieve the set objectives, and multiple regression analysis was employed as one of the methods.
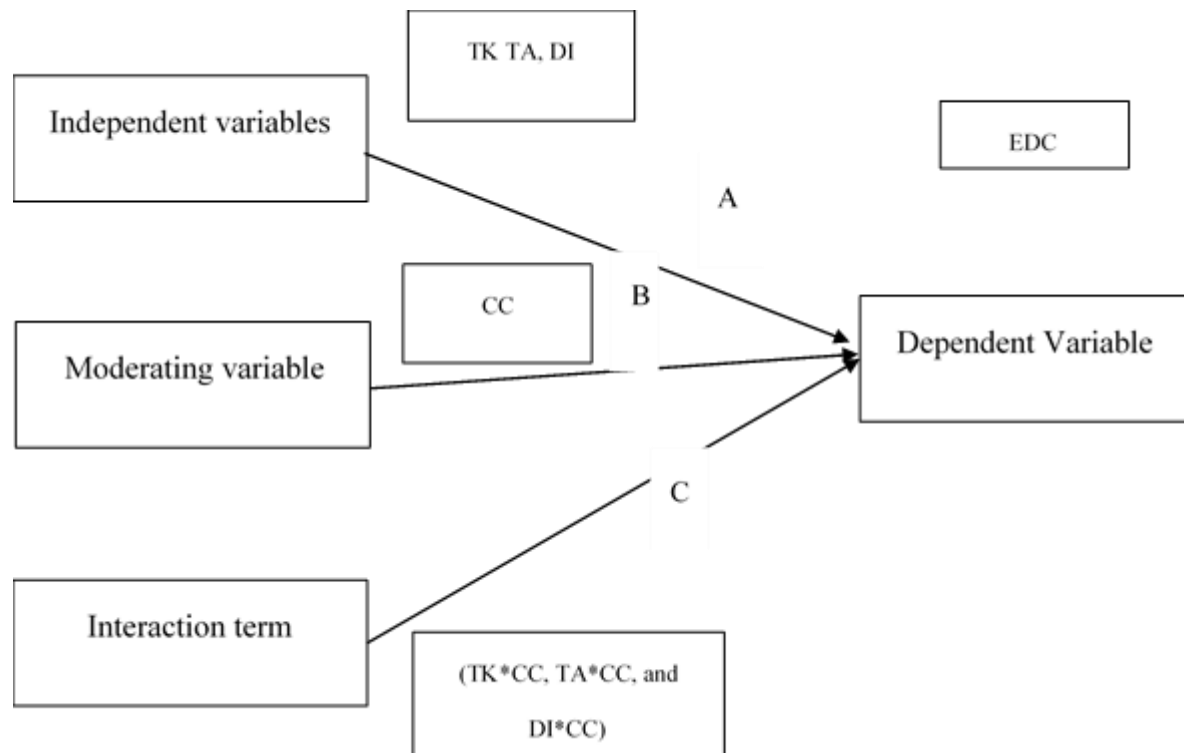
4.8.1 Moderating effect of compliance cost on the determinants of excise duty compliance

The fourth specific objective of the study was to find out the moderating effect of compliance costs on relationship between tax knowledge, tax audits, digitization on excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya.

The approach that was used involves interacting each of the independent variables with the moderator and then regression against the dependent variable. Baron and Kenny (1986) stated that moderation can only be justified if path C (the interaction of pathways A and B) is statistically significant (p<0.05). According to the hypothesis;

To test for moderation, effect a hierarchical regression analysis was conducted; Step one investigated the impact of tax knowledge, tax audits, and digitization on excise duty compliance. The second step examined the impact of compliance cost on excise duty compliance. Step three involved introduction of the interaction term into the equation and determining its significance while controlling for independent variables and excise duty compliance. The interaction term was computed as the product of standardized scores of tax knowledge, tax audits, digitization and compliance cost. The procedure to

determine the influence of the interaction term should be significant. The relationship was depicted in figure 4.2.

Figure 4.2: Test of moderation- Path Diagram for Direct and Indirect effects
Source: Jose (2013).

4.8.2 Overall moderating effect of compliance costs on relationship between tax knowledge, tax audit and digitization on excise duty compliance

The study sought to investigate the moderating effect of compliance cost on relationship between tax knowledge and on excise duty compliance by the small and medium water bottling water companies in Nairobi. To establish the moderating effect of compliance cost on relationship between tax audit and excise duty compliance by the small and medium water bottling water companies in Nairobi. Lastly to investigate the moderating effect of compliance cost on relationship between digitization and excise duty compliance by the small and medium water bottling water companies in Nairobi.

