EFFECT OF TAX POLICY REFORMS ON REVENUE COLLECTION IN KENYA

BEATRICE NJAMBI KAGUARA

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION, FACULTY OF BUSINESS AND MANAGEMENT SCIENCES, UNIVERSITY OF NAIROBI

NOVEMBER, 2022

DECLARATION

I, the undersigned, hereby swear that this is my own original work, and that it has not been submitted for review to any other organization or university but the University of Nairobi.

Signed: _____ Date: _____19th November 2022

BEATRICE NJAMBI KAGUARA

D61/79467/2012

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

Signed: _____Date: _____

PROF. MIRIE MWANGI

DEPARTMENT OF FINANCE AND ACCOUNTING

UNIVERSITY OF NAIROBI

ACKNOWLEDGEMENT

I thank the almighty God His sufficient grace and for enabling me to tackle this project and the entire MBA course. I also sincerely wish to thank my Supervisor Prof. Mirie Mwangi for his guidance, patience and advice during the entire research process, through him this research project has been a success. I wish to recognize my lecturers and professors in the Faculty of Business and Management Sciences, University of Nairobi that have dutifully unleashed their skills and knowledge during the course.

DEDICATION

I dedicate this research project to my family; My husband Johnson Kamau and my children Kamau and Njeri. I have denied them time to focus on this project. Their patience and support mean a lot to me. May God continue to bless you.

TABLE OF CONTENTS

DECLARATION.....ii

ACKNOWLEDGEMENT..... iii

DEDICATION.....iv

LIST OF TABLES..... viii

LIST OF ABBREVIATIONS.....ix

ABSTRACT.....x

CHAPTER ONE: INTRODUCTION.....1

1.1 Background of the Study.....1

1.1.1 Tax Policy Reforms.....2

1.1.2 Revenue Collection.....4

1.1.3 Tax Policy Reforms and Revenue Collection.....5

1.1.4 Tax Policy Reforms and Revenue Collection in Kenya.....7

1.2 Research Problem.....8

1.3 Research Objective.....10

1.4 Value of the Study.....10

CHAPTER TWO: LITERATURE REVIEW.....12

2.1 Introduction.....12

2.2 Theoretical Framework.....12

2.2.1 Theory of Optimal Taxation.....12

2.2.2 Ability to Pay Theory.....13

2.2.3 Economic Deterrence Theory.....15

2.3 Determinants of Revenue Collection.....16

2.3.1 Tax Policy Reforms.....16

2.3.2 Interest Rates.....17

2.3.3 Inflation Rate.....17

2.3.4 Unemployment Rate.....18

2.4 Empirical Review 18
2.4.1 Global Studies 19
2.4.2 Local Studies 21
2.5 Conceptual Framework 23
2.6 Summary of the Literature Review 24
CHAPTER THREE: RESEARCH METHODOLOGY 26
3.1 Introduction 26
3.2 Research Design 26
3.3 Data Collection 26
3.4 Data Analysis 26
3.4.1 Diagnostic Tests 27
3.4.2 Analytical Model 28
3.4.3 Tests of Significance 28
CHAPTER FOUR: DATA ANALYSIS, RESULTS AND FINDINGS 29
4.1 Introduction 29
4.2 Descriptive Analysis 29
4.3 Diagnostic Tests 29
4.3.1 Normality Test 29
4.3.2 Multicollinearity Test 30
4.3.3 Autocorrelation Test 31
4.4 Correlation Analysis 31
4.6 Discussion of Research Findings 35
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS 37
5.1 Introduction 37
5.2 Summary of Findings 37
5.3 Conclusion 38

5.4 Recommendations 39
5.5 Limitations of the Study 39
5.6 Suggestions for Further Research 40
REFERENCES 42
APPENDICES 50
Appendix I: Research Data 50

LIST OF TABLES

Table 3.1: Diagnostic Tests.....27
Table 4.1: Descriptive Statistics 29
Table 4.2: Normality Test Results 30
Table 4.3: Multicollinearity Test 30
Table 4.4: Autocorrelation Results 31
Table 4.5: Correlation Analysis 32
Table 4.6: Model Summary 32
Table 4.7: Analysis of Variance.....33
Table 4.8: Model Coefficients 34

LIST OF ABBREVIATIONS

ADF	Augmented Dickey Fuller
ANOVA	Analysis of Variance
CBK	Central Bank of Kenya
ETR	Electronic Tax Register
GDP	Gross Domestic Product
ITMS	Integrated Tax Management System
KIPPRA	Kenya Institute for Public Policy Research and Analysis
KNBS	Kenya National Bureau of Statistics
KRA	Kenya Revenue Authority
OECD	Organization for Economic Cooperation and Development
SPSS	Statistical Package for Social Sciences
TIMS	Tax Invoice Management System
TPR	Tax Policy Reforms
VAT	Value Added Tax
VIF	Variance Inflation Factors

ABSTRACT

Taxation is the main government revenue source in almost all jurisdictions. Due to its significant function, taxes have been employed to accomplish two objectives. One is that taxes are used to raise adequate money to pay for government spending without having to borrow extensively. Second, it is used to generate revenue in an efficient and equitable way with little harmful economic consequences. To increase revenue for public financing and widen the tax base, several tax systems around the globe have undergone reforms. Tax policy reforms are anticipated to positively influence on the revenue collected. The research objective was determining the effect of tax reforms on Kenya's revenue collection. The study was based on optimal taxation theory, ability to pay theory and economic deterrence theory. The independent variable was tax reforms while the control variables were interest rate, inflation and unemployment rate. The dependent variable the research endeavored to describe was the revenue collection in Kenya. The data was obtained on a quarterly basis for ten-year duration (Jan. 2012 to Dec. 2021). A descriptive research technique was applied in the research, with a multivariate regression model utilized in examining the link between the research variables. The research findings resulted in 0.479 R-square, signifying the selected independent variables could account for 47.9% of revenue collection in Kenya, while the other 52.1 percent was as a result of other factors not explored in this research. The F statistic was significant at a 5% extent possessing a p=0.000. This indicates the model was effective in describing revenue collection in Kenya. Further, the findings demonstrated that higher tax reforms yields a substantial rise in revenue collection in Kenya while unemployment rate negatively affects revenue collection. Interest rate and inflation did not possess significant effect on revenue collection. The research recommends that there is need to manage tax reforms and unemployment rate since they have a major impact on revenue collection. The research further acclaims the necessity for future researchers to conduct a study for a longer period of time to capture the effects of economic cycles like recessions and booms.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Taxation is the greatest source of government revenue in almost all jurisdictions (OECD, 2012). Due to its significant function, taxes have been employed to accomplish two objectives. One is that taxes are used to raise adequate money for paying public expenditure without having to borrow extensively. Second, it is used to generate revenue in an equitable and effective mechanism with little adverse impact on the economy (Glenday, 2012). To increase revenue for public finances and widen the tax base, several tax systems around the globe have undergone changes (Moyi & Ronge, 2016). Tax policy reforms are expected to have a positive impact on the revenue collected (Andrejovska & Pulikova, 2018).

This study was anchored on the theory of optimal taxation as developed by Adam Smith (1776) because it purports that, subject to a number of restrictions, a tax system ought to be designed to optimize a social welfare function. Tax reforms are aimed to ensure this goal is achieved while at the same time maximizing tax revenue. According to Mill's (1848) ability-to-pay theory, residents should support the government to the greatest extent possible, in accordance to their individual income capacities. Whether or not they benefit, those who are better equipped to pay should bear the greater cost of taxation. Tax reforms are aimed to achieve this. The economic deterrence theory by Becker (1968) as termed as deterrence, implies that the taxpayers attempt to maximize the gain from tax evasion. Tax reforms are meant to reduce cases of tax evasion and enhance tax revenue.

In order for a country to develop, taxes are essential. Due to a variety of circumstances, tax collections in Kenya have consistently fallen short of the expected

collection goals. To improve tax management and meet the established goals, the tax authority has had to create policies (Njenga, 2019). Huge amounts of resources are needed for the country's vision 2030 economic policy and the government has to secure funds to support the agenda. The primary source identified for funding this program is tax revenue (Kigunda, 2018). To raise the needed funds for vision 2030 and also meet the country's fiscal deficit targets, the authority in recent times upgraded it tax collection apparatus (KIPPRA, 2020).

