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**THE EFFECTS OF VOLUNTARY TAX DISCLOSURE PROGRAMME ON
IMPROVING TAX COMPLIANCE AND REVENUE GENERATION - A CASE
STUDY OF NAIROBI COUNTY**

JEFTA MROMBO ADMISSION NUMBER: 138624




**A RESEARCH REPORT SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTER OF PUBLIC POLICY
MANAGEMENT OF STRATHMORE UNIVERSITY.**

May, 2024

DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this university or any other university. To the best of my knowledge and belief, the proposal contains no material previously published or written by another person except where due reference has been duly made.


Jefta Mrombo

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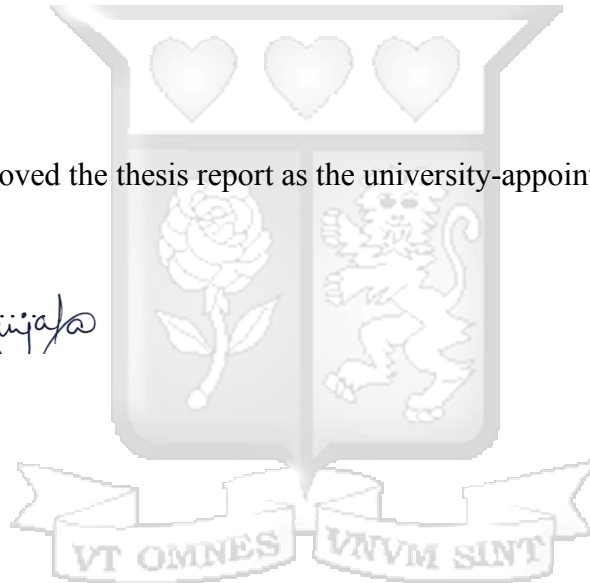
Date: 21st May 2024

Approval

I have reviewed and approved the thesis report as the university-appointed supervisor. Dr. Bernadette Wanjala.

Signature: 

Date: 21st May 2024



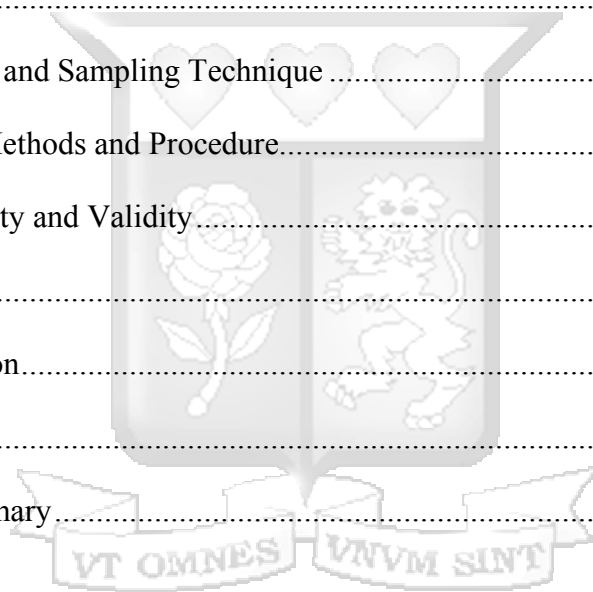
ABSTRACT

Kenya's Voluntary Tax Disclosure Programme (VTDP) was implemented to address the challenge of undeclared income and assets, offering amnesty and incentives for voluntary disclosure. This study analyzes the effectiveness of VTDP in enhancing tax compliance and its cost-benefit implications since its inception. Specifically, the study aimed to analyze how VTDP has improved tax compliance; to establish the cost of benefit analysis of VTDP by examining how much tax revenue has been collected versus how much has been waived since the implementation of the program; and to relate the VTDP with the tax revenue collected and the revenue trends before, and after the program. Using secondary panel data from 2018 to 2023 sourced from the Kenya Revenue Authority, the study employed difference-in-difference (DID) analysis, mean comparison tests, and fixed effects models to achieve its objectives. The findings indicated a significant positive association between VTDP and tax compliance, with an approximately 11.77% increase in compliance per unit increase in VTDP. Mean comparison tests revealed that collected tax revenues exceeded waived amounts, demonstrating the program's effectiveness in enhancing revenue generation or taxpayer compliance. DID regression analysis showed statistically significant increments in revenue, with a 2% increase in 2021, followed by 2.2% in 2022, and 2.3% in 2023. These results were supported by average treatment effect on the treated (ATET) analysis, affirming VTDP's positive impact on revenue outcomes. The findings of this study provide valuable insights into the effectiveness of Kenya's VTDP in enhancing tax compliance and revenue generation. The significant positive association between VTDP and tax compliance underscores the importance of voluntary disclosure programs in encouraging taxpayers to comply with their tax obligations. Additionally, the cost-benefit analysis revealed that the revenue collected through VTDP exceeded the waived amounts, indicating a positive return on investment for the government. The DID regression analysis further supported these findings, showing statistically significant increments in revenue following the implementation of VTDP. These results have important policy implications for tax authorities in Kenya and other developing countries facing similar challenges of tax evasion and non-compliance. It is recommended that the government expands existing VTDPs and actively promotes them through outreach programs, advertising campaigns, and partnerships with tax professionals and business associations. By doing so, the government can further enhance tax compliance and revenue collection, ultimately contributing to the country's socio-economic development. Additionally, future research could explore the long-term effects of VTDP on taxpayer behavior and the overall tax system in Kenya.

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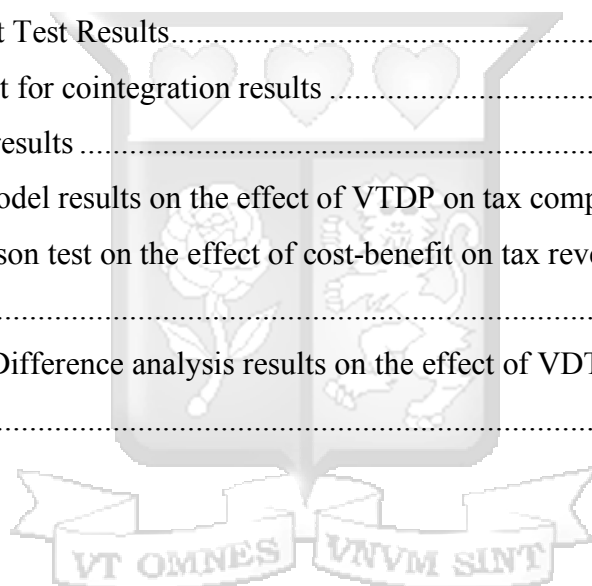
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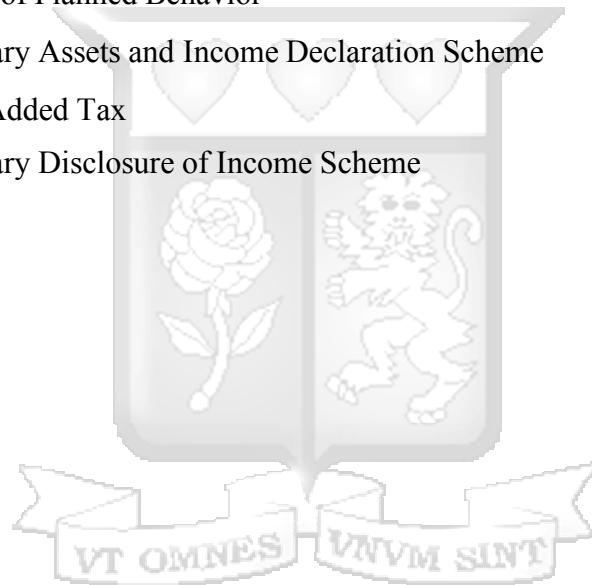
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LIST OF ABBREVIATION AND ACRONYMS

EAC	East African Community
GDP	Gross Domestic Product
GoK	Government of Kenya
KRA	Kenya Revenue Authority
PIN	Personal Identification Number
SMEs	Small and Medium Enterprises
TPB	Theory of Planned Behavior
VAIDS	Voluntary Assets and Income Declaration Scheme
VTDP	Value Added Tax
VDIS	Voluntary Disclosure of Income Scheme



CHAPTER ONE

INTRODUCTION

1.1 Background of the study

This Chapter provides a background of the study to establish context. It offers an overview of Kenya's tax system, delving into its potential challenges as well. It also examines the Country's voluntary tax disclosure Programme. Subsequently, it clarifies the problem statement, research objectives, research questions, significance, and the scope of the study.

1.1.1 Overview of Kenya's Tax System

Kenya's tax system serves as the cornerstone of the country's fiscal framework, providing the necessary revenue to finance public services, infrastructure development, and socio-economic programs. This section provides a comprehensive overview of Kenya's tax landscape, encompassing its structure, legislation, revenue sharing mechanisms, and compliance challenges.

Tax Structure:

Kenya's tax structure stands as a complex amalgamation of various tax types that are imposed at both the national and county levels. These taxes encompass a wide array of categories, with notable examples including Income Tax, Value Added Tax (VAT), Excise Duty, Property Rates, and more. Income Tax, governed by the Income Tax Act (ITA), serves as a cornerstone of the nation's revenue generation efforts, as it mandates taxes on individuals, entities, and corporations in accordance with their income levels (KRA, 2024). Recent studies underscore the pivotal role of Income Tax as a primary revenue source for the Kenyan government, highlighting its significance in sustaining public services and developmental initiatives (Otieno, 2021).

Value Added Tax (VAT), another integral component of Kenya's tax structure, operates under the regulatory framework of the VAT Act, imposing taxes on the supply of goods and services at a standard rate of 16% (KRA, 2024). The efficacy of VAT administration has garnered attention in recent research, with scholars advocating for enhanced compliance measures to mitigate revenue leakages and bolster fiscal sustainability (Mwangi et al., 2023).

Excise Duty represents yet another vital facet of Kenya's tax regime, as it targets specific goods such as alcohol, tobacco, and petroleum products, thereby contributing significantly to government revenue streams (KRA, 2024). The administration of Excise Duty, governed by the Excise Duty Act, plays a crucial role in regulating the consumption and production of excisable goods, while

concurrently augmenting fiscal resources for public expenditure priorities.

Property Rates, administered by county governments, assume a pivotal role in local revenue generation and infrastructure development, as they levy taxes on real estate properties within their respective jurisdictions (Kahutu, 2020). The imposition of Property Rates enables county authorities to finance essential public services, such as healthcare, education, and sanitation, while also facilitating investments in critical infrastructure projects aimed at enhancing the quality of life for residents.

In essence, Kenya's tax structure embodies a diverse array of tax categories, each playing a unique role in shaping the nation's fiscal landscape and supporting its socio-economic development agenda. By fostering compliance, enhancing administrative efficiency, and promoting equitable taxation, Kenya can harness the full potential of its tax system to drive sustainable growth and prosperity for all citizens.

Tax Legislation:

The legal framework governing taxation in Kenya constitutes a cornerstone of the country's fiscal governance structure, delineating the powers and responsibilities of both the National Government and County Governments in imposing taxes. Central to this framework is Section 209 of the Constitution, which confers upon the National Government the authority to enact tax legislation through Acts of Parliament, thereby encompassing a broad spectrum of tax categories and modalities (Murray, 2013). Recent scholarly inquiries have delved into the ramifications of constitutional provisions on tax policy formulation and implementation, shedding light on the imperative for legislative reforms aimed at bolstering tax efficiency and optimizing revenue collection (Ochieng & Wangari, 2022).

Furthermore, Section 210 of the Constitution delineates the procedural mechanisms governing tax imposition, waiver, or modification, emphasizing the primacy of parliamentary oversight and legislative control over tax matters (Murray, 2013). This constitutional provision underscores the foundational principles of transparency, accountability, and democratic governance in the realm of taxation, ensuring that tax policies align with broader national development objectives and societal needs.

In practice, tax legislation in Kenya finds expression through a myriad of statutes, including but not limited to the Income Tax Act, VAT Act, and Excise Duty Act, each of which provides the statutory basis for tax administration and enforcement (KRA, 2024). These legislative instruments serve as the bedrock upon which tax policies are formulated, implemented, and enforced, guiding

the conduct of taxpayers, revenue authorities, and other stakeholders within the tax ecosystem.

Moreover, regulatory frameworks complement tax legislation by delineating procedural aspects of taxation, such as compliance requirements, reporting obligations, and dispute resolution mechanisms (KRA, 2024). Through a symbiotic interplay of legislation and regulations, the tax regime in Kenya seeks to strike a delicate balance between fostering compliance, safeguarding taxpayer rights, and optimizing revenue mobilization for national development priorities.

In essence, tax legislation in Kenya embodies the convergence of legal principles, constitutional mandates, and policy imperatives aimed at facilitating efficient, equitable, and transparent tax administration. By upholding the rule of law, promoting legislative oversight, and ensuring procedural fairness, Kenya's tax legislative framework lays the groundwork for a robust and resilient fiscal governance architecture, poised to support sustainable socio-economic development and inclusive growth.

Tax Revenue Sharing:

The framework for revenue sharing between the National Government and County Governments in Kenya is predicated on constitutional mandates aimed at fostering equitable distribution of financial resources and upholding principles of fiscal responsibility. At the heart of this framework lies Article 201 of the Constitution, which delineates the principles governing the allocation of national tax revenue between the two tiers of government, underscoring the ethos of devolution and decentralized governance (Murray, 2013).

Recent scholarly inquiries have delved into the intricacies of revenue allocation and expenditure management within the purview of intergovernmental fiscal relations, shedding light on the complexities and challenges associated with ensuring revenue predictability, accountability, and effective resource utilization (Okoth & Adera, 2023). These studies have underscored the importance of robust institutional mechanisms and policy frameworks to facilitate transparent, efficient, and equitable revenue-sharing arrangements, thereby enhancing fiscal stability and promoting socio-economic development across all levels of government.

Moreover, the Public Finance Management Act (2012) plays a pivotal role in buttressing fiscal responsibility by providing statutory guidelines for revenue allocation, expenditure management, and financial reporting practices (Kahutu, 2019). By institutionalizing principles of transparency, accountability, and prudence in public financial management, the Act serves as a bulwark against fiscal indiscipline, corruption, and mismanagement, thereby bolstering investor confidence, promoting economic stability, and safeguarding the public interest.

In essence, the framework for tax revenue sharing in Kenya embodies a delicate balance between decentralization, fiscal autonomy, and collective responsibility, underpinned by constitutional imperatives and legislative frameworks aimed at promoting socio-economic equity, fiscal sustainability, and good governance. Through ongoing research, policy dialogue, and institutional reforms, stakeholders can work collaboratively to address emerging challenges, enhance institutional capacities, and foster a conducive environment for inclusive growth and development.

Tax Compliance Challenges:

Addressing tax compliance challenges in Kenya requires a multifaceted approach, given the diverse array of factors contributing to non-compliance and revenue leakage. Despite ongoing efforts to streamline tax administration processes, the country continues to grapple with persistent challenges in ensuring taxpayer compliance across various sectors of the economy (KRA, 2024). A primary concern revolves around low compliance rates, particularly prevalent among self-employed individuals and small businesses, where tax evasion and underreporting of income are widespread (KRA, 2024). Recent empirical studies have emphasized the pivotal role of taxpayer education and awareness programs in bolstering compliance levels and expanding the tax base (Ng'ang'a et al., 2022). By enhancing taxpayers' understanding of their rights and obligations, as well as the benefits of contributing to public coffers, such initiatives can foster a culture of voluntary compliance and civic responsibility, thereby mitigating tax evasion tendencies and enhancing revenue mobilization efforts.

