

**EFFECT OF REVENUE ENFORCEMENT STRATEGIES ON EXCISE TAX
COMPLIANCE AMONG WATER MANUFACTURING COMPANIES IN
NAKURU, KENYA**

**BY
MERCYLINE NANGA ABUNG'ANA**

**A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS AND
ECONOMICS, DEPARTMENT OF ACCOUNTING AND FINANCE IN
PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF
THE DEGREE OF MASTER OF TAX AND CUSTOMS ADMINISTRATION
MOI UNIVERSITY**

JUNE 2024

DECLARATION

Student Declaration

This research project is my original work and has not been presented for any award in any other academic or non-academic institution.

Name : MERCYLINE NANGA ABUNG'ANA


Signature :

Date : 13/12/2024.....

Supervisor's Approval

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

Supervisor's Name : DR. DORIS GITONGA


Signature :

Date : 13/12/2024.....

KENYA SCHOOL OF REVENUE ADMINISTRATION

This research project has been submitted for examination with my approval as the college principal.

College Principal's : DR. PATRICK LIMO

Signature * :

Date :

MOI UNIVERSITY

DEDICATION

I dedicate this project to my family for their endless support that they gave me and encouragement throughout the writing of this project.

ACKNOWLEDGEMENT

Firstly, I want to express my profound gratitude to God for bestowing upon me the grace necessary to undertake this research project. Additionally, my heartfelt thanks go to my supervisors; Dr. Doris Gitonga and Dr. Patrick Limo for their guidance, constructive feedback, and invaluable contributions, all of which were instrumental in bringing this research proposal to fruition. Lastly, my sincere appreciation extends to my friends and family for their encouragement and moral support during this journey. May God bless each and every one of you.

ABSTRACT

Domestic excise tax performance has fluctuated over the years, with varying growth rates and inconsistencies in reported figures. In FY 2020/21, there was a 12.0% growth following a 6.4% decline the previous year, largely attributed to the reopening of the economy and increased sales in bars and restaurants. However, by FY 2022/23, growth slowed to just 2.8%. The performance discrepancies underscore the need for more consistent reporting and clear attributions in tracking domestic excise revenue. One of the key challenges in Kenya is the persistent issue of tax compliance among water manufacturing companies, marked by underreporting and fraudulent reporting, which significantly affects excise tax collection and exacerbates revenue gaps. This study explored effects of revenue collection strategies on excise tax compliance in Nakuru, Kenya's water manufacturing sector. It focused on the effects of excise stamps, audits and digital tracking systems on excise tax compliance. Using an explanatory design, the research was based on deterrence theory, agent theory, and the Technology Acceptance Model (TAM). A sample of 194 participants was selected using Yumane's (1967) technique. Data was analyzed via multiple linear regressions, with findings presented in charts, tables, and graphs. The study's findings revealed that Excise stamps had a beta value of 0.391, indicating a positive and substantial effect on excise tax compliance; audit and inspection strategies had a strong influence, with a beta value of 0.447 and Digital tracking and tracing systems with a beta value of 0.300 also contributing positively. Overall, the model accounted for 50.7% ($R^2 = 0.507$) of the variation in excise tax compliance, suggesting that these factors play a significant role, although other variables not included in the model account for the remaining 49.3%. The study recommends improving excise tax compliance and reducing evasion, the government should enhance excise stamp design and security features while launching a public education campaign to emphasize their societal benefits. Audit and inspection strategies should be strengthened through more frequent audits, a risk-based approach, and the use of digital tools like AI to optimize resource allocation and enhance transparency. Additionally, expanding the use of digital tracking systems, investing in infrastructure, incentivizing businesses to adopt these technologies, and providing training and public awareness campaigns will ensure accurate reporting and compliance across sectors.

TABLE OF CONTENTS

DECLARATION.....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENT.....	iv
ABSTRACT.....	v
LIST OF TABLES	x
LIST OF FIGURES	xi
ABBREVIATIONS AND ACRONYMS.....	xii
OPERATIONAL DEFINITIONS OF TERMS	xiii
CHAPTER ONE	1
INTRODUCTION.....	1
1.0 Overview.....	1
1.1 Background of the Study.....	1
1.1.1 Global Perspective on Revenue Enforcement Strategies	3
1.1.2 Regional Perspective on Revenue Enforcement Strategies.....	5
1.1.3 Kenyan Perspective on Revenue Enforcement Strategies.....	6
1.2 Statement of the Problem.....	8
1.3 Research Objectives.....	10
1.3.1 General Objective	10
1.3.2 Specific Objectives	10
1.4 Research Hypothesis.....	10
1.5 Justification of the Study	11
1.6 Scope of the Study	12
CHAPTER TWO	13
LITERATURE REVIEW	13
2.1 Introduction.....	13
2.2 Concepts of Study	13

2.2.1 Concept of Excise Tax Compliance.....	13
2.2.2 Concept of Revenue Enforcement Strategies.....	14
2.3 Theoretical Framework.....	18
2.3.1 Deterrence Theory	18
2.3.2 Agency Theory.....	21
2.3.3 Technology Acceptance Model (TAM).....	23
2.3.4 Theory of Planned Behavior (TPB)	25
2.4 Empirical Review.....	27
2.4.1 Excise Stamps on Excise Tax Compliance	27
2.4.2 Audit and Inspection Strategies on Excise Tax Compliance	31
2.4.3 Digital Tracking and Tracing Systems on Tax Compliance	35
2.5 Critique of Existing Literature	38
2.6 Summary of the Literature Review	39
2.7 Research Gaps.....	39
2.8 Conceptual Framework.....	41
 CHAPTER THREE	 43
 RESEARCH METHODOLOGY	 43
3.1 Introduction.....	43
3.2 Research Design.....	43
3.3 Target Population.....	44
3.4: Sampling Frame.....	45
3.5 Sample and Sampling Technique.....	45
3.6 Research Data Collection Instrument	48
3.7 Data Collection Procedure	48
3.8 Pilot Testing.....	49
3.8.1 Validity of the Research Instrument	49
3.8.2 Reliability of the Research Instrument.....	50
3.9 Data Analysis and Presentation.....	50
3.10 Diagnostic Tests.....	51
3.10.1 Normality Test	51

3.10.2 Multicollinearity Test.....	51
3.10.3 Heteroscedasticity Test	52
3.10.4 Linearity Test.....	52
3.11 Measurements of Variables.....	52
3.11.1 Excise Tax Compliance	52
3.11.2 Excise Stamps Enforcement	53
3.11.3 Audit and Enforcement Strategies	54
3.11.4 Digital Tracking and Tracing Systems.....	54
3.12 Operationalization and Measurement of the Study Variables.....	56
3.13 Ethical Consideration.....	57
CHAPTER FOUR.....	58
DATA ANALYSIS, FINDINGS AND INTERPRETATION	58
4.0 Introduction.....	58
4.2 Demographic Statistics	59
4.2.1 Age Distribution.....	59
4.2.2 Gender Distribution	62
4.2.3 Department Distribution	65
4.2.4 Highest Level of Education	68
4.2.5 Years of Experience.....	72
4.3 Descriptive Analysis	75
4.3.1 Excise Stamps and its Relationship with Excise Tax Compliance	75
4.3.2 Audit and Inspection Strategies and its Relationship with Excise Tax Compliance	77
4.3.3 Digital tracking and its relationship with excise tax compliance.....	78
4.3.4 Excise Tax Compliance	80
4.4 Test for Assumptions	81
4.4.1 Normality Test	81
4.4.2 Multicollinearity Test.....	82
4.4.3 Linearity Test.....	84
4.4.4 Homoscedasticity Test	84
4.5 Correlation Analysis	85

4.6 Multiple Regression Analysis	88
4.6.1 Model Summary.....	88
4.6.1 Analysis of Variance (ANOVA).....	89
4.6.2 Multiregression (The Overall Effect of Excise Stamps, Audit and Inspection Strategies and Digital Tracking and Tracing Systems on Excise Tax Compliance)	90
4.7 Test of Hypothesis	92
4.8 Discussion of Study Findings	97
4.8.1 Effect of Excise Stamps Implementation on Excise Tax Compliance.....	97
4.8.2 Effect of Audit and Inspection Strategies on Excise Tax Compliance	98
4.8.3 Effect of Digital Tracking and Tracing Systems Strategies on Excise Tax Compliance.....	98
5.1 Introduction.....	100
5.1 Summary of Findings.....	100
5.1.1 Excise Stamps	100
5.1.2 Audit and Inspections	101
5.1.3 Digital Tracking and Tracing Systems.....	102
5.2 Conclusions of the Study	103
5.2 Recommendations.....	104
5.4 Limitations of the Study.....	106
5.3 Areas for Further Study	106
REFERENCES.....	108
APPENDICES	117
APPENDIX I: INTRODUCTION LETTER.....	117
APPENDIX II: QUESTIONNAIRE	118
APPENDIX III: WORK PLAN.....	124
APPENDIX IV: RESEARCH BUDGET	125

LIST OF TABLES

Table3.1: Target Population	45
Table3.2: Sample Size	48
Table 3.3: Operationalization of the Study Variables	56
Table 4.1: Respondents Rate	59
Table 4.2: Age Distribution	61
Table 4.3: Gender Distribution.....	64
Table 4.4: Department Distribution	67
Table 4.5: Highest Level of Education.....	71
Table 4.6: Years of Experience in Your Current Role	74
Table 4.7: Excise Stamps and its Relationship with Excise Tax Compliance	76
Table 4.8: Audit and Inspection Strategies and its Relationship with Excise Tax Compliance	77
Table 4.9: Digital tracking and its relationship with excise tax compliance.....	78
Table 4.10: Excise Tax Compliance.....	80
Table 4.11: Normality Test	82
Table 4.12: Multicollinearity Test	83
Table 4.13: Tests of Linearity.....	84
Table 4.14: Homoscedasticity Test.....	85
Table 4.15: Correlation Analysis	87
Table 4.16.....	88
Table 4.16: Model Summary	88
Table 4.17: ANOVA.....	89
Table 4.18: Multiregression Table	90
Table 4.19: Test of Hypothesis.....	92
Table 5.2: research budget	125
Table 5.1: Work Plan.....	124

LIST OF FIGURES

Figure 2.1: Conceptual framework	42
Figure 4.1: Age.....	62
Figure 4.2: Gender	64
Figure 4.3: Department.....	68
Figure 4.4: Highest Level of Education	72
Figure 4.5: Years of experience in your current role.....	75

ABBREVIATIONS AND ACRONYMS

AEOI	Automatic Exchange of Information
ATO	Australian Taxation Office
B-P-G	Breusch-Pagan-Godfrey Test
EBMs	Electronic Billing Machines
ECTS	Electronic Cargo Tracking System
GPS	Global Positioning System
IMF	International Monetary Fund
JKIA	Jomo Kenyatta International Airport
KRA	Kenyan Revenue Authority
NTS	National Tax Service
OECD	Organization for Economic Cooperation and Development
PBC	Perceived Behavioral Control
PEOU	Perceived Ease Of Use
PU	Perceived Usefulness
RFID	Radio-Frequency Identification
RRA	Rwanda Revenue Authority
SAT	Servicio de Administración Tributaria
SMEs	small and medium-sized enterprises
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
VAT	Value-Added Tax
VIF	Variance Inflation Factor

OPERATIONAL DEFINITIONS OF TERMS

Audit Enforcement	Audit enforcement involves the examination of financial records by tax authorities to ensure accurate reporting and compliance, deterring evasion through corrective actions and penalties Abebe, 2018)
Digital Tracking & Tracking Systems	Refer to technology-based solutions that monitor and verify the production, distribution, and sale of goods, ensuring compliance with regulations and preventing tax evasion through real-time data collection and product authentication (Mwangi, 2022).
Enforcement Strategies	Refer to the methods and actions taken by tax authorities to ensure compliance with tax laws, including audits, penalties, and legal measures, aimed at deterring non-compliance and encouraging voluntary adherence (Tallberg, 2002)
Excise Stamp Enforcement	Refers to the regulatory measures and actions taken by authorities to ensure the proper use of excise stamps on taxable products, verifying authenticity, and preventing tax evasion through counterfeit or unstamped goods (Kariuki, 2021).
Excise Tax Compliance	Refers to the adherence of businesses and individuals to legal requirements for paying excise taxes, ensuring accurate reporting, timely payment, and proper documentation (Mugoma, 2020).

CHAPTER ONE

INTRODUCTION

1.0 Overview

This chapter began by introducing the background of the study. It then outlined the statement of the problem and presents the research objectives, which were divided into general and specific objectives. Following this, the research hypotheses were discussed, along with the significance of the study. The chapter concluded by defining the scope of the study.

1.1 Background of the Study

Excise tax compliance is an important element of fiscal policy and revenue generation, particularly in specialized sectors such as the water manufacturing industry (Alsukait and Folta, 2020). Excise taxes, which are levied on specific goods and services, including bottled water, play a significant role in generating government revenue. However, compliance with excise tax regulations presents unique challenges due to the sector's large-scale operations, extensive production activities, and complex supply chains (Crawford and Smith, 2020). Enhancing compliance within this industry is vital for the efficiency and stability of a nation's fiscal system.

Revenue enforcement strategies such as audits, mandatory information reporting, penalties and sanctions, and education campaigns are key tools for promoting excise tax compliance. According to Alm (2019) and Becker's (1968) deterrence theory, audits increase compliance by raising the perceived cost of non-compliance. However, in the context of excise tax compliance in the water manufacturing sector, the effectiveness of

audits depends on the resources, technical expertise, and capabilities of enforcement authorities. These include their ability to assess production volumes accurately, evaluate the quality of tax returns, and detect underreporting or non-compliance.

The integration of advanced technologies, such as real-time monitoring systems and data analytics, enhances the precision and efficiency of audits. Studies by Gray & Deily (2014) emphasize that the broader institutional framework—including the legal and regulatory environment, political support, and public trust—further influences the effectiveness of audit strategies in achieving excise tax compliance. Mandatory information reporting is another crucial strategy for ensuring compliance. Slemrod (2019) highlights its importance in enhancing transparency and accountability within industries. By requiring water manufacturing companies to disclose detailed operational data, such as production volumes and sales figures, tax authorities can better monitor excise tax obligations.

Penalties and sanctions, as proposed in Becker's deterrence model (1968), also play an important role in ensuring compliance. In the excise tax context, penalties must be proportionate and fair to deter non-compliance while maintaining a cooperative relationship between businesses and tax authorities. Furthermore, the use of technology in excise tax administration, including AI and blockchain, enables real-time tracking of production and sales, enhancing accuracy in excise tax determination and collection. Education and awareness campaigns are essential complementary strategies. As Torgler (2013) emphasizes, such initiatives demystify complex tax regulations, including excise tax rules, and highlight the societal benefits of compliance.

Despite these strategies, compliance gaps persist, especially in industries with complex operations like water manufacturing. Existing research primarily focuses on general tax compliance, leaving a gap in understanding the specific challenges and solutions related to excise tax compliance. For instance, there is limited exploration of how enforcement strategies—such as audits, reporting requirements, and penalties—interact with the unique characteristics of excise tax in the water manufacturing sector. This study aims to address this gap by evaluating the effect of revenue enforcement strategies on excise tax compliance among water manufacturing companies in Nakuru County, Kenya. The study seeks to establish the relationship between enforcement mechanisms (independent variables) and excise tax compliance (dependent variable), thereby contributing to the existing body of knowledge and informing policy formulation.

1.1.1 Global Perspective on Revenue Enforcement Strategies

Tax compliance in Australia is carefully overseen by the Australian Taxation Office (ATO). As noted by Walker-Munro (2021), the ATO employs a variety of strategies to ensure that businesses adhere to tax laws and regulations. These strategies are designed to encourage voluntary compliance, deter non-compliance, and address any instances of tax evasion or avoidance. The effectiveness of these strategies, however, is not a settled matter and remains a topic of ongoing research and policy discussions. The debate centers around how well these strategies balance between being stringent enough to prevent tax evasion and flexible enough to not overly burden compliant businesses. The Australian Taxation Office (ATO) employs a comprehensive array of strategies to enforce revenue compliance. These strategies, while diverse, serve a singular purpose:

ensuring that businesses adhere to tax laws and contribute their fair share to the national economy.

At the forefront of these strategies are audits and inspections, traditional yet powerful tools in the ATO's arsenal. McGrath & Walker's 2022 study emphasizes the significant impact that the frequency and intensity of these audits have on compliance behavior among water manufacturers. The process involves meticulous scrutiny of a company's financial records and operations, ensuring adherence to tax regulations. This method instills a culture of compliance, as companies are aware that their financial activities are subject to regular and thorough examination, thereby reducing the likelihood of non-compliance.

Complementing these traditional methods is the ATO's use of information reporting and third-party data. This modern approach, highlighted in Hasan's 2022 research, involves collecting and analyzing data from various external sources, such as financial institutions, to obtain a comprehensive view of a company's financial dealings. For water manufacturers, this has proven to be an effective strategy. It allows the ATO to identify discrepancies or irregularities in tax filings by cross-referencing information, thus enhancing the accuracy of tax collection and reducing reliance on more traditional, resource-intensive methods like audits. Another crucial aspect of the ATO's enforcement strategy is the implementation of penalties and fines, a method well-documented for its effectiveness in promoting tax compliance. Castro & Scartascini's (2015) research underlines how the perceived risk of penalties influences compliance decisions among taxpayers. The threat of financial repercussions for failing to comply with tax laws acts as a significant deterrent. This strategy is especially effective where audits or data reporting

might not catch non-compliance. By setting clear and tangible consequences for non-compliance, companies are more likely to maintain accurate and transparent tax records, weighing the risks of underreporting or evading taxes against potential financial penalties.

1.1.2 Regional Perspective on Revenue Enforcement Strategies

Egypt's journey in reforming its tax system has been marked by significant efforts aimed at enhancing compliance and expanding its tax base. The government's initiatives to improve tax administration have been a core focus, with the introduction of new technologies and stringent measures to combat tax evasion. The International Monetary Fund (IMF) (2020) highlighted these efforts, acknowledging the steps taken towards modernizing Egypt's tax system. However, despite these advances, the country still grapples with challenges that impede the efficiency of its tax system. The informal economy remains a significant hurdle, alongside the complexity of tax laws and administrative inefficiencies. The Organization for Economic Cooperation and Development (OECD) (2020) pointed out these persistent issues, underlining the need for ongoing reforms to address these challenges effectively.

In tackling these challenges, Egypt has adopted several revenue enforcement strategies. One notable strategy is the digitalization of tax collection. The World Bank (2019) emphasized the effectiveness of digital platforms in simplifying tax filing and payment processes, thereby enhancing compliance. Egypt's implementation of an electronic invoicing system, as reported by the Egyptian Ministry of Finance (2021), is a testament to its commitment to leveraging technology to improve its tax system. Moreover, the country has focused on strengthening its audit and enforcement programs. Research by

De Simone, Sansing, and Seidman (2013) supports the notion that robust audit and enforcement mechanisms can serve as a deterrent to tax evasion. However, it's crucial that these measures are calibrated to ensure they do not excessively burden businesses that are compliant.

Another aspect of Egypt's tax reform is the adjustment of tax rates. The concept of the Laffer curve, as discussed by Laffer (2004), suggests that excessively high tax rates could actually discourage compliance. Therefore, finding the right balance in tax rates is essential to maximizing revenue without deterring taxpayers. Lastly, Egypt recognizes the importance of educational programs and assistance in improving tax compliance. According to Alm & McKee in 2006, providing education and assistance to taxpayers, especially in complex industries like water manufacturing, can significantly enhance their understanding and compliance with tax regulations. This approach not only helps in reducing errors and evasion but also builds a more cooperative relationship between taxpayers and the tax authorities.

1.1.3 Kenyan Perspective on Revenue Enforcement Strategies

In Kenya, the challenge of maximizing tax compliance among businesses is a reflection of a broader issue faced by many developing countries.. The Kenyan Revenue Authority (KRA) has been actively implementing various enforcement strategies to enhance compliance and combat tax evasion across different sectors. The effectiveness of these enforcement strategies on tax compliance is influenced by several factors. Regular audits and the imposition of penalties are among the primary tools used. Research by Nyakamba (2013) shows that the fear of audits and subsequent penalties can be a significant motivator for these companies to comply with tax laws. The threat of financial

repercussions and the complexities of legal entanglements are potent deterrents against non-compliance.

Legal actions against non-compliant companies are another strategy employed by the KRA. However, as Kafusha noted (2022), this approach, while sometimes effective, can also be costly and time-consuming. The process of legal enforcement involves extensive resources and can lead to protracted legal battles, making it a less efficient route in some instances. Additionally, education and awareness play a crucial role in enhancing tax compliance. Studies, such as those conducted by Gitaru (2017), have shown that when taxpayers have a better understanding of the tax system, compliance rates tend to improve. Informative campaigns and educational initiatives help demystify tax obligations and underline the importance of compliance in supporting national development.

Despite these efforts, the enforcement of tax compliance in Kenya, particularly in the water manufacturing sector, faces several challenges. The KRA often operates with limited resources, which affects its capacity to conduct thorough audits and enforce compliance effectively. This limitation can lead to gaps in the tax system that may be exploited by non-compliant entities. Corruption within the tax system also presents a significant barrier to effective enforcement. It erodes the integrity of the system and can lead to a perception of injustice or inefficiency among taxpayers. Moreover, the complexity and frequent changes in tax regulations, noted by Mutua in 2022, add to the challenges faced by taxpayers. These complexities can lead to confusion, making it more difficult for companies to remain compliant. Simplifying and stabilizing tax laws could potentially improve compliance rates.