1.1.1 Tax Policy Reforms

Tax policy reforms refer to the procedure of modifying how taxes are collected or administered. To increase the nation's ability to collect taxes, tax policy reforms may take the form of administrative, policy, or technological reforms (Cremer & Gahvari, 2017). Tax reform is the process by which a nation modifies the collection, mobilization, and use of taxes with the objective of improving tax administration. The creation of new tax legislation, adjustments to tax administration, and sealing tax evasion gaps are among the factors yield to increases in tax revenue collected (Piancastelli & Thirlwall, 2021).

Owing to the creation and consequent Sessional Paper No. 1 of 1986 in Kenya publication, reforms started in the 1980s. Massive adjustments in a number of sectors of the nation's tax administration preceded this. For example, broadening tax brackets and moderately lowering tax rates resulted in a reduction in direct taxes, which required a rise in indirect taxes to compensate for the revenue shortfall. That decision, though, was widely condemned because it lessened the tax system's ability to redistribute wealth because indirect taxes were thought to be retrogressive and, as a result, heavily burdened the poor. Additionally, the emphasis shifted from domestic

trade taxes to taxes on international trade. This change was accompanied by the implementation of the VAT, which replaced the sales tax that had been in effect since 1973 (Ombati, 2018).

The Tax Reform was in full force between 1986 and 2002. At the conclusion of its execution, it aimed to accomplish the following goals: raise tax revenue to 28% from 22 of GDP and improve administration efficiency. To boost the economic efficacy of the tax system, improve more dependency, resolve constraints relating to operating tax structure, and lower and tax rate rationalization. The economic recovery strategy identified additional areas that required advancement in order to increase revenue, such as the total elimination of the postponed import taxes, the consolidation of all taxes in the nation under KRA's sole authority to collect them, and an expansion of the taxation base (KIPPRA, 2020).

One of the improvements that completely transformed KRA procedures in 2005 was the implementation of the Simba system, which effectively automated up to 90% of customs operations and did away with the requirement for taxpayers to personally visiting KRA premises. The significant advancement was the creation of the document processing center, which revolutionized the customs clearance procedure by substituting the so-called long halls with a small group of around 30 officers headquartered in Nairobi who assessed customs entries for the entire country. The implementation of the customs oil stocks information system, an online portal designed for monitoring and tracking the oil stock information of each and every shipper, was the third significant part of the changes. The implementation of the TTIMS, an improvement to the ETR system, was another transformational innovation. Automatic filing of tax invoice transactions is made possible by TIMS.

Implementation of an Integrated Tax Management System (ITMS), created to give users quick feedback, speed up the customs clearance, lower compliance costs, and increase taxpayer engagement. Additionally, ITMS offered all taxpayers demands one-stop shop, enhancing tax collection. In order to make tax filing and payments more convenient and eliminate the need to stand in line at KRA, I-tax was established by KRA in 2015. I-tax streamlines tax procedures, cuts down on the amount of time needed in returns filing, and revenue generation boosts (KRA, 2020).

1.1.2 Revenue Collection

Funds gathered from taxes on employment and other incomes and profits; social security; goods and services, property, professional work, and other taxes levied is called tax revenue (Terefe & Teera, 2018). Also, tax revenue is referred to as the contribution made by businesses and individuals through the use of proper tax administration to support government spending (Shang, 2016). This tax can be collected from tax revenue and non-tax revenue sources. The former is comprised of direct taxation. Direct taxes are inescapable. These are taxes levied on income and property. The indirect tax category includes value-added tax, sale tax, goods tax, excise tax, customs duty, entrainment tax, and anti-dumping tax. Additionally, services provided by the state constitute non-tax revenue (Ali, Ali, & Dalmar, 2018).

Tax revenue can speed up growth in the economy and fund government programs intended for the well-being of the citizens. When the government meets it annual tax revenue target, it is capable of funding budgeted expenditures for development programs in the fiscal budget (Andrejovska & Pulikova, 2018). To ensure there is enough money available to cover operating expenses, the government should implement efficient revenue collecting tactics. A recommended approach is to

examine all points of revenue generation, as well as existing laws and regulations, once a year. Revenue collection is necessary to ensure the availability of resources to fund governmental services (Kiminyei, 2018).

Utilizing qualitative metrics, the degree in which the services and enforcement initiatives of the tax agency meet specified objectives is evaluated. They are determined by tax officers comparing finished work items to predetermined sets (Ariyo, 2007). Tax administration should establish a baseline performance level so that future standards can be created. When creating new measures, it is crucial to establish the baseline of data. Future performance goals can be defined once the baseline has been established. These goals are timeframes or straightforward instructions (such as to increase or improve a specific scenario) that let a business evaluate results using performance measures (Clotfelter, 2013). The current research assessed revenue collection as the natural logarithm of the total revenue collected in a given quarter.

1.1.3 Tax Policy Reforms and Revenue Collection

Tax policy reforms and tax revenue collection are guided by traditional theories of taxation that include the optimal theory of taxation, the benefit theory and ability-to-pay theory. These theories discussed the importance of fairness, certainty, and efficiency as bedrock of taxation (Koritnik & Podlipnik, 2017). The optimal theory of taxation anchoring the study provides empirical evidence that underpins the need for good tax reforms to meet tax payers' satisfaction and enhance tax revenue collection. Further, Ramsey rules corroborate with other taxation theories on equality and fairness in the tax system. It sets the pace for better regulatory framework by tax

policy makers in imposing indirect and direct taxes for the welfare of society (Cremer & Gahvari, 2017).

According to Koritnik and Podlipnik (2017), the ability-to-pay theory supports the legitimacy of tax laws and rules that also supports equality and fairness in the tax system. In addition, the justice and convenience concept of the tax system are associated with the taxpayers' ability-to-pay postulate and is part of the constitutional principles appropriate for effective tax compliance which is the key objective of tax administration that influences revenue collection (Rossikhina, Hultai & Shrub, 2018). The ability-to-pay is simply a legal tax burden distribution to individuals in the various sectors of the economy. The theory is a good working tool for modern tax administration and is useful in developing tax structure for revenue generation (Pressman, 2018).

The preposition also suggests that government should design the tax structure based on the citizens' ability to pay for expected benefits. Latif, Rahman, Ahmad, Khurshid and Shafique (2019) agreed with the ability-to-pay preposition and proposed that government should lower the tax rate to increase tax revenue collection. Reduction of the rate of taxation is an effective strategy for economic growth because it will bring more taxpayers under the tax bracket and will enhance government revenue. The adjustment of the tax rate encourages compliance and increases allocation efficiency (Soldatos, 2016). When the amount of tax to pay is not exorbitant it creates the opportunity for all taxpayers to contribute to tax revenue. The tax structure should be flexible to bring down the direct and indirect taxes thereby allowing everyone to come under the tax brackets (Latif et al., 2019).

1.1.4 Tax Policy Reforms and Revenue Collection in Kenya

The Kenya Revenue Authority (KRA), which was created in 1995 via an Act of Parliament, Chapter 469 of the Kenyan laws, is responsible for collecting taxes in Kenya. Six different taxes are collected by KRA. Such taxes include excise taxes, value added taxes (VAT), capital gains taxes, rental income taxes, and income taxes. Income tax is levied on a variety of sources of income, including income from employment, professional services, and investments, and it is dependent on tax brackets that are periodically revised. In Kenya, both commercial and residential properties are subject to a 10% rental income tax. VAT in Kenya is levied at a 16% rate on taxable goods and services, whilst excise duty is levied on certain imported and locally produced commodities that are listed in the Excise Duty Act of 2015 first schedule. Sales of capital assets are subject to capital gains tax, while agency revenue is generated through stamp duties and betting and pool taxes (KRA, 2021).

Despite the numerous tax reforms the nation has implemented, KRA has been unable to raise enough tax income to cover the budget deficits. Fundamental worries exist because, despite numerous reforms, the problems with raising revenue that the National Treasury and KRA encountered 20 years ago still exist today. Reforms have been put in place to tackle tax avoidance, evasion, and corruption. The tax authority has not achieved their goals despite technology advancements made in revenue collection. The perception that Kenyans are overburdened and that budget deficits still exist raises concerns about the effectiveness of these tax reforms and their impact on the collection of taxes (Ouma, 2019).

Since taxes are the primary source of income for the Kenyan government, discussions of tax policy are now important since they affect how taxes are collected. Increased government spending and the Kenya Revenue Authority's failure to reach revenue collection goals account for Kenya's fiscal deficit. The government has had to make difficult financial decisions, including borrowing from other governments, issuing floating-rate Eurobonds, and also borrowing internally by issuing infrastructure bonds (Deloitte, 2019). Despite the numerous tax reforms the nation has implemented, KRA has been unable to collect enough tax income to address the fiscal deficit.