4.8.3 Model Summary moderating effect of compliance costs on relationship between tax knowledge, tax audit and digitization on excise duty compliance

Table 4.17 indicated that there was a statistically significant moderating effect of compliance cost on relationship between tax knowledge and on excise duty compliance by the small and medium water bottling water companies in Nairobi. The study found there was a R =0.678, there is a positive correlation between tax knowledge and excise duty compliance. The study further found a r square of 0.460, indicating that 46% of the variation caused on excise duty compliance was explained, and caused by tax knowledge. The remaining 54% of variation was caused by factors not captured in the model.

Table 4.17: Overall model summary for moderating effect of cost of compliance

R	R Square	Adjusted R Square	Std. Error of the Estimate
.678^c	.460	.447	.28452

4.8.4 Analysis of variance for moderating effect of compliance costs on relationship between tax knowledge, tax audit and digitization on excise duty compliance

The analysis of variance on Table 4.18, shows that the F $(7,172) = 19.862$ and p =0.000, The findings indicate that the model was statistically significant, in showing the moderating effect of compliance cost on relationship between tax knowledge and excise duty compliance by the small and medium water bottling water companies in Nairobi.

Table 4.18: Analysis of variance for moderating effect of cost of compliance

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	169.850	7	24.264	19.862	.000[d]
3	Residual	210.128	172	1.222		
	Total	379.978	179			

4.8.5 Test for moderating effect using model summary change

Table 4.19 indicates the model paths while testing for the moderating effect of compliance cost on relationship between tax knowledge and excise duty compliance by the small and medium water bottling water companies in Nairobi. The study found that there was a r square of 0.469 in the first regression model without moderation, The second regression model lI introduced compliance cost and the r square is shown to be 0.466, a r square change of 0.003, or 0.3%.

Model III shows that the interaction term introduction caused a change in variation of 0.006 or 0.6%, from 0.466 to 0.460., the r square change was statistically significant $p < 0.05$

Table 4.19: Moderating effect of Compliance cost model matrix

	Model I	Model II	Model III
Constant	.135***	.871***	.762***
Tax Knowledge	.326***	.201***	.360***
Tax audits	.239***	.236***	.189***
Digitization	.715***	.620***	.344***
Compliance cost		-.173***	-.153***
MIv1			.101***
MIv2			.019***
MIv3			.081***
R^2	.469	.466	.460
Adjusted R^2	.450	.448	.447

Survey Data (2023)

4.8.6 Overall moderating effect of compliance costs on relationship between tax knowledge, tax audit and digitization on excise duty compliance

The study sought to find out the moderating effect of compliance costs on relationship between tax knowledge, tax audit, digitization and excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya. was statistically significant.

A regression analysis was concocted and the overall regression analysis conclusively resulted in the regression equation below;

$Y = 0.762 + 0.360*TK_1 + 0.189*TA_2 + 0.344*DI_3 - 0.153*M + 0.101* M*IV_1 + 0.019 * M*IV_2 + 0.081* M*IV_3$

The findings from table 4.20 indicate that at a constant 0.762 that a unit change in tax knowledge increases excise duty compliance by 0.360. The study found that unit change in tax audits increases excise duty compliance by 0.189. A unit change in digitization causes 0.344 increase in excise duty compliance. A unit change in Cost of compliance causes a decrease of - 0.153. in excise duty compliance. The study shows that a unit change in interaction terms 1 causes 0.101 increase in excise duty compliance. A unit change in interaction terms Interaction term 2 causes 0.019 increase in excise duty compliance. Lastly a unit change in interaction terms Interaction term 3 causes 0.081 increase in excise duty compliance.

The moderating effect of compliance costs on relationship between tax knowledge, tax audit, technology and excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya. was statistically significant. $p < 0.05$.

Table 4.20: overall regression, moderating role of compliance cost on the determinants of excise duty compliance

Model		β standardized coefficients	Std. Error	t	Sig.
	(Constant)	0.762	.155	4.916	.000
	TaxKnowledge	0.360	.086	4.186	.000
	TaxAudits	0.189	.055	3.436	.000
	Digitization	0.344	.153	2.248	.035
3	Cost of compliance	-0.153	.040	-3.825	.000
	M*IV 1	0.101	.032	3.156	.000
	M*IV 2	0.019	.003	6.333	.000
	M*IV 3	0.081	.013	6.230	.000

4.9 Hypotheses

The use of regression analysis can help examine a hypothesis by pinpointing which independent variables are major contributors to the regression model's effectiveness in explaining the variability observed in the dependent variable. In the current research, the independent variables being studied were tax knowledge, tax audits, and digitization, in addition to a moderating variable, which was the compliance cost. These variables were chosen as the foundation for hypothesis testing.