1.2 Statement of the Problem

Excise tax compliance remains a significant challenge for many tax authorities, and Kenya is no exception. Despite various strategies put in place by the government to enhance compliance, there is still a notable gap in excise tax revenue collection, which negatively impacts the country's economic stability and development (Mwangi, 2014). This issue is further exacerbated by the complex nature of tax laws, which often leaves taxpayers uncertain about their obligations. The tax authorities, including the Kenya Revenue Authority (KRA), have struggled with this ambiguity, making it difficult to ensure consistent adherence to tax regulations across different sectors of the economy. This complexity is particularly evident in the Domestic Excise tax performance, which has been inconsistent over the years. For example, in FY 2020/21, the tax head saw a 12.0% growth, recovering from a 6.4% decline in the previous year (KRA, 2022). This recovery was attributed to the gradual reopening of the economy and extended operating hours for bars and restaurants. However, another report mentions a 12.3% growth, primarily driven by volume increases in cigarettes and beer, indicating a discrepancy in the growth attributions. By FY 2022/23, the growth rate had dropped to 2.8%, with the revenue recorded at KShs 68.124 billion, highlighting a knowledge gap in understanding the factors affecting excise tax compliance and collection.

In Kenya's water manufacturing sector, compliance with excise tax obligations has been inconsistent, presenting a substantial challenge for revenue authorities. Registered sectors, including water manufacturing companies, play an important role in the economy by contributing to employment, economic growth, and public health. However, many of these companies have faced difficulties in adhering to tax regulations, leading to

substantial gaps in excise tax collection. Studies have shown that water manufacturing firms often underreport their production volumes or fail to remit the correct amount of excise taxes. A study by Mróz (2018) found that a significant number of these firms either misreport their production volumes or fail to fully remit excise taxes, often attributing their actions to the complexities involved in tax calculations and the perceived financial burden of compliance. Similarly, Okiro (2021) highlighted that evasion tactics, such as product misclassification and fraudulent reporting of production data, are common within the sector. These practices not only hinder the efforts of the KRA to collect excise taxes but also create an uneven playing field, where compliant firms face a competitive disadvantage.

Furthermore, the lack of targeted enforcement strategies and insufficient taxpayer education tailored to the water manufacturing sector worsens compliance issues. The sector's dynamic nature, specialized production processes, and unique market structures require more sector-specific support and enforcement mechanisms. Current strategies, such as audits and penalties, have proven ineffective in improving compliance. This underscores the need for focused policy interventions and further research into the sector's challenges. The existing compliance gap not only affects fair tax distribution across industries but also raises concerns about the effectiveness of tax enforcement and education, making it essential to address these issues for improved excise tax compliance and revenue collection in Nakuru's water manufacturing sector.

1.3 Research Objectives

1.3.1 General Objective

This study aimed to assess the effect of enforcement strategies on excise tax compliance among water manufacturing companies in Nakuru, Kenya.

1.3.2 Specific Objectives

The specific objectives of the study were:

- i. To assess the impact of implementing excise stamps on the excise tax compliance levels of water manufacturing companies in Nakuru, Kenya.
- ii. To evaluate the effectiveness of audit and inspection strategies in enhancing excise tax compliance in the water manufacturing sector in Nakuru, Kenya.
- iii. To investigate the role of digital tracking and tracing systems in enhancing excise tax compliance among water manufacturing companies.

1.4 Research Hypothesis

H0₁: Implementing excise stamps have no significant impact on the levels of excise tax compliance among water manufacturing companies in Nakuru, Kenya.

H0₂: Audit and inspection strategies have no significant effect on enhancing excise tax compliance in the water manufacturing sector in Nakuru, Kenya.

H0₃: The use of digital tracking and tracing systems has no significant effect on enhancing excise tax compliance among water manufacturing companies.

1.5 Justification of the Study

The study on the Effect of Revenue Enforcement Strategies on Tax Compliance Among Water Manufacturing Companies in Nakuru, Kenya is of significant importance to several stakeholders. For the Kenya Revenue Authority (KRA), the findings can aid in the development of more effective policies and strategies tailored to the specific challenges and behaviors of companies in this sector. The study also provides benchmarks for KRA to measure the effectiveness of their current enforcement strategies and identify areas needing improvement.

Policymakers can use the findings to craft well-informed tax regulations and enforcement approaches, ensuring a balance between effectiveness and fairness. Understanding how different enforcement strategies influence tax compliance is crucial for achieving optimal revenue generation while fostering the growth of the water manufacturing industry, an essential component of economic progress. The research can also highlight specific areas of weak compliance, allowing for precise interventions to bridge these gaps.

For the water manufacturing sector, the research emphasizes the importance of adhering to tax laws and encourages companies to adopt more ethical and accountable business practices. By understanding the impact of excise tax compliance on their operations, these companies will be motivated to align their strategies with legal standards, promoting fairness and responsibility within the sector. Insights into enforcement strategies will help water manufacturing companies better understand tax compliance expectations, aiding in preparation and planning, and reducing uncertainties around tax obligations.

The broader business community will benefit from the research by identifying successful enforcement approaches that encourage compliance, thereby leveling the playing field for all businesses. This fosters a competitive environment based on product and service quality rather than tax circumvention abilities, promoting healthy competition and market integrity. Additionally, a deeper understanding of enforcement strategies will equip the business community to anticipate and proactively address potential tax compliance challenges, leading to more stable and predictable operations.

For scholars, this study enriches the academic body of work on tax compliance and enforcement approaches, particularly in the context of developing nations like Kenya. Although focused on the water manufacturing industry, the insights could apply to various other sectors, offering a broader understanding of tax compliance behavior intricacies.

1.6 Scope of the Study

The main aim of this study was to evaluate the effect revenue enforcement strategies on tax compliance among water manufacturing companies in Nakuru, Kenya. The objectives of the study were threefold: to examine the effects of implementing excise stamps, auditing and inspection methods and digital tracking and tracing systems in enhancing tax compliance among water manufacturing companies. The study was conducted exclusively in Nakuru, Kenya, strategically chosen to maintain a focused geographical scope. Nakuru lies in the Rift Valley region, approximately 160 kilometers northwest of Nairobi, the capital city. As one of Kenya's five cities—alongside Nairobi, Mombasa, Kisumu, and Eldoret—this was elevated from a municipality to city status in 2024.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter was structured into several subsections, beginning with an exploration of the concept of studies and theoretical frameworks. It then reviewed empirical literature that examined previous studies relevant to the research topic. The chapter concluded with a critique of the reviewed literature, highlighting the existing research gaps.

2.2 Concepts of Study

The conceptual framework outlined the relationship between the study's independent variables and dependent variables.

2.2.1 Concept of Excise Tax Compliance

Excise tax compliance, essential for the equitable, efficient, and sufficient collection of taxes on products like alcohol and tobacco, hinges on adherence to regulatory mandates regarding tax reporting and payment (Abiola, 2024). The deployment of excise stamps, recognized for their efficacy in mitigating tax evasion and enhancing compliance, acts as a tangible testament to tax payments, aiding in the oversight of regulated goods' supply chains (Christian, 2020). This measure, alongside targeted audits and inspections, has proven instrumental in discouraging evasion, fostering a perception of heightened risk among potential evaders and thereby nudging them towards voluntary compliance. Strategic audits, as emphasized by the OECD (2010), focus enforcement efforts efficiently by prioritizing high-risk areas, thereby maximizing the impact of compliance efforts.

Moreover, taxpayer education plays a pivotal role in demystifying tax obligations, significantly contributing to voluntary compliance by clarifying the nuances of excise tax regulations. The IRS (2012) reports underscore the success of educational initiatives in improving compliance, highlighting the importance of taxpayer understanding in fostering a culture of compliance. According to Lukianykhina (2024), the integration of digital technologies, such as digital excise stamps and electronic monitoring, further exemplifies the evolving landscape of tax enforcement strategies. These technological advancements streamline compliance processes, reduce administrative burdens, and, as noted by the European Commission (2020), enhance the overall efficiency of tax collection, incentivizing compliance. Thus, a comprehensive approach that combines physical measures, strategic enforcement, education, and technological innovation emerges as the most effective strategy in ensuring excise tax compliance, underlining the critical role of multifaceted enforcement strategies in achieving the objectives of equity, efficiency, and revenue sufficiency in tax systems.

2.2.2 Concept of Revenue Enforcement Strategies

The concept of excise stamp enforcement plays a pivotal role in the landscape of tax compliance, especially concerning excise duties on goods like tobacco, alcohol, and fuel. Mbaru (2022) posits that this mechanism not only ensures accurate tax collection by marking goods that have fulfilled their tax obligations but also serves as a significant deterrent against illicit trade, thereby enhancing overall tax compliance. The effectiveness of such enforcement strategies is deeply intertwined with factors like taxpayer morale, the perceived fairness of the tax system, and audit probabilities. Notably, Alm, Bloomquist, and McKee (2017) have delved into the psychological motivations behind

tax compliance, revealing that the direct and tangible nature of excise stamps can markedly discourage tax evasion, as they symbolize a visible commitment to legal and fiscal responsibilities.

Building on the foundational insights of Slemrod and Yitzhaki (2002), who underscored the importance of visible and immediate enforcement mechanisms in curbing tax evasion, further research has highlighted the psychological dimensions of tax compliance. Enhancing taxpayers' perceptions of the effectiveness of enforcement strategies could significantly boost voluntary compliance. Nkundabanyanga (2017) states that this is because the battle against tax evasion is fought not just with physical measures like excise stamps but also through fostering a psychological and social environment that encourages compliance. The European Commission's 2020 study supports this, showing that countries with comprehensive excise stamp programs report lower levels of illicit trade in excisable goods, thus underscoring the dual role of excise stamps in not only deterring evasion but also educating consumers about the importance of supporting the legal market (Bourton, 2021). This multi-faceted approach to enforcement highlights the necessity of a strategy that balances tangible deterrents with the intangible factors that influence taxpayer behavior, ensuring the effective collection of revenue crucial for public services and societal well-being.

The Kenya Revenue Authority (KRA) has significantly evolved its excise tax compliance strategies by adopting risk-based audits, marking a strategic shift from traditional, random audit methods (Louis, 2020). This approach prioritizes the examination of entities deemed at higher risk of non-compliance, based on specific indicators, thereby optimizing the allocation of scarce audit resources. According to Gemed and Authority

(2020), risk-based auditing enhances efficiency in identifying and addressing tax discrepancies, leading to improved revenue collection and compliance. This method's effectiveness is supported by the principle of deterrence; knowing that the tax authority employs sophisticated techniques to pinpoint non-compliance significantly influences taxpayer behavior towards more honest reporting (Awitta, 2010). Furthermore, international bodies like the International Monetary Fund and the World Bank have underscored the effectiveness of risk-based approaches in tax administration, highlighting their role in ensuring strategic deployment of audit capabilities.

In addition to risk-based audits, the KRA's enforcement strategy includes surprise inspections, particularly effective among small and medium-sized enterprises (SMEs) (Irungu, 2019). These inspections involve on-the-spot checks for adherence to tax regulations, such as proper issuance of fiscal receipts and accurate sales recording. According to Williams (2024), the immediate and unannounced nature of these inspections makes them a potent tool for uncovering non-compliant practices, thereby acting as a significant deterrent against tax evasion. A study by Mwangi and Wanjau (2017) found that the threat of unannounced visits encourages continuous compliance among businesses, instilling a culture of adherence to tax laws. However, the success of inspections hinges on several factors, including their frequency, the criteria for selecting businesses, and the severity of penalties for non-compliance (Valerian, 2023). For inspections and risk-based audits to be both fair and effective, they must be well-designed and implemented, complemented by clear communication and education on tax obligations.

The integration of digital tracking and tracing systems into revenue enforcement strategies has significantly enhanced tax compliance by leveraging technological innovations for real-time monitoring of transactions and goods movement. These systems utilize a variety of technologies, including electronic invoicing, GPS tracking, and blockchain, to ensure secure and transparent transactions, thereby reducing opportunities for tax evasion and fraud (Bacchetta and Cullen, 2021). For instance, electronic invoicing allows for the real-time capture of transaction data, enabling tax authorities to promptly identify and address fraudulent reporting (Lee, 2019). Similarly, according to Kumar and Murala (2024) state that, blockchain technology creates an immutable ledger of transactions, greatly reducing fraud potential by preventing retroactive alterations. Despite challenges such as the need for substantial investment and adaptation to new reporting standards, the positive impact on tax compliance and revenue collection is evident, as demonstrated in countries like Spain, where real-time reporting systems have significantly curtailed VAT fraud.

Empirical evidence further underscores the effectiveness of digital tracking in boosting tax compliance and government revenues. For example, in Nigeria, the integration of electronic tax filing and payment systems markedly improved VAT compliance among businesses (Olaoye & Atilola, 2018). Similarly, the Rwanda Revenue Authority's adoption of electronic billing machines (EBMs) significantly enhanced VAT compliance by issuing receipts with a unique identifier for every transaction, facilitating real-time verification by tax authorities and consumers (Mascagni, 2023). These initiatives exemplify how digital technologies can transform tax compliance and administration by

promoting transparency, reducing evasion opportunities, and making the tax process more efficient for both authorities and taxpayers.

2.3 Theoretical Framework

The theoretical framework is a structure that upholds or supports the theory of a research study. It introduces and elucidates the theory explaining the existence of the research problem being investigated, as presented in the theoretical review. Theories are formulated to explain, predict, and understand phenomena, often with the aim of expanding knowledge within the confines of essential limiting assumptions. Three theories were chosen to support the study objectives. They include the deterrence theory, Agent Theory and Technology Acceptance Model (TAM).

The selected theories—Deterrence Theory, Agent Theory, and the Technology Acceptance Model (TAM)—are not the only ones that could explain the study; other relevant theories exist, such as the Compliance Theory and Institutional Theory, which also address tax compliance dynamics. However, these theories were chosen based on their direct alignment with the study objectives: Deterrence Theory for excise stamp implementation, Agent Theory for audit and inspection strategies, and TAM for digital tracking and tracing systems, as they provide robust frameworks for understanding compliance behaviors in the context of the water manufacturing sector.

2.3.1 Deterrence Theory

Deterrence theory, first articulated by scholars such as Cesare Beccaria (2016) and Jeremy Bentham (1789), asserts that individuals' behavior is shaped by the perceived consequences of their actions. Essentially, if the costs of engaging in an undesirable

behavior, such as tax evasion, outweigh the benefits, individuals will be deterred from committing such acts. The theory focuses on the threat of punishment, operating under the assumption that people make rational decisions based on this threat. At its core, deterrence theory suggests that the effectiveness of sanctions in preventing unwanted behavior depends on three key elements: certainty, severity, and swiftness of punishment (Barnum and Nagin, 2023). It implies that when tax evasion is perceived to result in severe, certain, and timely penalties, individuals are less likely to evade taxes.

The element of certainty refers to the likelihood that punishment will follow an illegal activity. In the case of tax evasion, it emphasizes how likely authorities are to detect and respond to such behavior. Severity denotes the harshness of the punishment, which must be significant enough to outweigh the perceived benefits of committing the unlawful act (Kolber, 2018). Swiftness, on the other hand, highlights that punishment should follow promptly, reinforcing the connection between the offense and its consequence (Brooks, 2021). This theory is particularly relevant to tax compliance, as it underscores how the threat of penalties for non-compliance is communicated to taxpayers. One such regulatory tool used in enforcing tax compliance is the excise stamp, which marks goods subject to excise tax. These stamps serve as an effective means of increasing compliance by enhancing the perceived certainty and severity of detection and punishment for tax evasion.

In the context of excise tax compliance, excise stamps act as a deterrence mechanism. According to Sudán (2020), these physical marks, applied to products subject to excise tax, such as tobacco and alcohol, are designed to prevent illegal production, distribution, or sale of these goods. Excise stamps align with the deterrence framework by addressing

the certainty and severity of punishment for non-compliance (Muhia and TAX, 2023). Their presence increases the likelihood that products will be inspected, thereby raising the chances that violations, such as selling unstamped goods, will be detected by authorities. The imposition of severe penalties for selling unmarked goods, such as fines or imprisonment, acts as a deterrent. Additionally, excise stamps enable faster identification of non-compliance, leading to quicker enforcement actions and sanctions.

Several studies have explored the connection between deterrence theory and tax compliance, particularly regarding excise taxes and the use of excise stamps. Mason (2018) conducted a study on the role of excise stamps in enhancing tax compliance in the United States. The research found that the introduction of excise stamps increased compliance by making the penalties for non-compliance more visible and certain. The study suggested that taxpayers were more likely to comply when they perceived a higher risk of detection, which excise stamps facilitated by making the tax status of products more apparent. Kaplanoglou (2020) explored the relationship between enforcement mechanisms, including tax stamps, and tax compliance in developing countries. The study argued that when taxpayers perceive enforcement actions as inevitable and severe, they are less likely to engage in evasion. It emphasized that visible deterrents, such as excise stamps, which signal a government's commitment to addressing tax evasion, are crucial in increasing compliance rates. Hassan et al. (2016) examined the use of excise stamps in Kenya within the broader context of enforcement and tax compliance. Their research concluded that the implementation of excise stamps significantly boosted compliance rates among businesses involved in the sale of alcohol and tobacco products.

This increase was attributed to the greater certainty of detection and the severity of penalties that were associated with violations.

2.3.2 Agency Theory

Agency theory, developed by Michael Jensen and William Meckling in 1976, explores the relationship between principals (such as shareholders or government authorities) and agents (such as managers or taxpayers) where the agents may not always act in the best interests of the principals due to differing objectives, self-interest, and information asymmetry (Jensen & Meckling, 2019). In the context of tax compliance, the government acts as the principal, seeking to ensure businesses comply with tax regulations, while the businesses (agents) may have incentives to evade taxes. The agency problem arises because businesses may prefer to reduce their tax liabilities, thus conflicting with the government's need for revenue (Panda and Leepsa, 2017). This creates a situation where the government must rely on monitoring mechanisms like audits and inspections to align the interests of businesses with the government's goal of tax compliance.

Agency theory suggests that businesses will only comply with tax laws when they perceive the benefits of compliance to outweigh the costs of evasion (Kovermann and Velte, 2019). The core principle behind agency theory is that when there is a conflict of interest between principals and agents, mechanisms like monitoring and enforcement are necessary to mitigate the potential for non-compliance. In the case of excise tax compliance, audits and inspections act as mechanisms for the tax authority (the principal) to reduce information asymmetry between itself and businesses (the agents) (Ogut, 2019). Audits provide a way for the authorities to verify that businesses are reporting

their earnings and tax liabilities accurately, while inspections ensure that businesses are complying with regulations in their operations.

Audit and inspection strategies, according to agency theory, are essential to resolving the agency problem in excise tax compliance. These strategies serve as monitoring tools, reducing the moral hazard of businesses underreporting their excise tax obligations or engaging in fraudulent activities. Moral hazard refers to the risk that agents (taxpayers) will act in their own self-interest by evading taxes, knowing that the tax authority (principal) cannot fully observe their actions (Alam, 2022). By increasing the likelihood of detection through regular audits and inspections, the government lowers the risk of tax evasion, motivating businesses to comply. Additionally, as audit and inspection strategies reduce the information asymmetry between taxpayers and tax authorities, they act as deterrents, making it clear to businesses that evasion is not only risky but likely to be detected.

The effectiveness of audit and inspection strategies in improving excise tax compliance can be seen through their role in reducing both moral hazard and adverse selection (Mahmood, 2018). Adverse selection occurs when the tax authority is unaware of the extent of tax evasion or the tactics employed by businesses to evade taxes. Through audits, the government gathers information about business operations and tax reporting, allowing them to detect discrepancies. Inspections, on the other hand, involve physical checks and verifications that further reduce the chance of evasion going unnoticed (Kenyon and Tilton, 2016). Together, these strategies serve to align the interests of the taxpayer with the government's goals of ensuring fair tax payment, thus reducing the agency problem.

Empirical studies have provided evidence supporting the link between audit and inspection strategies and improved tax compliance. For example, Alm, McClelland, and Schulze (2015) found that the likelihood of tax compliance increases significantly when the probability of being audited is higher. Their study demonstrated that when businesses are aware of frequent audits, they are less likely to engage in tax evasion, as the risk of detection outweighs the potential benefits of underreporting taxes. Similarly, Torgler (2017) found that the effectiveness of audit and inspection strategies in enhancing tax compliance is also influenced by perceptions of fairness. When businesses perceive the tax system and audit process as transparent and equitable, they are more likely to comply. This highlights the importance of not only conducting audits and inspections but ensuring that the process is seen as fair and unbiased to maintain trust in the tax system.

2.3.3 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is a pivotal framework in understanding how individuals come to accept and use new technologies. Initially introduced by Davis in 1989, TAM posits that two primary factors determine the likelihood of a new technology being adopted: perceived usefulness (PU) and perceived ease of use (PEOU) (Davis, 1989). Perceived usefulness refers to the degree to which a person believes that using a particular system would enhance their job performance, while perceived ease of use denotes the degree to which a person believes that using the system will be free of effort. This model has been extensively applied across various fields to predict and explain technology adoption behavior. In the context of digital tracking and tracing systems within water manufacturing companies, TAM provides a robust framework for assessing the adoption and implementation of these technologies. The adoption of digital tracking

and tracing systems is critical for enhancing operational efficiency, ensuring product quality, and complying with regulatory requirements, including tax obligations. The integration of TAM into this context involves evaluating how perceptions of usefulness and ease of use among decision-makers and users in water manufacturing companies influence their willingness to adopt these technologies.