1.2 Research Problem

Taxation is the main government revenue source in almost all jurisdictions (OECD, 2012). Due to its significant function, taxes have been employed to accomplish two objectives. One is that taxes are used to raise adequate money for paying government spending without having to borrow extensively. Second, it is used to generate revenue in an efficient and equitable mechanism with little detrimental economic effects (Glenday, 2012). To increase revenue for public financing and widen the tax base, several tax systems around the globe have undergone reforms (Moyi & Ronge, 2016). Tax policy reforms are anticipated to positively influence on the revenue collected (Andrejovska & Pulikova, 2018).

Various areas of the Kenyan economy were impacted by the 2015 Finance Act. For example, Income Tax Act, Cap. 470 section 6A, was amended by this act to include the residential rental income tax. This tax reform, along with others, aims to increase Kenya's income collection (Ndirangu, 2022). Panic beckons as donor health fund decreases, according to an article by Kabale (2019) in the Daily Nation newspaper. It is clear that Kenya's tax revenues are insufficient to finance the budget. The budget

deficits and Kenya's incapacity to reduce its excessive dependance on donor support and foreign borrowing have raised worries in response to this article. Kenya's 2021–2022 budget is 3.03 trillion shillings. 61% of this amount will be utilized to repay debt. This amount is excessive, because it reduces the government's ability to fund recurrent expenditure and development projects.

The empirical research conducted throughout the world has shown conflicting findings on TPR and revenue collection. Kamasa, Nortey, Boateng and Bonuedi (2022) examine tax reforms impact on tax revenue mobilization in Ghana and substantially concluding tax-linked reforms possess positive substantial effect on tax Ghana revenue collection. Shen, Li and Wang (2021) investigate tax reforms impact on inequality and welfare in China. The study reveals that the 2005 and 2011 tax reforms have improved the people's welfare while at the same time reducing inequalities. Ndoricimpa (2021) investigated the relationship between Burundi's civil wars and tax reforms. The findings also demonstrate that tax reforms are not related to total tax income or tax subcategories.

Locally, Kiara (2021) aims to examine indirect tax reforms impact on Kenyan revenue performance. The analysis reveals that the introduction of indirect tax reforms has a significant positive influence on revenue performance. Musyoka (2019) focused on tax reforms impact on voluntary tax compliance among SMEs in Nairobi County, Kenya. According to the findings, technology tax reforms, administrative tax reforms, taxpayer education reforms, and tax policy reforms all possessed significant positive impact on SMEs in Nairobi County's voluntary tax compliance. Livoi (2017) sought to analyze policy, administrative and technological tax reform impact on corporate tax compliance. Results showed that business tax compliance is negatively

impacted by tax reforms. Findings demonstrate that the tax reforms did not accomplish their ultimate purpose.

Although previous research has looked into the TPR impact on revenue collection, there are conceptual, contextual, as well as methodological gaps. Conceptually, it is possible that the disparities in results are due to the fact that TPR and revenue collection have each been conceptually operationalized in a unique manner by the prior researchers. Contextually, existing research on TPR and revenue collection has, for the most part, been conducted in developed markets, such as those in the western hemisphere and the Asia-Pacific region. Due to their different social and economic environments, emerging nations' findings may not be generalized to developing ones. In terms of methodology, majority of the previous studies conducted locally have relied on primary data which has its shortcomings. The current study relied on secondary data as it was considered more objective. Based on the gaps, this research pursued to address the following question: how do tax policy reforms affect the revenue collection in Kenya?

1.3 Research Objective

The objective of this research was to determine the effect of tax policy reforms on revenue collection in Kenya.

1.4 Value of the Study

The research conclusions would aid Kenya Revenue Authority in developing policies and reforms which might improve tax culture and hence support economic development. They might also help KRA get a better understanding of issues regarding tax reforms and revenue collection. Enabling KRA management in addressing the purported lack of knowledge in evaluating the effectiveness or

performance of their acquired systems and related technologies, the research would also shed light on reform areas that need to be developed.

Governments, National Treasury, and economic agencies are all examples of policymakers; they might utilize research results in informing their decisions on TPR and revenue collection. It is possible that the authorities that make policy may utilize the study's suggestions as a basis for developing efficient TPR methods to increase tax revenue collection.

The research conclusions would contribute to the body of knowledge already available on Kenya's experience with tax reform. The results of this research will provide literature and serve as the basis for future research, which would be greatly useful to scholars and academicians in the future. The study would advance our understanding of how tax reforms affect revenue collection. The research further expands the already-existing knowledge gap in terms of learning about tax revenue collection and its connection to tax reforms.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The theoretical underpinnings of TPR and revenue collection are explored in depth in this chapter. In addition, it summarizes prior empirical research, points out knowledge gaps, and concludes with a conceptual framework and hypotheses that propose a likely causal link between the investigated variables.

2.2 Theoretical Framework

This section covers the theories upon which tax policy reforms and revenue collection research is based. The research examined the theory of optimal taxation, ability to pay theory and economic deterrence theory.

2.2.1 Theory of Optimal Taxation

This is the anchor theory and it was developed by Adam Smith (1776). The theory states that a tax system opted should aim at maximizing a social welfare activity subject to a couple of limitations. Due to the notion behind optimal taxation the social planner is treated as a utilitarian: meaning, the utilities of people in the society forms the basis of social welfare function. In its most overall analyses, a social welfare function is utilized in this literature, that is, a nonlinear individual utility function. Through nonlinearity, the social planner opting for instance, more equality in dispersion of utility is permitted. In this literature some surveys however have assumption that the average utility is the social planner's sole concern, suggesting linearity in individual utilities through a social welfare function.

In simplifying the challenge that the social planner is experiencing, the assumption that is often is that all individuals in the society have homogenous taste in terms of

leisure besides consumption. At times the assumption of homogeneity is taken one further step with assumption that there are fully identical people populating the economy. Selecting a tax system which aims at maximizing the representative consumer's welfare is the core agenda of the social planner, having full insights that the consumer will embrace all incentives brought to the table by the tax system. According to some surveys of taxation, the assumption of a representative consumer could be a helpful simplification. Nevertheless, using a model with a representative consumer to draw policy conclusions, in some cases can result to major drawbacks (Pfister, 2019).

Ronge, Njeru and Ojwang (2015) advance that selecting a tax system ought to be for purposes of maximizing the citizen's social welfare. The reason behind the theory of designing also implementing taxes is reducing distortions alongside inefficiencies in the market. The equity principle, both horizontal along with vertical, is vertical, is vital during deliberations concerning a fair also optimal tax category. According to horizontal equity, fairness is payment of similar tax amounts for citizens with equal capacity of paying. On the other hand, vertical equity is payment of more taxes for citizens with higher ability-to-pay in comparison to those with lower ability-to-pay, provided the increase in tax level is reasonably considered. The theory predicts a positive relationship between tax policy reforms and revenue collection.

2.2.2 Ability to Pay Theory

This theory was pioneered by Mill (1848) and it suggests that government is supported as nearly as possible by citizens through contributions which is in proportion to their respective potentials in relation to revenue. The greater burden of taxation is born by those in a better position of paying irrespective of whether it

benefits them or not. Capability of paying is regarded as sacrifice. It states that public money ought to originate from him that hat in lieu of from him that hath not, Cashin (2015). Additionally, Cashin termed the normal and actually the main serious justification of potential in paying to being the grounds of deprivation. Paying taxes by the taxpayer is termed as a huge sacrifice. The taxpayer is obliged to turn the money over to the public treasury from where it is disbursed for social ends rather than expending it for his personal needs. The act of forgoing money earned to the state, is termed as sacrifice. Three progressive taxation theories namely; the equal theory, equal-proportional theory also least-sacrifice theory have risen from the notion of sacrifice when connected to the theory of the reducing money marginal utility.

The Equal-sacrifice theory implies that, all taxpayers should bear an equal amount of sacrifice of paying taxes. The act of imposing the same amount of sacrifice to all taxpayers refers to the notion of equal sacrifice, (Brown, 1928). The concept of equal-proportional sacrifice states that all taxpayers ought to incur similar sacrifices that are proportional to their incomes. This version therefore shows insufficient equality of sacrifice. The sacrifice borne by the rich man when paying taxes is greater in comparison to that of the moderate man. However, it should not exceed his income. Thus, equality is not found in the quantity of sacrifice rather than in the proportion (Pigou, 1928).