4.9.1 Hypotheses testing

The first hypothesis tested was H_{01}: tax knowledge has no statistically significant effect on excise duty compliance among Nairobi water bottling SMEs.The findings showed that tax knowledge had a positive and statistically significant effect on excise duty compliance among Nairobi water bottling SMEs. $p=0.000<0.05$, $\beta_1 = 0.360$ the linear relationship between tax knowledge and excise duty was positive r= 0.513 therefore the null hypothesis is rejected.

The second hypothesis H_{02}: tax audits have no statistically significant effect on excise duty compliance among Nairobi water bottling SMEs. The study found that tax audits had a positive and statistically significant effect on excise duty compliance among Nairobi water bottling SMEs. $p =0.000<0.05$, $\beta_2= 0.189$. the linear relationship between tax audits and excise duty was positive r= 0.669 the null hypothesis was rejected.

The third hypothesis H_{03}: Digitization has no statistically significant effect on excise duty compliance among Nairobi water bottling SMEs. The study indicated a $p =0.035<0.05$, $\beta_3= 0.344$ linear relationship between digitization and excise duty was positive r= 0.716 indicating that there was a positive and statistically significant effect of digitization on excise duty compliance among Nairobi water bottling SMEs. The null hypothesis was rejected.

The fourth hypothesis H_{04}: There is no statistically significant moderating effect of compliance costs on relationship between tax knowledge, tax audit, and digitization and excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya. the study found that there was statistically significant moderating effect of compliance costs on relationship between tax knowledge, tax audit, and technology on excise duty compliance by the small and medium water bottling water companies in

Nairobi, the linear relationship between compliance cost and excise duty was negative r= -0.633 Kenya the null hypothesis was therefore rejected.

a) **H$_{04a}$** Compliance cost has no significant moderating effect on the relationship between tax knowledge and excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya. The p value =0.000<0.05 therefore the null hypothesis was rejected since there was statistically significant moderating effect on the relationship between tax knowledge and excise duty compliance by the small and medium water bottling water companies in Nairobi, There was a positive effect β$_5$= 0.101

b) **H$_{04b}$** Compliance cost has no significant moderating effect on the relationship between tax audit and excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya. There was a statistically significant moderating effect on the relationship between tax audit and excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya. p=0.000<0.05, the null hypothesis was rejected. There was a positive effect β$_6$= 0.019

c) **H$_{04c}$** Compliance cost has no significant moderating effect on the relationship between digitization and excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya. There was a statistically significant moderating effect on the relationship between digitization and excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya. p=0.000<0.05, the null hypothesis was rejected. There was a positive effect β$_7$= 0.081 A summary of the hypotheses testing was illustrated in table 4.21

Table 4.21: Summary of Hypothesis testing

Hypothesis	P-value	Remarks
H_{01} There tax knowledge has no statistically significant effect on excise duty compliance among Nairobi water bottling SMEs.	0.000	Reject H_{01}
H_{02} tax audits have no statistically significant effect on excise duty compliance among Nairobi water bottling SMEs..	0.000	Reject H_{02}
H_{03} digitization has no statistically significant effect on excise duty compliance among Nairobi water bottling SMEs.	0.035	Reject H_{03}
H_{04} : There is no statistically significant moderating effect of compliance costs on relationship between tax knowledge, tax audit, and technology and excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya. the study found that there was statistically significant moderating effect of compliance costs on relationship between tax knowledge, tax audit, and technology on excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya.	0.000	Reject H_{04}
H_{04a} Compliance cost has no significant moderating effect on the relationship between tax knowledge and excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya.	0.000	Reject H_{04a}
H_{04b} Compliance cost has no significant moderating effect on the relationship between tax audit and excise duty	0.000	Reject H_{04b}

compliance by the small and medium water bottling water

companies in Nairobi, Kenya.

H₀₄c Compliance cost has no significant moderating effect   0.000   Reject **H₀₄c**

on the relationship between digitization and excise duty

compliance by the small and medium water bottling water

companies in Nairobi, Kenya.