Several studies have applied TAM to understand the adoption of similar technologies in different sectors. For instance, a study by Venkatesh and Davis (2000) extended TAM by introducing additional variables to better predict user acceptance and usage behavior, a modification known as TAM2. This extended model has been applied in various contexts, including the adoption of enterprise systems, which share similarities with digital tracking and tracing systems in terms of complexity and integration requirements. Moreover, research by Huang, Liao, and Yang (2013) specifically investigated the adoption of RFID (Radio-Frequency Identification) technology, a key component of digital tracking and tracing systems, in the manufacturing sector. They found that both perceived usefulness and ease of use significantly influenced the intention to adopt RFID technology. This finding underscores the applicability of TAM in understanding the adoption of technology in manufacturing settings, including the water industry.

Applying TAM to the adoption of digital tracking and tracing systems in water manufacturing companies entails assessing how these companies perceive the usefulness of these systems in improving tax compliance and operational efficiency. It also involves evaluating the ease of implementing and using these systems within their existing processes. By identifying and addressing any perceived barriers to usefulness and ease of

use, stakeholders can develop strategies to enhance the adoption of these technologies, thereby improving tax compliance and operational efficiencies.

2.3.4 Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) was developed by Icek Ajzen (1991) as an extension of the earlier Theory of Reasoned Action (TRA), which sought to understand the relationship between attitudes, intentions, and behaviors. While TRA focused on how attitudes and intentions shape behavior, TPB expanded on this by introducing the concept of perceived behavioral control (PBC). This new element acknowledged that behavior is not always completely under an individual's control, particularly when external factors or constraints are at play (Ajzen, 1981).

The TPB posits that human behavior is influenced by three key factors: attitude toward the behavior, subjective norms, and perceived behavioral control. First, attitude toward the behavior refers to the extent to which a person evaluates a particular behavior positively or negatively. In the context of tax compliance, for example, this would be how favorably or unfavorably a taxpayer views the act of paying excise taxes (Mason and Williams, 2020). Second, subjective norms involve the perceived social pressure to engage in a behavior. For tax compliance, this might include a taxpayer's beliefs about how their peers, business partners, or society view the importance of paying excise taxes (Bobek, 2017). Finally, perceived behavioral control (PBC) refers to an individual's perception of the ease or difficulty of performing a behavior. This is shaped by the resources, opportunities, or capabilities they believe they have at their disposal. For example, if a taxpayer believes that compliance is made easier due to efficient

enforcement mechanisms—such as excise stamps, audits, or digital tracking systems—they are more likely to comply with tax regulations.

Together, these three factors influence an individual's behavioral intention, which is the motivation to perform a specific behavior. In the TPB, it is assumed that when individuals have positive attitudes toward a behavior, perceive social pressure to comply, and believe they can do so easily, they are more likely to engage in that behavior. The TPB is particularly relevant to the study of revenue enforcement strategies, as it connects external enforcement mechanisms with internal motivations and intentions to comply with tax regulations. In this context, the use of excise stamps, audits, and digital tracking systems are critical elements that can influence tax compliance through their impact on taxpayers' attitudes, subjective norms, and perceived behavioral control (Muhia and TAX, 2023).

Excise Stamps serve both as a regulatory tool and a signal of compliance. The attitude of taxpayers toward excise stamps will likely depend on how effective they perceive these stamps to be in ensuring fair taxation. If taxpayers believe that excise stamps reduce opportunities for tax evasion and enhance fairness, they are more likely to have a positive attitude toward compliance. According to the TPB, a positive attitude toward excise stamps increases the likelihood of compliance (Malusha, 2019). Audits are another significant external enforcement mechanism. Here, the subjective norms component of TPB becomes important. If taxpayers believe that audits are commonly performed within their industry or that there is societal pressure to comply because of audit risks, this belief may influence their decision to comply with excise tax regulations. Moreover, audits may affect perceived behavioral control by reminding taxpayers of the potential consequences

of non-compliance (Kasper and Rablen, 2023). This can either foster a sense of control (through compliance) or, conversely, heighten the perceived difficulty of evading detection. Digital Tracking Systems also play a role in shaping attitudes and perceived behavioral control. If taxpayers view these digital systems as efficient and transparent, their attitude toward compliance is likely to be more positive. Additionally, if taxpayers believe that these systems make compliance easier—by reducing the burden of paperwork or streamlining the reporting process—their sense of control over the compliance behavior is enhanced, further promoting tax compliance.

2.4 Empirical Review

2.4.1 Excise Stamps on Excise Tax Compliance

Tax compliance remains a cornerstone of public finance stability and development. Governments worldwide adopt various strategies to enhance compliance rates, ranging from educational campaigns to enforcement actions. In South Korea, the National Tax Service (NTS) has been proactive in deploying diverse revenue enforcement strategies to combat tax evasion and increase compliance. Among these strategies, excess terms enforcement—defined as the application of overly strict or punitive measures beyond standard regulatory requirements—has sparked considerable debate regarding its effectiveness and impact on taxpayer morale and compliance. Korea's strategy towards enhancing tax compliance has been a multifaceted endeavor, reflecting a blend of educational outreach and rigorous enforcement to ensure adherence to tax regulations. Over recent years, the National Tax Service (NTS) of Korea has notably refined its approach, transitioning from conventional methods of enforcement to leveraging advanced technological tools and international cooperation. This evolution is well

documented in the scholarly work of Dom and Prichard (2022), who delve into the intricacies of the NTS's strategies, underscoring the pivotal role of sophisticated data analytics and cross-border collaborations in combating tax evasion.

The NTS has increasingly relied on big data analytics, utilizing vast amounts of data to detect patterns, anomalies, and potential instances of tax evasion more efficiently than ever before. This approach allows for a more targeted and informed enforcement strategy, where audits are not conducted at random but are instead based on a careful analysis of risk indicators and historical data. The effectiveness of using data analytics in enhancing tax compliance is supported by various studies, including that of Hashimzade, Myles, and Tran-Nam (2013), who examine the potential of big data in improving the detection of tax evasion and the allocation of audit resources. Moreover, the aspect of cross-border cooperation has been paramount in addressing the challenges posed by globalization to tax enforcement. Tax evasion increasingly involves complex international transactions, necessitating a coordinated response among countries. Korea has been active in engaging with international bodies such as the Organisation for Economic Co-operation and Development (OECD) and participating in initiatives like the Automatic Exchange of Information (AEOI), which facilitates the sharing of financial account information between countries. This global network of information exchange has been instrumental in tracing assets and incomes across borders that may otherwise have evaded national tax nets. Studies by Johannesen, Langetieg, Reck, Risch, and Slemrod (2020) provide empirical evidence on the efficacy of such international agreements in reducing tax evasion.

Rwanda's approach to improving tax compliance through various revenue enforcement strategies, as spearheaded by the Rwanda Revenue Authority (RRA), underscores the intricate balance needed between encouraging compliance and maintaining taxpayer trust. The introduction of electronic billing machines (EBMs), enhanced taxpayer services, and the implementation of penalties for non-compliance are all measures designed to modernize the tax collection process, make it more efficient, and ultimately increase the state's revenue without resorting to excessive tax rates or unfair practices (Hakizimana, 2023). The use of EBMs, for instance, has been pivotal in ensuring transparency in transactions and reducing opportunities for tax evasion. These machines automatically send transaction details to the RRA, making it easier to audit and ensuring that the correct amount of tax is collected at the point of sale. This technological intervention, along with improved taxpayer services, has been instrumental in streamlining tax collection and enhancing voluntary compliance among taxpayers.

The effectiveness of excise terms enforcement, particularly in the Kenyan context, has been a subject of considerable debate among scholars and policymakers. In their seminal work, Muriithi and Moyi (2013) delve into the complexities of tax compliance and the nuanced impact of enforcement strategies by the Kenya Revenue Authority (KRA). Their study offers a comprehensive analysis that sheds light on the dual outcomes of stringent enforcement measures: short-term gains versus potential long-term setbacks. Muriithi and Moyi's (2013) research underscores the immediate benefits of rigorous audit practices and stringent penalties in enhancing tax compliance. The rationale behind such an approach is straightforward: by increasing the perceived cost of non-compliance, taxpayers are more likely to adhere to tax regulations to avoid penalties. This deterrence

effect is a cornerstone of traditional tax enforcement strategies, predicated on the assumption that individuals are rational actors who will seek to minimize their costs (Allingham and Sandmo, 1972).

However, the study further illuminates the unintended consequences of these enforcement measures. Muriithi and Moyi (2013) argue that while such strategies may bolster compliance in the short run, they simultaneously sow seeds of discontent among taxpayers. The perception of unfairness, stemming from what is seen as overly punitive measures, fosters an adversarial relationship between the KRA and the taxpayers. This perceived injustice can erode the social contract between the state and its citizens, wherein voluntary compliance is underpinned by a mutual sense of trust and fairness (Feld and Frey, 2017). The long-term implications of this breakdown in trust are profound. As Muriithi and Moyi (2013) suggest, the initial gains in compliance could be offset by a decline in voluntary compliance. When taxpayers perceive the tax system as unfair, they are more likely to engage in non-compliant behavior, not just to evade taxes but as a form of protest against the system (Braithwaite, 2019). This dynamic underscores the importance of balancing enforcement with engagement strategies that foster a positive relationship between tax authorities and the public.

In light of these findings, Muriithi and Moyi's (2013) study calls for a reevaluation of tax enforcement policies in Kenya. It suggests that while stringent measures are effective in the short term, their success is unsustainable without addressing the underlying issues of fairness and trust. This research contributes to a growing body of literature advocating for a more holistic approach to tax compliance, one that combines enforcement with

education, service improvement, and participatory policies that engage taxpayers as partners rather than adversaries.

2.4.2 Audit and Inspection Strategies on Excise Tax Compliance

The intricate relationship between audit strategies and tax compliance has been a focal point for economic researchers aiming to unravel the complexities of taxpayer behavior and the efficacy of enforcement mechanisms. The foundational work of Alm, Jackson, and McKee (1992) laid the groundwork for understanding how heightened audit probabilities can act as a deterrent against tax evasion. Their controlled laboratory experiments demonstrated a clear correlation between increased audit rates and improved compliance levels among taxpayers, thus reinforcing the deterrence theory which posits that the likelihood of being caught and penalized dissuades individuals from engaging in non-compliant behavior. Building on this concept, the research conducted by Kleven et al. (2011) on Denmark's tax system further elucidates the nuanced dynamics of tax compliance. By implementing pre-announced audits targeted at high-risk profiles, Denmark was able to significantly boost voluntary compliance rates. This strategy underscores the effectiveness of risk-based audit selection and the impact of strategic communication on taxpayer behavior. It suggests that making audit criteria transparent and focusing resources on high-risk areas can optimize enforcement efforts without necessarily increasing the frequency of audits across the board.

The exploration of psychological and motivational factors in tax compliance introduced by Feld and Frey (2017) adds another layer of complexity to the discussion. Their concept of "*motivational posturing*" expands the dialogue beyond mere deterrence, proposing that the manner in which audits and inspections are conducted can influence

taxpayers' intrinsic motivations. By signaling a commitment to fairness and equity, tax authorities may cultivate a more cooperative and less adversarial relationship with taxpayers, thereby enhancing compliance through positive reinforcement rather than fear of punishment. In parallel, the role of inspections, particularly in combating the shadow economy, has been highlighted by Buehn and Schneider (2012). Their research points to the effectiveness of regular inspections, along with penalties for detected non-compliance, in mitigating the prevalence of informal economic activities. This approach not only addresses tax evasion but also contributes to a broader fiscal strategy aimed at formalizing economic activities and expanding the tax base. The potential of leveraging social norms and reputational concerns through the public disclosure of tax audit and inspection results has been examined by Mascagni, Nell, and Monkam (2017). Their findings suggest that in specific contexts, making audit outcomes public can enhance compliance among the wider taxpayer population. This strategy taps into the social dimensions of compliance, where the desire to maintain a positive public image and conform to social norms can motivate taxpayers to adhere to tax laws.

Alm, Blackwell, and McKee's (2014) research underscores the importance of audit probability in influencing taxpayers' compliance decisions. Their findings suggest that as the likelihood of being audited increases, so does the level of compliance among taxpayers. This relationship is intuitive, as the risk of detection and subsequent punishment for non-compliance becomes a more salient consideration for taxpayers when they perceive audits as a credible threat. The Servicio de Administración Tributaria (SAT) in Mexico, much like its counterparts in other Latin American countries, has been at the forefront of implementing innovative audit and enforcement strategies to tackle tax

non-compliance and evasion, which are pervasive issues impacting revenue collection and economic equity in the region. The effectiveness of these strategies, particularly audits, in enhancing tax compliance and increasing revenue collection, has been a subject of study and discussion in academic and policy-making circles. The insights from these studies, although sometimes focused on other Latin American countries like Chile, offer valuable lessons for Mexico given the similarities in the tax environments across the region.

A pivotal study by Pomeranz (2015) on the impact of audits in Chile has often been cited as evidence of the potential effectiveness of audit strategies in increasing tax compliance and revenue. Pomeranz's work highlighted that targeted audits, especially when based on indicators of non-compliance, can significantly boost revenue collection by deterring tax evasion. This principle, though studied in the Chilean context, is deemed highly relevant to Mexico's efforts in improving tax compliance through audits, as both countries grapple with similar challenges in tax administration. Beyond the focus on audits, the study by Castro and Scartascini (2015) expands the discussion to inspection strategies at large, including both random and targeted inspections. Their findings suggest that in Latin America, targeted inspections based on risk assessments are notably more effective than random inspections. This approach, grounded in the strategic allocation of limited resources to high-risk taxpayers, enhances the efficiency and effectiveness of tax enforcement efforts. For Mexico, adopting a risk-based approach to tax inspections means leveraging data and insights to pinpoint potential non-compliance, thereby optimizing the use of its enforcement resources.

Muhwa and Achoki's (2023) investigation into the role of increased audit activities presents a compelling case for the effectiveness of targeted audits in improving tax compliance among small and medium enterprises (SMEs) in Nairobi. By focusing on SMEs, their study highlights a segment of the economy that is often under-scrutinized yet significantly contributes to the national income. The findings of this study are pivotal, as they suggest that not all enforcement strategies need to be broad and indiscriminate. Instead, targeted audits, which are more resource-efficient and less intrusive, can yield substantial improvements in compliance. This research supports the broader literature on tax audits' role in enhancing tax compliance, as seen in studies like Alm, Jackson, and McKee (1992), which demonstrated that the perception of being audited can significantly influence compliance behavior.

In a complementary vein, Mwangi and Muturi (2016) broaden the discourse by examining the multifaceted nature of enforcement strategies, including penalties and service orientation, and their impact on tax compliance. Their findings illuminate the complex relationship between enforcement and compliance, indicating that while penalties serve as a critical deterrent against non-compliance, the quality of services rendered by the tax authority, in this case, the Kenya Revenue Authority (KRA) also plays a fundamental role in fostering voluntary compliance. This dual finding is essential as it underscores the need for a balanced approach to enforcement, one that not only punishes non-compliance but also rewards compliance through efficient and fair services. This perspective aligns with the service-oriented view of tax compliance, which posits that taxpayers are more likely to comply voluntarily if they perceive the tax authority as providing valuable services and treating taxpayers fairly (Feld & Frey, 2017).

2.4.3 Digital Tracking and Tracing Systems on Tax Compliance

The landscape of tax administration and compliance has been significantly transformed with the advent of digital technologies. Among various revenue enforcement strategies, digital tracking and tracing systems stand out for their potential to enhance tax compliance. These systems enable tax authorities to monitor transactions and financial flows in real-time, reducing opportunities for tax evasion and avoidance. In a study by an in-depth exploration into the transformative impacts of customs system automation on the efficiency of revenue collection within Kilimanjaro's customs department is presented. This research delves into various facets of automation, specifically examining how the adoption of integrated cargo management technologies influences the customs department's ability to collect revenue effectively. Additionally, the study probes into the role of capacity building in enhancing customs revenue collection performance and investigates whether capacity building can act as a moderating factor that amplifies the benefits derived from integrated cargo management technologies. Moreover, the challenges that emerge during the shift from conventional manual customs processes to a sophisticated automated system are thoroughly analyzed.

Paulina employs a robust analytical framework that includes descriptive statistics, content analysis, and the multiple linear regression models to dissect and understand the data collected. The findings of this study reveal a significantly positive impact of customs system automation on revenue collection performance. One of the pivotal elements of this automation is the electronic cargo tracking systems, which have been shown to substantially improve compliance rates. This improvement is attributed to the systems' ability to enhance transparency, accountability, and traceability in the customs clearance

process. However, the study also points out that not all technologies integrated into the customs system wield the same level of influence. Technologies such as cargo scanner technology and cargo valuation systems, despite being integral components of the automated system, exhibit a limited impact on the overall performance of customs revenue collection.

This nuanced examination sheds light on the critical importance of aligning technological innovations with effective capacity building. The findings suggest that while automation through integrated cargo management technologies presents a promising avenue for boosting revenue collection performance, the full spectrum of benefits can only be realized when accompanied by strategic capacity building initiatives. These initiatives are essential for ensuring that the personnel within the customs department are well-equipped to leverage these technologies to their fullest potential. Moreover, the study does not shy away from addressing the hurdles that are encountered during the transition phase from a traditional customs system to an automated setup. These challenges are pivotal in understanding the complexities involved in adopting new technologies within government departments, particularly those as crucial as customs and revenue collection.

In 2021, Zedekiah conducted a pivotal study titled *"Effect of Adoption of Electronic Cargo Tracking System on Excise Revenue Collection in Kenya: A Case of Jomo Kenyatta International Airport"* (JKIA). This research meticulously explored the impact of implementing an Electronic Cargo Tracking System (ECTS) on the collection of excise revenue in Kenya, with a specific focus on JKIA, a crucial hub for entry and exit in the country. The investigation was driven by a series of specific objectives aimed at dissecting various facets of the system's influence on revenue collection. These objectives

included assessing how cargo monitoring, information sharing, and cargo security contribute to the enhancement of excise revenue collection at JKIA. Adopting an explanatory research design, the study targeted a population of 300 customs and technical staff members of the Kenya Revenue Authority (KRA) stationed at the JKIA Customs department. Through stratified random sampling, a subset of these customs and technical officers assigned to the ECTS was selected for closer examination. The theoretical underpinning of the research was supported by a framework comprising Modern Portfolio Theory, Diffusion of Innovation Theory, Technological Determinism Theory, Infusion Theory of Technology, and the Technological Acceptance Model, which collectively provided a robust lens through which the study's hypotheses were tested.

The research findings, derived from multiple regression analysis, offered compelling evidence of the positive and significant impact of cargo monitoring, cargo security, and information sharing on excise revenue collection. Specifically, the analysis highlighted that cargo monitoring had a notable positive influence on revenue, as did cargo security, and information sharing. These results unequivocally demonstrated that the adoption of the ECTS at JKIA significantly bolstered excise revenue collection in Kenya, evidenced by the substantial growth in excise revenue from Sh. 80 billion in 2010 to Sh. 165 billion in 2018. Based on these findings, the study conclusively recommended that the Kenya Revenue Authority should further enhance cargo monitoring, cargo security, and information sharing practices to realize additional gains in excise revenue collection at JKIA. The research also opened avenues for future studies to explore other potential factors that could influence excise revenue collection at JKIA, thereby providing a pathway for continued improvement in revenue collection methodologies and systems in

Kenya. Through its comprehensive analysis and insightful conclusions, Zedekiah's study offers a valuable contribution to understanding the critical role of tracking systems in enhancing national revenue collection strategies.

2.5 Critique of Existing Literature

In their foundational study, Muriithi and Moyi (2013) present an in-depth examination of Kenya's approach to tax compliance, emphasizing the immediate advantages and potential long-term drawbacks of adopting strict enforcement policies. Although the research offers a thorough case study on Kenya, it does not completely consider the unique political, economic, and cultural contexts that could affect the success of such enforcement strategies. In their work, Mwangi and Muturi (2016) take a comprehensive approach by examining both penalties and service orientation within enforcement strategies. This dual perspective offers a nuanced understanding of how these elements interact. Yet, achieving the right equilibrium is complex; leaning too heavily on penalties could erode taxpayer trust in the tax authority, whereas prioritizing service orientation excessively, without sufficient enforcement, might foster taxpayer complacency. The ideal combination of enforcement and service orientation is likely context-dependent and should be continuously refined in light of empirical data.

Mascagni, Nell, and Monkam (2017) explore the novel idea of using public disclosure of audit outcomes to harness social norms for enhancing compliance. While this method is innovative, it carries the risk of unintended adverse effects, including harm to the reputations of businesses or individuals, which might be unjustly tarnished by the disclosure of information that could be misinterpreted (for instance, the fact of being audited doesn't necessarily indicate misconduct). The need to find a judicious balance

between ensuring transparency and respecting privacy, along with considering the possible effects on the morale of taxpayers, demands thoughtful deliberation. Buehn and Schneider (2012) concentrate on the significance of routine inspections to tackle the shadow economy, a crucial element in ensuring tax compliance. Nevertheless, the effectiveness of this approach might fluctuate considerably depending on the economic sector and the nature of informal activities. The widespread application of regular inspections without proper differentiation runs the risk of inefficiencies and has the potential to strain the relationship between tax authorities and businesses. A more nuanced approach that considers sector-specific dynamics could enhance the overall effectiveness of this strategy.

2.6 Summary of the Literature Review

The primary objective of this study was to assess the effect of revenue enforcement strategies on tax compliance among water manufacturing companies in Nakuru, Kenya. To achieve this goal, we conducted a comprehensive analysis of previous research findings, utilizing insights from three fundamental theories: deterrence theory, principle agent theory and social exchange theory. By thoroughly reviewing a variety of studies, our objective was to unveil the correlations between revenue enforcement strategies and tax compliance. Additionally, we aimed to identify gaps in current research that warrant additional investigation and offer critical assessments where applicable.