As shown by the theories of Equal in addition to Equal-proportional sacrifice, the rich alongside the poor are both taxed (Kaplow, 2020). None of the theories indicate a sign of bearing all the taxes upon any income group. The Least sacrifice Theory highlights that, the very rich individuals incomes' should be taxed first (Pigou, 1928). The rich would only be taxed after the income of the very rich is reduced to their levels. Later

the moderate persons' income would only be taxed if the very rich's also the rich's incomes are at the same level after being reduced through taxation. Through the theory, high incomes are progressively eliminated via taxation. The theory is appropriate to the current research as it recognizes the need for tax reforms aimed at taxing taxpayers based on their ability to pay and how this influences revenue collection.

2.2.3 Economic Deterrence Theory

Becker (1968) founded this theory and it is also known as the economic based theory. The theory argues taxpayers endevour to optimize on the advantage linked to tax evasion, via playing the audit lottery (Trivedi & Shehata, 2005). Taxpayers are either encouraged or discouraged by the likelihood of audit detection in conjunction with the penalty. The ultimate decision is made by the taxpayers to select the option that will optimize their financial gain, hereafter referred to as the after-tax return. For taxpayers, Cuccia (1994) contends that increase in audit visits, interest as well as penalty might impact level of their compliance.

Becker (1960) founded economic deterrence theory, who broke down unlawful behavior employing a financial express that taxpayer's conduct is influenced by variables, for instance, the tax rate determining the evasion benefits, and the probability of acknowledgement and penalties for extortion that dictate the expenditure. This implies that few people will avoid paying taxes if identification is likely and penalties are severe. There are many different methods of deterrence, including corrective and attractive measures (Becker, 1968).

However, when assessment chances are low and penalties are light, evasion is more likely to occur naturally. At that moment, the model anticipates significant failure to

comply. For example, it has been found that in some circumstances, the fear of being caught or the possibility of being recognized is an effective way to encourage honest behavior. When developing implementation processes that solely rely on penalties and the fear of being caught, tax organizations have also widely used the hypothetical criteria of monetary incentive (Sandmo, 2005). The theory is appropriate to the current research as it recognizes the role of tax reforms in enhancing revenue collection.

2.3 Determinants of Revenue Collection

There are a variety of factors that might influence tax revenue collection. This segment will highlight a number of prior scholars' studies in this field and analyze their results. The review has been divided into four major themes that are thought to have the most influence.

2.3.1 Tax Policy Reforms

Tax reforms are primarily carried out to increase the effectiveness of revenue mobilization and to optimize the social and economic advantages that the tax system may provide. Tax might be thought of as a charge placed or a monetary charge made on tax payer by the state, who can be either a person or a legal company. Property, corporation, and individual income taxes are examples of direct and income taxation. Indirect taxes (VAT, excise duty) are another type of tax (Moyi & Ronge, 2016).

Tax reforms might reduce revenue evasion and avoidance, as well as improve the efficiency and equity of collecting taxes, enabling the financing of public goods as well as services. It has the ability to rise income extend whereas fostering a move toward autonomy from foreign aid and money derived from natural resources. Wealth

distribution and behavior modification can promote economic growth and allay inequality anxieties (Soldatos, 2016).

2.3.2 Interest Rates

Interest rates possess substantial effect on both domestic and international product and service pricing. The quantity of money in the economy possesses substantial influence on interest rates. For example, when the economy is flooded with cash, borrowing rates are more likely to drop, which will have an impact on how a company does on the market. As a result, the market will grow and become more appealing to tourists to the nation. If the amount of money in the economy decreases, the opposite will occur (Adeyeye, 2019).

Interest rates establish revenue collection growth rate. Interest rate normally influences ability of households and firms to obtain credit and this has an effect on their investments. A reduction in interest rates will increase their ability to borrow and invest leading to a rise in their income and eventually a rise in government revenue collection. High interest rates also lead to increased cost of doing business and this discourages investors from taking loans to invest (Kiara, 2021).

2.3.3 Inflation Rate

The economy of a nation can be significantly impacted by inflation rates. For instance, the cost of goods and services will rise during periods of price fluctuations and increases. As a result, the overall cost of goods is likely to grow as inflation develops in an economy. This will consequently have an impact on how profitable businesses are. As a result, many investors who participate in the market's sale of goods and services typically make an inflation allowance (Arif, Khan & Hussain, 2017).

A country's revenue collection exhibits a long-term relationship with inflation. Behera and Dash (2018) posits presence of a positive impact of increased demand on prices of products. This theory further suggests that increase in output and the level of income create demand since higher levels of investment and consumption will be experienced. It is theoretically expected that inflation reduces the purchasing power of households leading to a reduction in the levels of tax revenues.

2.3.4 Unemployment Rate

During the pre-crisis era, the level of taxes collected and unemployment are seen to correlate in a highly negative manner. Here, tax revenues are collected more when unemployment levels reduce. For instance, if there is news on rising unemployment, this is likely to affect the total taxes collected. An important lag is noticed during the entire sample duration of rising unemployment to how the tax revenue responds (Birungi, 2015).

This market has sentiments that are strongly negative but the labor market is not very easily affected by this. The labor market will still be skeptic and experience the high rates of unemployment despite the level of tax revenues recuperating during a crisis. During the pre-crisis era, there is the existence of a negative relationship that becomes barely significant during the crisis period. The government can use fiscal policies in the short term to enhance revenue collection (Gituku, 2011).

2.4 Empirical Review

The purpose, methods, and conclusions of studies conducted both locally and abroad that indicate a connection between TPR and revenue collection are examined.

2.4.1 Global Studies

Kamasa et al. (2022) examined tax reforms impact on tax revenue generation in Ghana. On a time series of data stretching from 1980 to 2018, the dynamic ordinary least squares, autoregressive distributed lag model and completely modified least squares approaches were used. Tax reforms index is generated using information from the IMF's surveillance of fund arrangements database as annual successfully number of executed tax-linked reforms function and policy initiatives. This study offers compelling indication tax linked reforms have a positive substantial impact on Ghana's ability to raise taxes. Due to the fact that this research was carried out in Ghana, its results cannot be extrapolated to reflect any other settings. As a result, this study displays a contextual gap.

Shen et al. (2021) scrutinizes existing literature on taxation and presents a framework in evaluating tax policy reforms impact from progressivity and social welfare perspectives. The elimination of the regressive agriculture tax in 2005 and the raising of income tax rates in 2011 both raised progressivity but decreased the overall income tax portion of total taxation, according to an analysis of two tax reforms in China using this approach. Progressive taxation has little practical influence on enhancing wealth redistribution when the majority of taxpayers are in the lower tax rate. Due to the fact that this research was carried out in China, its results cannot be extrapolated to reflect any other settings. As a result, this study displays a contextual gap.

Ndoricimpa (2021) examined in what manner tax performance is linked to tax reforms and civil battles in Burundi. According to the findings of a regression analysis on a tax equation, income taxes, foreign trade taxes, and overall tax revenue are not linked to civil wars. Nevertheless, it has been discovered that goods and services taxes have

a negative correlation with civil wars. The findings also demonstrate that tax divisions and overall tax revenue are unrelated to tax reforms. The presence of fiscal corruption, the adverse impact economic conflicts economy, discriminatory tax relief, and the inability to concentrate on expanding the tax base are some of the factors why tax income performance lacked correlation to tax reforms. Because the study was conducted for a short time duration, the results might not hold if a longer period was taken into account.

Udezo and Onuora (2021) studied tax reforms effect on revenue performance in Nigeria through time series data from 1991 to 2018. Ex-post factor research design was utilized and data for the research was gotten from the National Bureau of Statistics, Nigerian Central Bank statistical Bulleting and Federal Inland Revenue Service. The regression result depicting reforms in VAT, individual income tax and petroleum profit tax having substantial positive effect on revenue performance. Whereas corporate income tax reform possesses positive though insignificant impact on revenue generation in Nigeria. The research was however focused on the Nigerian economy whose social and economic background is diverse from Kenya.

Afonso, Jalles and Venâncio (2021) empirically studied structural tax reforms impact on government expenditure efficacy sampling 18 OECD economies over the 2006–2017 period. After determining the ratings for input spending effectiveness, they assess in a panel setting the applicability of narrative tax reforms for public sector efficiency. They discover that input efficiency scores typically range from 0.6-0.7; tax rate rises possess negative effect on efficiency of public sector; even after controlling for endogeneity, these rises are still linked to lower public sector efficiency; in comparison, tax base increment have a positive impact on public sector efficiency

during expansionary cycles; however, during recessions, efficiency is improved when VAT bases are raised and the corporate income rate increases. This research was carried out in developed economies, which has business practices and a social as well as economic environment that are distinct from Kenyan, which are the primary subject of the present investigation.