Moreover, the informal sector poses a unique set of challenges to tax enforcement and collection, characterized by cash transactions, informality, and limited record-keeping practices (KRA, 2024). The absence of formal financial documentation and transactional records hampers effective tax monitoring and enforcement, leading to revenue leakage and diminished fiscal outcomes. Addressing these challenges necessitates innovative strategies tailored to the specific needs and realities of informal sector participants, including simplified tax compliance procedures, targeted outreach programs, and enhanced digital solutions for tax registration and reporting.

Furthermore, tax incentives intended to stimulate investment and economic growth have inadvertently contributed to narrowing the tax base and diminishing revenue yields (KRA, 2024). Recent empirical research has highlighted the need for a balanced approach to tax incentives, ensuring that they align with broader fiscal objectives while minimizing adverse impacts on revenue generation (KRA, 2024). By reassessing the design and scope of existing incentives and implementing robust monitoring mechanisms, policymakers can mitigate potential revenue losses

and optimize the effectiveness of incentive programs in driving sustainable economic development. Additionally, the advent of the digital economy has introduced new complexities and challenges to tax administration, as traditional tax codes struggle to accommodate the evolving nature of online business models and digital transactions (KRA, 2024). Recent studies have underscored the imperative of modernizing tax laws and regulations to address the unique characteristics of the digital economy, including cross-border transactions, digital platforms, and remote service delivery (KRA, 2024). By adopting innovative approaches to digital taxation, such as digital transaction taxes and digital service taxes, governments can enhance revenue collection from digital activities while promoting fairness and equity in the taxation of digital enterprises.

In conclusion, addressing tax compliance challenges in Kenya requires a comprehensive and nuanced strategy encompassing taxpayer education, sector-specific interventions, and regulatory reforms tailored to the evolving dynamics of the economy. Through concerted efforts by policymakers, tax authorities, and other stakeholders, Kenya can overcome existing compliance barriers, strengthen revenue mobilization efforts, and foster sustainable economic growth and development.

1.1.2 Voluntary Tax Disclosure Programme (VTDP)

The Voluntary Tax Disclosure Programme (VTDP) emerged in Kenya following the enactment of the Finance Act of 2020, marking a significant milestone in the country's efforts to enhance tax compliance and revenue collection. This initiative aims to encourage taxpayers to voluntarily disclose previously undisclosed income and assets, thereby regularizing their tax affairs and contributing to the broader goal of strengthening the tax system. By providing relief from penalties, interest, and criminal prosecution for non-compliance, the VTDP offers a viable mechanism for taxpayers to rectify past discrepancies and align with regulatory requirements.

International Context:

In considering the specific mechanisms and outcomes observed in South Africa, Nigeria, and the United Kingdom, it is noteworthy to highlight the success of VTDP implementation. In South Africa, the adoption of VTDP initiatives under the Tax Administration Act of 2011 marked a significant turning point in the country's tax administration landscape. Dare et al. (2018) and Chikozho and Atela (2018) have extensively studied the impact of South Africa's VTDPs, highlighting their role in not only bolstering tax collection but also in fostering a culture of compliance among taxpayers. The success of VTDPs in South Africa can be attributed to their

comprehensive nature, which offered taxpayers a clear pathway to regularize their tax affairs while mitigating the risk of punitive penalties (Dare et al., 2018; Chikozho & Atela, 2018).

Similarly, Nigeria's experience with the Voluntary Assets and Income Declaration Scheme (VAIDS) provides valuable insights into the potential of VTDPs to drive positive outcomes in emerging economies. Odesenya and Dushime (2021) have documented the transformative impact of VAIDS on Nigeria's tax landscape, citing significant improvements in tax compliance and revenue generation. By providing incentives for voluntary disclosure and offering relief from penalties and prosecution, VAIDS succeeded in expanding the tax base and enhancing overall fiscal sustainability. Moreover, the program's success in increasing the tax-to-GDP ratio underscores its role in strengthening the government's revenue mobilization efforts and promoting economic stability (Odesenya & Dushime, 2021).

In the United Kingdom, the utilization of Voluntary Disclosure Opportunities has been instrumental in shaping the country's tax compliance framework and revenue outcomes. Reports from HM Revenue and Customs indicate that these initiatives have played a pivotal role in encouraging taxpayers to come forward and disclose their tax liabilities voluntarily. By offering incentives such as reduced penalties and criminal immunity, the UK's VTDPs have incentivized compliance while simultaneously widening the tax base and ensuring a fair distribution of tax burdens (HM Revenue & Customs, 2015). The success of these initiatives underscores the importance of proactive tax administration measures in promoting transparency, accountability, and sustainable revenue generation in developed economies.

Implementation in Kenya:

In Kenya, the Voluntary Tax Disclosure Programme (VTDP) was established under the Finance Act of 2020, representing a significant legislative endeavor aimed at fortifying the country's tax administration framework and promoting fiscal integrity (Osoro, 2021). Operational from January 1, 2021, to December 31, 2023, the VTDP provided a structured avenue for non-compliant taxpayers to voluntarily declare their tax liabilities without fear of punitive measures (Rudich, 2021). This legislative initiative underscored the government's commitment to fostering tax transparency and accountability while offering relief to taxpayers grappling with outstanding penalties and accrued interest (Osoro, 2021). By enacting provisions that incentivized voluntary disclosure, the Finance Act aimed to stimulate greater participation in the formal tax system and expand the tax base, thereby enhancing revenue collection efforts and supporting national development priorities.

Furthermore, the VTDP's legislative framework provided taxpayers with a window of opportunity to rectify past discrepancies in their tax obligations, thus contributing to a culture of compliance and responsible fiscal behavior (Rudich, 2021). During its three-year implementation period, the Programme facilitated constructive dialogue between taxpayers and tax authorities, fostering mutual trust and cooperation in achieving common fiscal objectives (Osoro, 2021). By offering amnesty from prosecution and penalties, the VTDP encouraged voluntary compliance while alleviating the administrative burden on tax authorities (Rudich, 2021). Additionally, the program's emphasis on confidentiality and anonymity instilled a sense of security among participants, further incentivizing their engagement and cooperation (Osoro, 2021). Through these measures, the VTDP aimed to enhance tax compliance levels, streamline tax administration processes, and foster sustainable revenue mobilization for the benefit of Kenya's economy and society.

Outcomes and Implications:

The Voluntary Tax Disclosure Programme (VTDP) in Kenya carries profound implications for tax compliance, revenue generation, and economic progress. Through its provisions for incentivizing voluntary disclosure and adherence to tax obligations, the Programme is poised to yield tangible benefits in terms of heightened tax revenues, an expanded tax base, and enhanced fiscal resilience (Rudich, 2021). By encouraging taxpayers to come forward and rectify past discrepancies in their tax affairs, the VTDP can significantly bolster revenue collection efforts, thereby providing the government with additional resources to fund essential public services and development initiatives (Osoro, 2021). Furthermore, the program's emphasis on fostering a culture of transparency and accountability among taxpayers holds the potential to instill greater public trust in the tax system, promoting compliance and responsible fiscal behavior (Rudich, 2021).

However, the long-term effectiveness of the VTDP hinges on several critical factors, including the implementation of robust enforcement mechanisms, effective monitoring and evaluation systems, and ongoing efforts to address systemic challenges in tax administration (Rudich, 2021). Sustainable success will necessitate proactive measures to strengthen institutional capacities, enhance taxpayer education and awareness, and streamline administrative processes to facilitate seamless compliance (Osoro, 2021). Additionally, the VTDP underscores the government's commitment to fostering a conducive environment for investment, innovation, and economic growth by ensuring a level playing field for all taxpayers and promoting fair and equitable tax practices (Rudich, 2021). Overall, the VTDP represents a strategic intervention in Kenya's tax compliance landscape, with far-reaching implications for revenue mobilization, governance, and

socio-economic development.

1.2 Problem Statement

This study aims to investigate the impact of the Voluntary Tax Disclosure Programme (VTDP) on taxation in Nairobi County, with a focus on assessing its influence on compliance, tax revenue collection, and remittance trends among taxpayers in the country. Despite Kenya Revenue Authority's (KRA) annual reports indicating a shortfall in tax collection compared to targets, the issue of noncompliance persists as a significant challenge within the country's taxation system (Saidimu, 2009). Noncompliance has long been a concern for tax authorities, with estimates suggesting high rates, such as 50% in 2013 (KRA, 2024), and 45% among small and medium-sized enterprises (SMEs) in 2017 (Keraro, 2017). Although there has been a slight improvement, with a reported compliance rate of 42.33% in 2019 (Otindo, 2019), tax evasion remains a pervasive issue. In response to these challenges, the Kenyan government introduced the VTDP as a measure to address tax noncompliance. However, despite its implementation from January 1, 2021, to December 31, 2023 (KRA, 2024), there is a lack of empirical research evaluating the effectiveness of the Programme in achieving its objectives of increasing revenue collection, expanding the tax base, improving compliance, and incentivizing tax payment. Existing studies have primarily focused on other aspects of taxation, such as the effects of tax audits on compliance (Ndirangu, 2014; Abdul & Wang'ombe, 2017; Kelvin, 2017; Mathendu, 2022), the impact of tax reforms on revenue (Orieny, 2022), and determinants of tax compliance among SMEs (Majiwa, 2014; Keraro, 2017). Therefore, this study seeks to fill this gap in the literature by examining the extent to which the VTDP influenced tax revenue, tax burden, and remittance trends during its operational period, thereby informing policy decisions regarding the adoption and continuation of similar initiatives in the future. Additionally, this research aims to contribute to the broader understanding of the effects of voluntary tax disclosure programs on taxation systems, both in Kenya and globally.

This study will benefit various stakeholders, including policymakers, tax authorities, taxpayers, and the general public. Policymakers will gain insights into the effectiveness of VTDP as a tool for improving tax compliance and revenue generation, enabling them to make informed decisions regarding the design and implementation of future tax amnesty programs. Tax authorities, particularly KRA, will benefit from a better understanding of the factors influencing taxpayer behavior and compliance levels, allowing them to develop targeted strategies for enhancing revenue collection and enforcement efforts. Taxpayers will benefit from a more transparent and

equitable tax system, with reduced penalties and incentives for voluntary disclosure, fostering a culture of compliance and civic responsibility. Moreover, the general public will benefit from increased tax revenue, which can be allocated towards public services and infrastructure development, ultimately contributing to socio-economic development and improved quality of life.

1.3 Research Objectives

1.3.1 General research objective

To assess the effectiveness of voluntary tax disclosure programs (VTDP) in Nairobi County, particularly in enhancing tax compliance, optimizing tax revenue collection, and influencing trends in tax remittance.

1.3.2 Specific research objectives

- i. To investigate the impact of VTDP on tax compliance levels among taxpayers in Nairobi County and analyze the factors contributing to any observed changes.
- ii. To conduct a comprehensive cost-benefit analysis of VTDP by evaluating the relationship between the tax revenue collected and the amount of tax arrears waived since the initiation of the Programme.
- iii. To examine the temporal dynamics of VTDP implementation and its association with tax revenue outcomes, including revenue trends before, during, and after the program's implementation period.

1.4 Research Questions

- i. What is the magnitude of the effect of VTDP on tax compliance levels among taxpayers in Nairobi County, and what factors contribute to any observed changes?
- ii. How does the cost-benefit ratio of VTDP manifest, considering both the tax revenue collected and the amount of tax arrears waived since the inception of the Programme?
- iii. What is the temporal relationship between VTDP implementation and tax revenue outcomes, including revenue trends pre-, during, and post-implementation, and how do these dynamics inform the program's effectiveness?

1.5 Significance of the study

This study holds immense significance for various stakeholders and the broader Kenyan economy. By examining the effects of the Voluntary Tax Disclosure Programme (VTDP), it provides valuable insights that can inform policy decisions and shape future tax compliance initiatives. One key aspect is its potential to guide the refinement of the VTDP or similar programs in the future.

Through a detailed analysis of the program's strengths and weaknesses, policymakers can gain a deeper understanding of its effectiveness and identify areas for improvement. This knowledge is instrumental in designing more targeted and efficient tax policies, ensuring optimal outcomes in terms of revenue collection and compliance.

Moreover, understanding how the VTDP influences trends in tax remittance is crucial for the Kenya Revenue Authority (KRA) in devising strategies to manage tax resources effectively. By gaining insights into taxpayer behavior and compliance patterns, the KRA can tailor its enforcement efforts and resource allocation to maximize revenue collection while promoting voluntary compliance. This not only strengthens the integrity of the tax system but also fosters a culture of transparency and accountability among taxpayers.

Furthermore, if the study demonstrates a tangible reduction in net tax obligations for compliant taxpayers due to the broadening of the tax base through the VTDP, it can have significant implications for trust-building and compliance. A fair and equitable distribution of the tax burden across different income strata and sectors is essential for maintaining taxpayer confidence and fostering a sense of justice. This, in turn, encourages greater compliance and reduces the likelihood of tax evasion or avoidance.

On the economic front, if the VTDP proves effective in expanding the tax base, it could lead to increased revenues for Nairobi and the country as a whole. The additional revenue can be channeled towards funding essential public services, infrastructure development, and social welfare programs, thereby promoting economic growth and benefiting the broader population. Moreover, a successful VTDP that fosters tax compliance and transparency can enhance Kenya's reputation as a responsible and stable investment destination, both domestically and internationally. This can attract more investment inflows, stimulate development activities, and create additional employment opportunities, contributing to overall socio-economic progress and prosperity.

1.6 Scope of the Study

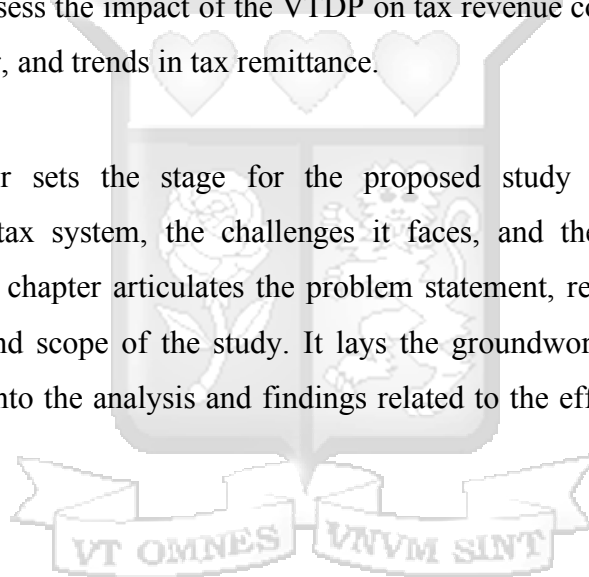
This study focuses on analyzing the effectiveness of the Voluntary Tax Disclosure Programme (VTDP) within the bustling Nairobi region of Kenya. Nairobi, being the economic and commercial epicenter of the nation, holds immense significance in terms of its contribution to the national tax base. By examining the impact of the VTDP in this specific context, the study aims to shed light on its potential to positively influence the Kenyan economy. Moreover, Nairobi's diverse economic landscape and the presence of taxpayers spanning various industries and income brackets provide a

rich microcosm for studying the effects of the Programme. Access to quality data on tax outcomes and economic indicators further enhances the feasibility of conducting a comprehensive assessment.