2.7 Research Gaps

The literature revealed several insightful findings about the determinants of taxpayer behavior and the effectiveness of various enforcement mechanisms. However, it also pointed to numerous research gaps that, if addressed, could significantly enhance our

understanding of tax compliance dynamics. Some of these gaps included: The strategy of making audit outcomes public, as discussed by Mascagni, Nell, and Monkam (2017), opens up questions about the balance between transparency, privacy, and the potential stigmatization of audited entities. Research gaps exist in systematically assessing the societal and individual taxpayer impacts of such disclosure strategies, including the potential for reputational damage and its effects on compliance behavior. The dual role of penalties and service orientation in influencing compliance, highlighted by Mwangi and Muturi (2016), points to a research gap in fully integrating the concept of service quality into tax compliance models. Investigating how perceptions of service quality from tax authorities influence compliance, separate from the deterrent effect of audits and penalties, could yield insights into non-coercive methods of enhancing compliance.

Although the short-term advantages of digital tracking systems in improving tax compliance and minimizing fraud are evident, research into their long-term impact remains sparse. The enduring nature of these benefits, how individuals may adjust their strategies to evade tax laws over time, and the overall cost-efficiency of deploying and up keeping such technologies are areas that need more thorough exploration. Similarly, while the effectiveness of digital tracking in tax enforcement is recognized, there's a noticeable lack of investigation into the data privacy and security risks these technologies may pose. Given the extensive collection and analysis of transactional and personal data by tax authorities and governments, it's essential to delve into the consequences for personal privacy rights and to develop strategies to protect against data breaches and misuse. These subjects are critical for a deeper understanding of digital tracking's broader implications and for ensuring its responsible implementation.

2.8 Conceptual Framework

The conceptual framework serves as a network of interrelated ideas, forming a structure that the researcher believes effectively captures the dynamics and relationships among the variables under study (Adom & Agyem, 2018). This research aims to evaluate the effect of revenue enforcement strategies on excise tax compliance among water manufacturing companies in Nakuru, Kenya. It examines the influence of independent variables such as excise stamps, audit and inspection strategies, and digital tracking and tracing systems on the dependent variable—excises tax compliance. Control variables that can be considered in the study include company size, years of operation, and revenue levels, as these factors can significantly shape compliance capabilities and behavior. Additionally, other contextual elements like access to technology, employee training, geographical location, and the regulatory environment may also impact excise tax compliance. By accounting for these control variables, the study ensures a precise analysis of the relationship between excise stamps, audit strategies, digital tracking systems, and compliance outcomes.

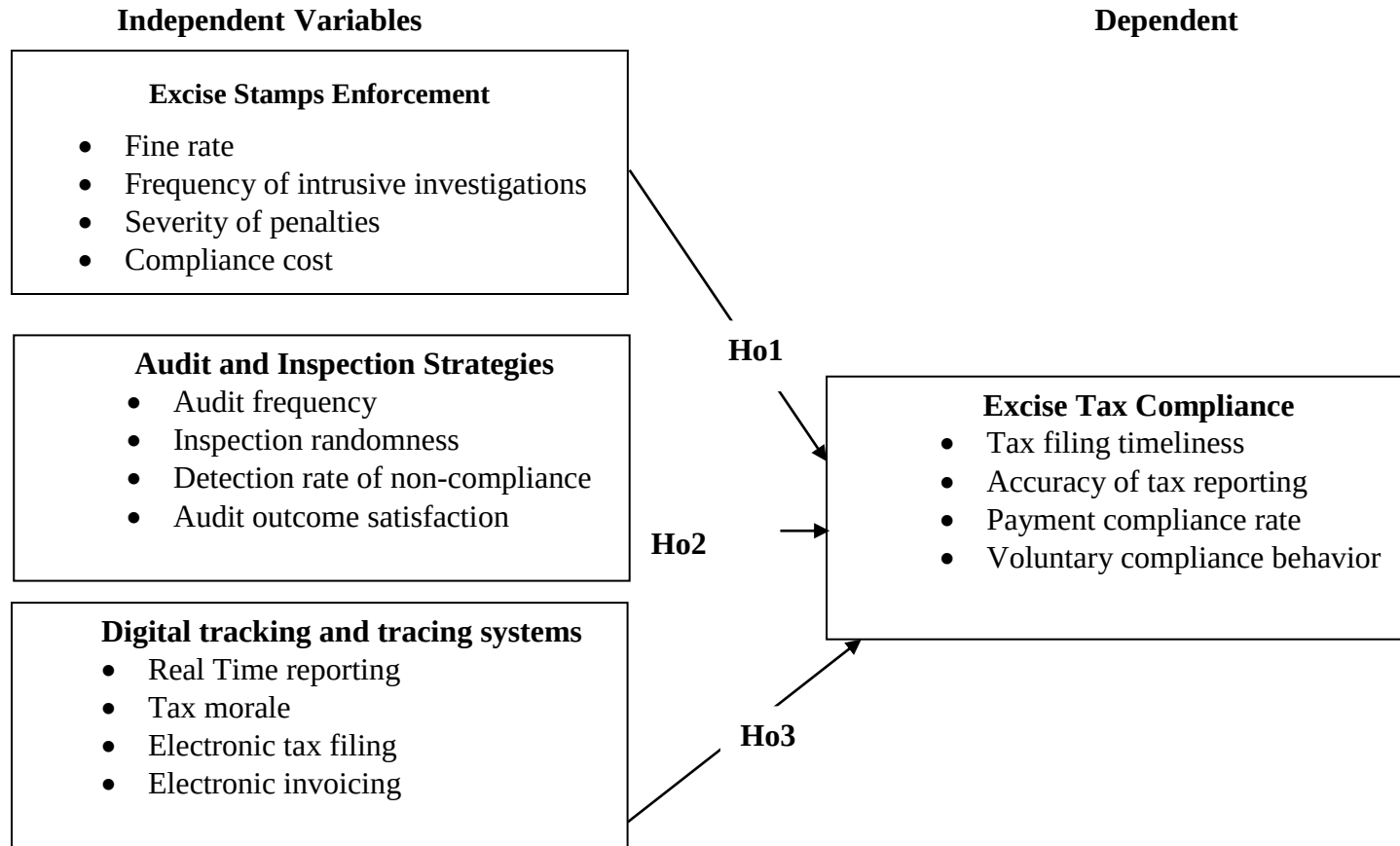


Figure 2.1: Conceptual framework

Source: Author (2024)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presented the methodology that was used to carry out the research. It presented the research design, the target population, sampling procedure data collection procedures instruments and data collection procedures instruments and data analysis.

3.2 Research Design

Research design serves as a structured blueprint that guides the researcher through the process of data collection, analysis, and interpretation, providing a foundation for the methods and tools used to gather and assess information. It is central to addressing the research questions and ensuring that the study's objectives are met (Mugenda & Mugenda, 2003). For this study, a descriptive research design was chosen, as it is particularly effective in capturing a detailed, accurate depiction of the current conditions of the research population. This design allows for the systematic collection and analysis of data, providing a comprehensive understanding of the research topic.

Descriptive research design is focused on observing and documenting the characteristics of a population, as well as the frequency of specific behaviors, traits, or conditions. Unlike explanatory designs, which focus on exploring causal relationships, descriptive research aims to paint a clear picture of the existing state of affairs. In this study, the descriptive design was ideal for identifying patterns in excise tax compliance and understanding the impact of revenue enforcement strategies within the context of the study. By utilizing descriptive surveys, the study was able to systematically collect data

that reflects the current state of excise tax compliance and provide valuable insights into the factors influencing it.

3.3 Target Population

The target population represents all the units of analysis relevant to a research project, as defined by Goertz and Mahoney (2012). These units can range from individuals to various entities, depending on the study's objectives. For this research, the target population consisted of 302 respondents in Nakuru, Kenya—a region chosen for its rapid urban growth and thriving economic activities, including manufacturing.

The study specifically focused on tax compliance within Nakuru's water manufacturing sector, an area presenting notable challenges for tax authorities. These challenges arise from ambiguous tax laws and a complex business environment. Despite the Kenyan government's efforts to improve tax compliance, significant gaps in revenue collection persist, affecting both economic stability and development. This research aimed to uncover specific compliance issues in Nakuru's water manufacturing industry, evaluate the effectiveness of current enforcement strategies, and identify policy interventions to enhance tax revenue collection and promote market fairness. The target population was stratified as follows: Excise Tax Enforcement Officials (150 respondents), Tax Policy Analysts (40 respondents), Compliance and Audit Officers (70 respondents), Legal Affairs and Dispute Resolution Officers (22 respondents), and Senior Tax Administration Officials (20 respondents). The breakdown of this population is detailed in Table 3.1.

Table3.1: Target Population

Respondents	Target population
Excise Tax Enforcement Officials	150
Tax Policy Analysts	40
Compliance and Audit Officers	70
Legal Affairs and Dispute Resolution Officers	22
Senior Tax Administration Officials	20
Total	302

Source: Author (2024)

3.4: Sampling Frame

The sampling frame is the full list of all the units of the study or target population from which the researcher selects the study sample (Saunders, Lewis & Thornhill, 2003). The sampling frame for this study was comprised of a carefully selected list of potential respondents who were the focus of your research. For this specific research, the sampling frame included a meticulously chosen roster of potential participants who were the central to the study. In this case, the sampling frame was constructed using authoritative and trustworthy data, specifically sourced from the Human Resource Departments of the Water Manufacturing Companies (2022/2023).

3.5 Sample and Sampling Technique

Sampling refers to selecting units from the population so that the data collected from the sample will be assumed to represent the status of the population as regards the study constructs or variables (Mugenda & Mugenda, 2003). To determine the appropriate

number of participants for the study, the researcher utilized the sample size calculation formula introduced by Yamane (1967). This calculation was performed assuming a 95% confidence level, which corresponds to a 5% level of significance. The formula was presented as follows:

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

Where **n**= Number of samples,

N= Total population and

e= Error tolerance

Where: N is the target population (222), e is the standard error of estimate (5%) at 95% confidence level and hence n is the sample size (194).

$$n = \frac{302}{1+302 (0.05^2)}$$

$$n = \frac{302}{1+0.555}$$

$$n = \frac{302}{1.555}$$

$$n = 194$$

The study employed stratified random sampling by dividing the total population of 302 individuals into distinct strata based on their roles and responsibilities within the water manufacturing sector and tax enforcement bodies. From each stratum, respondents were selected proportionally to ensure that all groups were adequately represented, resulting in a sample size of 194. Although the population size was not excessively large, a census

was avoided to manage time, costs, and logistical challenges, as well as to focus on collecting high-quality, representative data without overstretching resources.

To distinguish senior tax officials from other senior roles, clear definitions of responsibilities and job functions were established. Senior tax officials were identified based on their roles in policy formulation, compliance monitoring, and excise tax management, while senior enforcement officers were defined by their specific focus on inspection, audits, and penalty enforcement. The study adopted the term "administration" to refer to decision-making entities within both water manufacturing companies and tax authorities responsible for overseeing compliance and operational policies.

Nakuru's water supply presents notable challenges, as the county has been grappling with issues of water scarcity and quality due to inadequate infrastructure and over-reliance on boreholes (Mwangi, 2023). These issues are compounded by high population growth, putting pressure on water resources. Nakuru was chosen for the study partly because of its strategic importance in addressing water safety, highlighted by interventions from both the county and national governments aimed at improving access to safe drinking water. Additionally, much of the water manufactured in Nakuru serves not only the local population but is also transported to other parts of Kenya, making compliance with excise tax policies critical to the broader supply chain. The number of respondents for each stratum was shown in Table 3.2.

Table3.2: Sample Size

Respondents	Target population	Sample size
Excise Tax Enforcement Officials	150	96
Tax Policy Analysts	40	26
Compliance and Audit Officers	70	45
Legal Affairs and Dispute Resolution Officers	22	14
Senior Tax Administration Officials	20	13
Total	302	194

Source: Author (2024)

3.6 Research Data Collection Instrument

The study used questionnaires to collect primary data. The questionnaires were semi structured. Questionnaires are a favored method among researchers due to their ease of administration, particularly in scenarios where the respondents are geographically concentrated (Tavokol & Dennick, 2011). They serve as a crucial instrument in research, facilitating the rapid and efficient collection of data from a broad participant base.

3.7 Data Collection Procedure

Participants independently filled out the research questionnaires, with the researcher personally handling the collection of data. To facilitate this procedure, the researcher handed out the questionnaires to selected individuals for completion. Afterwards, the

completed questionnaires were gathered from the participants by the researcher for subsequent analysis. It was anticipated that the respondents possess understanding concerning the impact of revenue enforcement strategies on tax compliance. An introductory letter was presented to the participants to build rapport and elucidate the objectives of the study.

3.8 Pilot Testing

A preliminary study was conducted in Kisumu to improve the accuracy and reliability of the data collection tool. Kisumu is home to a diverse range of water bottling companies, with Kisumu Water and Sanitation Company Limited (KIWASCO) being a key player. Established in 2001, KIWASCO is ISO 9001:2015 certified and operates under CAP 486 of the laws of Kenya, making the city an ideal location for the research. The presence of multiple manufacturing companies, particularly in the water bottling sector, provided a broad pool of subjects for the study. This allowed for a thorough examination of how various enforcement strategies are implemented within firms operating under similar local and regulatory conditions. The preliminary study served as an effective step for evaluating the research framework, data collection methods, and analysis techniques, as recommended by Mugenda & Mugenda (2013). The pilot sample size ranged from 1% to 10% of the total sample size for the study.

3.8.1 Validity of the Research Instrument

Validity refers to the extent to which an instrument accurately measures what it is intended to measure (Mugenda, 2011). To verify the validity of the data collection instrument for this research, it will undergo evaluation by experts, including the supervisor. These research experts reviewed the instrument, focusing on how well the

questions and items reflect the concepts being studied. Their feedback, criticisms, and suggestions were integral to refining the questionnaire, ensuring it effectively represents the concepts in question. According to Creswell and Clark (2011), involving professionals or experts in the field is a common and reliable method to assess a measure's content validity.

3.8.2 Reliability of the Research Instrument

Reliability refers to the consistency of the results obtained from a research instrument over multiple tests (Wachira, 2017). To evaluate the reliability of the instrument, I employed the split-half technique. This involves administering the questionnaire to a preliminary group, then dividing the responses into two sets. By calculating the correlation between these two halves, I assessed their consistency. A Cronbach's alpha coefficient of 0.70 or above is deemed acceptable, indicating reliable instrument performance (Sekaran, 2003). Generally, reliability scores below 0.6 are viewed as poor, around 0.70 are acceptable, and above 0.80 are considered good (Mugenda, 2011).

3.9 Data Analysis and Presentation

Descriptive statistics was used to determine the effects of revenue enforcement strategies on tax compliance among Water Manufacturing Companies in Nakuru, Kenya. A regression model was used for ascertaining the effects of revenue enforcement strategies on tax compliance among Water Manufacturing Companies in Nakuru, Kenya. The study used regression analysis to test the level of significant of the variables on the dependent variable at 95% level of significance. Tables, figures and charts were used for data presentation. After the analysis and interpretation of data, a final report was written to provide a summary of the findings. The following regression model was used.

The regression equation ($Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$):

Whereby

Y = Excise Tax Compliance

β_0 = Constant (Co-efficient of intercept)

X_1 = Excise Stamps Enforcement

X_2 = Audit and Enforcement Strategies

X_3 = Digital tracking and tracing systems

ε = represents the error term

$\beta_1, \beta_2, \beta_3$ = Regression co-efficient of three variables.

3.10 Diagnostic Tests

This research utilized regression analysis, which required scrutinizing the data for possible violations of assumptions regarding normality and linearity as detailed by Field (2009).

3.10.1 Normality Test

The normality test was used to determine if the data follows a normal distribution. In this study, the normality of the data was evaluated using the Kolmogorov-Smirnov and Shapiro-Wilk tests. Should the p-value from either test be greater than 0.05, it was interpreted that the data does adhere to a normal distribution, thereby meeting the normality assumption required for multiple regression analysis.

3.10.2 Multicollinearity Test

Multicollinearity arises when the independent variables in a regression model are strongly correlated with one another. To detect multicollinearity, the Variance Inflation

Factor (VIF) is commonly employed. A VIF value between 1 and 10 is typically regarded as acceptable, indicating that multicollinearity is unlikely to pose a problem. However, if the VIF exceeds 5 to 10, or if the tolerance value falls below 0.1 to 0.2 (corresponding to an R^2 value of 0.8 to 0.9), multicollinearity is present and may influence the reliability of the regression analysis.

3.10.3 Heteroscedasticity Test

Heteroscedasticity, according to Ouma and Muriu (2014), describes a scenario in which the variance of the residuals in a model is not uniform. The Breusch-Pagan-Godfrey test (B-P-G Test) was utilized to evaluate the presence of heteroscedasticity.

3.10.4 Linearity Test

A linearity test is a statistical technique used to assess whether the relationship between variables in a model is appropriately described as linear, as outlined by Elskens (2002). The main objective of performing a linearity test is to ensure that the linear regression model accurately reflects the true relationship between the variables. If linearity is not established, it may be advisable to consider other modeling techniques or apply data transformations to more accurately depict the actual relationship, as suggested by Corbetta (2011).

3.11 Measurements of Variables

3.11.1 Excise Tax Compliance

Excise tax compliance serves as the dependent variable in this investigation, defined as the degree to which taxpayers adhere to regulatory requirements in paying excise duties (Kiogora, 2022). Compliance rates are crucial indicators, reflecting the effectiveness of

enforcement strategies implemented by tax authorities. Measurement of compliance includes assessing both the frequency and accuracy of tax filings and payments. Evaluation methodologies encompass quantitative analyses of tax returns, audits, and penalties levied. The study employs revenue collected through excise taxes as a primary metric for compliance, considering it a reliable proxy for assessing the impact of enforcement efforts.

3.11.2 Excise Stamps Enforcement

Effective enforcement of excise stamps involves several key constructs: fine rate, frequency of intrusive investigations, severity of penalties, and compliance cost. These constructs collectively contribute to the deterrence and detection mechanisms aimed at reducing tax evasion and promoting compliance. The fine rate refers to the monetary penalties imposed on non-compliant entities, designed to discourage evasion behaviors (Leech, 2018). Frequency of intrusive investigations measures the regularity and intensity of audits and inspections conducted by enforcement agencies to verify compliance. Severity of penalties evaluates the harshness of sanctions imposed on violators, influencing their decision-making regarding compliance. Compliance cost encompasses the financial burden and administrative efforts incurred by taxpayers to meet regulatory requirements. In this study, a Likert Scale was used to measure these constructs of excise stamps enforcement. The data were subsequently analyzed using multiple regressions, correlation analyses, and t-tests to examine the relationships between enforcement strategies and excise tax compliance outcomes.

3.11.3 Audit and Enforcement Strategies

Audit and enforcement strategies encompass several critical dimensions: audit frequency, inspection randomness, detection rate of non-compliance, and audit outcome satisfaction. These dimensions collectively shape the effectiveness and efficiency of regulatory oversight aimed at enhancing compliance behaviors. Audit frequency refers to the regularity and schedule of audits conducted by tax authorities to assess taxpayer compliance (Negaro, 2019). Inspection randomness evaluates the unpredictability and fairness in selecting entities for audits, reducing anticipatory evasion tactics. Detection rate of non-compliance measures the effectiveness of audit and inspection processes in identifying and addressing violations. Audit outcome satisfaction gauges taxpayers' perceptions of fairness and efficiency in the resolution of audit findings. In this study, a Likert Scale was employed to measure these constructs of audit and enforcement strategies. The data were subsequently analyzed using multiple regressions, correlation analyses, and t-tests to explore the relationships between audit and enforcement strategies and excise tax compliance outcomes.

3.11.4 Digital Tracking and Tracing Systems

Digital tracking and tracing systems include several essential constructs: real-time reporting, tax morale, electronic tax filing, and electronic invoicing. These constructs collectively enhance the transparency and efficiency of tax administration, thereby improving compliance rates. Real-time reporting refers to the capability of systems to provide immediate updates on transactions and tax-related activities, allowing for timely monitoring and intervention (Atik, 2015). Tax morale measures the intrinsic motivation and willingness of taxpayers to comply with tax regulations, influenced by the perceived

fairness and effectiveness of the system. Electronic tax filing evaluates the adoption and effectiveness of digital platforms for submitting tax returns, reducing errors and administrative burdens. Electronic invoicing involves the use of digital invoices to ensure accurate and verifiable records of transactions, aiding in the detection and prevention of tax evasion. In this study, a Likert Scale was used to measure these constructs of digital tracking and tracing systems. The data were then analyzed using multiple regressions, correlation analyses, and t-tests to investigate the relationships between digital tracking and tracing systems and excise tax compliance outcomes.

3.12 Operationalization and Measurement of the Study Variables

Table 3.3: Operationalization of the Study Variables

Variable Type	Operational Indicators (Measurements)	Measurement Questionnaire scale	Analytical tool used
<u>Independent</u> <i>Excise stamps</i>	• Fine rate • Frequency of intrusive investigations • Severity of penalties • Compliance cost	5-point Likert Scale	Multiple regressions, correlation, t test.
<i>Audit and Inspection Strategies</i>	• Audit frequency • Inspection randomness • Detection rate of non-compliance • Audit outcome satisfaction	5-point Likert Scale	Multiple regressions, correlation, t test.
<i>Digital tracking and tracing systems</i>	• Real Time reporting • Tax morale • Electronic tax filing • Electronic invoicing	5-point Likert Scale	Multiple regression, correlation, t test

<u>Dependent</u> <i>Tax Compliance</i>	• Awareness of tax obligations • Tax morale • Changes in compliance behaviour		Descriptive statistics, multiple regressions, t test.