2.4.2 Local Studies

Ndirangu (2022) aimed at establishing taxation strategies execution costs effect on revenue generation in Kenya. The research utilized casual quantitative research approach. The research utilized secondary data obtained for 26 years duration from the National Treasury and KRA. Regression model being utilized in testing the substantial link taxation policy execution costs on revenue generation in Kenya. According to the results of the regression analysis, the costs associated with implementing tax laws have a substantial impact on the amount of tax income that KRA is able to obtain. The research was limited to taxation policies implementation costs, thus it does not take into account other aspects of TPR.

Kiara (2021) examined tax reforms impact in respect to pre- and post- reform eras and the factors fundamental the detected indirect taxes trends as one of the underexploited revenue sources. The study utilized annual secondary data for the years 2010 through 2019. The analysis employed impact evaluation methods (regression discontinuity and difference-in-difference, also referred to as quasi panel analysis methods). The analysis was performed using Stata software. The analysis's use of the difference-in-difference model demonstrates that the implementation of indirect tax reforms significantly improves revenue performance. According to the findings of the

research, TPR was conceived as just the indirect TPR, leaving direct TPR out of the equation.

Ouma (2019) studied tax reforms, economic growth and political environment impact on gross tax, direct tax and indirect tax revenues utilizing annual data for the duration 1964-2016. Descriptive statistics, multi-segment regressions, as well as non-linear regression were among the analysis methods used. The findings indicate that: entire taxes reacted positively to every tax reform; modification in entire taxes were impacted by the reforms since GDP was increasing; economic growth possess positive substantial impact on entire tax classifications; government efficacy has a positive impact on indirect taxes; and despite the fact that impact of government corruption control on tax revenues is neglible statistically, it may still help generate revenue far beyond economic growth. Because the research was conducted before the 2015 tax reforms, there is need to conduct a study taking into account the current status.

Livoi (2017) sought to analyze impact of policy, administrative and technological tax reform on corporation tax compliance. A census on domestic taxes department employees at KRA headquarters was done. Self-administered surveys received a 64% response rate. Analyses both descriptive and inferential were performed on the data. Cronbach's alpha was used to evaluate the measurement scale's reliability and internal consistency. The ANOVA test produced a 0.00 p value, indicating that the model matched the data well. Results showed that business tax compliance is negatively impacted by tax reforms. Findings demonstrate that the tax reforms did not accomplish their ultimate purpose. Due to the fact that revenue collection was not taken into consideration in this research, a conceptual gap has been shown.

Munene and Nduruhu (2016) surveyed tax reforms and modernization programs effect on tax revenue by the Customs and Border Control Department. Descriptive research design was utilized. The 126 personnel of KRAs Customs and Border Control Department made up the target population. The SPSS software was used to evaluate the data that had been gathered. Using basic linear regression, the impact of changes to the structure of the customs department on tax collecting income was investigated. Reforms in tax revenue collection and customs enforcement have a weakly positive correlation, although it is not statistically significant. Because determining the influence of tax reforms on the revenue generation in Kenya was not the objective of this particular piece of study, those results should not be considered definitive.

2.5 Conceptual Framework

Tax policy reforms, as measured by a dummy which took a value of zero before tax policy reforms and a value of 1 after tax policy reforms, served as the investigation's independent variable. Interest rate, inflation, and unemployment rate made up the control variables. The amount of revenue collected in a given quarter served as the dependent variable, and it was represented in natural logarithmic form.

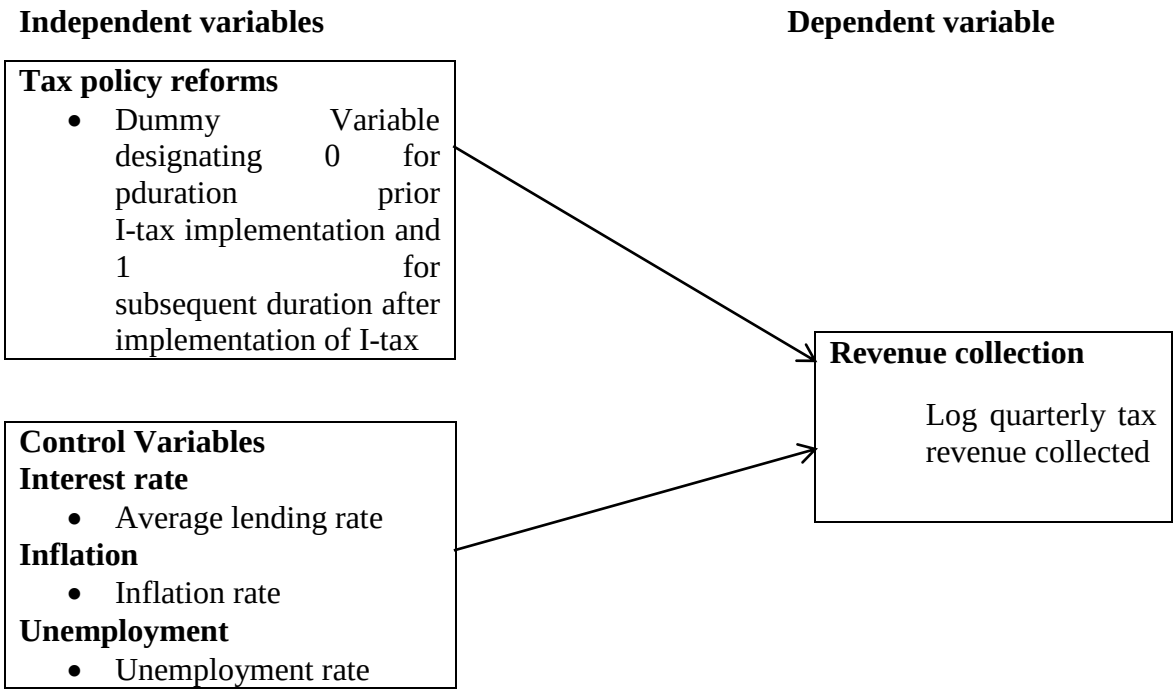

Figure 2.1: Conceptual Model

Source: Researcher (2022)

2.6 Literature Review Summary

Theoretical relationships between TPR and revenue collection have been modeled in a variety of ways. The theory of optimal taxation, ability to pay theory and economic deterrence theory are all covered. This segment too covers the primary factors influencing revenue collection. On TPR and revenue collection, both local and foreign researches have been conducted. The review reveals there is no cosensus on this relationship. This void was exploited in the recently conducted research.

The preceding section's empirical experiments indicated the existence presence of conceptual, methodological, as well as contextual gaps. Differences in the operationalization of TPR revealed conceptual gaps. Methodological shortcomings in empirical studies were exposed by the lack of agreement on standard research practices. Variations in study settings exposed a number of contextual gaps. These discrepancies suggest that further research is needed.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The chapter describes the steps and methods embraced in the execution of the study. It particularly converses the data collection approaches, research design, variable operationalization, and data analysis methods.

3.2 Research Design

A descriptive approach was utilized for this investigation. Examining the relationship that exists between TPR and revenue collection is the focus of this descriptive study's main objective. Given that the researcher was primarily interested in the phenomenon's fundamental characteristics, this approach is appropriate (Khan, 2008). It too was effective for describing the variables interconnections. This design also represented the variables precisely and legitimately, yielding sufficient data to answer the research objectives (Cooper & Schindler, 2014).

3.3 Data Collection

Data from the KRA, Kenyan Central Bank and KNBS was used in this study, which was secondary in nature on a quarterly basis spanning 10 years (2012-2021). KRA provided information on the dependent variable, the revenue collection for each quarter. Data acquired from CBK was used to compute the country’s interest rate which was the quarterly average bank lending rate. KNBS provided inflation statistics on the quarterly inflation rate, and unemployment data on the quarterly unemployment rate.

3.4 Data Analysis

Data analysis was done via the SPSS software version 24. Tables presented the

quantitative conclusions. Measures of central tendency and dispersion were calculated using descriptive statistics, and standard deviation was provided for all the variables. Correlation was used to gauge the degree of link between research variables, and regression was used to identify cause-and-effect relationships. Relationship between research variables established by multiple regression using linear regression.