The term "Nairobi region" in this study refers to the administrative classification used by the Kenya Revenue Authority (KRA) to delineate tax-administrative units, typically aligned with the boundaries of Nairobi County as defined by the Independent Electoral and Boundaries Commission (IEBC). Any variations among these jurisdictions will be duly noted and addressed in the study. The research will analyze data spanning a period of five years: two years preceding the implementation of the VTDP as the baseline period, and the subsequent three years during which the Programme was in effect. By utilizing secondary data from January 1, 2018, to December 31, 2023, the study aims to assess the impact of the VTDP on tax revenue collection, the size of the tax base, compliance behavior, and trends in tax remittance.

1.7 Chapter Summary

This introductory chapter sets the stage for the proposed study by providing background information on Kenya's tax system, the challenges it faces, and the voluntary tax disclosure Programme (VTDP). The chapter articulates the problem statement, research objectives, research questions, significance, and scope of the study. It lays the groundwork for subsequent chapters, which will delve deeper into the analysis and findings related to the effectiveness of the VTDP in Nairobi County.



CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter delves into the existing body of knowledge surrounding tax amnesty, unearthing the theoretical framework, empirical evidence, and critical debates that shape the understanding of key parameters such as tax compliance, tax base expansion, and tax revenue generation.

2.2 Theoretical literature review

The academic understanding of tax compliance motivation can be broadly categorized into two main approaches: deterrence model expansion capturing social and psychological issues.

2.2.1 Economic deterrence theory

The rationale of economic deterrence theory in relation to tax compliance has its roots in the work of Allingham and Sandmo (1972), who developed their model based on Becker's (1968) pathbreaking application of the economics of crime paradigm. This theory suggests that the economic environment is a significant element in taxpayers' decisions regarding compliance with tax obligations. The perceived probability of various utilities tied to the different actions – obedience, and disobedience- significantly shapes taxpayer behavior (Mitchell et al., 2019). Of all deterrence measures, general deterrence based on the fact of sanctions and punishment has received worldwide support for its success in promoting compliance (Alm et al., 2019). The underlying assumption is that globally, taxpayers behave rationally and like to have a higher rate of noncompliance when deterrence mechanisms are deficient (Ebimobowei & Peter, 2013).

Economic deterrence theory is based on the idea that factors such as taxes, penalties, and detection probabilities have a direct effect on the way individuals decide to comply or not with the law regarding taxing (Allingham & Sandmo, 1972). Developing on this principle, Mohd Isa (2012) asserts that the features of deterrence can also be observed in such tax audits, tax agent force, tax intricacy, and taxpayer information. For this reason, this study relies on the economic deterrence theory espoused by Allingham and Sandmo (1972) to provide theoretical support for the findings pertaining to these constructs.

In the earlier models of economic deterrence, predicting taxpayer compliance, the Theory of Crime by Becker (1968) was very popular regardless of the fact that tax evasion was compared to criminal behavior under the enforcement of the law. An ultimate spiral of theory on tax compliance has seen drastic changes since the 1970s, with Allingham and Sandmo (1972) defining an initial model for

tax evasion that occurred. This method, what is usually called the deterrence paradigm, considers taxation as a cost and assumes that taxpayers have an innate tendency to want to evade it altogether. All these are not enough to discourage taxpayers from cheating; they are only restrained by the likelihood of audits, detection, and penalties. The stylized taxpayers are seen as gamblers in this model and make choices regarding their stake depending on the odds and rates of reward from noncompliance.

Models of economic deterrence portray individuals as rational who painstakingly compare the expected utility against possible costs (Allingham & Sandmo, 1972; Alm, 1988; Devos, 2005). The ultimate compliance decision comes from a cost-benefit analysis (Devos, 2005). As a result, the main effort has been geared towards direct factors such as the likelihood of audit and severity of penalties (Devos, 2005). They weigh noncompliance costs and the possible benefits of nonpayment against the satisfaction of properly reporting income (Alm, 2012). Under this paradigm, the expectation of utility is associated with taxpayers' choices following any contingent cost, which might include legal penalties (Slemrod, 2007). These earlier models were summarized to the assumptions that reported income tax to the government would rise in direct proportion to the intensity of enforcement actions and punishment practices (Allingham & Sandmo, 1972). This rationale implies that fear is the only thing that drives compliance, which means that taxpayers report all their income to escape economic punishments in case they get detected and punished (Alm, 2012).

In the scope of the research, the economic deterrence theory may serve as an instrument that can assist in assessing and explaining how VTDP has improved tax compliance. The focus of this theory is also to evaluate the cost benefits of VTDP through an assessment of tax revenue collected and tax arrears or burdens waived when the Programme was in effect.

2.2.2 Theory of planned behavior

Ajzen's (1991) theory of planned behavior (TPB) provides a very informative model on the basis of which one can forecast and analyze human behavior that is influenced by policy action, with taxation being one such domain where TPB might be applied (104). According to this theory, human behavior is a result of several motivational determinants that were at least in part created by policy actions such as tax amnesty schemes adopted by governments.

According to TPB, taxpayer compliance is influenced by three key determinants: (a) Attitudes in that personal perceptions towards the outcomes of their actions can relate to tax compliance. This

includes the perceived benefits and drawbacks of both compliance and noncompliance; (b). Subjective norms put emphasis on two constructs: (1) Perceived Social Pressure to Comply, which stresses the social pressure to comply with tax regulations. This includes elements such as information, nature of form complexity, and apparent risk of detection (Putra & bin Osman, 2019). Sudrajat and Ompusunggu (2015) explain that TPB is still applicable in understanding taxpayer responses in the context of tax amnesty policies where government-motivated factors may significantly impact compliance behavior. In a similar vein, Walsh (2012) discusses the importance of individual beliefs, social norms, and perceptions of control in influencing the decision-making process about taxpaying from within the TPB framework perspective. In addition to such core factors, the theory recognizes underlying influences of individual beliefs, social norms, and control capacities. As Benk et al. (2011) note, the motivation to undertake a particular behavior, such as obedience to the laws that govern taxation, depends on there being an inspiring reason to act in such a way. Building upon this, specifically, Ajzen (2002) indicates that these central determinants are influenced by “behavioral beliefs” (a consequence of the actions), “normative beliefs” (social norms), and “control beliefs” (capability to perform the behavior).

Various researchers further underscore the relationship between the TPB and tax compliance. The authors mentioned above, Wenzel (2004b) and Braithwaite (2003), point out the significance of merging sociological and psychological factors in explaining a high level of compliance. Such concepts as trust in authorities Murphy (2004), perceived fairness of the tax system (Wenzel, 2004b), and moral considerations and social norms (Frey, 2003; Wenzel, 2004a) become the central elements to be taken into consideration when viewing behavior from a TPB perspective. The TPB lens is a crucial part of the current study as it provides an opportunity to analyze the possible effects that the design and implementation of the VTDP present motivational factors that motivate taxpayers to comply and pay their taxes accordingly. Having integrated the motivational elements discussed in the TPB, the study can gauge how VTDP affects taxpayers’ attitudes related to compliance, social norms that stimulate compliance performance, and perceived control capacities that influence decision-making related to compliance.

2.2.3 Theory of Rational Choice

Theory of Rational Choice posits that individuals make decisions by weighing the costs and benefits of available alternatives and selecting the option that maximizes their utility or satisfaction (Simon, 1955). In the context of tax compliance and voluntary disclosure initiatives like VTDP,

this theory suggests that taxpayers will engage in a cost-benefit analysis when deciding whether to comply with tax obligations or participate in voluntary disclosure programs. Taxpayers will consider factors such as the potential penalties for non-compliance, the likelihood of detection, the amount of tax owed, and the benefits of voluntary disclosure, such as the waiver of penalties or reduced tax liability (Becker, 1968).

By applying the Theory of Rational Choice to cost-benefit analysis, researchers can model taxpayer decision-making processes and assess the factors that influence compliance behavior (Thaler & Sunstein, 2008). This theoretical framework provides a systematic approach for evaluating the costs and benefits associated with VTDP, including the financial implications for taxpayers and the government (Alm & McKee, 2004). Additionally, the Theory of Rational Choice offers insights into how taxpayers weigh trade-offs between short-term gains and long-term consequences when making compliance decisions, shedding light on the effectiveness of voluntary disclosure programs in achieving their objectives (Kaplow, 2003).

Moreover, the Theory of Rational Choice extends beyond individual decision-making to consider broader societal implications and interactions (Elster, 1986). It acknowledges that rational individuals may act in ways that collectively produce suboptimal outcomes due to institutional constraints or coordination problems (Ostrom, 2005). Therefore, by incorporating this theoretical perspective into the analysis of VTDP and tax compliance, researchers can explore not only the micro-level dynamics of taxpayer behavior but also the macro-level effects on overall compliance rates and revenue outcomes.

In conclusion, the Theory of Rational Choice provides a robust framework for assessing the cost-benefit dynamics of voluntary tax disclosure programs like VTDP. By analyzing the trade-offs between compliance and non-compliance, this theory offers valuable insights into taxpayer decision-making processes. Through its application, researchers can systematically evaluate the financial implications of VTDP for both taxpayers and the government. This study aims to leverage the Theory of Rational Choice to understand how taxpayers weigh potential penalties against the benefits of voluntary disclosure, thereby assessing the effectiveness of VTDP in achieving its objectives. Thus, this theory serves as a valuable tool for understanding the economic motivations underlying tax compliance behavior and the impact of voluntary disclosure initiatives on revenue outcomes.

2.2.4 Comparative Institutional Analysis

In the context of taxation and voluntary disclosure programs like VTDP, Comparative Institutional Analysis allows researchers to assess the impact of the program by comparing tax compliance, revenue collection, and other relevant indicators before and after its implementation (North, 1990). By employing this framework, researchers can identify trends, patterns, and causal relationships associated with the introduction of VTDP (Thelen, 1999). This theoretical approach facilitates a systematic examination of how the program affects tax compliance behavior, revenue outcomes, and other key variables over time (Mahoney & Thelen, 2010). Moreover, Comparative Institutional Analysis enables researchers to control for external factors and contextual differences that may influence the observed changes, thus providing a more rigorous assessment of the program's effectiveness (Hall & Taylor, 1996).

Overall, Comparative Institutional Analysis offers a robust theoretical foundation for evaluating the pre and post VTDP dynamics and understanding the program's implications for tax administration and compliance outcomes (Mahoney & Thelen, 2010). Through a comparative lens, researchers can analyze the evolution of tax compliance and revenue trends in Nairobi County before and after the implementation of VTDP, shedding light on the program's effectiveness and identifying areas for improvement (Thelen, 1999). By systematically comparing institutional arrangements, policy frameworks, and enforcement mechanisms, researchers can gain valuable insights into the mechanisms driving tax compliance and revenue collection, informing future policy decisions and program design (North, 1990).

2.3 Empirical Literature

This section provides an empirical review of the literature on the study variables.

2.3.1 Effect of VTDP on Compliance

Researchers have tried to examine the correlation between VTDP and tax compliance, focusing on how tax amnesty initiatives such as voluntary tax disclosure impact tax compliance. However, much of this research has been done in different contexts and nations, raising concerns about whether contextual factors play a role. Larasdiputra and Saputra (2021) analyzed the data regarding tax amnesty, compliance costs, and sanctions' effects on Asians' behavior in terms of their tax payment. Using questionnaires and regression analysis, they found that all three interventions were compliant and had a potential for general implementation by the region (Larasdiputra & Saputra, 2021). Fox and Murray (2011) had made similar findings in their study on how tax amnesties

influence filing rates and revenue collection in the United States. Fox and Murray's (2011) descriptive and regression analyses showed that effective amnesty programs might improve both indices, as well as reiterate the importance of adequate amnesty policy design for achieving complete compliance. In their Indian study, Sudrajat and Ompusunggu (2015) suggested a conceptual framework for measuring tax compliance, focusing on (1) compliance with the regulations and (2) trust in government impartiality. The regression analysis of their findings demonstrates a high correlation between citizen support and compliance. This provides necessary evidence in favor of the need to develop trust for continued compliance behavior (Sudrajat & Ompusunggu, 2015).

Wadesango et al. (2020) concentrated their attention on a specific context – Zimbabwean SMEs, adopting a descriptive research design and multiple regression analysis as the methodology. The scholars discovered a negatively correlated relationship between tax amnesty and compliance, which suggests that future compliance could be achieved by stricter sanctions (Wadesango et al., 2020). However, a Nigerian study conducted by Okoye (2019) reported controversial findings. Okoye (2019) examined whether tax amnesty programs influenced compliance in Nigerian taxpayers, using political trust as a moderation variable. By questionnaire distribution and regression analysis, Okoye (2019) discovered a positive link between unannounced amnesty programs and compliance, noting the significance of communication clarity and program design.

Substantial research on tax amnesty programs (such as VTDP) has been conducted in Nigeria. Oladele et al. (2019) analyzed the effect of audit probability and the penalties enforced on companies in Nigeria. By applying Ordinary Least Square analysis, they concluded that a minor increase in both variables could result in better compliance with tax audits in Ondo State. In another Nigerian study, Atawodi and Ojeka (2012) investigated the effect of factors that influence tax behavior among SMEs in the Country. Using a logit model, the research established barriers to SME compliance in issues related to fulfillment processes and high tax charges as the most serious obstacles (Atawodi & Ojeka, 2012). Other factors, like lack of knowledge about tax and multiple taxations, which were minimally significant, contributed as well. This observation fell in line with the studies by Witte and Woodbury (1985), Park and Hyun (2003), and Tanzi (1980).

Oladipupo and Obazee (2016) also focused their study on Nigeria, investigating the impact of taxpayer knowledge and penalty systems on tax compliance in the case of SMEs in the Country. Through the use of a survey research design, they conducted data collection using questionnaires and analyzed the information through Ordinary Least Square regression. The results of their

research revealed that both tax knowledge and the effect of penalties had a statistically significant impact on compliance, albeit it was positive and marginal. This implies, from the perspective of Nigerian SMEs, that increasing taxpayers' awareness regarding compliance, as opposed to focusing solely on penalty systems, will lead to a greater increase in tax compliance. Much of the regional literature on the study topic has also been concentrated in Ethiopia. Assfaw and Sebhat (2019) explored factors influencing ethical tax practice in Ethiopia. The logit regression analysis of the data collected in three zones revealed several positive factors. The effects of taxpayer education, training awareness, knowledge, and a simple tax system combined with a more positive attitude toward taxes, the efficient allocation of funds by government administration, and loyalty reward schemes all result in increased compliance. Tilahun (2018) further explored the economic and social variables determining voluntary compliance within the Ethiopian context but narrowed his research to Bahirdar City. Using ordered logit analysis, the study uncovered significant determinants such as tax rate, tax perception of government spending, tax system efficiency, audit penalties, and compliance costs. The results from Tilahun (2018) and Assfaw and Sebhat (2019) are in harmony with earlier findings of Riahi-Belkaoui (2004) and Richardson (2008).

In another Ethiopian study, Manaye and Alemu (2018) investigated tax compliance determinants among taxpayers in Wolaita Sodo and Tercha Towns. Utilising multiple linear regression, Manaye and Alemu (2018) discovered that tax audits, financial constraints to the individual, and policy shifts in government all impacted the nature of compliance, echoing the findings of Jackson and Milliron (2002), Riahi-Belkaoui (2004), Richardson (2008), and Deyganto (2018). Deyganto (2018) focused on the determinants of voluntary compliance with taxation among taxpayers in Gedeo Zone, Ethiopia. The research used a mixed method research design and binary logistic regression models to employ seven key variables influencing compliance behavior (Deyganto, 2018). Items included were age, perceived audit probability, gender, poor tax knowledge, perception of the tax rate, penalty awareness, and the simplicity of the tax system. Significantly, as per Wärneryd and Walerud (1982), Deyganto's (2018) conclusion was consistent.