Survey Data (2023)

4.10 Discussion of Findings

4.10.1 Tax knowledge on excise duty compliance

The first objective was to find out effect of tax knowledge on excise duty compliance among Nairobi water bottling SME. The correlation analysis indicated that tax knowledge had a positive and significant relationship with excise duty compliance ($r = .513$ $p = 0.00 < 0.05$). The regression model indicated that taxpayer education caused a statistically significant increase in tax compliance ($\beta = 0.762$), ($p = 0.000 < 0.05$). The researcher revealed a significant positive correlation between tax knowledge and excise duty compliance, signifying that as tax knowledge increases, so does compliance. Furthermore, the regression analysis demonstrated that taxpayer education had a substantial and statistically significant effect on enhancing tax compliance. The research was in agreement with a study done by (Joy & Ng, 2021) supports the findings that tax knowledge has a positive impact on excise duty compliance among small and medium-sized enterprises (SMEs) in the Nairobi water bottling industry. The research, conducted in a different geographical context, similarly found a strong positive correlation between tax knowledge and excise duty compliance ($r = .480$, $p < 0.05$). Furthermore, their regression analysis revealed that taxpayer education significantly improved compliance ($\beta = 0.685$, $p < 0.05$). This alignment of findings underscores the importance of tax

education in enhancing SMEs' compliance with excise duty regulations. Anderson and Davis (2019) challenge the notion that tax knowledge has a significant impact on excise duty compliance in the Nairobi water bottling SME sector. Their research, conducted in a similar context, found a weak correlation between tax knowledge and compliance (r = .185, p > 0.05). Regression analysis also indicated that taxpayer education had a minimal and statistically insignificant effect on compliance (β = 0.112, p > 0.05). This contradictory evidence suggests that other factors may play a more dominant role in influencing excise duty compliance within this specific industry.

4.10.2 Tax audits on excised duty compliance.

To determine the effect of tax audits on excise duty compliance among Nairobi water bottling SMEs, was the second specific objective. The correlation analysis carried out showed that tax audits had a positive and statistically significant connection with excise duty compliance r = 0.669 p = 0.000<0.05. The regression model further showed that a unit change in tax audits caused a significant improvement in tax compliance, (β=0.360), (p=0.000<0.05). Tax audits have been found to have a positive effect on excise duty tax compliance. These findings suggest that tax audits play a crucial role in enhancing excise duty tax compliance within this specific sector. A study by Bae, Cho, and Kang (2019) revealed that increased tax audits significantly increase excise duty tax compliance among Korean manufacturers. Similarly, a study by Cuccia and Maida (2017) found that tax audits had a positive effect on excise duty tax compliance in Italy. These findings suggest that tax audits can serve as an effective enforcement tool to promote excise duty tax compliance. A study by Alm and McKee (2008) found that tax audits had a negative effect on cigarette tax compliance in the US. Similarly, a study by Bird and Torgler (2006) found that tax audits had a negative effect on excise tax compliance in Canada.

4.10.3 Digitization on excise duty compliance

To determine the effect of digitization on excise duty compliance among Nairobi water bottling SMEs, was the third specific objective. The correlation analysis carried out showed that tax audits had a positive and statistically significant connection with excise duty compliance r = 0.716 p = 0.000<0.05. The regression model further showed that a unit change in digitization caused a significant improvement in excise duty compliance, (β=0.344), (p=0.035<0.05). Digitization has been found to have a positive effect on excise duty compliance. Firstly, the positive and statistically significant correlation between tax audits and excise duty compliance underscores the importance of tax enforcement mechanisms. Moreover, the regression analysis revealing that digitization significantly improves excise duty compliance suggests that embracing technology and digital tools can be a valuable strategy for SMEs. The study concurred with study by Adegbie and Fakile (2020) found that the digitization significantly increases excise duty compliance among Nigerian manufacturers (β= 0.48, p<0.05). This suggests that the adoption of technology can be an effective strategy for promoting excise duty compliance.

4.10.4 Compliance cost on relationship between tax knowledge tax audits, digitization and excise duty compliance

The fourth specific objective was to find out the moderating effect of compliance costs on relationship between tax knowledge, tax audit, digitization on excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya. The correlation analysis carried out showed that tax audits had a negative and statistically significant connection with excise duty compliance r = -0.633 p = 0.000<0.05. The regression model further showed that a unit change in compliance cost caused a significant decrease in excise duty compliance, (β=-0.153), (p=0.000<0.05). Compliance

cost has been found to have a positive effect on excise duty compliance, and to have a statistically significant moderating effect on relationship between tax knowledge, tax audit, digitization on excise duty compliance by the small and medium water bottling water companies in Nairobi,

The findings showed that (β=0.101), (p=0.000<0.05). in the regression model. This indicated that there was a positive and statistically significant moderating effect of compliance cost on tax knowledge and on excise duty compliance by the small and medium water bottling water companies in Nairobi.

Further the findings showed regression results on moderating effect of compliance cost on tax audit and on excise duty compliance by the small and medium water bottling water companies in Nairobi. (β=0.019), (p=0.000<0.05), and lastly the regression model showed results on the moderating effect of compliance cost on digitization and on excise duty compliance by the small and medium water bottling water companies in Nairobi. . (β=0.081), (p=0.000<0.05),

Kenya. The study agreed with (Harrison, 2022) whose study found that a compliance cost negatively affected VAT compliance (β=-3.394), (p=0.000<0.05).