3.4.1 Diagnostic Tests

The diagnostic tests performed are outlined in Table 3.1

Table 3.1: Diagnostic Tests

Assumption	Description	Test	Interpretation	Treatment
Normality	To verify normal distribution, the test is conducted	Shapiro–Wilk test	If p values are above 0.05, the variables are normally distributed	application of square roots or logs to non-normality
Multicollinearity	The phenomenon known as multicollinearity occurs when there is a connection between many variables, which then leads to the standard errors distorting the regression analysis.	VIF Test	Multicollinearity exist where the VIF > 10	Eliminate highly correlated variables.
Heteroscedasticity	to determine whether the model's or the errors' variance is different for each observation	Breusch–Pagan test	Heteroscedasticity exist where the p-value $p<0.05$)	Use Natural log of variables
Autocorrelation	To determine the value of a single variable by considering other variables that are connected to it.	Breusch-Godfrey test.	If p-values are lower than 0.05, autocorrelation is present.	Hildreth-Lu Procedure

Stationarity test	In order to evaluate whether or not a time series variable has a unit root and whether or not it is stationary	ADF test	If p values are below 0.05, unit roots exist.	Use Natural log of variables

3.4.2 Analytical Model

The equation below was utilized:

$$Y_t = \beta_0 + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + \beta_4 X_{4t} + \varepsilon_t$$

Where: Y_t = Revenue collection measured as log tax revenue collected by KRA

β_0 =y intercept of the regression equation.

$\beta_1, \beta_2, \beta_3, \beta_4$ =are the regression coefficients

X_{1t} = Tax policy reforms measured using a dummy variable with values of 0 denoting periods preceding the implementation of I-Tax and Values of 1 denoting subsequent periods after implementation of I-Tax

X_{2t} = Interest rate measured as average bank lending rate on a quarterly basis

X_{3t} = Inflation measured as inflation rate for every quarter

X_{4t} = Unemployment as measured by quarterly unemployment rate

ε =error term

3.4.3 Tests of Significance

The relevance of the overall model as well as the variable was determined via the use of parametric tests. To determine whether the model was useful, the F-test and the analysis of variance (ANOVA) were used, but to determine if any given individual variable was statistically significant, the t-test was used.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND FINDINGS

4.1 Introduction

This chapter offers the findings of this research. The main aim of the study was to determine how tax reforms influences revenue collection in Kenya. The following sections consist of descriptive statistic, diagnostic test, correlations analysis, regression as well as results discussion.

4.2 Descriptive Analysis

Descriptive statistics of all variables on which analysis was done are tabulated below. Quarterly information was gathered and analyzed using SPSS version 24 software during a ten-year duration (2012 to 2021).

Table 4.1: Descriptive Statistics

	Units	N	Minimum	Maximum	Mean	Std. Deviation
Revenue collection	Log	40	5.4487	6.6003	6.156750	.3118219
Tax reforms	Dummy	40	.0	1.0	.600	.4961
Interest rate	%	40	7.0	18.0	9.528	2.5379
Inflation rate	%	40	3.5	16.9	6.435	2.3729
Unemployment rate	%	40	2.6	10.4	4.131	2.0084
Valid N (listwise)		40				

Source: Research Findings (2022)

4.3 Diagnostic Tests

Before even handling the regression model, diagnostic tests were run. Normality, Multicollinearity, and Autocorrelation tests were conducted in the survey.

4.3.1 Normality Test

To establish if the data was normally distributed, the researcher used the Shapiro-Wilk tests. If the p-value exceeds 0.05, we conclude that there is normal distribution of data and vice versa. Table 4.2 contains the test findings.

Table 4.2: Normality Test Results

	Shapiro-Wilk	P-value
Revenue collection	0.871	0.179
Tax reforms	0.905	0.200
Interest rate	0.920	0.203
Inflation rate	0.883	0.195
Unemployment rate	0.876	0.192

Source: Research Findings (2022)

Since the data displayed a p value of above 0.05 therefore having a uniform distribution, the researcher adopted the alternative hypothesis. This data proofed fit to subjected to tests and analysis like variance, regression as well as Pearson Correlation.

4.3.2 Multicollinearity Test

In a multiple regression model, multicollinearity is displayed whenever predictor variables exhibit a substantial relationship. An event where independent variables have great correlations is unfortunate. Parameters are said to have multicollinearity if they have a perfect linear connection. Outcomes for the test on multicollinearity were displayed in Table 4.3. VIF value is used where values that fall below 10 are not multi-linear. One condition for multiple regressions to occur is that no strong connection should be evidenced among variables. Given by the outcomes, every VIF variable is below 10 as indicated in table 4.3 which shows independent variables in the study experience no substantial statistical multi-linearity.

Table 4.3: Multicollinearity Test

	Collinearity Statistics	
	Tolerance	VIF
Tax reforms	0.376	2.660
Interest rate	0.411	2.433
Inflation rate	0.392	2.551
Unemployment rate	0.518	1.931

Source: Research Findings (2022)

4.3.3 Autocorrelation Test

A serial correlation test established the relationship of error terms for diverse times. For the research to obtain the desired model parameters, the Durbin Watson serial correlation test was utilized to carry out the analysis of data autocorrelation, which is a major shortcoming in the data analysis which ought to be examined. The outcomes are shown in Table 4.4.

Table 4.4: Autocorrelation Results

Durbin Watson Statistic
1.982

Source: Research Findings (2022)

From the null hypothesis, no first-order serial/auto correlation exists. The 1.982 Durbin Watson statistical varies from 1.5 to 2.5 indicating no serial correlation.

4.4 Correlation Analysis

Pearson correlation utilized to establish the relationship linking revenue collection in Kenya to the characteristics of the study (Tax reforms, interest rate, inflation and unemployment rate). From the study's findings, a weak positive that is statistically significant relationship present between tax reforms and revenue collection ($r = .361$, $p = .022$). The correlation results further discovered a weak negative though not significant statistical connection between interest rate and revenue collection ($r = -.235$, $p = .145$). Inflation unveiled a negative though not significant link with revenue collection in Kenya ($r = -.038$, $p = .815$). Unemployment rate displays a significant negative interrelationship to revenue collection in the Kenyan economy ($r = -.524$, $p = .000$). The outcomes are as revealed in Table 4.5.

Table 4.5: Correlation Analysis

		Revenue collection	Tax reforms	Interest rate	Inflation rate	Unemployment rate
Revenue collection	Pearson Correlation	1				
	Sig. (2-tailed)					
Tax reforms	Pearson Correlation	.361*	1			
	Sig. (2-tailed)	.022				
Interest rate	Pearson Correlation	-.235	-.374*	1		
	Sig. (2-tailed)	.144	.017			
Inflation rate	Pearson Correlation	-.038	-.267	.653**	1	
	Sig. (2-tailed)	.815	.096	.000		
Unemployment rate	Pearson Correlation	-.524**	.416**	-.472**	-.188	1
	Sig. (2-tailed)	.000	.008	.002	.246	

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
c. Listwise N=40

Source: Research Findings (2022)

4.5 Regression Analysis

Tax reforms, interest rate, inflation as well as unemployment rate were utilized as agents to predict revenue collection in Kenya. The test was done at 5% significance level. Table 4.6 to 4.8 displays the results.

Table 4.6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.692[a]	.479	.420	.2374799

a. Predictors: (Constant), Unemployment rate, Inflation rate, Tax reforms, Interest rate

Source: Research Findings (2022)

The R squared indicator indicates how the explanatory variables may describe variations in the response variable. As indicated in Table 4.6, the 0.479 R square,

indicating that changes in tax reforms, interest rate, inflation and unemployment rate account for 47.9 percent of revenue collection in Kenya. Factors not encompassed in this research account for 52.1 percent of the variance in revenue collection in Kenya. The correlation coefficient (R) of 0.692 showed a significant connection amongst predictor factors and revenue collection.

Table 4.7: Analysis of Variance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.818	4	.455	8.060	.000[b]
	Residual	1.974	35	.056		
	Total	3.792	39			

a. Dependent Variable: Revenue collection
b. Predictors: (Constant), Unemployment rate, Inflation rate, Tax reforms, Interest rate

Source: Research Findings (2022)

The value of P obtained by ANOVA is 0.000, which is less than p=0.05. This establishes that the model's importance described how Tax reforms, interest rate, inflation and unemployment rate affect Kenya revenue collection.

The relevance of various variables was determined using the model coefficients. The statistics of t and values of p were used to accomplish this. This study is significant since it allowed the researcher to determine which independent variables were chosen (Tax reforms, interest rate, inflation and unemployment rate) significantly influences the revenue collection of the Kenyan economy. The outcomes are summarized in Table 4.8.