Jemaiyo and Mutai (2016) further expanded the contextual scope of the study topic by investigating the factors affecting the levels of compliance in taxation among Kenyan taxpayers based in Eldoret town. Their research methodology was ex-post facto, which focused on a community of 605 individuals in the town of Eldoret. Applying the snowball and purposive sampling methods, they finalized the sample size of 68 respondents, a number of which were real estate investors, tax audit officers, and tax compliance officers. Data collection, on the other hand, resorted to a structured

questionnaire, while the basic analytical tool used was chi-square tests. Interestingly, the study revealed a significant relationship between four key factors and tax compliance: Tax compliance cost, knowledge of the tax, tax penalties, and audits. These findings imply that targeting these mentioned peculiarities could, perhaps, serve as vital in improving the rate of tax compliance in the real estate industry.

2.3.2 Cost-benefit of VTDP

Limited literature is available on the cost-benefit of the VTDP or tax amnesties following their implementation. A 2015 European Commission report tried to assess the cost benefit of tax amnesties, highlighting that the VAT Gap among the 26 EU member states involved in the assessment was an indicator of the effectiveness of VTDP enforcement and compliance measures, as it offered a projection of revenue loss due to tax avoidance, tax evasion, tax fraud, bankruptcies, financial insolvencies, and miscalculations (European Commission, 2015). While this report does not clearly establish the cost-benefit of the implementation of tax amnesty programs such as VTDP, it signals that there could be some cost-benefits considering their broader adoptions across countries. In their study focusing on Chile, Jenkins et al. (2023) do not clearly establish the cost-benefit of tax amnesty programs (such as VTDP) either. However, their conclusion that prefilling tax returns addresses the challenges of high taxpayer compliance costs, tax gaps, and burdensome audits, inspections, and tax evasion suggests a potential link between increased tax returns and VTDP. This points to a possibility of tax amnesties having cost-benefits after all.

Alm et al. (2009) study on whether tax amnesties work focusing on revenue effects of tax amnesties during the transition in the Russian Federation in the 1990s reports crucial findings suitable for the development of the cost-benefits of the VTDP hypothesis. In their study, Alm et al. (2009) found that tax amnesties had a minimal short- or long-term impact on tax revenues, concluding that most tax amnesties seem unlikely to have significant as well as demonstrate negative or positive impacts on tax revenues. Even though this finding and deduction call into question the effectiveness and usefulness of tax amnesties as policy measures, it theorises a possible correlation between VTDP and increase tax revenues. Kwatamba (2016), involving a time series methodology to examine the impact of tax amnesty on tax revenues in Kenya, also establishes the basis for a potential correlation between VTDP and enhanced tax returns. Findings from Kwatamba's (2016) study emphasise the need for the Kenya Revenue Authority to adopt tax amnesties to boost tax revenue, highlight that these programmes may have some cost-benefits.

Much of the existing research on the link between tax amnesty and tax revenue has concentrated in Indonesia. Fox and Murray (2014) used an empirical framework involving the Bayesian Analysis paradigm to conduct an assessment of tax revenue due to the application of tax amnesty in Indonesia. The statistics indicated that the first amnesty program in Indonesia boosted revenue (Fox & Murray, 2014). It is, however, important to note that sub-sequential amnesties tend to have a positive impact on revenue performance. Still, the level of the beginning is lower compared to the first amnesty. Consequently, besides decreases during the amnesty period, filing rates tend to decrease below the levels before the amnesty. The data seems to indicate that amnesties have a very small negative effect on tax compliance and revenues in the short run, leaving a gap in knowledge and literature on the effects in the long-term.

In another Indonesian study, (Mahestyanti et al., 2018) sought to analyse the influence of the tax amnesty program that was implemented in Indonesia in 2016 on different categories, including tax penalties, wealth, and tax compliance. The researchers used primary data, which was collected via empirical economics and analyzed using variance analysis methodology (Mahestyanti et al., 2018). The findings of the study reveal that there is a relationship between tax compliance and wealth, where low tax compliance is positively related to high wealth (Mahestyanti et al., 2018). Moreover, there was a strong correlation between the adverse side effects, such as significant tax penalties and an increased likelihood of being audited (Mahestyanti et al., 2018). The findings showed that tax amnesties were having a two-dimensional or dual impact on the systems of taxation. The latter demonstrates that this lens can, to some extent, be efficient in raising funds for governments. Nevertheless, tax amnesties were shown to be conflicting and resulted in an overall decrease in tax compliance. This means that despite the fact that they help them make more profits in the short run, these practices have adverse effects in the long term.

In another Indonesian-based study, Said (2017) used a descriptive research approach to analyse the country's tax amnesty policies. As per the results of the study, tax amnesty programs were shown to have an impact on the tax-to-GDP ratio and a negative influence on the number of instances of tax compliance decreased with such programs (Said, 2017). From this research, it is clear that in the short-term period, tax amnesty had adverse effects on government revenues, while in the long-term period, tax amnesty had positive impacts on government revenues. This finding is consistent with the results and conclusions made by another Indonesian study conducted by Gunawana and Resitarini (2019). Conducting an empirical case study involving 17 companies in Indonesia and

selected using purposive sampling, Gunawana and Resitarini (2019) found a positive correlation between tax amnesty policies and tax revenue. The results of a multiple linear regression analysis revealed a positive relationship between tax amnesty and the amount taxed collected Gunawana and Resitarini (2019). The motivation levels of taxpayers to pay taxes also have a positive effect during the tax amnesty measures, and it will eventually lead to an increase in the compliance level. Sari et al. (2021) focused on the regional context, examining the relationship between tax amnesty programs and tax revenue among Asian developing countries. Utilising panel data from a sample of 200 subsidiaries across 10 countries, covering the time frame of 2010 to 2014, Sari et al. (2021) discovered that study revealed that the implementation of tax amnesty programs, along with strict tax inspections, sanctions, and tax audit systems, has the potential to improve tax revenues and compliance. Bozdoğan and Şimşek (2018) conducted a similar study but in Turkey. Using a vector autoregressive analysis (VAR) to analyse 1980 to 2014 data, it was found that tax amnesties seemingly lead to declining results in terms of the amount of tax revenue raised with time. On the contrary, the effect of GDP is a monotonically increasing function. The statement strongly implies that tax amnesties are detrimental and cause a major loss to the revenues of taxes. Since Bozdoğan and Şimşek (2018) findings are inconsistent with previous research in Asian countries such as Indonesia, it raises concerns about whether or not contextual or regional factors are also at play. Agbonika (2015) conducted an analysis of the successes and failures of amnesty programs put in place in Nigeria. Employing the exploratory approach to analyse diverse pieces of literature on the results of revision in tax laws using amnesty schemes, Agbonika (2015) found that tax amnesties had a positive impact on tax bureaucracies, which resulted in the drastic change in the means of handling the problem of tax evasion. The research established that the rate of participation rose and ever increased with the provision of tax amnesty programs as one-time opportunities. However, a South African study conducted by Junpath et al. (2016) reported controversial findings, raising concerns about the role of contextual factors. Junpath et al. (2016) carried out an attitudinal and perception analysis among taxpayers in South Africa on the nature of compliance with tax amnesty programs. A survey was carried out in an attempt to determine the perceptions of taxpayers towards compliance with tax and amnesty (Junpath et al., 2016). The researchers employed ordinary least squares estimation for their study (Junpath et al., 2016). The result of the study revealed that the amnesties did not facilitate increasing the tax collection (Junpath et al., 2016). Secondly, they also concluded that amnesties offered platforms for further cases of tax evasion (Junpath et al., 2016). The incentive for taxpayers' non-adherence with tax regulations was their expectation of future tax

amnesties.

Since conducting a cost-benefit analysis of VTDP will also involve assessing penalties waived, assessing literature on the correlation between VTDP and tax penalties or burdens can also assist in building up this hypothesis. Unfortunately, there are not enough studies that have tried to examine the correlation between tax amnesties and taxpayers' tax liabilities. However, it is known that tax amnesties such as VTDP are usually deployed to motivate non-compliant taxpayers to comply by promising to forgive tax penalties accrued. Mookherjee and Gupta (1995) noted that tax amnesty schemes offer taxpayers immunity from tax penalties or imprisonment in exchange for disclosing all income that was not declared in the past. Parys (2012) further highlighted that a significant number of developing nations increasingly deploy tax incentives to reduce the tax burden for foreign investors. This observation suggests that tax amnesty schemes, including tax incentives, can reduce tax or waiver burden for taxpayers.

2.3.3 Contribution of VTDP to Tax Collected and Revenue Trends

Much literature on the correlation between VTDP and tax collected (tax revenue) has been reviewed above. Thus, the literature on the correlation between VTDP and revenue trends is explored herein. Evidently, much of the research on the link between tax amnesties and revenue trends has been conducted in Asian countries. Ha and Phan (2017) evaluated Vietnamese taxpayer involvement in VTD programs and their behavioral characteristics. They found that confidence in tax authorities, perceived VTD justice and social norms drive voluntary compliance and tax remittance behavior in surveys and focus groups. When the VTD program was open, egalitarian, and consistent with society, participants were more willing to pay taxes voluntarily. The research stressed the need for confidence and credibility in VTD activities to boost taxpayer involvement and tax remittances.

A subsequent study conducted in Malaysia by Balamurugan and Sinapayan (2018) offered contradicting and controversial findings, questioning whether contextual factors really matter. In their research, Balamurugan and Sinapayan (2018) observed that even with VTD systems, high-income people and major enterprises had minimal tax remittance. The report ascribed these concerns to structural factors, including corruption, insufficient enforcement, and tax authority distrust. The results highlighted the need for substantial changes beyond VTD programs to remove compliance hurdles and boost tax remittances. Balamurugan & Sinapayan (2018) also compared European VTD initiatives to tax remittance patterns. The analysis found considerable differences in

VTD initiative effectiveness between jurisdictions. Some nations saw significant tax remittance rate gains with VTD systems, whereas others struggled due to administrative complexity and poor taxpayer engagement. The results stressed the significance of context-specific VTD program design and implementation for compliance.

In another Asian research, De Simone and Markle (2020) examined how VTD initiatives affect Singaporean tax remittances. A detailed review of tax data and questionnaires showed that VTD programs significantly increased individual and corporate tax submission rates. The research found that VTD initiatives promoted openness and accountability, improving government compliance and income. Kim and Lee (2021) further evaluated how VTD initiatives affect South Korean tax remittances. According to tax data analysis, tax remittance increased significantly when a VTD system was implemented. They also saw taxpayers remit more quickly and accurately due to the VTD program's incentive effect. The study implies that VTD programs can boost tax remittance rates and revenue collection.

Contrary to these findings, Pramanayogi et al. (2022) observed conflicting results from VTD programs on Indian tax remittance trends. People paid slightly more tax when VTD programs were launched. This increment eventually faded. According to the researchers, several issues prevented VTD programs from working as intended. Complex VTD program rules and methods were a major issue. Because many people didn't know about these programs, they didn't participate. The government didn't police the laws enough; thus, some people didn't feel pressured to pay taxes after joining VTD programs. These issues revealed systemic issues that must be addressed to improve VTD programs' tax compliance. Pramanayogi et al. (2022) recommended improving VTD programs. They suggested that the government clarify rules and make programs easy to grasp. They also suggested the government promote VTD programs so more people know about them and may participate. They urged the government to enforce the rules more strictly to put people under pressure to comply. The researchers believed these improvements would help VTD programs persuade people to pay their taxes on time and in full, improving the country's finances. Moreover, Hoopes et al. (2018) examined VTD programs' effects on tax remittance trends across countries. Those having VTD programs were compared to those without. They observed that VTD programs improved tax payments on time. Additionally, fewer people tried to avoid taxes. These VTD applications made it easier to know who was paying what, making people more likely to follow the regulations. This study reveals that these initiatives help ensure everyone pays their fair amount of taxes, making the system more honest and dependable. Hoopes et al. (2018) also found another

thing. They found that VTD programs clarified tax reporting. The procedure was illuminated, making it easier to understand. Clear and open tax reporting fostered a culture of tax accountability. When VTD initiatives are implemented, more people pay their taxes properly and become more aware of their responsibilities, improving the system for everyone.

Additionally, Slemrod (2019) examined the behavioral determinants affecting taxpayer involvement in VTD programs and tax remittance patterns. They discovered via surveys and interviews that VTD programs' fairness and effectiveness strongly affected participants' tax remittance decisions. VTD systems that were fair, transparent, and consistent with moral and ethical norms encouraged voluntary taxation. The research stresses the relevance of psychological and motivational variables in VTD attempts to promote tax remittance compliance.

2.4 Summary of Research Gaps

Existing research on tax amnesty programs offers valuable insights but also reveals significant knowledge gaps. While studies provide useful suggestions on the effects of tax amnesty programs on compliance and profitability, there's a need for further inquiry into their long-term effects and the sustainability of behavioral changes. Moreover, deeper analysis of program design elements such as amnesty duration, penalty structures, and outreach campaigns could enhance understanding and improve program effectiveness in diverse circumstances.

Additionally, the current literature predominantly focuses on formal taxpayers, overlooking the complexities of integrating the informal sector into the tax system through compliance incentives or simplified filing processes. Exploring psychological and behavioral factors like trust in government, perceived fairness, and social norms could provide deeper insights into taxpayer motivations within amnesty programs. Furthermore, the literature lacks clarity on the cost-benefit analysis associated with VTDP following tax amnesty implementations, and much of the existing research is based on international contexts, potentially overlooking unique factors pertinent to Kenya. Bridging these gaps is essential for evaluating the effectiveness of the Kenyan VTDP, informing policy decisions, and shaping future iterations of tax amnesty programs to better serve the needs of the country's taxpayers and revenue collection efforts. Through thorough exploration of program effects and design features, this research aims to provide valuable insights for enhancing the effectiveness and efficiency of tax amnesty initiatives in Kenya.

Table 2.1 Research Gaps

Author	Title	Findings	Gap in Study
Alm et al. (2009)	Revenue Effects of Tax Amnesties: A Comparison	Tax amnesties had minimal short- or long-term impact on tax revenues, raising questions about their effectiveness as policy measures.	Limited research has explored the long-term effects of tax amnesties, leaving gaps in understanding their overall impact on tax revenues.
Jenkins et al. (2023)	Prefilled Tax Returns and Tax Amnesty Programs: Evidence from Chile	Prefilled tax returns may address compliance challenges and enhance tax returns, indicating potential benefits of tax amnesty programs.	Further research is needed to directly assess the cost-benefit relationship of tax amnesty programs like VTDP, particularly in diverse contexts.
Sari et al. (2021)	Tax Amnesty Programs and Tax Revenue: A Panel Data Analysis	Tax amnesty programs, along with strict tax inspections and sanctions, have the potential to improve tax revenues and compliance.	Despite evidence suggesting positive impacts of tax amnesty programs on tax revenues, more studies are needed to understand their long-term effects and sustainability.
Junpath et al. (2016)	Taxpayer Perceptions and Compliance with Amnesty Programs: A Case Study of South Africa	Amnesty programs did not facilitate increased tax collection and may have incentivized further tax evasion, indicating potential flaws in their design.	There is a need for more research to investigate the nuanced effects of tax amnesty programs on taxpayer behavior and compliance across different contexts.
Mookherjee & Gupta (1995)	Tax Amnesty Schemes: Theory and Evidence	Tax amnesty schemes offer taxpayers immunity from penalties in exchange for disclosure, suggesting potential benefits in reducing taxpayer burdens.	Further empirical research is needed to quantify the impact of tax amnesty programs on reducing taxpayer penalties and liabilities, particularly in diverse socioeconomic contexts.