3.13 Ethical Consideration

The researcher obtained a research letter from the Kenya School of Revenue Administration and a research permit from the National Commission of Science Technology and Innovation before commencing the study. The researcher also ensured confidentiality was maintained throughout the data collection process by anonymizing the responses from the intended respondents. Additionally, the researcher was committed to honesty and maintained a high level of integrity throughout the entire process.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND INTERPRETATION

4.0 Introduction

This chapter consisted of data analysis, findings that were collected, interpretation of the analyzed data, and findings of the effect of revenue enforcement strategies on excise tax compliance among water manufacturing companies in Nakuru, Kenya. The specific objectives informed the three null hypotheses that the study set out to test; H0₁: Implementing excise stamps had no significant impact on the levels of excise tax compliance among water manufacturing companies in Nakuru, Kenya. H0₂: Audit and inspection strategies had no significant effect on enhancing excise tax compliance in the water manufacturing sector in Nakuru, Kenya. H0₃: The use of digital tracking and tracing systems had no significant effect on enhancing excise tax compliance among water manufacturing companies. Descriptive and inferential statistics were used to analyze the data. Inferential statistics presented the main project by testing the hypotheses while Descriptive statistics built the case for the project of study.

4.1 Response Rate

The researcher distributed 194 questionnaires, of which 153 were returned, achieving an overall response rate of 79.4%. The response rates varied slightly across different strata but remained consistently high, reflecting the effectiveness of the distribution method. Among Excise Tax Enforcement Officials, 76 out of 96 questionnaires were returned, yielding a response rate of 79.17%. For Tax Policy Analysts, 21 out of 26 questionnaires were completed, resulting in a response rate of 80.77%. Compliance and Audit Officers returned 35 out of 45 questionnaires, marking a response rate of 77.78%. Similarly, Legal

Affairs and Dispute Resolution Officers submitted 11 out of 14 questionnaires, achieving a response rate of 78.57%. Finally, Senior Tax Administration Officials returned 10 out of 13 questionnaires, with a response rate of 76.92%.

The slight variations in response rates across these groups suggest that the distribution method successfully maintained representativeness. While no specific weights were applied to the strata, all responses were treated equally during the analysis. Nonetheless, the strata-specific response rates played a crucial role in ensuring accurate and balanced representation aligned with the study's objectives. Table 4.1 provides a summary of the response rate.

Table 4.1: Respondents Rate

Respondents	Frequency	Percentage
Respondents	153	79.4
Non-Respondents	41	20.6
Total	194	100

4.2 Demographic Statistics

4.2.1 Age Distribution

Age distribution plays a crucial role in the study as it helps to capture diverse perspectives, experiences, and attitudes toward excise tax compliance across different

career stages and age groups within the water manufacturing industry. This demographic aspect ensures that the analysis reflects the views of younger professionals, individuals in their prime working years, and more experienced industry veterans, thereby providing a holistic understanding of compliance dynamics.

The findings reveal that the majority of respondents (57.8%) fell within the age range of 26-45 years, with 27.3% aged 26-35 years and 30.5% aged 36-45 years. This indicated that the study predominantly captured insights from individuals in their prime working age, actively engaged in the industry, which was beneficial for understanding contemporary challenges and practices in excise tax compliance. Additionally, 28.1% of respondents were in the age group of 46-55 years, representing experienced professionals whose insights shed light on long-term trends and best practices in the sector.

Moreover, 12.3% of respondents belonged to the 56-65 age group, contributing perspectives shaped by extensive career experiences and a deep understanding of industry compliance issues. Notably, 7.1% of participants are aged 18-25 years, ensuring the inclusion of younger individuals who had fresh and innovative viewpoints regarding tax compliance practices and challenges. This diverse age representation enriched the study by offering nuanced insights into how excise tax compliance is perceived and managed across varying levels of experience and career progression within Nakuru's water manufacturing industry.

In a nutshell, the age distribution of the respondents in the study reflects a diverse range of experiences and perspectives within the water manufacturing sector in Nakuru. The varying age groups represented in the sample provided comprehensive view of how

excise tax compliance is perceived and managed across different generations and career stages. This diversity in age demographics enhanced the richness and depth of the study findings, allowing for a more nuanced understanding of the factors influencing tax compliance behavior among water manufacturing companies in the region.

Table 4.2: Age Distribution

		Age			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	11	7.1	7.2	7.2
	26-35	42	27.3	27.5	34.6
	36-45	47	30.5	30.7	65.4
	46-55	31	28.1	20.3	85.6
	56-65	19	12.3	12.4	98.0
	Above 65	3	1.9	2.0	100.0
	Total	153	100.0	100.0	

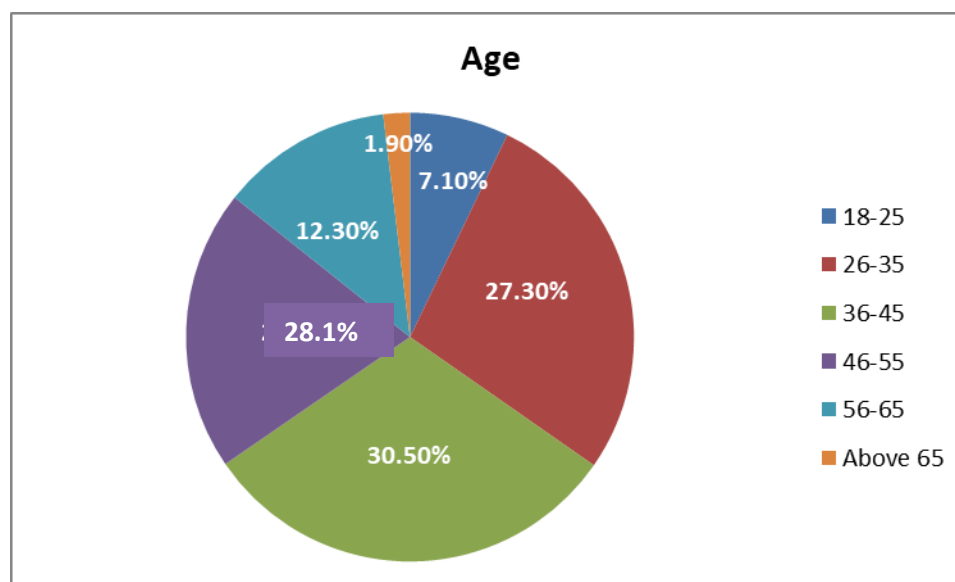


Figure 4.1: Age

4.2.2 Gender Distribution

The gender distribution of the respondents in the study reveals interesting insights into the representation of male and female participants in the research on excise tax compliance among water manufacturing companies in Nakuru, Kenya. Among the 153 participants, 50.6% are female, while 38.3% are male. This indicates a slightly higher representation of female respondents in the study, suggesting a significant presence of women in the water manufacturing sector in Nakuru who are willing to engage in discussions related to tax compliance.

The higher percentage of female participants in the study, compared to male participants, could reflect the changing dynamics in the workforce within the water manufacturing industry. It may also indicate a growing interest and involvement of women in tax compliance matters and regulatory issues within the sector. The inclusion of diverse gender perspectives is crucial for obtaining a comprehensive understanding of the

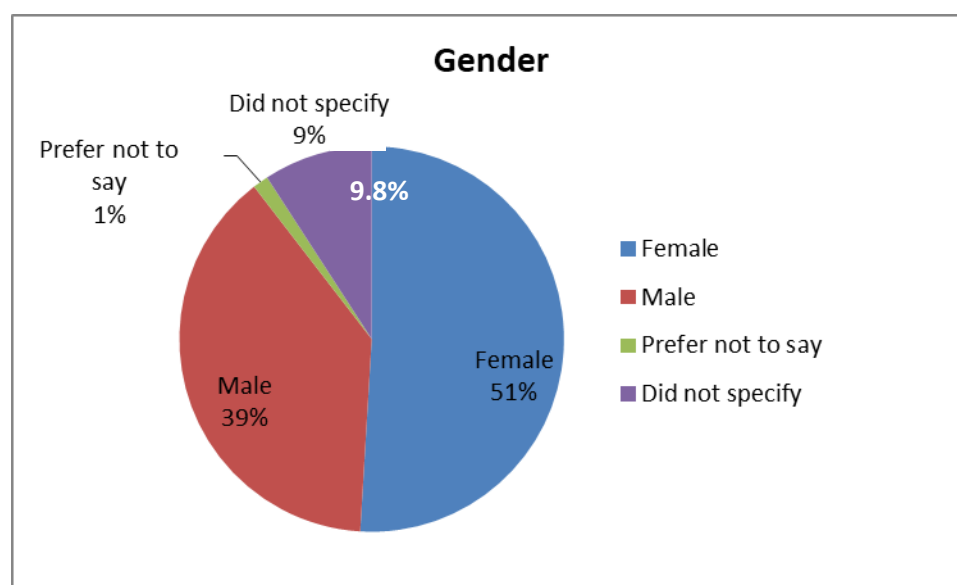
challenges and practices related to excise tax compliance among water manufacturing companies.

Moreover, the data shows that 9.8% of the respondents did not specify their gender or provided responses that were not categorized as male or female. While this group constitutes a small percentage of the sample, their inclusion highlights the importance of considering non-binary or unspecified gender identities in research studies to ensure inclusivity and diversity in data analysis and interpretation.

In general, the gender distribution in the study reflects a balanced representation of male and female participants, with a slightly higher percentage of female respondents. This gender diversity in the sample enhances the robustness of the research findings by capturing a range of perspectives and experiences related to excise tax compliance in the water manufacturing industry. Understanding how gender dynamics influence compliance behaviours and practices can provide valuable insights for policymakers, tax authorities, and industry stakeholders seeking to promote effective tax compliance strategies that resonate with the diverse workforce in Nakuru's water manufacturing sector.

Table 4.3: Gender Distribution

Gender				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	78	50.6	51.0
	Male	59	38.3	89.5
	Prefer not say	2	1.3	90.8
	Did not Specify	14	9.8	100.0
Total	153	100.0	100.0	

**Figure 4.2: Gender**

4.2.3 Department Distribution

The department distribution of the respondents in the study provides valuable insights into the roles and responsibilities of individuals involved in excise tax compliance within the water manufacturing sector in Nakuru, Kenya. The data reveals a diverse representation of different departments within the industry, shedding light on the various functions and expertise contributing to tax compliance efforts.

Among the 153 participants, the largest proportion (32.5%) belongs to the Excise Tax Enforcement Officials department. This indicates a significant presence of individuals directly involved in enforcing excise tax regulations and ensuring compliance among water manufacturing companies in Nakuru. The high percentage of Excise Tax Enforcement Officials underscores the critical role they play in monitoring and regulating tax compliance within the sector.

Furthermore, the Compliance and Audit Officers department accounts for 22.1% of the respondents, highlighting the importance of internal compliance mechanisms and audit processes in maintaining tax compliance standards within water manufacturing companies. The presence of a substantial number of Compliance and Audit Officers in the study suggests a strong emphasis on internal control and oversight functions to uphold tax regulations and practices.

Additionally, the data shows that Legal Affairs and Dispute Resolution department comprises 17.5% of the participants, indicating the involvement of legal professionals in addressing tax-related disputes and ensuring legal compliance within the water manufacturing industry. The representation of Legal Affairs and Dispute Resolution

personnel underscores the significance of legal expertise in navigating complex tax regulations and resolving disputes effectively.

Moreover, Senior Tax Administration department and Tax Policy Analysts department constitute 14.9% and 13.0% of the respondents, respectively. The presence of senior tax administrators and policy analysts in the study reflects the strategic and policy-oriented aspects of tax compliance management within the water manufacturing sector. Their involvement suggests a focus on developing and implementing tax policies that align with regulatory requirements and industry standards.

Overall, the department distribution in the study showcases a diverse mix of roles and expertise involved in excise tax compliance within the water manufacturing industry in Nakuru. The representation of various departments highlights the collaborative efforts and multidisciplinary approach required to ensure effective tax compliance practices and regulatory adherence in the sector. Understanding the distribution of departments and their contributions can provide valuable insights for policymakers, industry stakeholders, and tax authorities seeking to enhance tax compliance strategies and enforcement mechanisms within the water manufacturing sector.

Table 4.4: Department Distribution

		Department			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Compliance and Audit officers	34	22.1	22.2	22.2
	Excise Tax enforcement officials	50	32.5	32.7	54.9
	Legal affairs and Dispute Resolution	27	17.5	17.6	72.5
	Senior Tax Administration	23	14.9	15.0	87.6
	Tax policy Analysts	19	13.0	12.4	100.0
Total		153	100.0	100.0	

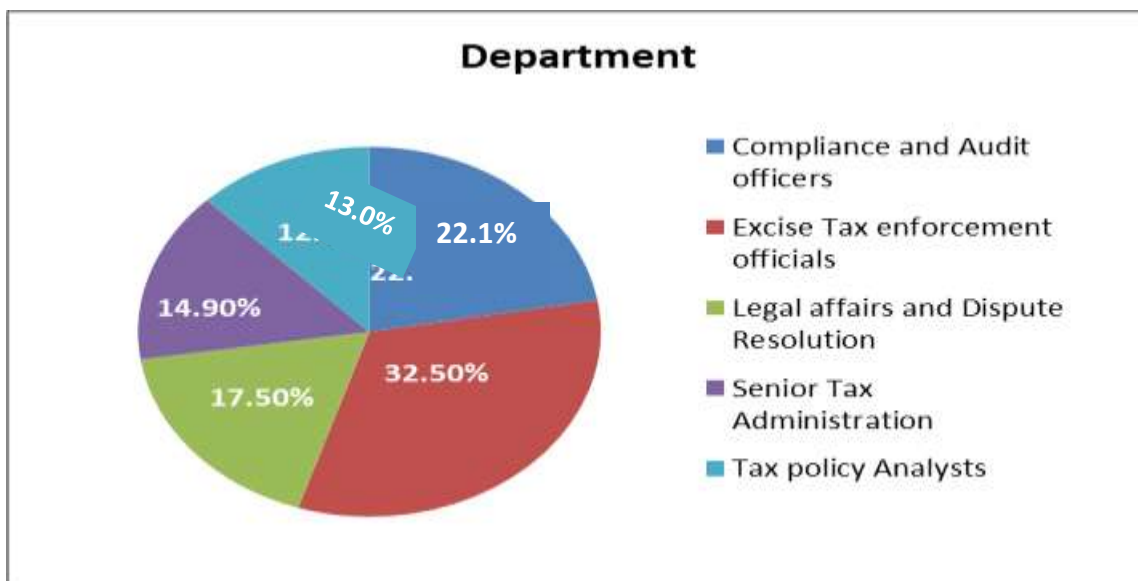


Figure 4.3: Department

4.2.4 Highest Level of Education

The distribution of the highest level of education among the respondents in the study provides insights into the educational backgrounds and qualifications of individuals involved in excise tax compliance within the water manufacturing sector in Nakuru, Kenya. The data reveals a diverse range of educational achievements among the participants, reflecting the varying levels of expertise and knowledge contributing to tax compliance efforts.

Among the 153 participants, the majority (43.1%) hold an Undergraduate Degree, indicating a significant proportion of individuals with a foundational level of education in disciplines relevant to the water manufacturing industry and tax compliance. The high percentage of respondents with an Undergraduate Degree suggests a strong academic background among professionals engaged in tax compliance activities within the sector.

Furthermore, 35.9% of the participants have a Postgraduate Diploma, highlighting a substantial number of individuals with specialized education beyond the undergraduate level. The presence of respondents with Postgraduate Diplomas signifies a higher level of expertise and advanced knowledge in specific areas related to tax compliance, potentially enhancing the quality and effectiveness of compliance practices within water manufacturing companies.

Moreover, 13.1% of the respondents hold a Master's Degree, indicating a smaller yet significant proportion of individuals with advanced academic qualifications in relevant fields. The representation of Master's Degree holders suggests a cohort of professionals with in-depth knowledge and specialized skills that can contribute to strategic decision-making and policy development in tax compliance management within the industry.

Additionally, 5.9% of the participants have a Ph.D. or Equivalent qualification, showcasing a smaller but notable group of individuals with the highest level of academic achievement. The presence of Ph.D. holders underscores the importance of research expertise, critical thinking, and advanced analytical skills in addressing complex tax compliance challenges and driving innovation within the water manufacturing sector.

Furthermore, 2.0% of the respondents have a High School Diploma, representing a smaller segment of participants with foundational education qualifications. While this group constitutes a minor percentage of the sample, their inclusion highlights the diversity of educational backgrounds and experiences among individuals engaged in tax compliance activities within the sector.

In sum, the distribution of the highest level of education in the study demonstrates a mix of educational qualifications, ranging from undergraduate degrees to postgraduate diplomas and advanced degrees. The diverse educational backgrounds among the participants underscore the multidisciplinary nature of tax compliance management within the water manufacturing industry and the importance of leveraging a range of expertise and knowledge to enhance compliance practices and regulatory adherence. Understanding the educational profiles of individuals involved in tax compliance can provide valuable insights for designing targeted training programs, skill development initiatives, and capacity-building efforts to strengthen tax compliance capabilities within the sector.

Table 4.5: Highest Level of Education

Highest Level of Education				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High school/ Diploma	3	1.9	2.0
	Master's Degree	20	13.0	15.0
	PhD or Equivalent	9	5.8	20.9
	Post graduate Diploma	55	35.7	56.9
	Undergraduate Degree	66	42.9	100.0
	Total	153	100.0	100.0

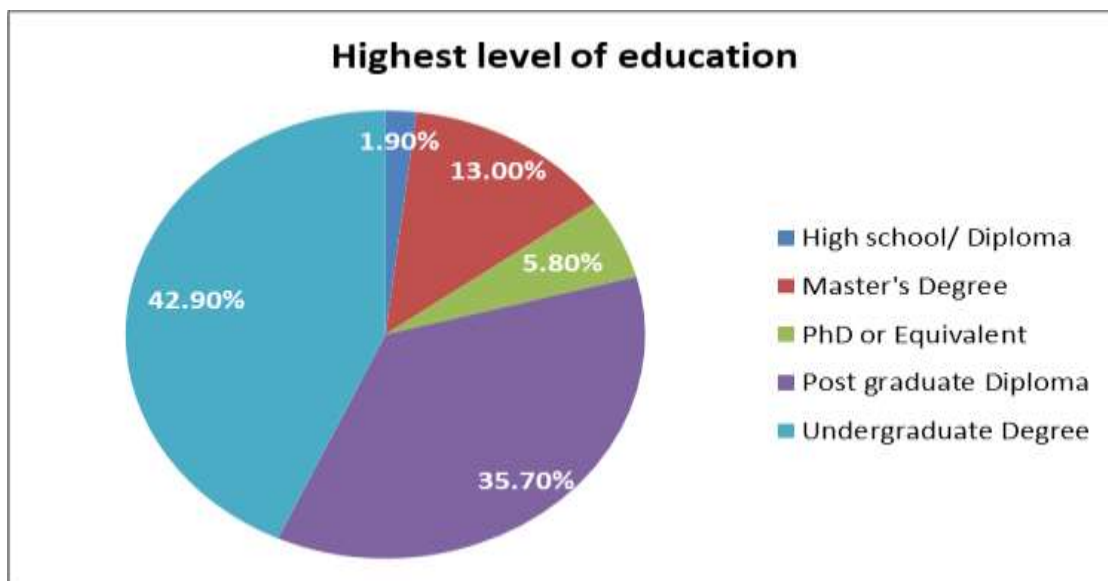


Figure 4.4: Highest Level of Education

4.2.5 Years of Experience

The distribution of years of experience among the respondents in the study offers valuable insights into the professional tenure and expertise of individuals engaged in excise tax compliance within the water manufacturing sector in Nakuru, Kenya. The data reveals a diverse range of experience levels among the participants, reflecting the varying degrees of industry knowledge and practical skills contributing to tax compliance efforts. Among the 153 participants, the largest proportion (38.6%) have 6-10 years of experience in their current role, indicating a significant number of individuals with a moderate level of industry experience and tenure in excise tax compliance within the water manufacturing sector. The high percentage of respondents with 6-10 years of experience suggests a cohort of professionals who have likely developed a deep understanding of tax compliance practices and regulations over their years of service.

Furthermore, 22.2% of the participants have 11-15 years of experience in their current role, highlighting a substantial group of individuals with a more seasoned background in excise tax compliance. The representation of respondents with 11-15 years of experience signifies a cohort of professionals who bring extensive industry knowledge, expertise, and practical insights to tax compliance activities, potentially contributing to strategic decision-making and operational efficiency within water manufacturing companies.

Moreover, 19.6% of the respondents have 1-5 years of experience, indicating a notable proportion of individuals who are relatively new to their roles in excise tax compliance. The presence of respondents with 1-5 years of experience suggests a mix of early-career professionals and mid-level practitioners who are building their expertise and skills in tax compliance practices within the sector.

Additionally, 14.4% of the participants have 16-20 years of experience, showcasing a smaller yet significant group of individuals with extensive industry tenure and long-standing involvement in excise tax compliance activities. The representation of respondents with 16-20 years of experience highlights a cohort of seasoned professionals who likely possess in-depth knowledge, strategic insights, and a wealth of practical experience in navigating complex tax compliance challenges within the water manufacturing industry.