Table 4.8: Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.053	.233		25.986	.000
	Tax reforms	.070	.027	.364	2.466	.038
	Interest rate	-.032	.023	-.262	-1.408	.168
	Inflation rate	.008	.022	.059	.356	.724
	Unemployment rate	-.090	.026	-.516	-3.452	.001

a. Dependent Variable: Revenue collection

Source: Research Findings (2022)

Table 4.9 shows that tax reforms and unemployment rate, with p values less than 0.05, were significant predictors of revenue collection in Kenya while interest rate and inflation rate did not possess significant impact on revenue collection in Kenya.

The following regression was established:

$Y = 6.053 + 0.364X_1 - 0.516X_2$

Where,

Y = Revenue collection

X_1= Tax reforms

X_2= Unemployment rate

Using the constant = 6.053, we can see that if selected independent variables (Tax reforms, interest rate, inflation and unemployment rate) were rated zero, the revenue collection would increase by 6.053. Increasing tax reforms by one unit would increase performance by 0.364 while increasing unemployment rate by one unit would cause the revenue collection to decline by 0.516.

4.6 Discussion of Research Findings

This research had an aim of establishing the way in which the predictor variables impacted the revenue collection in the Kenyan context. Independent variables included tax reforms, interest rate, inflation and unemployment rate. This research tried to show revenue collection being a dependent variable. The natural logarithm of quarterly revenue collection measured revenue collection. Correlation as well as regression analysis being utilized to show the connection linking the independent to dependent variables

The Pearson model showed a weak positive that is statistically significant link exists between tax reforms and revenue collection. The correlation results further revealed a weak negative but not significant statistical connection between interest rate and revenue collection. Inflation unveiled a negative though not significant link with revenue collection in Kenya. Unemployment rate displays a significant negative interrelationship to revenue collection in the Kenyan economy.

The independent variables accounted for 47.9% of variances in revenue collection, in accordance with the summary of the model. The predictor variables of this research had explanatory power that fitted a 95% confidence level like indicated by the 0.000 p value that was way below the threshold of significance that is 5%. Therefore, the overall model employed in this study is a good and sufficient prediction model to determine the revenue collection in Kenya.

This research concurred to Kamasa et al. (2022) who examined tax reforms impact on tax revenue generation in Ghana. On a time series of data stretching from 1980 to 2018, the autoregressive distributed lag model, dynamic ordinary least squares, and completely modified least squares approaches were used. An index of tax reforms is

generated using information from the IMF's surveillance of fund arrangements database as a function of the annual number of effectively executed tax-related reforms and policy initiatives. This study offers compelling proof that tax-related reforms have a positive and substantial effect on Ghana's ability to raise taxes.

This research is also in agreement with research by Udezo and Onuora (2021) who studied tax reforms effect on revenue performance in Nigeria through time series data from 1991 to 2018. Ex-post factor research design was utilized and data for the research were gotten from the National Bureau of Statistics, Nigerian Central Bank statistical Bulleting and Federal Inland Revenue Service. The regression result depicting reforms in VAT, individual income tax and petroleum profit tax having substantial positive effect on revenue performance. Whereas corporate income tax reform possesses positive though insignificant impact on revenue generation in Nigeria.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The major motive of this research was investigating the way tax reforms influences the revenue collection in Kenya. The conclusions from the above sections are outlined in this chapter together with the conclusions and limitations of this study. This section also outlines the strategies that can be adopted by policymakers. It also carries the recommendations.

5.2 Summary of Findings

The study assessed how tax reforms influenced the revenue collection in Kenya. Tax reforms, interest rate, inflation and unemployment rate were adopted to be the predictor variables of the research. The research adopted descriptive design to do analysis and data collecting. Secondary data was obtained from KRA, CBK as well as KNBS and prepared via SPSS version 24 system. The study used data of 10 years compiled quarterly.

The Pearson model showed a weak positive that is statistically significant link exists between tax reforms and revenue collection. The correlation results further revealed a weak negative but not significant statistical connection between interest rate and revenue collection. Inflation unveiled a negative but not significant association with revenue collection in Kenya. Unemployment rate displays a significant negative interrelationship to revenue collection in the Kenyan economy.

The independent variables accounted for 47.9% of variances in revenue collection, in accordance with the summary of the model. The predictor variables of this research had explanatory power that fitted a 95% confidence level like indicated by the 0.000 p

value that was way below the threshold of significance that is 5%. Therefore, the overall model employed in this study is a good and sufficient prediction model to determine the revenue collection in Kenya.

The regression results further discovered that if the selected independent variables (Tax reforms, interest rate, inflation and unemployment rate) were rated zero, the revenue collection would increase by 6.053. Increasing tax reforms by one unit would increase performance by 0.364 while increasing unemployment rate by one unit would cause the revenue collection to decline by 0.516.

5.3 Conclusion

The research findings show that Tax reforms and unemployment rate have a substantial impact on Kenya's revenue collection. The research finds that tax reforms leads to a significant rise in revenue collection in Kenya while a rise in unemployment rate leads to a significant decline in revenue collection. Interest rate and inflation do not have a significant effect.

The research discovers that the factors under research – Tax reforms, interest rate, inflation and unemployment rate – affect revenue collection by describing 47.9% of the variations. This means that the non-model variables are only responsible for 52.1% of variations of revenue collection in the country. It is therefore substantial to infer that the outlined factors impact revenue collection as shown in the p values below 0.05 ANOVA summary.

The conclusions of this research concurred with Ouma (2019) who studied tax reforms, economic growth and political environment impact on total tax, direct tax and indirect tax revenues utilizing annual data for the duration 1964-2016. Descriptive statistics, multi-segment regressions, as well as non-linear regression were among the

analysis methods used. The findings indicate that: all taxes reacted positively to every tax reform; modification in all taxes were impacted by the reforms since GDP was increasing; economic growth has a positive significant impact on all classifications of taxes; government effectiveness has a positive impact on indirect taxes; and despite the fact that impact of government corruption control on tax revenues is statistically insignificant, it may still help generate revenue far beyond economic growth.

5.4 Recommendations

This study has demonstrated that tax reforms possess positive significant impact on the revenue collection in the country. Specifically, I-tax reforms impacted positively on revenue collection. The research recommended the necessity for policy architects and practitioners to come up with more tax reforms as this contributes to a rise in tax revenue. The practitioners should also ensure continuous improvement of the I-tax system as this will ensure that its contribution to revenue collection is long term.

This study demonstrated that unemployment rate impacts negatively on revenue collection. This implies that higher unemployment rate in the economy is likely to possess negative influence on the revenue collected in Kenya. It therefore recommends that several approaches are required to make sure that the factors that lead to unemployment are well handled to make sure that the unemployment is regulated to enhance further growth in revenue collection. When the country will be able to reduce the current unemployment rate, it will enhance its production which will lead to a rise in revenue collection.

5.5 Limitations of the Study

This research embraced a 10-year period (2012-2021). It gives no substantial evidence that in an added timeframe, the findings will not change. Moreover, it is uncertain that these conclusions will be sustained after 2021, things might change. Extra

timeframe is reliable because it comprises instances with economic shifts like recessions and booms.

The main drawback of the research was the data quality. It is not possible to reliably state the results obtained in the survey as the correct reflection of the general situation. Accuracy and reliability of the data collected are assumed to a certain point. Additionally, because of the existing circumstances, computing the data has been incoherent. This study uses secondary data as opposed to primary data. The determinants of revenue collection have been partially considered because of unavailability of data for all determinants.

Regression models were used to conduct data analysis. It might be impossible for the researchers to generalize outcomes because of the setbacks accruing from model utilization like erroneous and deceptive conclusions ensuing from alteration in variable worth. Whenever data is put in a regression model, it is impossible to process it through another prior model.

5.6 Suggestions for Further Research

The objective of the study was to determining tax reforms impact on revenue collection of the Kenyan economy. A research that focuses on primary data or mixes primary data with secondary data is recommended so as to recognize qualitative elements that might have been overlooked in the current research.

This research failed to consider all independent variables impacting revenue collection of an economy. A suggestion therefore arises to include other factors in future studies in order to come up with more specific findings. These factors include exchange rates, balance of payments, corruption, money supply among others. Providing details how each of them affects revenue collection will enable

policymakers make decision on the steps to take in order to control their revenue collection.