Said (2017)	Impact of Tax Amnesty Programs on Tax-to-GDP Ratio and Tax Compliance: Evidence from Indonesia	Tax amnesty programs initially had adverse effects on government revenues but showed positive impacts in the long term.	More research is necessary to understand the transitional dynamics of tax amnesty programs, including their short-term disruptions and long-term benefits for tax compliance and revenue collection.
Bozdoğan & Şimşek (2018)	The Impact of Tax Amnesties on Tax Revenue: A Case Study in Turkey	Tax amnesties in Turkey led to declining tax revenue over time, indicating potential drawbacks of such programs.	Further investigation is needed to explore the underlying mechanisms driving the decline in tax revenue associated with tax amnesty programs, considering contextual and policy factors.
Pramanayogi et al. (2022)	Evaluation of Tax Amnesty Programs: Insights from Indian Taxation	Tax amnesty programs in India had mixed effects on tax remittance trends, highlighting challenges in program design and enforcement.	Additional research is required to identify and address the systemic issues affecting the effectiveness of tax amnesty programs, particularly in diverse cultural and regulatory contexts.

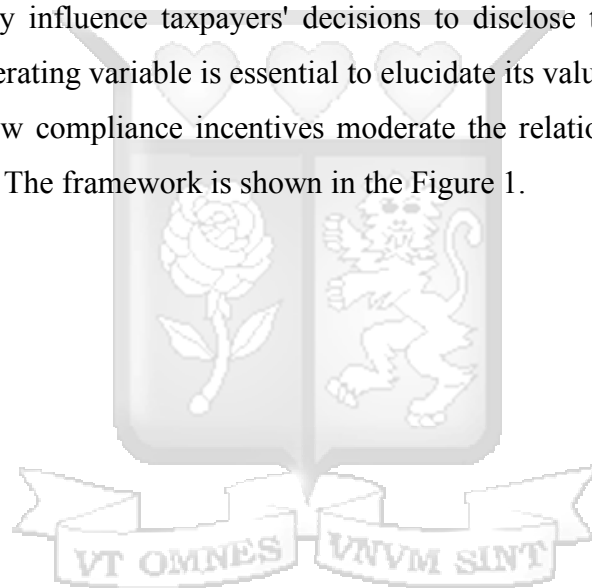
2.5 Conceptual framework

The conceptual framework, as defined by Chandran and Menon (2004), encompasses a set of interconnected variables that logically represent the key aspects of the situation under study. Adrian (2014) further elucidates this definition, emphasizing the framework's role in situating the researcher within the research context. By articulating assumptions and perspectives, the framework delineates the researcher's stance, indicating areas of alignment or divergence with prevailing discussions and issues. In the context of this research, the conceptual framework serves to map out the interrelationships between the independent variables and the dependent variable,

guiding an exploration of their interactions and effects.

The independent variables identified for this study include the Voluntary Tax Disclosure Program (VTDP) and factors such as Tax Compliance (assessed through Tax penalties), Cost-Benefit Analysis of VTDP (comparing Tax collected to Tax waived), Tax Revenue Collected, and Tax Revenue Trends. These variables are crucial in understanding the dynamics of tax compliance behavior and the efficacy of VTDP in revenue generation and tax burden alleviation. The dependent variable, VTDP taxes, represents the taxes disclosed voluntarily through the program.

A critical aspect of the conceptual framework is the inclusion of a moderating variable, Compliance Incentives (Tax waived). This variable plays a pivotal role in shaping the relationship between VTDP and tax compliance behavior. Compliance incentives, in the form of waived taxes or penalties, can significantly influence taxpayers' decisions to disclose their liabilities voluntarily. The inclusion of this moderating variable is essential to elucidate its value-added contribution to the analysis by examining how compliance incentives moderate the relationship between VTDP and tax compliance outcomes. The framework is shown in the Figure 1.



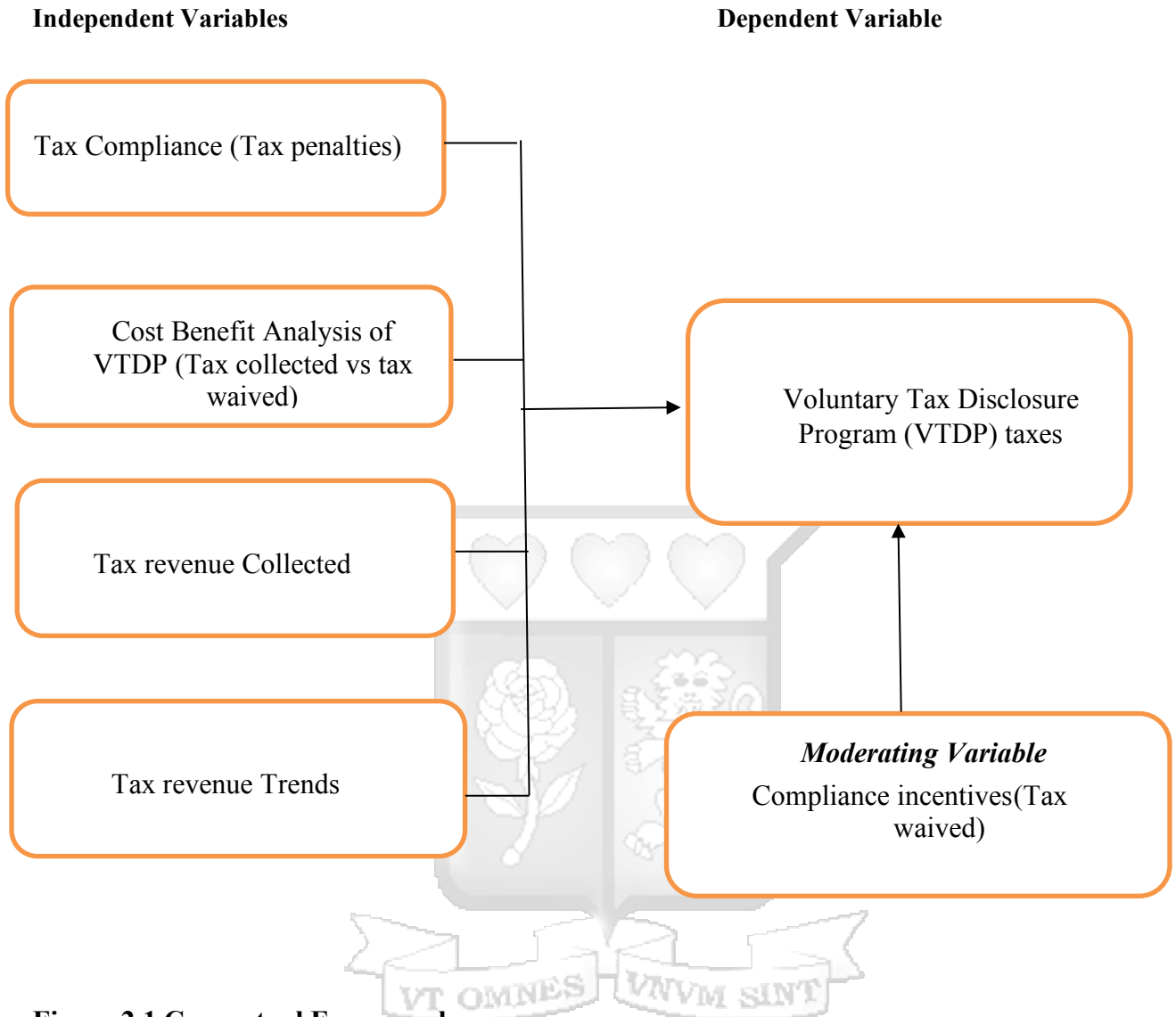


Figure 2.1 Conceptual Framework

Source: Researcher (2024)

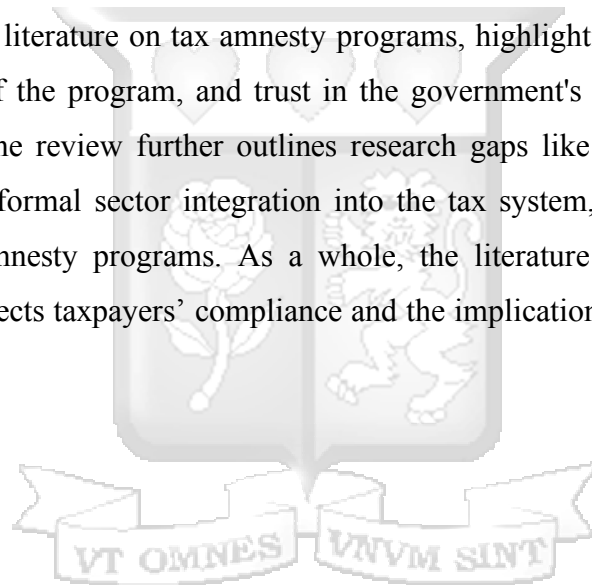
The above conceptual framework identifies the relationship between the selected variables of the research and how they are hypothesized. The variable is operationalized as shown in Table 2.2

Table 2.2 Operationalization of Variables

Variable	Type	Indicators	Source of Data	Type of Analysis
Voluntary Tax Disclosure Program (VTDP)	Dependent	<ul style="list-style-type: none"> • Effect on Tax compliance • Effect on Tax revenue collected • Effect on Tax remittance Trends 	Quantitative: Surveys, tax records	Descriptive Statistics, Quantitative Analysis
Compliance Change	Independent	<ul style="list-style-type: none"> • Change (Increase) in compliance rate • Change (Decrease) in noncompliance rate 	Quantitative	Descriptive Statistics, Quantitative Analysis
Tax Revenue	Independent	<ul style="list-style-type: none"> • Change (Increase) in tax revenue collected • Change (Increase) in number of taxpayers added to the tax system 	Quantitative: Tax records	Descriptive Statistics, Quantitative Analysis
Tax Waivers	Independent	<ul style="list-style-type: none"> • Increase in number of noncompliant taxpayers disclosing and paying their taxes • Assessment of penalties waived 	Quantitative	Descriptive Statistics, Quantitative Analysis
Tax revenue remittance trends	Independent	<ul style="list-style-type: none"> • Change in people starting to file returns • Change in non-compliant taxpayers starting to comply • Change in taxpayers and entities constantly paying their taxes • Change in people doing follow-ups about their tax status and obligations 	Quantitative	Descriptive Statistics, Quantitative Analysis
Compliance incentives	Moderating	Penalty waivers	Qualitative: Perception assessment	Descriptive Statistics, Qualitative Analysis

2.7 Chapter summary

In the literature review, the theoretical approaches to analyze the motivation of taxpayer compliance are considered. It elaborates on the economic deterrence model and the extension to include social and psychological factors. In the review, it is stressed that both sociological and psychological factors should be considered in explaining high levels of compliance, including the sense of trust in authorities, the perception of fairness of the tax system, moral issues, and social norms. Moreover, it underscores the significance of TPB theory in comprehending taxpayer compliance and the importance of investigating how the particular design and implementation of tax amnesty arrangements might affect taxpayer compliance by influencing key variables. Also, the article provides empirical literature on tax amnesty programs, highlighting the importance of clear communication, design of the program, and trust in the government's impartiality for long-term compliance behaviour. The review further outlines research gaps like the durability of program impacts in the long run, formal sector integration into the tax system, and the psychosocial and behavioural factors in amnesty programs. As a whole, the literature review gives an in-depth understanding of what affects taxpayers' compliance and the implications of VTDP on the tax base and tax revenue.



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the methodological approach for the study, which comprises research design, population and sampling, data collection procedure, data analysis methods, data presentation, and ethical considerations.

3.2 Research philosophy

In the present study, a positivist research philosophy was utilized as the base for understanding research knowledge and its nature (Saunders et al., 2003). This approach, also known as a research paradigm, included wide theoretical and practical proposals that allowed for managing the research work. It was viewed as a careful process where researchers-built bridges between the research questions and objectives through proven processes.

Gliner et al. (2000) further clarified the idea of a paradigm as a particular strategy for thinking and studying. Although not a methodology in and of itself, it acted as a guiding philosophy that informed how research was conducted. This philosophy, which took into account the individual's mental model, perception, and belief system towards reality, influenced the values and beliefs of the researcher, thus ensuring the validity of arguments and the reliability of results.

Positivist philosophy was adopted as the philosophy in this research because it closely associated itself with objectivism (Cooper & Owen, 2007). This method focused on objectivity in the social realm, requiring the researcher to discard their values and biases. Scientists working within the positivist research paradigm preferred to collect data that was generalizable and collected from large samples rather than data gathered from focused investigations. Additionally, this type of methodology did not allow the personal beliefs of the researcher to affect the study. Saunders et al. (2003) also pointed to how positivism related to the focus on observations and experiments that generated simple, quantifiable data. This school of thought was based on the assumption of the existence of a singular truth that was not affected by human bias and could be measured and observed objectively through standardized procedures.

3.3 Research design

In terms of the research design for this study, a quantitative approach was chosen due to the nature of the study and the type of secondary data involved. The quantitative approaches, including surveys and statistical analysis, provided useful tools for variable measurement, pattern detection, and broadening the scope of generalization.

While a causal quantitative research design was deemed a perfect fit for the purpose of the study, which aimed to explain the causal relationship between VTDP implementation and improvements in compliance, decline in tax burden, tax base expansion, and trends in tax remittance in Kenya, it's worth noting that the regression and mean comparison tests employed did not strictly adhere to this framework. Despite this, the quantitative approach allowed for a comprehensive understanding of causal mechanisms within the process of how the VTDP affected various tax-related indicators, as suggested by Gay and Airasian (2003), who highlight that such designs are particularly useful for determining the causal impact of one factor on others. Generally, as described by Green and Tull (2009), the research design reflects the specific methods and procedures used in collecting the required data. It serves not only as the project's performance guide but also as a data collection plan that defines what data will be collected, where it will be collected from, and how. Thus, the chosen quantitative approach facilitated the examination of the causal relationships underlying the VTDP's effects on tax-related outcomes in Kenya.

3.4 Data

The dataset employed consists of panel data encompassing 250 firms and 6 years. It comprises tax data collected before and during the adoption of VTDP, sourced from the Kenya Revenue Authority (KRA). The sectors included in the dataset encompass manufacturing, services, and finance, and the regions covered are urban and rural areas with respective distributions of firms within these sectors and regions over the study years. It's worth noting that the data constitutes an unbalanced panel.

Kothari (2004) defines a population as the entire body of individuals or units from which conclusions about a given sampling are drawn. The target data units in this study are tax data obtained before and during the adoption of VTDP. According to Mugenda (2008), the essence of sampling is to achieve a sample that represents a unit of interest. This is in line with the principle that sampling, as defined by Burns and Grove (2010), is the selective process of choosing individuals, situations, or behaviours for study. In this research, data collection was conducted to

reflect information from 2018 to 2023. Secondary data was collected for the period 2018 to 2023, capturing two years prior to the implementation of the VTDP (baseline) and its operational period. This timeframe allowed for the gathering of baseline data and the observation of the VTDP's potential effects on the selected variables over a significant period, facilitating a more accurate evaluation of its effectiveness.