Study by (Barclays Bank, 2014) indicated that compliance cost caused a significant moderating effect on how tax knowledge affects excised duty compliance.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This section of the report provides a concise overview of the study's findings, draws conclusions, and proposes recommendations based on the research objectives. Additionally, the chapter suggests potential avenues for further research.

5.1 Summary of Findings

The general objective of the study was to establish the determinants of excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya. The study sought to find out effect of tax knowledge on excise duty compliance among Nairobi water bottling SME. To determine the effect of tax audits on excise duty compliance among Nairobi water bottling SMEs. To establish the effect of digitization on excise duty compliance among Nairobi water bottling SMEs.

And lastly to find out the moderating effect of compliance costs on relationship between tax knowledge, tax audit, digitization on excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya, which also was to investigate the moderating effect of compliance cost on relationship between tax knowledge and excise duty compliance by the small and medium water bottling water companies in Nairobi. To establish the moderating effect of compliance cost on relationship between tax audit and excise duty compliance by the small and medium water bottling water companies in Nairobi. To investigate the moderating effect of compliance cost on relationship between digitization and excise duty compliance by the small and medium water bottling water companies in Nairobi. Questionnaires were used to collect data and the data was analysed using descriptive and inferential statistics. A

multiple linear regression model was used to determine the connection between the independent variables and the dependent variables.

5.1.1 Tax knowledge on excise duty compliance

The first objective was to effect of tax knowledge on excise duty compliance among Nairobi water bottling SME. Correlation analysis showed that the relationship between tax knowledge and excise duty compliance was positive and statistically significant r=0.513. The regression model further showed that with all factors constant a unit change in the tax knowledge metrics would cause a positive and significant effect on excise duty compliance. (β_1=0.360), (p=0.000<0.05). Tax knowledge was found to be a factor in explaining excise duty compliance among among Nairobi water bottling SME.

5.1.2 Tax Audits on excise duty compliance

The second specific objective was to determine the effect of tax audits on excise duty compliance among Nairobi water bottling SMEs. After conducting a correlation analysis, it was discovered that there is a positive and statistically significant correlation between tax audits and excise duty compliance r=0.669. Additionally, the regression model indicated that an increase in the tax audits metrics would result in a positive and significant effect on excise duty compliance (β_2=0.189), (p=0.000<0.05). while keeping all other factors constant. Therefore, tax audits were identified as a crucial factor in explaining excise duty compliance in the Nairobi water bottling SMEs.

5.1.3 Digitization on excise duty compliance

The third specific objective was to establish the effect of digitization on excise duty compliance among Nairobi water bottling SMEs.

After performing a correlation analysis, it was found that there is a positive and statistically significant relationship between digitization and excise duty compliance r=0.716. Furthermore, the regression model revealed that an increase in the digitization

would have a positive and significant impact on excise duty compliance, (β_3=0.344), (p=0.035<0.05), assuming all other factors remained constant. As a result, digitization was determined to be a critical factor in explaining excise duty compliance among businesses in Nairobi.

5.1.4 Compliance cost

The last specific objective was to find out the moderating effect of compliance costs on relationship between tax knowledge, tax audit, digitization on excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya. Within this objective the study sought investigate the moderating effect of compliance cost on relationship between tax knowledge and excise duty compliance by the small and medium water bottling water companies in Nairobi. The study found that the linear relationship between cost of compliance and excised duty compliance was negative and statistically significant r=-0.633.To establish the moderating effect of compliance cost on relationship between tax audit and excise duty compliance by the small and medium water bottling water companies in Nairobi. And finally, to investigate the moderating effect of compliance cost on relationship between digitization and excise duty compliance by the small and medium water bottling water companies in Nairobi. The correlation analysis concluded a that there was a negative and significant relationship between compliance cost and excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya. The regression model showed that there was a statistically significant moderating effect of compliance costs on relationship between tax knowledge, tax audit, digitization on excise duty compliance by the small and medium water bottling water companies in Nairobi, Kenya. Also it indicated there was a statistically significant moderating effect of compliance cost on relationship between tax knowledge and excise duty compliance by the small and medium water

bottling water companies in Nairobi, (β_5=0.101), (p=0.000<0.05). A significant moderating effect of compliance cost on relationship between tax audits and excise duty compliance by the small and medium water bottling water companies in Nairobi (β_6=0.019), (p=0.000<0.05). And also a statistically significant moderating effect of compliance cost on relationship between digitization and excise duty compliance by the small and medium water bottling water companies in Nairobi, (β_7=0.081), (p=0.000<0.05).