Furthermore, 3.3% of the participants have less than 1 year of experience, representing a smaller segment of individuals who are relatively new to their roles in excise tax compliance. While this group constitutes a minor percentage of the sample, their inclusion underscores the diversity of experience levels and career stages among

individuals engaged in tax compliance activities within the sector. To sum up, the distribution of years of experience in the study demonstrates a mix of experience levels, ranging from early-career professionals to seasoned practitioners with decades of industry tenure. The diverse range of experience backgrounds among the participants underscores the multidimensional nature of tax compliance management within the water manufacturing industry and the importance of leveraging a spectrum of expertise and experience to enhance compliance practices, regulatory adherence, and industry knowledge. Understanding the experience profiles of individuals involved in tax compliance can provide valuable insights for designing tailored training programs, mentorship initiatives, and knowledge-sharing platforms to foster continuous professional development and expertise enhancement within the sector.

Table 4.6: Years of Experience in Your Current Role

Years of Experience in Your Current Role				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 11-15 years	34	22.1	22.2	22.2
1-5 years	30	19.5	19.6	41.8
16-20 years	22	14.3	14.4	56.2
6-10 years	59	38.3	38.6	94.8
Less than 1 year	5	3.2	3.3	98.0
More than 20 years	3	1.9	2.0	100.0
Total	153	100.0	100.0	

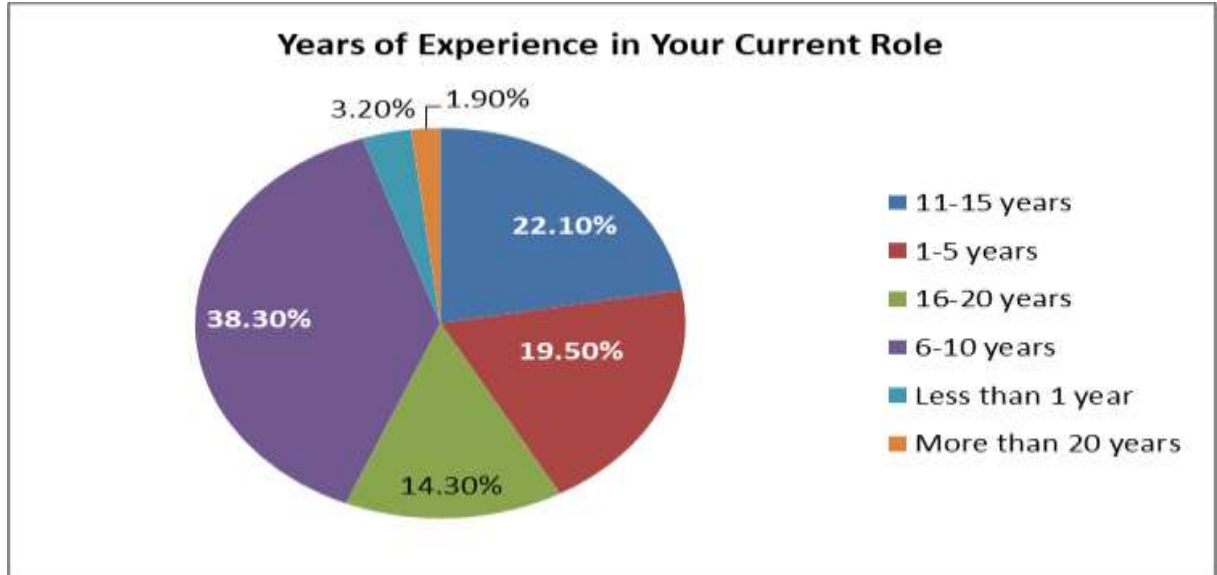


Figure 4.5: Years of experience in your current role

4.3 Descriptive Analysis

4.3.1 Excise Stamps and its Relationship with Excise Tax Compliance

This section sought to determine the effect of excise stamps on excise tax compliance.

Table 4.7: Excise Stamps and its Relationship with Excise Tax Compliance

Statement	Mean	Std. Deviation
Excise stamps significantly enhance the government's ability to monitor and ensure compliance with excise tax regulations.	3.76	3.30
The use of excise stamps has a deterrent effect on tax evasion and fraudulent activities related to excisable goods.	3.78	3.33
Implementing excise stamps simplifies the tax compliance process for businesses involved in the production or distribution of excisable goods.	3.63	3.22
Excise stamps are a cost-effective method for ensuring tax compliance compared to other enforcement strategies.	3.71	3.28
The public visibility of excise stamps on products increases consumer awareness about tax compliance and contributes to societal norms that favor it.	3.77	3.35
Regular updates and enhancements to the excise stamp system are necessary to keep pace with evolving tax evasion tactics.	3.80	3.37

Source: Author (2024)

Based on the findings in Table 4.7, the highest mean values recorded were 3.80, 3.78, 3.77, and 3.76, aligning with a Likert scale rating of 4. This suggests that respondents agree that excise stamps play a crucial role in enhancing the government's ability to monitor and enforce compliance with excise tax regulations. They also concur that regular updates and improvements to the excise stamp system are essential to counter evolving tax evasion strategies. Additionally, the visibility of excise stamps on products

boosts consumer awareness about tax compliance, fostering societal norms that support it. The lowest mean value, 3.63, indicates strong agreement among respondents that implementing excise stamps simplifies the tax compliance process for businesses involved in the production or distribution of excisable goods. These findings align with previous studies, such as Marangu (2018), which demonstrated that the demand for excise stamps positively and significantly impacts the monitoring of tax revenue.

4.3.2 Audit and Inspection Strategies and its Relationship with Excise Tax

Compliance

This section sought to determine the effect of audit and inspection strategies on excise tax compliance.

Table 4.8: Audit and Inspection Strategies and its Relationship with Excise Tax Compliance

Statement	Mean	Std. Deviation
Audit and inspection strategies are crucial for detecting and deterring excise tax evasion and non-compliance.	3.75	3.34
The presence of a well-defined audit and inspection plan increases voluntary compliance among businesses dealing with excisable goods.	3.81	3.37
The fear of being audited or inspected has a significant impact on a taxpayer's decision to comply with excise tax obligations.	3.90	3.46
Audit and inspection strategies should be tailored to the specific risks and compliance behaviors of different sectors dealing with excisable goods.	3.83	3.41
Technological advancements (e.g., data analytics, AI) have significantly increased the effectiveness of audit and inspection strategies in ensuring excise tax compliance.	3.90	3.46

Source: Author (2024)

Based on the findings presented in Table 4.8, the highest mean values were 3.90, 3.83, and 3.81. This suggests that the respondents agree on several points: the fear of being audited or inspected significantly influences a taxpayer's decision to comply with excise tax obligations; technological advancements, such as data analytics and AI, have greatly enhanced the effectiveness of audit and inspection strategies in ensuring compliance; audit and inspection strategies should be customized according to the specific risks and compliance behaviors of different sectors involved in excisable goods; and a well-defined audit and inspection plan boosts voluntary compliance among businesses handling excisable goods. The lowest mean value recorded was 3.75, which indicates that respondents strongly agreed that audit and inspection strategies are vital for detecting and preventing excise tax evasion and non-compliance. This study aligns with previous research, including Ogutu (2019), who demonstrated that tax audits positively impact the collection of excise duty.

4.3.3 Digital tracking and its relationship with excise tax compliance

This section sought to determine the effect of Digital tracking on excise tax compliance.

Table 4.9: Digital tracking and its relationship with excise tax compliance

Statement	Mean	Std. Deviation
Digital tracking systems significantly reduce the likelihood of excise tax evasion by providing real-time oversight of excisable goods.	3.97	3.53
The implementation of digital tracking technologies (e.g., blockchain, RFID	3.88	3.45

tags) has made the excise tax collection process more efficient and transparent.

Digital tracking empowers taxpayers to comply with excise tax regulations by simplifying the documentation and reporting process.	3.93	3.50
---	------	------

The cost of implementing digital tracking technologies is justified by the subsequent increase in excise tax compliance and revenue.	3.80	3.38
--	------	------

Digital tracking systems enhance the ability of tax authorities to audit and inspect excisable goods, leading to a decrease in tax evasion cases.	3.90	3.44
---	------	------

There is a positive correlation between the awareness and understanding of digital tracking mechanisms among taxpayers and their level of compliance with excise tax obligations.	3.85	3.43
---	------	------

Source: Author (2024)

Based on the findings in Table 4.9, the highest mean values were 3.97, 3.93, and 3.90. This suggests that respondents agree Digital tracking systems play an important role in reducing excise tax evasion by providing real-time monitoring of excisable goods. They also believe that digital tracking simplifies the documentation and reporting processes, enabling taxpayers to more easily comply with excise tax regulations. Furthermore, respondents feel that digital tracking systems strengthen the capacity of tax authorities to audit and inspect excisable goods, which in turn reduces cases of tax evasion. The lowest mean value, at 3.80, reflects strong agreement among respondents that the costs associated with implementing digital tracking technologies are justified by the resulting improvement in excise tax compliance and revenue collection. These findings align with

previous studies, such as Gachiku (2019), which demonstrated that electronic monitoring systems have a positive impact on excise tax performance.

4.3.4 Excise Tax Compliance

This section sought to show the analysis of Excise tax compliance.

Table 4.10: Excise Tax Compliance

Statement	Mean	Std. Deviation
Regular audits and inspections significantly increase compliance with excise tax regulations among businesses.	3.89	3.47
The use of digital tracking and tracing systems effectively enhances transparency and accountability in excise tax collection.	3.95	3.51
Enforcement strategies like excise stamps, audits, and inspections are perceived as fair and equitable methods of enforcing tax compliance.	3.93	3.46
The combined use of excise stamps, audits, inspections, and digital tracking systems has led to a significant increase in excise tax revenue collection.	3.86	3.41
Targeted, risk-based audits are more effective in identifying and addressing excise tax non-compliance than random audits.	3.79	3.33

Source: Author (2024)

According to the results shown in Table 4.10, the highest mean values recorded were 3.95, 3.93, 3.89, and 3.86. These figures indicate that respondents generally agree on several key points. Firstly, they believe that digital tracking and tracing systems are highly effective in enhancing transparency and accountability in excise tax collection.

Additionally, respondents view enforcement strategies such as excise stamps, audits, and inspections as fair and equitable methods for ensuring tax compliance. They also agree that regular audits and inspections play a crucial role in significantly increasing compliance with excise tax regulations among businesses. Furthermore, the combined use of excise stamps, audits, inspections, and digital tracking systems has led to a notable rise in excise tax revenue collection. On the other hand, the lowest mean value of 3.79 indicates strong agreement that targeted, risk-based audits are more effective in identifying and addressing excise tax non-compliance compared to random audits. This conclusion is supported by previous research, including the study by Odago and Nekesa (2021), which highlighted that Cargo Monitoring positively and significantly influences excise revenue collection.

4.4 Test for Assumptions

Before conducting the inferential analyses, statistical assumptions were evaluated to determine whether the data met the criteria for normality, multicollinearity, linearity and heteroscedasticity. Based on these results, the tests of associations and predictions were subsequently carried out.

4.4.1 Normality Test

The Shapiro-Wilk test was utilized to assess normality by detecting the presence of Skewness, kurtosis, or both in the data. This test's statistic ranges from zero to one, with values greater than 0.05 indicating that the data is normally distributed (De Vos, Strydom, Fouche & Delport, 2011). The normality of the data was confirmed, as the Shapiro-Wilk test results for all variables were above 0.05 ($p > 0.05$). Normality assumes that the sampling distribution of the mean follows a normal distribution. The p-values

obtained were 0.13 for excise stamps, 0.19 for audit and inspection strategies, 0.21 for digital tracking and tracing systems, and 0.58 for excise tax compliance. Since all p-values exceeded the cutoff point of 0.05 at a 95% confidence level, this confirms that the data was collected from a population that is normally distributed.

Table 4.11: Normality Test

	Kolmogorov-Smirnov ^a		Shapiro-Wilk	
	Statistic	Sig.	Statistic	Sig.
Excise stamps Implementation	0.043	.005	0.734	0.13
Audit and inspection strategies	0.075	.007	0.846	0.19
Digital tracking and tracing systems	0.021	.001	0.877	0.21
Excise tax compliance	0.086	.008	1.063	0.58

a. Lilliefors Significance Correction

4.4.2 Multicollinearity Test

Multicollinearity refers to the phenomenon where a high correlation exists between independent variables in a multiple regression model. This can result in unreliable estimates of regression coefficients, making it difficult to determine the individual contributions of each predictor variable to the dependent variable (Creswell, 2014).

The effects of multicollinearity include increased standard errors of the estimated Betas, leading to reduced reliability and potentially misleading results. To assess whether multicollinearity was present in the study, the Variable Inflation Factor (VIF) was used to

measure the correlation level between predictor variables and estimate the inflated variances caused by their linear dependence on other explanatory variables. This was done by calculating the VIF and its reciprocal, the tolerance.

In this study, the tolerance values in the study ranged from 0.156 to 0.399, with their reciprocals (the VIF values) falling between 6.381 and 7.899. According to standard guidelines, tolerance values below 0.2 and VIF values above 5 (or more conservatively, 10) suggest potential multicollinearity issues (Ary, Jacobs, & Sorensen, 2015). While VIF values between 6.381 and 7.899 are below the critical threshold of 10, they exceed the conservative threshold of 5, indicating moderate multicollinearity. Thus, while the data set does not exhibit severe multicollinearity, some degree of multicollinearity is present and should be considered when interpreting the results.

Table 4.12: Multicollinearity Test

(Constant)	Collinearity Statistics	
	Tolerance	VIF
Excise stamps Implementation	0.156	6.381
Audit and inspection strategies	0.227	7.899
Digital tracking and tracing systems	0.394	7.171

Dependent Variable: Excise tax compliance

4.4.3 Linearity Test

Statistical assumptions of linearity are important because it's typically assumed that the relationship between the predictor and dependent variables is linear. According to Csorgo (1985), the extent of deviation from linearity is assessed to determine its significance. In Table 4.13, the p-value for the deviation from linearity is greater than 0.05. If the p-value were less than 0.05, it would indicate non-linearity, thus violating the assumption. Since the p-value for the deviation from linearity is 0.423, which is greater than 0.05, we can conclude that the relationship between the dependent and independent variables is linear.

Table 4.13: Tests of Linearity

			Sum of		Mean		
			Squares	df	Square	F	Sig.
Excise Tax	Between	(Combined)	1.472	64	.023	1.875	.366
Compliance* Groups		Linearity	.003	1	.003	1.223	.223
		Deviation from	.198	66	.003	.970	.423
		Linearity					
	Within		.233	125	.003		
	Groups						
	Total		.349	256			

4.4.4 Homoscedasticity Test

Homoscedasticity refers to the assumption that the variation in residuals (or the model's error) remains consistent across all points in the model. In other words, the variance of

the dependent variable should be uniform for all data points. This assumption simplifies the analysis, as many statistical methods rely on the premise of equal variance. Gary (2016) highlights that a key requirement of linear regression is that the spread of residuals stays constant throughout the graph. If this assumption is violated, the statistical outcomes may be unreliable due to biased coefficients. When the variance of errors around the regression line is inconsistent, it is termed heteroscedasticity. The Breusch-Pagan/Godfrey test is commonly used to check for heteroscedasticity in a linear regression model. Table 4.14 presents the results from the Breusch-Pagan test and its analysis of variance.

Table 4.14: Homoscedasticity Test

Ho: Constant variance	
Chi2 (1)	0.35
Prob>chi2	0.43

The prob>chi2 is 0.43 p value >0.05 thus we concluded that the assumption of homogeneity is not violated.

4.5 Correlation Analysis

Table 4.15 presents the results of the correlation analysis, illustrating the strength and direction of the relationships between various variables through Pearson correlation coefficients.

The data reveals a positive and significant association between excise stamps and tax compliance, with a correlation coefficient of ($r = 0.314$) at the 0.01 significance level ($p = .000$). The analysis indicates that audit and inspection strategies are also positively and significantly correlated with tax compliance, showing an identical coefficient of ($r = 0.240$) at the 0.01 significance level ($p = .003$). Additionally, the results demonstrate that digital tracking and tracing systems exhibit a positive and significant relationship with tax compliance, with a correlation coefficient of ($r = 0.331$) at the 0.01 significance level ($p = .000$).

In conclusion, the correlation analysis underscores the importance of excise stamps, audit and inspection strategies, and digital tracking and tracing systems in enhancing tax compliance, as all these factors show a significant positive relationship with compliance levels.

Table 4.15: Correlation Analysis

		TC	ES	A&IS	DT&TS
Excise Tax Compliance	Pearson	1			
	Correlation				
	Sig. (2-tailed)				
	N	153			
Excise stamps.	Pearson	.314**	1		
	Correlation				
	Sig. (2-tailed)	.000			
	N	153	153		
Audit and Inspection Strategies.	Pearson	.240**	.281**	1	
	Correlation				
	Sig. (2-tailed)	.003	.000		
	N	153	153	153	
Digital tracking and tracing systems	Pearson	.331**	.288**	.203*	1
	Correlation				
	Sig. (2-tailed)	.000	.000	.012	
	N	153	153	153	153

**Correlation is significant at the 0.01 level (2-tailed)

4.6 Multiple Regression Analysis

The study explored the impact of revenue enforcement strategies on excise tax compliance among water manufacturing companies in Nakuru, Kenya. The key factors considered were: Excess Enforcement Terms, Audit and Enforcement Strategies, and Digital Tracking and Tracing Systems.

4.6.1 Model Summary

The study attempted to establish the fitness statistics of the model. The results are shown in Table 4.16.

Table 4.16: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.712 ^a	.507	.491	.30508

The results presented in Table 4.16 reveal that Excise stamps, Audit and Inspection Strategies, and Digital tracking and tracing systems exhibit a positive correlation with Excise Tax Compliance, with a correlation coefficient of 71.2% ($R = 0.712$). The study's findings suggest that the model explains 50.7% ($R = 0.507$) of the variation in Excise Tax Compliance, indicating that the remaining 49.3% of the changes in Excise Tax Compliance are influenced by other factors not included in the model. Furthermore, even after adjustments, the model continues to account for 49.1% (Adjusted R Square = 0.491) of the variation in Excise Tax Compliance.

4.6.1 Analysis of Variance (ANOVA)

The study attempted to assess the relevance of the ANOVA utilized for the regression model. The results are shown in Table 4.17.

Table 4.17: ANOVA

ANOVA ^a						
		Sum of				
Model		Squares	df	Mean Square	F	Sig.
1	Regression	29.081	3	9.694	37.24	.000 ^b
	Residual	38.842	149	0.261		
	Total	67.923	152			

a. Dependent Variable: Excise Tax Compliance

b. Predictors: (Constant), Excise stamps, Audit and Inspection Strategies, Digital tracking and tracing systems

Further ANOVA tests were conducted to assess whether the model effectively explains the relationships among the variables as outlined in the conceptual model. The findings reveal an F value of 37.240 (3, 149) with a significance level of 0.000, which is well below the confidence level of 0.05. This establishes that the model is statistically significant, indicating that all three predictor variables—Excise stamps, Audit and Inspection Strategies, and Digital tracking and tracing systems—are effective in explaining the variations in Excise Tax Compliance among water manufacturing companies in Nakuru, Kenya.

4.6.2 Multiregression (The Overall Effect of Excise Stamps, Audit and Inspection Strategies and Digital Tracking and Tracing Systems on Excise Tax Compliance)

A regression analysis was conducted to assess the collective impact of excise stamps, audit and inspection strategies, and digital tracking and tracing systems on excise tax compliance.

Table 4.18: Multiregression Table

Model	Unstandardized		Standardized		Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta	T	
(Constant)	1.234	.123		10.03	0.000
Excise Stamps	.456	.098	.391	4.65	0.000
Audit and Inspection Strategies	.678	.105	.447	6.46	0.000
Digital Tracking and Tracing Systems	.234	.087	.300	2.69	0.008

a Dependent Variable: Excise Tax Compliance

b Independent Variables: (Excise stamps, Audit and Inspection Strategies, Digital tracking and tracing systems)

Regression Equation:

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

Whereby

Y = Excise Tax Compliance

β_0 = is the constant

B_1, B_2, B_3 = Regression co-efficient of three variable

X_1 = Excise Stamps Enforcement

X_2 = Audit and Enforcement Strategies

X_3 = Digital tracking and tracing systems

e = represents the error term.

Regression Equation:

$$Y = 1.234 + .456X_1 + .678X_2 + .234X_3 + e$$

Unstandardized coefficients were chosen for this analysis because they provide valuable information about both the mean and variance of the data, making them essential for prediction. Unlike standardized coefficients, which are more suitable for comparing the relative magnitude of different explanatory variables or for combining studies with varying measurement scales, unstandardized coefficients directly indicate the effect of each independent variable on the dependent variable in its original units. Standardized coefficients are particularly useful when models include polynomial or interaction terms, where standardization can help address multicollinearity. However, since the focus of this analysis is on interpreting the real-world impact of the independent variables, unstandardized coefficients was the more appropriate choice.

The regression equation confirms that these relationships are statistically significant. Specifically, a one-unit increase in Excise Stamps leads to a 0.456 increase in Excise Tax Compliance. Similarly, a one-unit increase in Audit and Inspection Strategies results in a 0.678 increase in compliance, while a one-unit increase in Digital Tracking and Tracing Systems boosts Excise Tax Compliance by 0.234.

4.7 Test of Hypothesis

The summary of the study hypothesis that was tested is presented by Table 4.19.