3.5 Data analysis

A multivariate regression model was employed to evaluate the connections between the independent variables and the dependent variable. This model aimed to test the significance of the links between the VTDP and tax compliance, the cost benefits of VTDP, and tax collected and revenue trends in Kenya. Additionally, the analysis incorporated time series data of five years from 2018 to 2023. Before fitting the regression model, the data underwent extensive diagnostic testing to identify issues such as heteroskedasticity, serial correlation, fixed effects, and autocorrelation. It's worth noting that the data sourced from the Kenya Revenue Authority (KRA) facilitated the analysis.

3.6 Model specification

In this study, the benefits of panel data were utilized to analyze the effects of VTDP implementation on tax revenue, the enlargement of the tax base, and the reduction of the tax burden in Kenya, covering a period of three years: 2020-2023. As noted by Hsiao and Pesaran (2004), the special quality of longitudinal data allowed for the examination of more complex dynamic relationships that may otherwise have been lost in cross-sectional or time-series analyses. The study used the pooled OLS method for analysis.

The empirical model was as follows:

$$Y = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \epsilon_t$$

Where:

Y_{it} - Voluntary Tax Disclosure Programme (VTDP)

β_0 - Regression Coefficients constant

β_1, \dots, β_5 - is the coefficients of the regressor variables

X_1 - Tax Compliance Rates

X_2 - Cost Benefits of VTDP

X_3 - Tax Collected

X4 - Tax Waived

X5 - Revenue Trends

ϵ_t - The error term

3.7 Diagnostic tests

In order to proceed further with the normality test of the data to explore the effect of VTDP implementation on tax revenue, tax base expansion, and tax burden reduction in Kenya, and the moderating effect of Compliance incentives, it was essential to check the data suitability for the analysis. This involved running a set of diagnostic tests to address various problems, such as heteroskedasticity, serial correlation, fixed and random effects, autocorrelation, multicollinearity, and stationarity. Table 3.1 provided a comprehensive overview of the tests that were conducted, outlining the specific criteria that were employed for decision-making in each case.

Table 2: Diagnostic tests

Source: Author (2024)

Test Used	Test Parameter	Interpretation
Time Fixed Effects	Testsparm test	If the p-value exceeds 0.05, it suggests that the coefficients for all years are statistically indistinguishable from zero. In such a scenario, the null hypothesis stating the absence of time-fixed effects cannot be rejected. Consequently, introducing a two-way fixed effects model or dummy variables for each year becomes unnecessary, as the data doesn't warrant accounting for distinct year-specific effects.
Heteroskedasticity	Wald Chi-square test	If the P-value < 0.05 , the presence of Heteroskedasticity is confirmed.
Serial correlation	Wooldridge Drukker test	If the p-value associated with the relevant test exceeds 0.05, it indicates that the null hypothesis of no first-order autocorrelation cannot be rejected. In simpler terms, this suggests that the observed data does not exhibit significant serial correlation.

Multicollinearity	VIF	If the p-value associated with the relevant test exceeds 0.05, it indicates that the null hypothesis of no first-order autocorrelation cannot be rejected.
Unit roots/stationarity	Levin-Lin-Chu Unit test for ICFs/ Harris-Tzavalis test for icfs	If the p-value associated with the test statistic falls below 0.05, it signifies that the null hypothesis of a unit root can be rejected.
Normality	Jacque Beta test	If $P > 0.05$, then this implies normality.

3.7.1 Heteroscedasticity

As noted by Woodridge (2005) and Baltagi (2008), even though OLS estimators were still unbiased and consistent under heteroscedasticity, the standard errors became distorted, affecting the accuracy of t-statistics and F-statistics for hypothesis testing. In this research, the Breusch-Pagan-Godfrey test was used to test for heteroscedasticity. If the null hypothesis of homoscedasticity was rejected (p-value < 0.05), it indicated unequal error variances across the observations. This situation demanded robust standard errors to mitigate the impact of heteroscedasticity on hypothesis testing.

3.7.2 Auto Correlation

Another potential issue in time series analysis was autocorrelation, where error terms in specific periods depended on those in earlier periods (Woodridge, 2005). Autocorrelation could bias the standard errors of estimated coefficients, leading to inaccurate results and invalid hypothesis tests. In this study, the Woodridge F-test was used to test for autocorrelation. This test measured the null hypothesis of the absence of serial correlation against the alternative, which favored its presence. The null hypothesis was rejected because the p-value was less than 0.05, indicating the presence of autocorrelation. Addressing autocorrelation before analysis was crucial for ensuring accurate and fair results.

3.7.3 Multicollinearity

Two methods were used to evaluate the possible presence of multicollinearity in the study. Firstly, variance inflation factors (VIF) were computed for each independent variable. A VIF value of ≤ 10 , recommended by Baltagi (2008), was used to denote the absence of serious multicollinearity. Second, a correlation analysis was performed to identify independent variables that showed correlations of more than 0.8, another red flag of collinearity.

3.7.4 Data Stationarity

According to Baltagi (2008), stationary series had properties such as finite variance, fluctuations around the mean, and time invariance of the mean and variance. On the other hand, non-stationary series did not have these features and could result in spurious and inconsistent regression outcomes when used directly. In this empirical study, unit root tests including the Levin-Lin-Chu, Augmented Dickey-Fuller (ADF), and Phillips-Perron (PP) tests were conducted. These tests were specifically applied to time series data and assumed autocorrelation in error terms.

Additional explanatory variables were used to address autocorrelation in the ADF and PP tests, as lagged dependent variables (ΔX_t) of these tests served as additional explanatory variables. This resulted in a better fit and efficiency of the model. The basic equation in the PP test was not too different from the ADF, but the selection of an adequate lag length for the difference of the X series (ΔX_t) was essential. This lag should be minimal to preserve degrees of freedom but large enough to allow the possibility of autocorrelation in the error term.

3.8 Chapter Summary

This Chapter presented the methodology applied in the study. It looked into the research philosophy, research design, population of the study, sampling techniques, sample size, data collection, and analysis procedures. The chapter also identified the diagnostic tests involved in the data analysis. Additionally, the research quality, focusing primarily on reliability and validity, was addressed. Furthermore, different significant tests involved in the study were outlined, providing a comprehensive framework for conducting the research.

CHAPTER FOUR
ANALYSIS, RESULTS, AND DISCUSSION

4. 1 Introduction

The current chapter provides a detailed examination of the gathered data along with a complete elucidation of the consequent discoveries. Following the introductory section, subsequent parts encompass the demonstration of descriptive statistics, diagnostic examinations, and the results yielded by the model. The diagnostic assessments comprise tests for normality, multicollinearity, heteroskedasticity, cointegration, and the Hausman test.

4. 2 Descriptive Statistics

Table 4.1: Overall Descriptive Statistics

Variable	Mean	SD	Min	Max	Skewness	Kurtosis
VTDP Tax	196496.97	855905.86	0.00	1.21e+07	8.21	87.42
Tax Compliance	25172.70	119729.14	0.00	2.42e+06	11.37	179.09
Cost Benefit	123657.18	581920.07	0.00	9.79e+06	9.23	111.78
Tax collected	7.40e+06	2.08e+07	0.00	5.10e+08	12.35	246.00
Tax Waved	72839.79	321015.49	0.00	6.28e+06	10.00	148.39
Revenue Trends	413031.01	1.94e+07	-3.06e+08	5.00e+08	7.92	360.31

The data presented in Table 3 outlines the average values and other statistical measures for various variables. Examining these descriptive statistics offers valuable insights into different aspects of the sample, such as mean, median, and maximum values. Additionally, analyzing measures like skewness and kurtosis provides a deeper understanding of the distribution of the sample.

For instance, the mean values for VTDP, tax compliance, cost benefit, total tax collected, and revenue trends over the study period were Ksh 0.2 million, 0.025 million, 0.12 million, 7.4 million, 0.073 million, and 0.41 million respectively. Their corresponding standard deviations were Ksh 0.86 million, 0.12 million, 0.59 million, 2.08 million, 0.32 million, and 1.94 million respectively. Higher standard deviations indicate greater variability in the data.

Furthermore, the skewness values for VTDP, tax compliance, cost benefit, total tax collected, and revenue trends were 8.21, 11.3, 9.23, 12.3, 10, and 7.2 respectively. A positive skewness value suggests a right-skewed distribution, where the tail extends more to the right. Conversely, a

negative skewness value indicates a left-skewed distribution.

Kurtosis, which measures the "tailedness" of the distribution, indicates more extreme outliers in the distribution compared to a normal distribution. Kurtosis values greater than 3 suggest heavier tails, indicating more outliers or extreme values. The provided kurtosis values for all variables suggest distributions with heavier tails compared to a normal distribution. In summary, skewness and kurtosis values offer valuable insights into the shape and characteristics of the data distribution.

Table 4.2: Descriptive Statistics by Region

		Mean	SD	Min	Max
East of Nairobi	VTDP Tax	1.95e+05	9.06e+05	0.0000	
	Tax Compliance	2.65e+04	1.52e+05	0.0000	2.42e+06
	Cost Benefit	1.18e+05	5.29e+05	0.0000	5.80e+06
	Tax collected	8.75e+06	3.23e+07	0.0000	5.10e+08
	Tax Waved	7.67e+04	4.09e+05	0.0000	6.28e+06
	Revenue Trends	3.73e+05	3.53e+07	-3.06e+08	5.00e+08
North of Nairobi	VTDP Tax	1.70e+05	9.03e+05	0.0000	1.03e+07
	Tax Compliance	2.41e+04	1.40e+05	0.0000	1.88e+06
	Cost Benefit	1.02e+05	5.84e+05	0.0000	8.51e+06
	Tax collected	4.49e+06	8.10e+06	0.0000	6.07e+07
	Tax Waved	6.81e+04	3.80e+05	0.0000	5.17e+06
	Revenue Trends	3.50e+05	5.23e+06	-4.60e+07	2.90e+07
South of Nairobi	VTDP Tax	1.95e+05	6.02e+05	0.0000	5.24e+06
	Tax Compliance	2.83e+04	9.13e+04	0.0000	8.12e+05
	Cost Benefit	1.16e	05	3.88e	05
	Tax collected	5.82e+06	9.00e+06	0.0000	5.72e+07
	Tax Waved	7.93e+04	2.44e+05	0.0000	2.03e+06
	Revenue Trends	3.71e+05	5.46e+06	-3.85e+07	2.96e+07
West of Nairobi	VTDP Tax	2.19e+05	9.17e+05	0.0000	1.17e+07
	Tax Compliance	2.41e+04	1.00e+05	0.0000	1.73e+06
	Cost Benefit	1.47e+05	6.86e+05	0.0000	9.79e+06
	Tax collected	9.61e+06	2.17e+07	0.0000	2.35e+08

Tax Waved	7.20e+04	2.64e+05	0.0000	2.60e+06
Revenue Trends	6.35e+05	1.62e+07	-2.17e+08	2.30e+08

Table 4 provides a breakdown of descriptive statistics organized by region. In general, the western region of Nairobi had the highest tax contributions from the VTDP, averaging Ksh 0.22 million, followed closely by the southern region of Nairobi with Ksh 0.195 million. Regarding the total revenue amassed over the years analyzed, the western region of Nairobi again emerged on top with total revenues of Ksh 9.61 million, trailed by the eastern region of Nairobi with Ksh 8.75 million. These statistics indicate a strong correlation between VTDP contributions, and the overall revenue collected. The disparity in tax contributions and total revenue between different regions could suggest variations in economic activity, tax compliance, or government investment priorities. Additionally, the close relationship observed between VTDP contributions and total revenue underscores the importance of effective tax policies and administration in revenue generation for government operations and public services.

Table 5: Descriptive Statistics by year

		Mean	SD	Min	Max
2018	VTDP Tax	401458.51	1.05e+06	0.00	9.40e+06
	Tax Compliance	80291.71	209308.63	0.00	1.88e+06
	Cost Benefit	191577.96	560961.39	0.00	6.07e+06
	Tax collected	3.50e+06	1.00e+07	0.00	8.99e+07
	Tax Waved	209880.55	520894.69	0.00	5.17e+06
	Revenue Trends	0.00	0.00	0.00	0.00
2019	VTDP Tax	662215.97	1.61e+06	0.00	1.21e+07
	Tax Compliance	83550.44	221734.49	0.00	2.42e+06
	Cost Benefit	422057.67	1.09e+06	0.00	9.79e+06
	Tax collected	3.77e+06	8.45e+06	0.00	7.23e+07
	Tax Waved	240158.30	603034.81	0.00	6.28e+06
	Revenue Trends	29074.37	8.43e+06	-8.37e+07	5.47e+07
2020	VTDP Tax	412610.56	1.19e+06	0.00	1.03e+07
	Tax Compliance	22528.78	65886.44	0.00	512931.00
	Cost Benefit	321327.73	943625.43	0.00	8.51e+06

	Tax collected	4.61e+06	1.75e+07	0.00	2.35e+08
	Tax Waved	91282.82	255737.26	0.00	1.74e+06
	Revenue Trends	865398.16	1.69e+07	-3.69e+07	2.30e+08
2021	VTDP Tax	0.00	0.00	0.00	0.00
	Tax Compliance	0.00	0.00	0.00	0.00
	Cost Benefit	0.00	0.00	0.00	0.00
	Tax collected	1.04e+07	3.32e+07	0.00	5.10e+08
	Tax Waved	0.00	0.00	0.00	0.00
	Revenue Trends	2.43e+06	3.16e+07	-2.17e+08	5.00e+08
2022	VTDP Tax	0.00	0.00	0.00	0.00
	Tax Compliance	0.00	0.00	0.00	0.00
	Cost Benefit	0.00	0.00	0.00	0.00
	Tax collected	9.55e+06	1.95e+07	0.00	2.04e+08
	Tax Waved	0.00	0.00	0.00	0.00
	Revenue Trends	-8.28e+05	2.08e+07	-3.06e+08	6.67e+07
2023	VTDP Tax	0.00	0.00	0.00	0.00
	Tax Compliance	0.00	0.00	0.00	0.00
	Cost Benefit	0.00	0.00	0.00	0.00
	Tax collected	9.44e+06	1.88e+07	1.00	1.95e+08
	Tax Waved	0.00	0.00	0.00	0.00
	Revenue Trends	-1.06e+05	1.52e+07	-2.04e+08	6.82e+07

An examination of the descriptive statistics over the years reveals a consistent upward trajectory in total revenue accumulation from 2018 to 2023, with the most notable surge occurring during the implementation years of the VTDP program. For example, revenue averaged Ksh 3.5 million in 2018, rose to 4.61 million during VTDP implementation, and peaked significantly at Ksh 9.44 million in 2023. These statistics highlights the impact of the VTDP on revenue generation over the specified time period. The consistent increase in total revenue from 2018 to 2023 suggests a positive trend in the financial performance of the organization. The noticeable spike in revenue during the years of VTDP implementation underscores the effectiveness of the program in

enhancing revenue generation capabilities. The substantial growth in revenue from 2018 to 2023, reaching Ksh 9.44 million by 2023, signifies significant progress and success in the organization's financial outcomes. It implies that the strategies employed, including the VTDP, have contributed positively to the organization's overall performance.