5.2 Conclusions

Tax Audits and Excise Duty Compliance:

Tax audits were found to be positively correlated with excise duty compliance. This highlights the significance of robust tax audit procedures in promoting compliance among water bottling SMEs.

Digitization and Excise Duty Compliance:

The study demonstrated a positive relationship between digitization and excise duty compliance. This suggests that adopting digital technologies can improve compliance. Business owners should invest in digital tools to streamline their operations, making it easier to adhere to tax obligations.

Compliance Costs and Excise Duty Compliance:

The study revealed that compliance costs have a positive effect on excise duty compliance among water bottling companies in Nairobi. Higher compliance costs were associated with improved compliance behaviour. This suggests that the financial burden associated with compliance acts as a motivating factor for companies to meet their excise duty obligations. It is crucial for policymakers to carefully consider the balance between compliance costs and their impact on compliance behaviour.

Moderating Effect of Compliance Costs:

The study found that compliance costs have a statistically significant moderating effect on the relationship between tax knowledge, tax audits, digitization, and excise duty compliance. Compliance costs were shown to amplify the positive effects of tax knowledge, tax audits, and digitization on compliance behaviour. This highlights the importance of considering compliance costs as a contextual factor when designing policies and interventions aimed at improving excise duty compliance.

5.3 Recommendations

Based on the findings of the study the following recommendations were given:

5.3.1 Implications to policy makers

Improve tax knowledge and education: There is a positive correlation between tax knowledge and excise duty compliance, so the legislature alongside the treasury ministry should invest in programs that enhance taxpayers' understanding of tax regulations and obligations.

Enhance tax audit processes: Tax audits were found to be a crucial factor in explaining excise duty compliance. Thus, the Kenya Revenue Authority should aim to improve tax audit processes to ensure they are transparent, efficient, and effective.

The parliament of Kenya alongside the KRA should Simplify tax regulations and procedures: Complex tax regulations and procedures can discourage compliance. Policymakers should simplify the tax system to reduce the compliance burden and promote voluntary compliance.

5.3.2 Implications to theory and academics

Academics can help promote tax compliance by incorporating tax education into the curriculum of business and accounting courses. This education can help improve tax literacy and promote voluntary compliance. Academics institutions offering tax related

courses like KESRA and other universities should develop a comprehensive compliance model that takes into account the various factors that affect excise duty tax compliance in Kenya.

5.4 Limitations of the study

During the data gathering process, the researcher faced difficulties as the participants were hesitant to participate in the study due to its association with taxes. However, the researcher was able to alleviate their concerns by ensuring them that their data would only be used for academic purposes and confidentiality would be maintained. To further verify confidentiality, an introduction letter from Moi University was included with the questionnaires. Despite these efforts, the study was limited by the unavailability of participants during working hours, which impacted the response rate. To address this limitation, the researcher had to increase the response rate by making numerous phone calls.

5.5 Suggestions for further research.

Conducting a longitudinal study would enable researchers to monitor changes in excise duty compliance behaviour over time. This would help identify trends and patterns in tax compliance behaviour and provide insights into the effectiveness of policies aimed at promoting compliance. Future research could compare other factors affecting excise duty compliance across different industries and sectors in Kenya since only 0.447% accounted for the variance caused on excise duty compliance in Kenya. This would provide a more comprehensive understanding of tax compliance behaviour in Kenya. Adding a positively correlated moderator to the study would give a different perspective on the determinants of excise duty compliance.

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APPENDICES

Appendix I: Questionnaire

Kindly tick appropriately

Section A: Demographic Information

1. The business is Registered as a:

   Sole Proprietorship   ( )

   Partnership   ( )

   Limited Company   ( )

 Kindly indicate Your highest level of education

   Certificate   ( )
   Diploma/Professional ( )
   Undergraduate   ( )
   Graduate   ( )
   Doctorate   ( )

2. How long has the company been in operation?

Below 1 year   ( )
   Between 1 and 2 years   ( )
   Between 3 and 4 Years   ( )
   Above 5 Years   ( )

Section B: Effect of tax knowledge on excise duty compliance

This part is concerned with determining the knowledge on excise legal framework among the Water Bottling SMEs on excise tax compliance level. Please mark (×) in the box which best depicts your level of concurrence or non-concurrence with the statement.