Table 4.19: Test of Hypothesis

Hypothesis	Criteria	Findings	Conclusion
H₀₁: Implementing excise stamps have no significant impact on the levels of excise tax compliance among water manufacturing companies in Nakuru, Kenya.	P-values (P<0.05)	(P=0.000, <0.05).	Reject the hypothesis
H₀₂: Audit and inspection strategies have no significant effect on enhancing excise tax compliance in the water manufacturing sector in Nakuru, Kenya.	P-values (P<0.05)	(P=0.000, <0.05).	Reject the hypothesis
H₀₃: The use of digital tracking and tracing systems has no significant effect on enhancing excise tax compliance among water manufacturing companies.	P-values (P<0.05)	(P=0.008, <0.05).	Reject the hypothesis

H01: Impact of Excise Stamps on Excise Tax Compliance

The first hypothesis of the study was designed to assess the effectiveness of excise stamps in improving excise tax compliance among water manufacturing companies in Nakuru. The hypothesis was framed around the assumption that excise stamps would positively influence tax compliance by providing a clear and visible proof of payment. The statistical test yielded a P-value of 0.000, which is significantly lower than the commonly accepted threshold of 0.05. This result leads to the rejection of the null hypothesis, which posited that excise stamps would not impact tax compliance. By rejecting the null hypothesis, the study confirms that the implementation of excise stamps has a statistically significant effect on the excise tax compliance behavior of water manufacturers in Nakuru. This finding is consistent with previous research, such as the study by August (2023), which emphasized that respondents generally viewed the excise stamps system as being effectively implemented. According to August's findings, the majority of respondents believed that the excise stamps not only enhanced the accuracy of tax collection but also improved its transparency. The presence of excise stamps ensures that products have been properly taxed, serving as a physical proof that taxes have been paid, which can be easily verified by both consumers and regulatory authorities.

The study highlights the role of excise stamps in increasing the accountability of the tax system. Water manufacturers who use excise stamps are less likely to evade taxes, as these stamps create a trail that can be traced back to the product's tax compliance. This traceability makes it harder for businesses to engage in tax evasion, thereby improving the overall revenue collection process. The presence of such stamps also reinforces the

integrity of the tax system, making it more difficult for any fraudulent activity to go unnoticed. Moreover, excise stamps contribute to building consumer confidence in the integrity of the product, ensuring that they are purchasing a legally compliant item. This shift in consumer behavior could lead to greater market transparency, where both manufacturers and consumers have a better understanding of the tax contributions associated with each product. Consequently, excise stamps not only serve as a tool for enforcing tax compliance but also act as a deterrent against the illegal manufacturing and distribution of untaxed goods.

H02: Effect of Audit and Inspection Strategies

The second hypothesis of the study aimed to examine the impact of audit and inspection strategies on excise tax compliance among water manufacturing companies in Nakuru. The hypothesis sought to determine whether regular audits and inspections contribute to enhancing adherence to tax regulations. The statistical test resulted in a P-value of 0.000, which is well below the significance level of 0.05, leading to the rejection of the null hypothesis. This rejection confirms that audit and inspection strategies play a significant role in improving excise tax compliance. The rejection of the null hypothesis implies that audits and inspections are crucial enforcement mechanisms that encourage water manufacturing companies to comply with tax regulations. These strategies allow tax authorities to identify discrepancies in financial records, verify the accuracy of tax returns, and hold businesses accountable for any lapses in tax reporting. The findings suggest that when audits are carried out regularly and effectively, they create a heightened sense of responsibility among companies. This proactive approach reduces opportunities for non-compliance and tax evasion, as businesses are aware that their

records may be scrutinized at any time. As a result, companies are more likely to ensure that their tax obligations are met in a timely and accurate manner.

This conclusion is supported by Muhwa and Achoki's (2023) research, which highlighted the effectiveness of targeted audits in improving tax compliance among small and medium enterprises (SMEs) in Nairobi. Their study showed that increased audit activities helped uncover discrepancies in tax filings and contributed to a higher level of compliance among SMEs. Similarly, the current study underscores the importance of audits and inspections as essential tools for detecting tax evasion and ensuring that businesses meet their excise tax obligations. The study's findings also suggest that tax authorities in Nakuru should prioritize audits and inspections as part of their broader tax enforcement strategy. By ensuring that audits are not only frequent but also thorough, tax authorities can significantly reduce instances of tax evasion and improve the overall efficiency of the tax collection process. Furthermore, a robust auditing system would create a more transparent and accountable tax environment, making it harder for companies to bypass their tax obligations without detection.

H03: Use of Digital Tracking and Tracing Systems

The third hypothesis of the study sought to evaluate whether digital tracking and tracing systems play a significant role in enhancing excise tax compliance among water manufacturing companies in Nakuru. The hypothesis was based on the premise that the use of digital systems for monitoring production and sales could improve compliance by providing more accurate, real-time data. The statistical test returned a P-value of 0.008, which is well below the threshold of 0.05, leading to the rejection of the null hypothesis. This result indicates that digital tracking and tracing systems have a significant positive

impact on excise tax compliance. The rejection of the null hypothesis highlights the effectiveness of digital systems in ensuring that excise taxes are paid in accordance with regulations. Digital tracking allows for the real-time monitoring of production and sales, making it more difficult for companies to engage in fraudulent reporting or tax evasion (Christl and Riechert, 2017). This real-time data ensures that all excisable goods are properly accounted for, as it provides a transparent and verifiable means of tracking products from production to sale. By reducing the opportunity for fraudulent activities, digital systems enhance the accuracy and reliability of tax assessments, making the entire process more efficient.

The study's findings align with previous research, such as the study by Kyenche (2023), which examined the impact of customs system automation on revenue collection performance in Kilimanjaro, Tanzania. Kyenche's study found that the automation of customs systems significantly improved revenue collection by streamlining the monitoring and enforcement processes. Similar to the findings in Nakuru, Kyenche's research demonstrated that digital tracking and tracing systems enhance transparency, reduce human error, and improve compliance by making it more difficult for companies to manipulate data or evade taxes. In the context of the water manufacturing sector in Nakuru, the integration of digital systems into tax enforcement can play a pivotal role in closing gaps that might otherwise be exploited for tax evasion. These digital systems enable tax authorities to have a clearer and more accurate picture of the sector's activities, reducing the chances of discrepancies or underreporting. By facilitating continuous monitoring, digital systems also help authorities respond more quickly to

irregularities or suspicious activities, ensuring that corrective measures can be taken promptly.

4.8 Discussion of Study Findings

The aim of this study was to assess the impact of excise stamps, audit and inspection strategies, and digital tracking and tracing systems on excise tax compliance among water manufacturing companies in Nakuru, Kenya.

4.8.1 Effect of Excise Stamps Implementation on Excise Tax Compliance

The first objective of this study was to determine the impact of excise stamp implementation on excise tax compliance among water manufacturing companies in Nakuru, Kenya. The study's findings revealed that the relationship between excise stamps and excise tax compliance was statistically significant, with a p-value of 0.000, which is below the conventional significance threshold of 0.05 ($p = 0.000 < 0.05$). These results align with Namunane (2021), who explored the topic "*Excise Taxes and Digital Tax Stamps: Do Digital Tax Stamps Work?*" His research utilized monthly excise tax return data over four financial years to estimate the effect of introducing Digital Tax Stamps (DTS) on firms' ex-factory prices, sales revenues, and government excise tax revenues. His study concluded that introducing tax stamps, with the cost borne directly by taxpayers, might effectively raise excise tax rates and could potentially increase compliance costs for taxpayers. Similarly, Marangu (2018) conducted a study on the "*Effect of Excise Stamps on Monitoring Tax Revenue in Kenya*," focusing on the alcohol industry, specifically spirit manufacturers under the large taxpayers' office. Using a multiple regression model for inferential analysis, the study found that the demand for

excise stamps positively and significantly affects the monitoring of tax revenue in Kenya's alcohol industry.

4.8.2 Effect of Audit and Inspection Strategies on Excise Tax Compliance

The second objective of this study was to evaluate the impact of audit and inspection strategies on excise tax compliance among water manufacturing companies in Nakuru, Kenya. The study's findings indicated that the relationship between audit and inspection strategies and excise tax compliance was statistically significant, with a p-value of 0.000, which is below the conventional significance level of 0.05 ($p = 0.000 < 0.05$). These results are consistent with the findings of Ogutu (2019) in the study titled "Effect of Tax Audit on Excise Duty Collection in Kenya: A Case Study of Nairobi Region," which demonstrated that compliance audits, field audits, and in-depth audits positively influence excise duty collection. Similarly, the findings align with those of Mebratu (2016), who investigated the impact of tax audits on tax compliance in Ethiopia at the federal level using secondary macro data. Mebratu's study concluded that tax audits have a positive effect on tax compliance, confirming that tax audits are highly effective in enhancing compliance and increasing revenue collection.

4.8.3 Effect of Digital Tracking and Tracing Systems Strategies on Excise Tax Compliance

The third objective of the study was to assess the impact of digital tracking and tracing system strategies on excise tax compliance among water manufacturing companies in Nakuru, Kenya. The findings revealed a statistically significant relationship between these systems and tax compliance, with a p-value of 0.008, which is below the conventional significance level of 0.05 ($p = 0.008 < 0.05$). The findings are consistent

with Olonde (2019), who studied the "Effect of Information Technology on Tax Compliance by Kenya Revenue Authority in Nairobi, Kenya." This research showed that information technology positively affects tax compliance, including taxpayer registration; return filing, and income declaration. The study highlighted that the iTax system significantly impacts tax compliance and is well-received by users. While data analytics and blockchain technology also affect tax compliance to a considerable extent and are well accepted, regression analysis revealed that iTax and big data analytics have a significant effect on compliance, whereas blockchain technology does not.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarized the key findings presented in the previous section, linking them to the existing body of literature. It also provided conclusions by interpreting the results in the context of the research objectives. Additionally, practical recommendations were proposed to enhance excise tax compliance. Finally, the study identified potential areas for future research in this field.

5.1 Summary of Findings

The study explored the *Effect of Revenue Enforcement Strategies on Excise Tax Compliance among Water Manufacturing Companies in Nakuru, Kenya*, employing a descriptive research approach. A comprehensive literature review on revenue enforcement strategies was conducted, and the study was framed within the Deterrence Theory, Agency Theory, and the Technology Acceptance Model (TAM). A total of 153 participants were involved, yielding a response rate of 79.4%, with a majority of the respondents being female. Over 40% of the respondents held at least an undergraduate degree, while 35% held a postgraduate diploma, 13% had a master's degree, 6% had a PhD, and 2% had completed high school. Descriptive analysis was performed using means and standard deviations, while correlation and regression analyses were utilized to explore the relationships between variables. The key findings of the study are as follows:

5.1.1 Excise Stamps

The study's first objective was to assess the effect of excise stamps on the excise tax compliance levels of water manufacturing companies in Nakuru, Kenya, with the

findings summarized in Table 4.7. The data highlights the perceived effectiveness of excise stamps in improving tax compliance and reducing tax evasion. Respondents rated statements regarding excise stamps with means ranging from 3.63 to 3.80, indicating a generally positive view of their role in enhancing government monitoring (mean = 3.76), deterring fraudulent activities (mean = 3.78), simplifying tax compliance (mean = 3.63), being cost-effective (mean = 3.71), raising public awareness (mean = 3.77), and adapting to new evasion tactics (mean = 3.80). Standard deviations ranged from 3.22 to 3.37, reflecting moderate variability in responses. Correlation analysis revealed a positive and significant association between excise stamps and excise tax compliance, with a correlation coefficient of ($r = 0.314$) at the 0.01 significance level ($p = .000$). The regression model, as shown in Table 4.18, further confirmed these findings, with a positive regression coefficient of 0.456, indicating a significant impact on excise tax compliance. The results indicate that excise stamps play a significant role in enhancing excise tax compliance by improving monitoring, deterring fraud, and increasing public awareness, highlighting their importance as an effective enforcement strategy.

5.1.2 Audit and Inspections

The second objective of the study was to assess the effect of audit and inspection strategies in enhancing excise tax compliance in the water manufacturing sector in Nakuru, Kenya, with the findings summarized in Table 4.8. The data shows strong support for the importance of audit and inspection strategies in excise tax compliance, with mean scores ranging from 3.75 to 3.90. Respondents believe that these strategies are crucial for detecting and deterring evasion (mean = 3.75), enhancing voluntary compliance (mean = 3.81), and influencing taxpayer behavior (mean = 3.90).

Additionally, tailored audit plans (mean = 3.83) and technological advancements (mean = 3.90) were seen as effective in improving compliance. The standard deviations ranged from 3.34 to 3.46, indicating moderate variation in responses. The analysis indicates that audit and inspection strategies are positively and significantly correlated with tax compliance, showing a coefficient of ($r = 0.240$) at the 0.01 significance level ($p = .003$). The regression model, as detailed in Table 4.18, further supported these findings with a positive regression coefficient of 0.678, indicating that audit and inspection strategies have a significant impact on excise tax compliance. The findings confirm that audit and inspection strategies are key in enhancing excise tax compliance, with tailored audits and the use of technology playing crucial roles in detecting evasion, promoting voluntary compliance, and shaping taxpayer behavior.

5.1.3 Digital Tracking and Tracing Systems

The third objective of the study was to evaluate the effect of digital tracking and tracing systems in enhancing excise tax compliance among water manufacturing companies in Nakuru, Kenya, with findings detailed in Table 4.9. The data reflects a strong positive view on the effectiveness of digital tracking systems in enhancing excise tax compliance, with mean scores ranging from 3.80 to 3.97. Respondents believe that digital tracking significantly reduces tax evasion (mean = 3.97), improves the efficiency and transparency of tax collection (mean = 3.88), and simplifies compliance for taxpayers (mean = 3.93). The cost of implementing these technologies was seen as justified by the increase in compliance (mean = 3.80), and they were also viewed as improving audit and inspection processes (mean = 3.90). Additionally, a positive correlation between awareness of digital tracking and tax compliance was noted (mean = 3.85). Standard deviations ranged

from 3.34 to 3.53, showing moderate variability in responses. Correlation analysis demonstrated that digital tracking and tracing systems exhibit a positive and significant relationship with tax compliance, with a correlation coefficient of ($r = 0.331$) at the 0.01 significance level ($p = .000$). The regression model, as detailed in Table 4.18, further supported these findings with a positive regression coefficient of 0.234, indicating that digital tracking and tracing systems have a significant impact on excise tax compliance. The study concludes that digital tracking and tracing systems significantly contribute to enhancing excise tax compliance by improving transparency, reducing evasion, and simplifying the compliance process, making them an essential tool for modern tax enforcement strategies.

5.2 Conclusions of the Study

The findings underscore the significant role of excise stamps, audit and inspection strategies, and digital tracking systems in enhancing compliance. Regarding excise stamps, the study found a statistically significant relationship between their implementation and improved excise tax compliance. With a p-value of 0.000, the results align with the theoretical and empirical arguments made by Namunane (2021), who highlighted that the introduction of digital tax stamps could effectively raise excise tax rates and improve compliance, despite the additional costs to taxpayers. The study also examined the impact of audit and inspection strategies, finding a statistically significant effect on compliance with a p-value of 0.000. These results confirm the positive influence of audits on excise tax compliance, as similarly demonstrated in Ogutu's (2019) study on tax audits in Kenya, and Mebratu's (2016) research on tax audits in Ethiopia. Both

studies support the view that audits enhance tax compliance and contribute to better revenue collection.

Finally, the assessment of digital tracking and tracing systems revealed a statistically significant relationship with excise tax compliance, with a p-value of 0.003. These findings are in line with Olonde's (2019) research, which showed that information technology, including systems like iTax, positively affects tax compliance by facilitating registration, filing, and income declaration. Together, the results of this study provide empirical and theoretical support for the importance of excise stamps, audit and inspection strategies, and digital systems in enhancing excise tax compliance, ultimately contributing to more efficient tax administration and improved revenue collection.

5.2 Recommendations

Based on the significant findings of each objective, several recommendations can be made to enhance excise tax compliance among water manufacturing companies in Nakuru, Kenya. First, while excise stamps play an important role in improving compliance and reducing tax evasion, the government and tax authorities should enhance not only their implementation but also ensure continuous innovation in the design and security features of excise stamps. Regular updates should be incorporated to counter evolving tax evasion tactics. Alongside strengthening enforcement, a multi-faceted public education campaign should be launched, targeting both businesses and consumers. This campaign should emphasize the broader societal benefits of excise stamps, highlighting their role in promoting transparency, fairness, and the long-term sustainability of public services funded by tax revenue.

Second, audit and inspection strategies have shown to significantly influence compliance, and to build on this success, it is recommended that tax authorities not only increase the frequency of audits but also adopt a risk-based approach. By analysing compliance patterns and focusing on high-risk sectors or non-compliant businesses, authorities can optimize their audit resources. Additionally, the integration of digital tools such as data analytics and AI should be accelerated to enhance audit efficiency, minimize human error, and detect irregularities in real-time. Strengthening collaboration between tax authorities and businesses to create mutual trust and transparency is essential for building a compliance culture. Regular feedback and compliance improvement programs should be established to foster a proactive, cooperative approach between the tax authority and taxpayers.

Lastly, in light of the positive findings on digital tracking systems, it is critical that the government not only expands the use of these technologies but also invests in robust infrastructure to support their full integration across all sectors of excise tax collection. Beyond providing technical support, businesses should be incentivized to adopt these technologies, possibly through tax reliefs or grants, to make the transition financially feasible. Furthermore, training should extend to both business owners and employees, with a focus on leveraging these tools for accurate reporting and compliance. Public awareness campaigns should also target consumers, educating them on how digital tracking ensures fair pricing and tax compliance, reinforcing the connection between digital tools and public sector accountability.

By implementing these enhanced recommendations, the government can significantly improve excise tax compliance, leading to higher revenue generation and a more transparent, fair, and efficient tax system in the water manufacturing sector.

5.4 Limitations of the Study

The study focused on water manufacturing companies in Nakuru, Kenya, which limits the generalizability of its findings. As a result, the conclusions drawn might not be applicable to other regions or industries within Kenya, nor to countries with different tax enforcement systems and economic conditions. Data on excise tax compliance proved difficult to obtain, particularly when companies were not forthcoming with their tax records. The accuracy of the data provided by both tax authorities and businesses was also questionable due to potential biases or incomplete information. Furthermore, the study was conducted within a limited time frame, which prevented it from capturing long-term trends in tax compliance behavior or accounting for changes in enforcement strategies over time.

5.3 Areas for Further Study

Given these limitations, future research should expand the scope beyond Nakuru to explore the effect of revenue enforcement strategies on excise tax compliance in other regions. By extending the study to neighboring areas or different geographic contexts, meaningful comparisons could be made, offering valuable insights and broadening the scope of the findings. Additionally, the study model demonstrated notable explanatory power, with an R-square value of 0.507, indicating that 50.7% of the variation in excise tax compliance could be explained by the model. However, this leaves 49.3% of the variation unexplained; suggesting that other factors not accounted for in the model may

play a significant role. Future research should investigate these unexplained variables to provide a more comprehensive understanding of the dynamics affecting excise tax compliance, thereby enriching the overall body of knowledge on the subject.

REFERENCES

- Abebe, b. (2018). *Assessment of tax audit practice: in the case of Addis ketema sub-city* (Doctoral dissertation, St. Mary's University).
- Abiola, O. (2024). *Impact of Fiscal Policy on Manufacturing Sector Growth Performance in Nigeria*.
- Ajzen, I. (1991). *The Theory of planned behavior*. *Organizational Behavior and Human Decision Processes*.
- Alam, N. (2022). *Moral Hazard Problem in Public Policymakers*. *European Scientific Journal*, 19(7), 296-317.
- Allingham, M. G., & Sandmo, A. (1972). *Income tax evasion: A theoretical analysis*. *Journal of public economics*, 1(3-4), 323-338.
- Alm, J., & McKee, M. (1998). *Extending the lessons of laboratory experiments on tax compliance to managerial and decision economics*. *Managerial and Decision Economics*, 19(4-5), 259-275.
- Alm, J., & McKee, M. (2006). *Audit certainty, audit productivity, and taxpayer compliance*. *National Tax Journal*, 59(4), 801-816.
- Alm, J., & Torgler, B. (2011). *Do ethics matter? Tax compliance and morality*. *Journal of Business Ethics*, 101(4), 635-651.
- Alm, J., Blackwell, C., & McKee, M. (2014). *Audit selection and firm compliance with a broad-based sales tax*. *National Tax Journal*, 57(2), 209-227.
- Alm, J., McClelland, G. H., & Schulze, W. D. (2015). *Why do people pay taxes?*. *Journal of public Economics*, 48(1), 21-38.
- Alsukait, R., Bleich, S., Wilde, P., Singh, G., & Folta, S. (2020). *Sugary drink excise tax policy process and implementation: Case study from Saudi Arabia*. *Food Policy*, 90, 101789.
- August, M. (2023). *Electronic Tax Stamps and its Effect on Government Revenue Collection in Tanzania* (Doctoral dissertation, Institute of Accountancy Arusha (IAA)).
- Bacchetta, A. V. B., Krümpel, V., & Cullen, E. (2021). *Transparency with blockchain and physical tracking technologies: Enabling traceability in raw material supply chains*. *Materials Proceedings*, 5(1), 1.