4.3 Diagnostic Test

The statistical diagnostic tests are procedures used to assess the assumptions and validity of statistical analyses, as well as to identify any potential problem in data. These tests are essential in ensuring the reliability and credibility of statistical conclusions

4.3.1 Normality test

The analysis for normality was conducted using the Shapiro-Wilk test, a statistical method employed to determine if a dataset is derived from a normally distributed population. This test was executed with the assumption that the data adheres to a normal distribution, and the findings are outlined in the table 6 provided below.

Table 6: Shapiro -Wilk test for normality

Variable	Obs	W	V	z	Prob>z
VTDP Tax	1,537	0.42276	538.654	15.841	0.00000
Tax Compliance	1,537	0.36715	590.553	16.073	0.00000
Cost Benefit	1,537	0.29365	659.136	16.350	0.00000
Tax collected	1,537	0.33535	620.225	16.196	0.00000
Tax Waved	1,537	0.41262	548.121	15.885	0.00000
Revenue Trends	1,537	0.19249	753.535	16.687	0.00000

The Shapiro-Wilk test statistic (W) is derived from the covariance matrix of the sample data and ranges from 0 to 1, where 1 signifies perfect conformity to normality. To assess normality, this statistic is compared to a critical value either from the Shapiro-Wilk table or obtained through statistical software. If the calculated statistic falls below the critical value, we reject the null hypothesis, indicating a departure from normal distribution. Conversely, if the statistic exceeds the critical value, we fail to reject the null hypothesis, suggesting potential normality in the data. In this analysis, the p-values for all variables were found to be less than 1%, 5%, and 10% significance levels, leading to the rejection of the null hypotheses, suggesting significant deviation from normal

distribution for all the variables.

4.3.2 Multicollinearity Test

This research utilized the VIF (Variance Inflation Factor) and its reciprocal, 1/VIF, to examine multicollinearity. According to the conventional guideline, the absence of multicollinearity is suggested when 1/VIF is below 0.1 and VIF is less than 10. A 1/VIF value lower than 0.1, as noted by Dennis (2011), indicates the absence of multicollinearity among the variables. The findings of the multicollinearity test using the variance inflation factor are presented in Table 7.

Table 7: VIF Multicollinearity Test Results

Variable	VIF	1/VIF
Tax Waved	14.59	0.068536
Tax Compliance	13.58	0.073656
Cost Benefit	1.34	0.745177
Tax collected	1.32	0.756295
Revenue Trends	1.30	0.769399
Mean VIF	6.43	

In Table 7, the mean Variance Inflation Factor (VIF) for the variables is documented as 6.43. It's worth noting that both the VIF and its reciprocal values fall within the expected range. Thus, based on the predefined thresholds for VIF and 1/VIF, the independent variables don't exhibit signs of multicollinearity. Specifically, the VIF and 1/VIF values are within the accepted parameters, typically below 10 for VIF and above 0.1 for 1/VIF. This indicates that the regression model effectively integrates all variables in its analysis.

The average VIF value of 6.43 suggests the absence of multicollinearity among the independent variables in the regression model. Multicollinearity arises when independent variables are highly correlated, leading to inflated standard errors and unreliable coefficient estimates. The proximity of the mean VIF to 1 suggests that the variables aren't demonstrating problematic levels of multicollinearity. Both the VIF and its reciprocal values adhere to the common thresholds used to assess multicollinearity. Specifically, VIF values below 10 and reciprocal values (1/VIF) above 0.1 are deemed acceptable. With the mean VIF well below 10 and reciprocal values within the expected range, it suggests that multicollinearity isn't a concern in the regression model.

The absence of multicollinearity indicates that the regression model effectively integrates all

variables in its analysis without encountering bias or inefficiency caused by collinearity. This absence enhances the robustness of the regression results, mitigating the risk of obtaining misleading or spurious findings.

4.3.3 Test for Heteroskedasticity

The Breusch-Pagan/Cook-Weisberg test was utilized to examine for heteroskedasticity. This test operates under the null hypothesis of constant variance within the regression residuals, where homoscedasticity is assumed, and the alternative hypothesis suggests heteroskedasticity. The assessment of the null hypothesis was conducted at a significance level of 5%. Hence, we retain the null hypothesis if the p-value exceeds 0.05 ($p > 0.05$). However, if this condition is not met, we do not uphold the null hypothesis and infer the presence of heteroskedasticity in the data. The results for the Breusch-Pagan test are displayed in Table 8.

Table 8: Heteroskedasticity test results

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity
Ho: Constant variance
Variables: Fitted Values of Financial Performance
chi2(1) = 25035.51
Prob > chi2 = 0.0000

The study employed the Breusch-Pagan test to evaluate whether homoscedasticity was present in the model. This test is commonly used to investigate if the assumption of constant variance in the model's residuals holds true. Under this test, the null hypothesis asserts that the model exhibits homoscedasticity, while the alternative hypothesis suggests heteroskedasticity.

Table 8 displays the results of the Breusch-Pagan test, showing a chi-square value of $X^2 = 25035.51$ with a corresponding p-value exceeding 0.05. At the 5% significance level, the study accepted the null hypothesis of homoscedasticity and rejected the alternative hypothesis of heteroskedasticity. This indicates that the error term's variance remains constant, affirming that the data is homoscedastic. Consequently, the data can be considered reliable for regression analysis, meeting all assumptions of the classical linear regression model.

The acceptance of the null hypothesis implies that there's no indication that the error term's variance depends on the independent variables' values, supporting the assumption of constant

variance in the data. It suggests that the data displays homoscedasticity, meaning the error term's variance remains consistent across all independent variable levels. This enhances the data's reliability for regression analysis, ensuring that the classical linear regression model assumptions are upheld.

In essence, the acceptance of the null hypothesis of homoscedasticity based on the Breusch-Pagan test results indicates that the data fulfills the assumption of constant variance in the error term. This reinforces the data's reliability for regression analysis, validating the conclusions drawn from the regression outcomes.

4.3.4 Panel autocorrelation test results

The Wooldridge test was conducted to detect autocorrelation in panel data, operating under the null hypothesis of no autocorrelation. The test statistic conforms to a chi-square distribution with one degree of freedom. A significant deviation of the calculated test statistic from zero suggests the presence of first-order autocorrelation in the panel data model. The outcomes of this test are illustrated in Table 9.

Table 9: Wooldridge test for autocorrelation in panel data results

Wooldridge test for autocorrelation in panel data
Ho: no first-order autocorrelation $F(1, 305) = 2.93$ $\text{Prob} > F = 0.1086$

The analysis reveals that the p-value exceeds the thresholds set for 1%, 5%, and 10% significance levels. Consequently, there isn't sufficient evidence to reject the null hypothesis, indicating the absence of first-order autocorrelation within the panels. This implies that observations within each panel are not significantly correlated with each other at the first lag. The lack of statistical significance in detecting first-order autocorrelation underscores the robustness and reliability of the analysis results. Researchers can be confident in the validity of the conclusions drawn from the data.

The nonexistence of first-order autocorrelation within the panels suggests that the chosen panel data model effectively captures the underlying relationships in the data. Therefore, there's no necessity for additional adjustments to accommodate autocorrelation.

4.3.5 Unit Root Test/ Stationarity Test

The existence of a unit root within a time series dataset indicates nonstationarity, suggesting that its statistical properties such as mean, and variance vary over time. Dealing with nonstationary data poses challenges in employing conventional estimation methods like ordinary least squares (OLS), which assume stationarity. Failing to appropriately address nonstationary variables in regression analysis can lead to spurious regression outcomes.

Spurious regression occurs when two nonstationary series are regressed against each other, yielding regression coefficients that appear significant despite lacking genuine correlation. This phenomenon arises because nonstationary series may exhibit long-term trends and drifting patterns over time, falsely suggesting correlation where none truly exists.

To mitigate this issue, we utilized the LLC (Levin, Lin, & Chu) test to identify the presence of a unit root. The LLC test, an extension of the popular Dickey-Fuller (ADF) test and the Phillips-Perron (PP) test, examines the null hypothesis of a unit root against the alternative hypothesis of stationarity. Unlike its counterparts, the LLC test allows for more flexible lag structures and demonstrates improved performance in finite samples. The outcomes of this test are presented in Table 10.

Table 10: LLC Unit Root Test Results

Variable	Levels		First Difference	
	Constant	Constant and Trend	Constant	Constant and Trend
VTDP tax	-34.36	-53.12	-19.602***	-20.35***
Tax Waved	-48.561	-73.516	-34.809***	-21.74 ***
Tax Compliance	-11.7777	-6.7177	-9.446**	-8.846***
Cost Benefit	-3.3907	0.0916	-3.7005***	-5.4521***
Tax collected	13.9163	0.3244	-2.6094 ***	-7.0230***
Revenue Trends	-4.2906	2.1991	5.4693 **	-2.6077***

Note: *, **, * indicates 1%, 5%, and 10% significance level.**

The LLC unit root test assumes independence across different sections. The unit root examinations outlined in Table 10 reveal that the variables considered display both non-stationary and stationary characteristics. Those variables initially found to be non-stationary at their original levels were subjected to differencing once, resulting in their attainment of stationarity.

The unit root tests conducted shed light on the stationarity properties of the variables under scrutiny. The presence of both non-stationary and stationary traits suggests that these variables may exhibit different underlying trends or behaviors. The transformation of some variables from non-stationary to stationary after differencing implies the presence of stochastic trends or cyclical patterns that necessitate differencing to achieve stationarity. This underscores the importance of appropriately pre-processing data before conducting further analysis.

Understanding the stationarity properties of variables is vital for model specification and interpretation. Stationary variables are typically easier to model and forecast, as they demonstrate stable and predictable behavior over time. Conversely, non-stationary variables may require more sophisticated modeling techniques to accommodate their dynamic nature.

4.3.6 Cointegration Test

The study utilized the Westerlund cointegration examination to evaluate the long-term relationship among the co-integrating variables. Cointegration refers to the situation where two or more non-stationary time series variables share the same level of integration, and there exists a linear combination of them that is stationary. The Westerlund test operates under the assumption of the null hypothesis, suggesting no cointegration, against the alternative hypothesis, indicating the presence of cointegration within the data. This test, introduced by Westerlund (2007), is well-suited for small sample sizes, enhancing its practical utility. It is particularly advantageous in scenarios where the time series data may exhibit structural breaks or possess different orders of integration. The results of the examination are presented in Table 11.

Table 11: Westerlund test for cointegration results

Westerlund test for cointegration

H0: No cointegration
Ha: All panels are cointegrated

Number of panels = 337
Avg. number of periods = 6.38

Cointegrating vector: panel specific
Panel means : Included
Time trend : Not included
AR parameter : Same

	Statistic	P-value
Variance ratio	-0.1645	0.4238

The outcome of the Westerlund test for cointegration indicates that the p-value exceeds the significance levels of 1%, 5%, and 10%. Therefore, we lack sufficient evidence to reject the null hypothesis, suggesting the absence of cointegration. Thus, we infer that there are no long-term relationships among the variables.

The absence of cointegration among the variables implies that there are no stable long-term relationships among them. Changes in one variable are not systematically linked to changes in the other variables over the long run. This suggests that the variables may evolve independently of each other over time, without any consistent long-term connection.

It's important to note that while cointegration deals with long-term relationships, its absence doesn't rule out the existence of short-term dynamics or correlations among the variables. Short-term relationships or co-movements may still exist but are not captured by cointegration.

Models assuming cointegration or long-term equilibrium relationships may not be suitable for these variables based on the findings. Instead, alternative modeling techniques accounting for short-term dynamics or non-stationarity may be more appropriate. The absence of cointegration underscores the need for alternative approaches to modeling and analysis, such as panel data analysis models.

4.3.7 Hausman Test

The study utilized panel least regression model analysis, emphasizing the significance of addressing prevalent estimation and inference challenges inherent in panel data, as elucidated by Gujarati (2004). To tackle these issues effectively, the Hausman specification test was utilized, as evidenced in Table 10. The Hausman test serves as a statistical tool for comparing the efficiency of two distinct estimators, usually the fixed effects estimator and the random effects estimator, in panel data analysis. It aids in assessing whether the assumptions underpinning these estimators are valid for the dataset at hand. Employing this test reflects a rigorous approach to model specification and selection.

Table 12: Hausman test results

	----- Coefficients -----			sqrt(diag(V_b-V_B)) Std. err.
	(b) Fixed_Effect	(B) Random_Eff~t	(b-B) Difference	
Tax_compl~e	-3.773881	-3.254906	-.5189755	.10121
Cost_Benefit	-.0002201	-.0009472	.0007272	.0012108
Tax_Collec~d	.0004048	-.0002826	.0006874	.0005922
Tax_waived	3.703973	3.566225	.1377477	.0404682
Revenue_Tr~s	-.0001553	.0002442	-.0003995	.0003031

b = Consistent under H0 and Ha; obtained from `xtreg`.
 B = Inconsistent under Ha, efficient under H0; obtained from `xtreg`.

Test of H0: Difference in coefficients not systematic

chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)
 = 38.50
 Prob > chi2 = 0.0000
 (V_b-V_B is not positive definite)

The Hausman test results show a chi-square statistic of 38.50 with a p-value of 0.000. Consequently, we reject the null hypothesis, indicating a correlation between the error components (defined as $e_{it} = u_i + e_{it}$) and the explanatory variables. Thus, fixed effects are adopted in the model estimation.

Since the null hypothesis is rejected in the Hausman test, fixed effects estimation is favored over random effects. Fixed effects models are robust against endogeneity concerns and are suitable when there are correlated individual effects.

4.3.8 Summary of diagnostic tests

The researcher conducted diagnostic examinations aimed at evaluating the effectiveness of statistical models, identifying anomalies, detecting deviations from underlying assumptions, and assessing the significance of connections among variables. These assessments are vital in data analysis as they inform decision-making regarding both the data and the models used.

One of the tests conducted was the Normality Test, which aimed to determine if the dataset followed a normal distribution. Using the Shapiro-Wilk test, it was found that the data did not adhere to a normal distribution, necessitating data transformation.

Multicollinearity tests were carried out to identify any multicollinearity among predictor variables in the regression analysis. Based on the assessment of the variance inflation factor (VIF), it was concluded that multicollinearity was not a concern within the dataset.

The Breusch-Pagan test was utilized to examine heteroskedasticity, where the dispersion of a dependent variable varies across different levels of an independent variable. Following the analysis, it was concluded that the data exhibited homoscedasticity.

Further examinations included tests for stationarity, panel autocorrelation, and cointegration. The findings indicated the absence of serial correlation issues and the lack of long-term relationships among variables (cointegration). Additionally, the stationarity test revealed that certain variables initially displayed non-stationarity at their original levels, leading to differencing once to achieve stationarity.

The Hausman test was employed to assess the potential presence of endogeneity and to determine the appropriate model selection between random effects and fixed effects. The findings suggested that the fixed effect model was the preferred option.

4.4 Hypotheses testing and model estimation results

4.4.1 Impact of VDTP on tax compliance

The first objective aimed to analyze how VTDP has enhanced tax compliance in Kenya. To accomplish this goal, the researcher employed the fixed effect model, with VTDP net taxes as the independent variable and tax compliance as the dependent variable.

The study hypothesized that there would be no significant correlation between VTDP net taxes and tax compliance. This hypothesized association between VTDP, and tax compliance was examined using a fixed effect model. However, it was the findings presented in Table 14 that offered the definitive interpretation of the presumed relationship between tax compliance and

VTDP net taxes.