Strongly Agree=5, Agree = 4, Uncertain=3, Disagree=2 and Strongly Disagree=1

	1	2	3	4	5
I know all excise tax laws					
Excise tax laws are complicated					
I know how to effectively use EGMs					
I know how to use the itax platform to file returns					
I am aware of all of my rights as a taxpayer					

Section C: Effects of tax audits on excise duty compliance

This part is concerned with determining the effect of tax audits among the Water Bottling SMEs on excise tax compliance level. Please mark (×) in the box which best depicts your level of concurrence or non-concurrence with the statement. Strongly Agree=5, Agree = 4, Uncertain=3, Disagree=2 and Strongly Disagree=1

	1	2	3	4	5
I have been audited in the past by KRA					
KRA has audited our stamps usage and declaration in the past					
KRA is able to pick up excise inconsistency by comparing filled data					
We have been audited on our claimed expenses for our business in the past					
Our water product has been questioned by KRA filed officers					

Section D: Effects of digitalization on excise duty compliance

This part is concerned with determining the effect of digitization among the Water Bottling SMEs on excise tax compliance level. Please mark (×) in the box which best depicts your level of concurrence or non-concurrence with the statement. Strongly Agree=5, Agree = 4, Uncertain=3, Disagree=2 and Strongly Disagree=1

	1	2	3	4	5
The unique serialized excise stamps make it easy to know fake stamps through soma label application.					
I know how to calculate excise tax using EGMS					
I am able to amend errors made using EGMs					
EGMS allows one to activate stamps usage 7 days after usage					
I have made payments for taxes online					

Section E: Excise duty compliance

This part is concerned with determining excise tax compliance level. Please mark (×) in the box which best depicts your level of concurrence or non-concurrence with the statement. Strongly Agree=1, Agree = 2, Uncertain=3, Disagree=4 and Strongly Disagree=5

	1	2	3	4	5
I am registered for excise duty obligation					
I submit my business tax returns on the set period					
I have been charged late payment interest in the past					
I pay my taxes by the due date					
I have been charged with a late filling penalty in the past					

Section F: Moderating Variable

Compliance costs

This part is concerned with determining the moderating effects of compliance costs on excise tax compliance level. Please mark (×) in the box which best depicts your level of concurrence or non-concurrence with the statement. Strongly Agree=1, Agree = 2, Uncertain=3, Disagree=4 and Strongly Disagree=5

	1	2	3	4	5
Record keeping for 5 years is expensive to maintain					
Cost of hiring professionals tax agents is expensive to the firm					
I have not incurred any extra cost to obtain tax compliance certificate					
Tax audits are expensive to the company					
Cost of acquiring excise stamps is not significant to the company					

Thank you for your participation

Appendix II: Campus Research Letter

KENYA REVENUE AUTHORITY
ISO 9001:2015 CERTIFIED

PUBLIC

KENYA SCHOOL OF REVENUE ADMINISTRATION

REF: KESRA/NBI/036

22nd March 2023

TO: WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: REQUEST FOR ASSISTANCE TO MOSES KURIA OF REGISTRATION NO.: KESRA105/0049/2021 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: *"Determinants of excise duty tax compliance in SMEs in Nairobi.."*

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

2 MAR 2023

Damacrine Masira
Manager Academic Research,
KESRA

Appendix III: Data Request Form

Date: .... 28/03/2023 ....

.... M   KURIA   MUHIA ....

.... STUDENT   REG NO   KESRA 105/0049/2021

.... Moses Kuria 96@gmail.com ....

.... 0723771507 ....

Department/Unit: .... KESRA ....

Fill-in the Details Below		
	Licensed Lotting Companies nobi (if possible ng manual	
	Excise duty Targets a Collection from water bottling Companies	

Date will be used for academic research.

Signature: .... HKus ....

Approval by Head   Department:

Signature: .... (signatures) ....

(stamp: KENYA SCHOOL OF REVENUE ADMINISTRATION — ACADEMIC DIVISION — D UDIES — MAR 2023)

KENYA VISION 2030

Appendix IV: NACOSTI Research Licence

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Ref No: 331841

Date of Issue: 31/May/2023

RESEARCH LICENSE

This is to Certify that Mr.. Moses Karie Muhia of Kenya School of Revenue Administration, 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: DETERMINANTS OF EXCISE DUTY COMPLIANCE ON SMALL AND MEDIUM WATER BOTTLING COMPANIES IN NAIROBI, KENYA. for the period ending: 30/May/2024.

License No: NACOSTI/P/23/26264

331841

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.
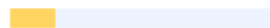
See overleaf for conditions

Appendix V: Plagiarism report

Plagiarism Checker X - Report

Originality Assessment

18%

Overall Similarity

Date: Jun 22, 2023
Matches: 4692 / 26668 words
Sources: 124

Remarks: Low similarity detected, check with your supervisor if changes are required.