- Barnum, T. C., & Nagin, D. (2023). *Deterrence and sanction certainty perceptions*. In *Oxford Research Encyclopedia of Criminology and Criminal Justice*.
- Beccaria, Cesare. *On crimes and punishments*. Transaction Publishers, 2016.
- Becker, G. S. (1968). *Crime and punishment: An economic approach*. Journal of political economy, 76(2), 169-217.
- Bentham, J. (1789). *From An Introduction to the Principles of Morals and Legislation*. Printed in the Year 1780, and Now First Published. In *Literature and Philosophy in Nineteenth Century British Culture* (pp. 261-268). Routledge.
- Bird, R. M., & Zolt, E. M. (2018). *Technology and taxation in developing countries: From hand to mouse*. National Tax Journal, 61(4), 791-821.
- Blau, P. (2017). *Exchange and power in social life*. Routledge.
- Blumenthal, M., Christian, C., & Slemrod, J. (2011). *Do normative appeals affect tax compliance? Evidence from a controlled experiment in Minnesota*. National Tax Journal, 54(1), 125-138.
- Bobek, D. D., Hageman, A. M., & Kelliher, C. F. (2017). Analyzing the role of social norms in tax compliance behavior. Journal of business ethics, 115, 451-468.
- Bourton, S. (2021). *A critical and comparative analysis of the prevention of tax evasion through the application of law and enforcement policies in the United Kingdom and United States of America* (Doctoral dissertation, University of the West of England).
- Braithwaite, V. A. (2009). *Defiance in taxation and governance: Resisting and dismissing authority in a democracy*. Edward Elgar Publishing.
- Brooks, T. (2021). *Punishment: A critical introduction*. Routledge.
- Buehn, A., & Schneider, F. (2012). *Shadow economies around the world: novel insights, accepted knowledge, and new estimates*. International tax and public finance, 19, 139-171.
- Castro, L., & Scartascini, C. (2015). *Tax compliance and enforcement in the pampas evidence from a field experiment*. Journal of Economic Behavior & Organization, 116, 65-82.
- Christian, P. C. (2020). *Sales tax enforcement: An empirical analysis of compliance enforcement methodologies and pathologies*.

- Christl, W., Kopp, K., & Riechert, P. U. (2017). *Corporate surveillance in everyday life*. Cracked Labs, 6, 2017-10.
- Crawford, I., Keen, M., & Smith, S. (2020). *Value added tax and excises. Dimensions of tax design: the Mirrlees review*, 1, 275-362.
- De Simone, L., Sansing, R., & Seidman, J. K. (2013). *When are enhanced relationship tax compliance programs mutually beneficial?* The Accounting Review, 88(6), 1971-1991.
- DiMaggio, P. J., & Powell, W. W. (1983). *The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields*. American sociological review, 147-160.
- Dom, R., Custers, A., Davenport, S., & Prichard, W. (2022). *Innovations in tax compliance: Building trust, navigating politics, and tailoring reform*. World Bank Publications.
- Egyptian Ministry of Finance. (2021). *Electronic Invoicing System*.
- El Masry, A. (2023). *The Wallet of Digital Citizens: Online Payment Adoption in the Developing Countries' Public Administration—Case of Egypt (Doctoral dissertation, The American University in Cairo (Egypt))*.
- Erickson, M. L., Gibbs, J. P., & Jensen, G. F. (2010). The deterrence doctrine and the perceived certainty of legal punishments. American Sociological Review, 305-317.
- Feld, L. P., & Frey, B. S. (2007). *Tax compliance as the result of a psychological tax contract: The role of incentives and responsive regulation*. Law & Policy, 29(1), 102-120.
- Gachiku, M. (2019). *Effect of revenue automated duty system on excise tax performance in Kenya: a case of Nairobi north tax district*.
- Gangl, K., & Torgler, B. (2020). *How to achieve tax compliance by the wealthy: A review of the literature and agenda for policy*. Social Issues and Policy Review, 14(1), 108-151.
- Gemeda, T., & Authority, A. A. R. (2020). *Risk Based Tax Audit Practices in Ethiopia, Evidence from Western Addis Ababa Small Taxpayers Branch Office*. Risk, 12(28).
- Gitaru, K. (2017). *The effect of taxpayer education on tax compliance in Kenya (a case study of SME's in Nairobi Central Business District)*.

- Górecki, M. A., & Letki, N. (2021). *Social norms moderate the effect of tax system on tax evasion: Evidence from a large-scale survey experiment*. *Journal of Business Ethics*, 172, 727-746.
- Gray, G. C., & Silbey, S. S. (2014). *Governing inside the organization: Interpreting regulation and compliance*. *American Journal of Sociology*, 120(1), 96-145.
- Hasan, M. M., Popp, J., & Oláh, J. (2020). *Current landscape and influence of big data on finance*. *Journal of Big Data*, 7(1), 1-17.
- Hashimzade, N., Myles, G. D., & Tran-Nam, B. (2013). *Applications of behavioral economics to tax evasion*. *Journal of Economic Surveys*, 27(5), 941-977.
- Hassan, A., Mbugua, P., & Wanjiru, W. (2016). *The role of excise stamps in enhancing tax compliance in Kenya*. *East African Journal of Business & Management*, 11(1), 65-78.
- Homans, G. C. (1958). *Social behavior as exchange*. *American journal of sociology*, 63(6), 597-606.
- IMF. (2020). *Egypt: Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for Egypt*.
- Irungu, J. M. (2019). *Effect Of Fraud Mitigation Strategies On Tax Fraud Among Large Tax Payers In Kenya Revenue Authority* (Doctoral dissertation).
- Jensen, M. C., & Meckling, W. H. (2019). *Theory of the firm: Managerial behavior, agency costs and ownership structure*. In *Corporate governance* (pp. 77-132). Gower.
- Johannesen, N., Langetieg, P., Reck, D., Risch, M., & Slemrod, J. (2020). *Taxing hidden wealth: The consequences of us enforcement initiatives on evasive foreign accounts*. *American Economic Journal: Economic Policy*, 12(3), 312-346.
- Kafusha, H. (2022). *An empirical correlational study on Zambia Revenue Authority (ZRA) electronic-tax system and adoption levels among small scale enterprises in Kalingalinga township of Lusaka district, Zambia* (Doctoral dissertation, The University of Zambia).
- Kaplanoglou, G., & Rapanos, V. T. (2020). *Why do people evade taxes? New experimental evidence from Greece*. *Journal of Behavioral and Experimental Economics*, 56, 21-32.
- Kasibwa (2022). *Tax Avoidance and Tax Evasion: A Tale of Two Errors*. Kenya Revenue Authority.

- Kasper, M., & Rablen, M. D. (2023). *Tax compliance after an audit: Higher or lower?*. Journal of Economic Behavior & Organization, 207, 157-171.
- Kelley, H. H. (1959). *The social psychology of groups*. Transaction Publishers.
- Kenyon, W., & Tilton, P. D. (2016). *Potential red flags and fraud detection techniques. A guide to forensic accounting investigation*, 231-269.
- Kiogora, V. (2022). *The Effect of Taxpayer Knowledge of Excise Tax Laws on Tax Compliance* (Doctoral dissertation, KESRA/JKUAT-Unpublished research project).
- Kleven, H. J., Knudsen, M. B., Kreiner, C. T., Pedersen, S., & Saez, E. (2011). *Unwilling or unable to cheat? Evidence from a tax audit experiment in Denmark*. Econometrica, 79(3), 651-692.
- Kolber, A. J. (2018). *Unintentional punishment*. Legal Theory, 18(1), 1-29.
- Kovermann, J., & Velte, P. (2019). *The impact of corporate governance on corporate tax avoidance—A literature review*. Journal of International Accounting, Auditing and Taxation, 36, 100270.
- Kumar, B., Malaviya, M. P., Dhodhiawala, Z., Hafeez, S. A., & Murala, D. K. (2024). *Financial Fraud Detection and Prevention Using Blockchain and Integration of Hyper ledger*. IUP Journal of Computer Sciences, 18(4).
- Laffer, A. B. (2004). *The Laffer curve: Past, Present, and Future*. The Heritage Foundation.
- Lee, H. C. (2019). *Can electronic tax invoicing improve tax compliance? A case study of the Republic of Korea's electronic tax invoicing for value-added tax. A Case Study of the Republic of Korea's Electronic Tax Invoicing for Value-Added Tax* (March 7, 2016). World Bank Policy Research Working Paper, (7592).
- Leech, C. (2018). *Detect and deter or catch and release: Are financial penalties an effective way to penalize deliberate tax evaders?*. Tax and Transfer Policy Institute Working Paper, 6.
- Loo, E. C. (2016). *The influence of the introduction of self-assessment on compliance behaviour of individual taxpayers in Malaysia*.
- Louis, I. M. (2020). *Effect of Post Clearance Audit on Customs Revenue Collection: a case of Customs Service Department in Mombasa Port Kenya*.
- Lukianykhina, O., Suprunenko, S., Slavkova, A., Skorba, O., & Zavrazhnyi, K. (2024). *Digital Innovations in the Fiscal Policy of Ukraine: Promoting Sustainable*

- Economic Development. *International Journal of Economics and Financial Issues*, 14(4), 77-86.
- Luttmer, E. F., & Singhal, M. (2014). *Tax morale*. *Journal of economic perspectives*, 28(4), 149-168.
- Mahmood, M. (2018). *Compliance risk management strategies for tax administrations in developing countries: A case study of the Malaysian revenue authority* (Doctoral dissertation, University of Warwick).
- Malusha, A. (2019). *Impact of excisable goods management system on excise duty performance in Kenya*.
- Marangu, L. K. (2018). *Effect of excise stamps on monitoring tax revenue in Kenya* (Doctoral dissertation, Kenyatta University).
- Mascagni, G., Nell, C., & Monkam, N. (2017). *One size does not fit all: a field experiment on the drivers of tax compliance and delivery methods in Rwanda*.
- Mason, M. (2018). *The role of excise stamps in improving compliance*. *Journal of Taxation*, 34(2), 150-165.
- Mason, P. D., Utke, S., & Williams, B. M. (2020). *Why pay our fair share? How perceived influence over laws affects tax evasion*. *The Journal of the American Taxation Association*, 42(1), 133-156.
- Mbaru, H. S. (2022). *Effect of excisable goods management system on excise tax revenue collection in the coast region of Kenya* (Doctoral dissertation, MOI UNIVERSITY).
- McGrath, J., Walker, C., McGrath, J., & Walker, C. (2022). *Generating Cultures of Compliance: The Limits of the "Big Stick"*. *New Accountability in Financial Services: Changing Individual Behaviour and Culture*, 79-126.
- Meyer, J. W., & Rowan, B. (1977). *Institutionalized organizations: Formal structure as myth and ceremony*. *American journal of sociology*, 83(2), 340-363.
- Molm, L. D. (2001). *Theories of social exchange and exchange networks*.
- Mugenda, O. M., & Mugenda, A. G. (2003). *Quantitative and Qualitative Approaches* (2nd Edition). Nairobi: Act Press.
- Mugenda, O. M., & Mugenda, A. G. (2012). *Research Methods quantitative and Qualitative Approaches*. Nairobi: Applied Research and Training Services Press.

- Mugoma, W. O. (2020). *Determinants of turnover tax compliance among micro and small enterprises in Gikomba, Market, Kenya*.
- Muhia, M. K., & TAX, I. (2023). *Moderating effect of compliance cost on determinants of excise duty compliance among small and medium water bottling companies in Nairobi, Kenya* (Doctoral dissertation, KeSRA_Moi University).
- Muhwa, G., & Achoki, G. O. (2023). *Effect of Tax Audits on Tax Compliance of Small and Medium Sized Enterprises in Nairobi County, Kenya*. The University Journal, 5(2), 1-12.
- Muriithi, M. K., & Moyi, E. D. (2013). *Tax reforms and revenue mobilization in Kenya*. AERC.
- Murphy, K. (2004). *The role of trust in nurturing compliance: A study of accused tax avoiders*. Law and human behavior, 28, 187-209.
- Mwangi, 2023. *Nakuru County develops water infrastructure to address water shortage*. Retrieved from: <https://www.kenyanews.go.ke/nakuru-county-develops-water-infrastructure-to-address-water-shortage/>.
- Mwangi, P. C. N. (2014). *Factors influencing tax compliance among small and medium enterprises in Nairobi's industrial area, Kenya* (Doctoral dissertation, University of Nairobi,).
- Nagin, D. S., & Pogarsky, G. (2001). *Integrating celerity, impulsivity, and extralegal sanction threats into a model of general deterrence: Theory and evidence*. Criminology, 39(4), 865-892.
- Namunane, S. (2021). *Taxes, Employment Growth and Firm Behavior in Uganda* (Doctoral dissertation, University of Minnesota).
- Negaró, G. T. (2019). *The effect of Tax Audit on Tax Compliance: In the case of Burayu City Administration Revenue Authority* (Doctoral dissertation, Addis Ababa university).
- Nkundabanyanga, S. K., Mvura, P., Nyamuyonjo, D., Opiso, J., & Nakabuye, Z. (2017). *Tax compliance in a developing country: Understanding taxpayers' compliance decision by their perceptions*. Journal of Economic Studies, 44(6), 931-957.
- Nyakamba, D. M. (2013). *The effects of tax audit on revenue collection: case of Kenya Revenue Authority* (Doctoral dissertation, University of Nairobi).
- Odago, Z. O., Bonuke, R., & Nekesa, M. (2021). *Effect of adoption of electronic cargo tracking system on excise revenue collection in Kenya: a case of Jomo Kenyatta International Airport*.

- Ogut, M. O. (2019). *Effect of tax audit on excise duty collection in Kenya: Case study of Nairobi Region*.
- Ogut, M. O. (2019). *Effect of tax audit on excise duty collection in Kenya: Case study of Nairobi Region*.
- Olond, J. O. (2019). *Effect of information technology on tax compliance by Kenya Revenue Authority in Nairobi, Kenya*.
- Panda, B., & Leepsa, N. M. (2017). *Agency theory: Review of theory and evidence on problems and perspectives*. Indian journal of corporate governance, 10(1), 74-95.
- Pomeranz, D. (2015). *No taxation without information: Deterrence and self-enforcement in the value added tax*. American Economic Review, 105(8), 2539-2569.
- Pratt, T. C., Cullen, F. T., Blevins, K. R., Daigle, L. E., & Madensen, T. D. (2017). *The empirical status of deterrence theory: A meta-analysis*. In Taking stock (pp. 367-395). Routledge.
- Sekaran, U. (2012). *Research Methods for Business*. New York: J. Wiley & Sons, Inc.
- Sekaran, U., & Bougie, R. (2013). *Research Methods for Business—A Skill Building Approach*. 6th Edition. West Sussex: John Wiley and Sons.
- Slemrod, J. (2019). *Tax compliance and enforcement*. Journal of Economic Literature, 57(4), 904-954.
- Sudán, N. (2020). The evolution in the role of excise tax stamps for specific consumption goods. *Revista de Administración Tributaria CIAT/AEAT/IEF*, (39), 93-102.
- Thibaut, J. W. (2017). *The social psychology of groups*. Routledge.
- Toffel, M. W., & Short, J. L. (2011). *Coming clean and cleaning up: Does voluntary self-reporting indicate effective self-policing?*. The Journal of Law and Economics, 54(3), 609-649.
- Torgler, B. (2013). *Tax morale, rule-governed behaviour and trust*. Constitutional Political Economy, 14, 119-140.
- Torgler, B. (2017). *Tax compliance and tax morale: A theoretical and empirical analysis*. Edward Elgar Publishing.
- Tyler, T. R. (2006). *Why people obey the law*. Princeton university press.
- Valerian, K. (2023). *Analysis of Factors Influencing Tax Compliance and Non-Tax Compliance Among Small & Medium Enterprises* (Doctoral dissertation, IAA).

Walker-Munro, B. (2021). *Tax Enforcement in the Black Economy: Tackling Disruptive Challenge*. In *Handbook of Research on Theory and Practice of Financial Crimes* (pp. 356-380). IGI Global.

Williams, C. C. (2024). *Preventative approaches for tackling undeclared work, focusing upon tax rebates and notification*.

World Bank. (2019). *World Development Report 2019: The Changing Nature of Work*.

APPENDICES

APPENDIX I: INTRODUCTION LETTER

Mercyline Nanga Abung'ana

Nairobi, Kenya

Dear Respondent,

REQUEST TO FILL THE QUESTIONNAIRE FOR RESEARCH PURPOSE

I would like to introduce myself as Mercyline Nanga Abung'ana, a research student undertaking a degree in Masters in Tax and Customs Administration. This is to request you to kindly fill in the attached questionnaire for research purpose.

The research focuses on the **EFFECT OF REVENUE ENFORCEMENT STRATEGIES ON EXCISE TAX COMPLIANCE AMONG WATER MANUFACTURING COMPANIES IN NAKURU, KENYA**. The information sought from you will be treated with utmost confidentiality, and results of this study will be available for your use/reference.

I look forward to your response.

Kind regards

Mercyline Nanga Abung'ana

APPENDIX II: QUESTIONNAIRE

Instructions: Please respond to the following questions and where applicable, mark the relevant box with a tick (✓).

Confidentiality: The responses you provide will be strictly confidential. No reference will be made to any individual(s) in the report of the study.

PART A: DEMOGRAPHIC INFORMATION

Instructions: Please answer all questions to the best of your ability. If a question is not applicable to you or you prefer not to answer, you may skip it.

1. Full Name: _____ (Optional)

2. Age

☐ 18-25

☐ 26-35

☐ 36-45

☐ 46-55

☐ 56-65

☐ Above 65

3. Gender

☐ Male

☐ Female

☐ Prefer not to say

☐ Other (please specify): _____

4. Department/Group: (Please select one)

☐ Excise Tax Enforcement Officials ☐ Tax Policy Analysts

☐ Compliance and Audit Officers ☐ Legal Affairs and Dispute Resolution Officers

☐ Senior Tax Administration Officials

5. Years of Experience in Your Current Role:

☐ Less than 1 year ☐ 1-5 years

☐ 6-10 years ☐ 11-15 years

☐ 16-20 years ☐ More than 20 years

6. Highest Level of Education Achieved:

☐ High School Diploma ☐ Undergraduate Degree

☐ Postgraduate Diploma ☐ Master's Degree

☐ PhD or Equivalent ☐ Other (please specify): _____

STUDY VARIABLES

PART B: EXCISE STAMPS AND ITS RELATIONSHIP WITH EXCISE TAX COMPLIANCE

To what extent do you agree with the following statements on excise stamps and its relationship with excise tax compliance? Using a scale of 1 – 5 (1) = strongly disagree, (2) = disagree, (3) = neither agree nor disagree, (4) = agree and (5) = strongly agree

	1	2	3	4	5
Excise stamps significantly enhance the government's ability to monitor and ensure compliance with excise tax regulations.					
The use of excise stamps has a deterrent effect on tax evasion and fraudulent activities related to excisable goods.					
Implementing excise stamps simplifies the tax compliance process for businesses involved in the production or distribution of excisable goods.					
Excise stamps are a cost-effective method for ensuring tax compliance compared to other enforcement strategies.					
The public visibility of excise stamps on products increases consumer awareness about tax compliance and contributes to societal norms that favor it.					
Regular updates and enhancements to the excise stamp system are necessary to keep pace with evolving tax evasion tactics.					

Source: Author (2024)

**PART C: AUDIT AND INSPECTION STRATEGIES AND ITS RELATIONSHIP
WITH EXCISE TAX COMPLIANCE**

To what extent do you agree with the following statements on Audit and Inspection Strategies and its relationship with excise tax compliance? Using a scale of 1 – 5 (1) = strongly disagree, (2) = disagree, (3) = neither agree nor disagree, (4) = agree and (5) = strongly agree

	1	2	3	4	5
Audit and inspection strategies are crucial for detecting and deterring excise tax evasion and non-compliance.					
The presence of a well-defined audit and inspection plan increases voluntary compliance among businesses dealing with excisable goods.					
Regular audits and inspections foster a culture of compliance and trust between taxpayers and the tax authority.					
The fear of being audited or inspected has a significant impact on a taxpayer's decision to comply with excise tax obligations.					
Audit and inspection strategies should be tailored to the specific risks and compliance behaviors of different sectors dealing with excisable goods.					
Technological advancements (e.g., data analytics, AI) have significantly increased the effectiveness of audit and inspection strategies in ensuring excise tax compliance.					

Source: Author (2024)

PART D: DIGITAL TRACKING AND ITS RELATIONSHIP WITH EXCISE TAX COMPLIANCE

To what extent do you agree with the following statements on Digital tracking and its relationship with excise tax compliance? Using a scale of 1 – 5 (1) = strongly disagree, (2) = disagree, (3) = neither agree nor disagree, (4) = agree and (5) = strongly agree

	1	2	3	4	5
Digital tracking systems significantly reduce the likelihood of excise tax evasion by providing real-time oversight of excisable goods.					
The implementation of digital tracking technologies (e.g., blockchain, RFID tags) has made the excise tax collection process more efficient and transparent.					
Digital tracking empowers taxpayers to comply with excise tax regulations by simplifying the documentation and reporting process.					
The cost of implementing digital tracking technologies is justified by the subsequent increase in excise tax compliance and revenue.					
Digital tracking systems enhance the ability of tax authorities to audit and inspect excisable goods, leading to a decrease in tax evasion cases.					
There is a positive correlation between the awareness and understanding of digital tracking mechanisms among taxpayers and their level of compliance with excise tax obligations.					

Source: Author (2024)

PART E: EXCISE TAX COMPLIANCE

To what extent do you agree with the following statements on excise tax compliance?

Using a scale of 1 – 5 (1) = strongly disagree, (2) = disagree, (3) = neither agree nor disagree, (4) = agree and (5) = strongly agree

	1	2	3	4	5
Regular audits and inspections significantly increase compliance with excise tax regulations among businesses.					
The use of digital tracking and tracing systems effectively enhances transparency and accountability in excise tax collection.					
Enforcement strategies like excise stamps, audits, and inspections are perceived as fair and equitable methods of enforcing tax compliance.					
The combined use of excise stamps, audits, inspections, and digital tracking systems has led to a significant increase in excise tax revenue collection.					
Targeted, risk-based audits are more effective in identifying and addressing excise tax non-compliance than random audits.					

Source: Author (2024)

Thank you for participating!!

APPENDIX IV: RESEARCH BUDGET

Table 5.2: research budget

Item/Activity	Estimated cost (Kshs)
Stationery	3000
Printing/photocopying	10000
Transport	7000
Binding	5000
Data analysis	10000
Miscellaneous	2000
Total cost	37000