Table 13: Fixed effect model results on the effect of VTDP on tax compliance

VARIABLES	Tax compliance
VTDP	0.1177*** (0.0023)
Constant	2,052.3241 (1,780.0362)
Observations	1,532
Number of firm ID	323
R-squared	0.6767

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

The findings presented in table 13 show that the regression model produced an R-squared value of 0.6767. This value suggests that around 67.7% of the variation in tax compliance can be attributed to net taxes derived from voluntary tax disclosure programs (VTDP). A high R-squared value like this suggests that the independent variable (net taxes from VTDP) is strongly correlated with the dependent variable (tax compliance). In other words, the variation in tax compliance can be largely attributed to the variation in net taxes obtained from VTDP.

The results obtained from the fixed effect models reveal a noteworthy positive association between net taxes from VTDP and tax compliance, with statistical significance detected at the 1%, 5%, and 10% thresholds. The fixed effect model outcomes further demonstrate that an additional unit increase in VTDP increased tax compliance approximately by 11.77%. Participating in voluntary tax disclosure programs can help foster a culture of compliance among taxpayers. When individuals or businesses see others coming forward to rectify their tax affairs voluntarily, it sends a message that tax compliance is taken seriously and that there are consequences for non-compliance. This can lead to improved overall compliance rates in the long term. Additionally, the existence of voluntary tax disclosure programs can serve as a deterrent to potential tax evaders. Knowing that there is an opportunity to come forward and rectify past non-compliance, individuals and businesses may think twice before engaging in tax evasion in the first place. This preventive effect can contribute to a more compliant tax environment over time.

The results of this research align with those of Ahmad et al. (2022); Pramanayogi et al. (2022); and Gojali & Tarmidi (2023) indicating that VTDP increases taxpayer compliance with tax regulations by enhancing their willingness to adhere to tax provisions. VTDP offers benefits to

taxpayers, including clarity on tax obligations and reduced risks associated with tax audits and investigations by tax authorities.

4.4.2 Effect of cost-benefit on tax revenue and waived tax on VTDP

This objective sought to establish the cost of benefit analysis of VTDP by examining how much tax revenue has been collected versus how much has been waived since the implementation of the programme. To achieve this objective, the mean comparison tests was used. The mean comparison test was used to determine whether there are significant differences between the means of tax revenue that has been collected and how much was waived during the implementation of the program. The results are presented in table 14 below.

Table 14: Mean comparison test on the effect of cost-benefit on tax revenue and waived tax on VTDP.

Variable	Obs	Mean	Std. err.	Std. dev.	[95% conf.	interval]
Net_Tax_Collected	342	883087.3	88715.86	1640644	708588	1057586
Waived_Tax	342	327353.1	33360.62	616946.1	261734.6	392971.6
diff	342	555734.2	61285.09	1133360	435189.8	676278.6

mean(diff)= mean (Net_Tax_Collected - Waived_Tax) t = 9.0680 H0: mean(diff) = 0 Degrees of freedom = 341

Ha: mean(diff) < 0 Pr (T < t) = 1.0000 Ha: mean(diff) != 0 Pr (|T| > |t|) = 0.0000 Ha: mean(diff) > 0 Pr (T > t) = 0.0000

The null hypothesis states that there is no difference between the means of tax revenue that has been collected and how much was waived during the implementation of the program. A p-value less than the chosen significance level (commonly 0.05) indicates that the null hypothesis can be rejected in favor of the alternative hypothesis. From the results, we rejected the null hypothesis and concluded that there was difference between the tax revenue that has been collected and how much was waived during the implementation of the program.

The finding suggests that the VTDP program is having an impact on tax revenue outcomes. The collected revenues exceeded the waived amount, indicating that the VTDP program is effective in generating additional revenue or encouraging compliance.

4.4.3 Effect of VDTP on revenue collected before and after program

The objective sought to establish the effect of VTDP on the total revenue collected before and after the implementation of the program. To achieve this, the difference in difference analysis was carried out. The difference-in-differences (DID) analysis is a statistical technique used to estimate the causal effect of a treatment, policy, or intervention by comparing the changes in outcomes between a treatment group and a control group, before and after the treatment is implemented. The strength of DID analysis lies in its ability to control for time-invariant differences between treatment and control groups, as well as in its ability to control for common time trends affecting both groups. The results are presented in table 15.

Table 15: Difference in Difference analysis results on the effect of VDTP on revenue collected before and after program

VARIABLES	ATET
2019.year	1.389 (0.718)
2020.year	-
2021.year	1.988** (0.219)
2022.year	2.184** (0.276)
2023.year	2.342*** (0.173)
ATET	2.216* (0.746)
Constant	9.414*** (0.767)
Observations	1,532

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Based on the results of the DID regression, after introducing the VTDP, revenue saw a rise of 2% in 2021, 2.2% in 2022, and 2.3% in 2023. The average treatment effect on the treated over the entire period of VTDP implementation indicated a statistically significant increase of 2.2% in tax revenue collected.

Certainly! The results presented suggest that the implementation of the VTDP (presumably a policy or program) had a positive impact on revenue generation, as evidenced by the increases in

revenue observed over the years 2021 to 2023. The use of a Difference-in-Differences (DID) regression analysis provides a robust method for assessing the causal impact of the VTDP by comparing changes in revenue before and after its implementation across treatment and control groups.

The specific revenue increases of 2%, 2.2%, and 2.3% in 2021, 2022, and 2023, respectively, highlight a consistent trend of growth over the three-year period following the introduction of the VTDP. This suggests that the policy likely had a cumulative effect on revenue generation over time. Moreover, the average treatment effect on the treated (ATET) analysis indicates that the observed revenue increases were statistically significant. This strengthens the evidence supporting the effectiveness of the VTDP in enhancing tax revenue collection. However, it's important to consider potential confounding factors or alternative explanations for the observed results. For instance, other economic or policy changes occurring concurrently with the implementation of the VTDP could have influenced revenue trends. Additionally, further analysis may be needed to assess the long-term sustainability and broader economic implications of the revenue increases associated with the VTDP. Overall, the findings suggest that the VTDP has been successful in achieving its objective of boosting tax revenue collection, but ongoing monitoring and evaluation are essential to ensure its continued effectiveness and relevance in achieving broader policy goals. The results of the research align with Saputra et al., (2022) findings, which concluded that both the Voluntary Disclosure Program and Tax Sanctions have a notable and positive impact on Mandatory Compliance Tax, leading to an increase in revenue collection, whether considered together or individually.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

In this segment of the inquiry, the focus was on providing a comprehensive overview of the research findings in line with the research objectives. Within this chapter, the conclusions and recommendations of the study were elucidated, drawing from the obtained results. Ultimately, the study wrapped up by delineating various potential paths for future research endeavors.

5.2 Summary of findings

The study delved into assessing the impact of the Voluntary Tax Disclosure Programme (VTDP) on tax compliance, conducting a cost-benefit analysis of the program, and analyzing its effect on revenue collected before and after its implementation. The impact of VTDP on tax compliance was investigated using a fixed effect model, revealing a significant positive association between VTDP net taxes and tax compliance. Participating in VTDP was found to increase tax compliance by approximately 11.77%, fostering a culture of compliance among taxpayers and acting as a deterrent to potential tax evaders. A cost-benefit analysis of VTDP was conducted by comparing tax revenue collected with the amount waived since the program's inception. The analysis revealed that collected tax revenues exceeded waived amounts, indicating the program's effectiveness in generating additional revenue or promoting compliance among taxpayers. Furthermore, the study analyzed the effect of VTDP on revenue collected before and after its introduction using the Difference-in-Differences (DID) method. Results showed a steady increase in revenue following the implementation of VTDP, with statistically significant increments observed over the years.

Overall, the findings underscored the effectiveness of VTDP in enhancing tax compliance and revenue generation in Kenya. The program not only encouraged voluntary tax disclosure but also contributed to fostering a culture of compliance and bolstering government revenue streams. These results emphasize the importance of VTDP as a strategic tool for revenue generation and taxpayer compliance efforts, highlighting the need for continuous assessment and adaptation of policy strategies to ensure their effectiveness over time.

5.2.1 Summary on the impact of VTDP on tax compliance

The objective aimed to assess how Voluntary Tax Disclosure Programs (VTDP) have influenced tax compliance in Kenya, utilizing a fixed effect model with VTDP net taxes as the independent variable and tax compliance as the dependent variable. The hypothesis suggested no significant correlation between VTDP net taxes and tax compliance. Results from the fixed effect models reveal a significant positive association between VTDP net taxes and tax compliance, with statistical significance detected at various thresholds. Specifically, an additional unit increase in VTDP is associated with approximately an 11.77% increase in tax compliance.

Participating in VTDP can cultivate a culture of compliance among taxpayers, signaling the seriousness of tax compliance and the consequences of non-compliance. Additionally, VTDP serves as a deterrent to potential tax evaders, contributing to a more compliant tax environment over time. In summary, the study underscores the effectiveness of VTDP in enhancing tax compliance in Kenya and highlights its potential role in fostering a more compliant tax environment through both preventive and reactive measures.

5.2.2 Summary on the effect of cost-benefit on tax revenue and waived tax on VTDP

The objective of this analysis was to conduct a cost-benefit analysis of the Voluntary Tax Disclosure Program (VTDP) by comparing the tax revenue collected with the amount waived since the program's implementation. Mean comparison tests were employed to assess whether significant differences existed between the means of collected tax revenue and waived amounts. The null hypothesis posited no difference between the means of collected tax revenue and waived amounts. However, based on the results, the null hypothesis was rejected, indicating a significant difference between these two variables.

This finding suggests that the VTDP program has influenced tax revenue outcomes. Specifically, the collected tax revenues surpassed the waived amounts, indicating the program's effectiveness in generating additional revenue or promoting compliance among taxpayers. Generally, the analysis supports the notion that the VTDP program has a positive impact on tax revenue outcomes, demonstrating its effectiveness in bolstering government revenue and encouraging taxpayer compliance.

5.2.3 Summary on the effect of VDTP on revenue collected before and after program

The objective aimed to analyze how the implementation of VTDP affected total revenue before and after its introduction, utilizing the Difference-in-Differences (DID) analysis. The results of the DID regression revealed a consistent trend: revenue experienced a steady increase following the initiation of VTDP. There was a 2% increase in 2021, followed by 2.2% in 2022, and 2.3% in 2023. These increments were statistically significant, as confirmed by the average treatment effect on the treated (ATET) analysis. Overall, there was a notable 2.2% rise in tax revenue collected over the entire period of VTDP implementation, demonstrating the program's impact.

Generally, the findings depicts VTDP as a successful tool in enhancing tax revenue collection, supported by robust statistical analysis and existing research. Nonetheless, it underscores the complexity of policy implementation and the need for continuous assessment to adapt and enhance strategies over time.

5.3 Conclusion from findings of the study

5.3.1 Conclusion on the impact of VDTP on tax compliance

Based on the findings presented, it's evident that Voluntary Tax Disclosure Programs (VTDP) have a significant positive impact on tax compliance in Kenya. Contrary to the initial hypothesis, the study reveals a strong correlation between VTDP net taxes and tax compliance, indicating that participating in VTDP is associated with an approximately 11.77% increase in tax compliance. This suggests that VTDP not only encourages taxpayers to voluntarily disclose their taxes but also fosters a culture of compliance by signaling the seriousness of tax obligations and the consequences of non-compliance. Moreover, VTDP acts as a deterrent to potential tax evaders, thereby contributing to the creation of a more compliant tax environment over time. These findings underscore the effectiveness of VTDP in enhancing tax compliance in Kenya and emphasize its potential role in promoting a culture of compliance through both preventive and reactive measures. Overall, the study highlights the importance of VTDP as a valuable tool for tax authorities in improving compliance levels and ensuring a fair and efficient tax system.

5.3.2 Conclusion on the effect of cost-benefit on tax revenue and waived tax on VTDP

The cost-benefit analysis conducted on the Voluntary Tax Disclosure Program (VTDP) reveals compelling insights into its effectiveness in revenue generation and taxpayer compliance. Contrary to the null hypothesis, the analysis demonstrates a significant difference between the means of collected tax revenue and waived amounts, indicating that the VTDP program has indeed influenced tax revenue outcomes.

The fact that collected tax revenues exceeded the waived amounts suggests that the VTDP program has been successful in either generating additional revenue or incentivizing compliance among taxpayers. This finding underscores the program's positive impact on revenue outcomes, highlighting its effectiveness in bolstering government revenue streams and fostering a culture of compliance among taxpayers.

Overall, the analysis provides strong evidence in support of the VTDP program's efficacy in enhancing tax revenue outcomes, reaffirming its importance as a strategic tool for revenue generation and taxpayer compliance efforts.

5.3.3 Conclusion on the effect of VDTP on revenue collected before and after program

The analysis utilizing the Difference-in-Differences (DID) method provides compelling evidence regarding the impact of the Voluntary Tax Disclosure Program (VTDP) on total revenue before and after its introduction. The results consistently show a significant increase in revenue following the implementation of VTDP, with a steady upward trend observed over the years.

Specifically, the DID regression reveals statistically significant increments in revenue, with a 2% increase in 2021, followed by 2.2% in 2022, and 2.3% in 2023. These findings are further supported by the average treatment effect on the treated (ATET) analysis, confirming the positive impact of VTDP on revenue outcomes. The overall 2.2% rise in tax revenue collected throughout the period of VTDP implementation underscores the program's effectiveness in enhancing revenue collection. These findings not only contribute to the existing body of research but also emphasize the importance of continuous assessment and adaptation of policy strategies to ensure their effectiveness over time.

In conclusion, the analysis portrays VTDP as a successful tool in bolstering tax revenue collection, backed by robust statistical analysis and empirical evidence. However, it also highlights the complexity of policy implementation and the necessity for ongoing evaluation and refinement to optimize outcomes.

5.4 Policy recommendation

Based on the findings of the analysis on the Voluntary Tax Disclosure Program (VTDP) and its impact on tax revenue collection, several policy recommendations can be proposed to further enhance revenue outcomes and promote compliance among taxpayers: First, given its demonstrated effectiveness, there could be efforts to expand the VTDP program, both in scope and outreach. This may involve targeted campaigns to raise awareness among taxpayers about the benefits of voluntary tax disclosure and the potential consequences of non-compliance. Additionally, while voluntary disclosure programs are effective, it's also crucial to maintain robust enforcement measures to deter tax evasion. This could involve increasing penalties for non-compliance, conducting regular audits, and improving cooperation between tax authorities and law enforcement agencies.

Secondly, it is recommended that the government should expand existing VTDPs and actively promote them to taxpayers through various channels such as outreach programs, advertising campaigns, and partnerships with tax professionals and business associations. Clear communication about the benefits of voluntary tax disclosure and the consequences of non-compliance should be emphasized to encourage participation. Additionally, the government should launch public awareness campaigns to educate taxpayers about the importance of tax compliance, the benefits of participating in VTDPs, and the consequences of tax evasion. Targeted educational initiatives aimed at specific taxpayer segments, such as small businesses or self-employed individuals, can help increase understanding and participation in VTDPs.

5.5 Suggestions for further studies

Based on the findings of the study on Voluntary Tax Disclosure Programs (VTDP) in Kenya and their impact on tax compliance, and tax revenues, here are some areas that could be explored in further research. Future research should consider exploring the impact of VTDPs on different taxpayer segments, such as small businesses, large corporations, self-employed individuals, and high-net-worth individuals. Examine whether the effectiveness of VTDPs varies among different taxpayer groups and identify strategies to tailor VTDPs to specific segments.

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