Verify Report:
iew e ifi a e nline

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FILE - MOSES KURIA PROJECT 22NDJUN23 (1).DOCX

Appendix VI: List of Water Bottling SMEs

1. Aquadrop - Gambino Bottling Ltd
2. Urban waters   - Country Foods
3. Aberdare Aqua cool   - Rojo Vida Enterprises
4. Blumist - Harshke Enterprises LTD
5. Iconic - Iconic Drillers and construction limited
6. Brima - Linent Co. Ltd
7. vsent   - Valley Springs Enterprises
8. Maji Yetu - Scute Enterprises
9. Krystal Purified - Crystal Bottlers
10. Sparkle Water Sparkle & Clear LTD
11. Nenkai water -Style Sense
12. Oleshua - Oleshua Properties
13. Tosheka Water - Simba Tano Enterprises Limited
14. Mountain Valley - Classic Spring Mineral Water Ltd
15. Chemi Misty - Savana Enterprises Ltd
16. Qiu - Viwia Geysers Limited
17. Thames Water - Samlu City
18. Nameelok water - Nameelok Water Co Ltd
19. Meadows - Meadows Valley ltd
20. Precise Water - Singele Ent Ltd
21. Amechi - Enovative water Supply
22. Majifina - THREEG Investment
23. Gravity - Gravity Supermarket
24. Frosty drinking water - Kelu Investments
25. Krystal Hydrate - Lenalia Ltd
26. Bethel - Bethel Water Services ltd
27. Limani - Maramos royal enterprises ltd
28. Lizian Enterprises Ltd
29. Cool breeze - Cool Breeze Agencies Ltd
30. Inspire - Inspire water suppliers
31. Majesty - Range processors ltd
32. Elwan Wells - Elwan Wells
33. Aquadue Springs - Aqua Due Springs Enterprises

34. Neo Water - Teampromise Agencies Ltd

35. Still drops - Temina Home Basics

36. Zoros Cool - The Zoros Company Ltd

37. Uzima - Waterworks Technologies ltd

38. Kijani - Kijani Water Solution ltd

39. Langine Still - Melangine Dairies limited

40. Care Water - Abadin Limited

41. Blue Springs - Blue Springs

42. Barafu - Barafu Enterprises

43. Aviano - Aviano East Africa

44. Masafa Quench - EJ Wellington Ltd

45. New dawn - New Dawn Distributors

46. The Point Aqua Spring - IPES Limited

47. Airdrop purified water - Airdrop Water Company

48. Palm Water - Palm Water Ltd

49. Aqua Pack   - Aqua Pack Coolers

50. County Pure life - County Bottlers Limited

51. Royal - Royal quench enterprise

52. Jibu - Jibu Co Kenya Ltd

53. Baruk Springs - Baruk Springs

54. Crytal Maple water - Wamwika Enterprises

55. Aquabas - Brijos Agroline Solutions ltd

56. Nature Harvest - Nature harvest water

57. Aquabest - My Water Business Ltd

58. Pisoko - Sugul Foods

59. Williams Lange - Harpman Technology Africa

60. Aquifer - Johali Limited

61. Kerimist - Mau Foods

62. Aquasafe - Saab Enterprises Limited

63. Evian Coolers - Ediface Enterprises Ltd

64. Kereita - Kereitta Enterprises Ltd

65. Pure Vesi - Aquaiot Africa Limited

66. Leo Springs - Leo Spring Beverages

67. country water - Country water Ltd

68. Aquaryna - Aquaryna Water Bottlers

69. Glacier - Hydrolab Limited

70. Samaria - Samaria Products Ltd

71. Lifeplus - Ozone Beverages Ltd

72. Simply Aqua - Milstev Investment Limited

73. Msafa - South Seas Food Kenya Ltd

74. Kitmiky Springs - alsbury Enterprises

75. Aquapure Mineral Water

76. Delsa Ltd

77. Morning Dew Mineral Water

78. Nero company ltd

79. Aberdares water

80. Liztan enterprise ltd

81. Rocksprings sweet waters services ltd

82. Zima qiu ltd

83. Aquaridge

84. Natures Cool

85. Baraniki springwater

86. Nelion Mist

87. Aberdare sweet waters

88. County purelife

89. Mbaruk springs

90. Sanfresh

91. Galana

92. Woodlands moist

93. Coolbreeze

94. Pinar

95. Blueridge mineral water

96. Autumn mist

97. Nordic dew mineral water

98. Shipae water

99. Sure pure drinking water

100.   Skymart bottled water

101.   Mwanainchi water

102.   Tydes springs

103.   Sunny aquatics

104.	Divine Aqua
105.	Clouds sparkle
106.	Pure Delight
107.	Summet Springs Ltd
108.	Remys Purified Water
109.	Blue Briss Mineral Water
110.	Serene artesian wells

Source: kenya revenue authority (2023)