Because of unavailability of data, this study focused on the latest 10 years. Other future studies should employ a wider range to come up with a valid conclusion. This study was also under restriction because it only focused solely on Kenya. Additional survey should be conducted in other nations to determine results. In conclusion, the investigator adopted a regression model to do a confirmation or rejection of the findings. Any studies in future should adopt other independent methods to confirm or reject their findings.

REFERENCES

Afonso, A., Jalles, J. T., & Venâncio, A. (2021). Structural tax reforms and public spending efficiency. *Open Economies Review*, *32*(5), 1017-1061.

Adeyeye, G. B. (2019). Improving Tax Implementation through Technology Innovation in Nigeria (A Study of Federal Inland Revenue Service). Annals of Spiru Haret University. *Economic Series, 19*(1), 31-64.

Ali, A. A., Ali, A. Y. S., & Dalmar, M. S. (2018). The impact of tax revenues on economic growth: A time-series evidence from Kenya. *Academic Research International, 9*(3), 163-170.

Andrejovska, A., & Pulikova, V. (2018). Tax revenues in the context of economic determinants. *Montenegrin Journal of Economics*, *14*(1), 133-141.

Arif, I., Khan, L., & Hussain, F. (2017). Impact of semi-autonomous revenue authority on tax revenue and buoyancy: Evidence from Pakistan. *Journal of Finance and Economics Research, 2*(2), 164-174

Ariyo, A. (1997). *Productivity of the Nigerian Tax System: 1970 - 1990*. Research paper No.67. Nairobi.

Becker, G. S. (1968). Crime and punishment: An economic approach. In *The economic dimensions of crime* (pp. 13-68). Palgrave Macmillan, London.

Behera, D. K., & Dash, U. (2018). The impact of macroeconomic policies on the growth of public health expenditure: An empirical assessment from the Indian states. *Cogent Economics & Finance*, *6*(1), 143-154.

Birungi, J. M. (2015). *The effect of selected macroeconomic variables on government revenues in Rwanda* (Unpublished MBA research project, University of Nairobi).

Brown, R.M. (1928). Tax policy in emerging countries. Environment and Planning C: *Government and Policy.* 26(2), 73-36.

Burns, N. & Burns, S. (2008). *The practice of nursing research: Conduct, critique and utilization*: 5th Edition: St Louis, Elsevier Saunders

Cashin, P. (2015). *Government spending ,taxes and economic performance*. International Monetary Fund Staff papers, 42(2), Washington DC.

Clotfelter, C. T (2013), Tax Evasion and Tax Rate: An Analysis of Individual Returns, *Review of Economics and Statistics 65*, 363-373.

Cooper, R., & Schindler, S. (2014). *Business research methods.* New York: Mc Grawhill

Cremer, H., & Gahvari, F. (2017). Restoring Ramsey tax lessons to Mirrleesian tax settings: Atkinson–Stiglitz and Ramsey reconciled. *Social Choice and Welfare, 49*(1), 11- 35.

Cuccia, A. (2013). The economics of tax compliance: what do we know and where do we go? *Journal of Accounting Literature, 13(1),* 81-116.

Deloittee (2019). Finance Bill 2019 Direct Tax Measures in Kenya. https://www2.deloitte.com/content/dam/Deloitte/ke/Documents/tax/Tax_policy_reforms_in_Kenya.pd

Gituku, F. G. (2011). *Tax reforms and revenue productivity in Kenya* (Unpublished MBA research project, University of Nairobi)

Glenday, G., (2012). "*Does Trade Liberalization lead to lower Custom Revenues? The Case of Kenya*", Duke Center for International Development, Duke University, USA.

Kabale, C. (2019). *Crisis looms as donor health fund shrinks*. Daily Nation Newspaper

Kamasa, K., Nortey, D. N., Boateng, F., & Bonuedi, I. (2022). Impact of tax reforms on revenue mobilisation in developing economies: empirical evidence from Ghana. *Journal of Economic and Administrative Sciences, 1*(2), 133-139

Kaplow, L. (2020). *The theory of taxation and public economics.* Princeton University Press.

Kenya Revenue Authority (KRA), (2021). Taxation for Non- Resident's Employment Income.https://kra.go.ke/en/individual/filing-paying/types-of-taxes/individual-

Khan, J. A. (2008). *Research methodology*. New Delhi. APH Publishing Corporation

Kiara, F. G. (2021). *Impact of indirect tax policy reforms on revenue performance in Kenya* (Unpublished MSc in tax research thesis, Moi University).

Kigunda, E. G. (2018). *Effect of Vision 2030 Development Strategies on Strategic Planning at Kenya Pipeline* (Unpublished MBA Project, university of Nairobi).

Kiminyei, F. K. (2018). The nexus between tax revenue and government expenditure in Kenya. *International Journal of Economics and Management Sciences, 7*(5), 2-6.

KIPPRA, (2020). Kenya Economic Report, 2020. Creating an enabling environment for inclusive growth in Kenya (Vision 2030) https://kippra.or.ke/wp-content/uploads/2021/02/Kenya-Economic-Report-2020.pd

Koritnik, B., & Podlipnik, J. (2017). The Ability-to-Pay Principle as a Primarily Constitutional Basis for Tax Norms of a Financial Nature. Izzivi ustavnega prava, 21. file:///C:/Users/User/Downloads/9_KoritnikPodlipnik_draft-prevod_EN1.pdf

Latif, M. I., Rahman, H., Ahmad, H., Ahmad, F., Khurshid, M. M., & Shafique, M. N. (2019). Estimation of Laffer Curve: Evidence from Pakistan. *Sarhad Journal of Management Sciences, 5*(1), 103-112.

Livoi, G. M. (2017). *The effect of tax reforms on corporate tax compliance to Kenya Revenue Authority* (Unpublished MSc Finance dissertation, KCA University).

Mill, J. S. (1848). Principles of political economy with some of their applications. *Social Philosophy*, 1(1), 36-45

Moyi, E., & Ronge, E. (2016). Taxation and tax modernization in Kenya: A diagnosis of performance and options for further reform. file:///C:/Users/User/Downloads/Tax-Revenue-Performance-in-Kenya1.pdf

Munene, R., & Nduruhu, D. (2016). Effect of Tax Reforms on Revenue Collection at Customs and Border Control Department of Kenya Revenue Authority. *Journal of Business and Management*, *18*(4), 61-66.

Musyoka, N. N. (2019). *Effect of tax reforms on voluntary tax compliance among small and medium enterprises in Kenya: a case of Nairobi County* (Unpublished Doctoral dissertation, Strathmore University).

Ndirangu, A. W. (2022). *Taxation Policy Implementation Costs, Macroeconomic Factors and Revenue Collection in Kenya* (Unpublished Doctoral dissertation, JKUAT-COHRED).

Ndoricimpa, A. (2021). Tax reforms, civil conflicts and tax revenue performance in Burundi. *Scientific African*, *13*(2), 99-110.

Njenga, A. W. (2019). *Effect of ITax Platform on Kenya Revenue Authority's Revenue Collection Target Among Large Taxpayers* (Unpublished MBA dissertation, United States International University-Africa).

OECD (2012), Tax revenue https://data.oecd.org/tax/tax-revenue.htm Online library of the Organisation for Economic Cooperation and Development (OECD).

Ombati, N. A., (2018) *The Effect of Tax Reforms on The Efficiency Of Revenue Collection In Kenya*. Unpublished MBA Project, University of Nairobi.

Ouma, D. (2019). Revenue effects of tax reforms, economic growth and political environment in Kenya. *African Journal of Economic Review*, *7*(1), 136-153.

Pfister, M. (2019). *Taxation for investment and development: an overview of policy challenges in Africa* (Rep.). Ministerial meeting and Expert Roundtable of the NEPAD-OECD Africa investment Initiative.

Piancastelli, M., & Thirlwall, A. P. (2021). The Determinants of Tax Revenue and Tax Effort in Developed and Developing Countries: Theory and New Evidence 1996- 2015. *Nova Economia*, *30*(4), 871-892.

Pigou, A (1928). *The Economics of Welfare*. London, England: Macmillan and Co

Pressman, M. (2018). The Ability to Pay in Tax Law: Clarifying the Concept's Egalitarian and Utilitarian Justifications and the Interactions between the Two. *NYUJ Legis. & Pub. Pol'y,* 2(1), 141-153

Ronge, E., Njeru, B., & Ojwang, D. (2015). *Implicit taxation of the Agricultural Sector in Kenya* (*Working paper No. 52*). Nairobi: The Kenya Institute for Public Policy Research and Analysis.

Rossikhina, H., Hultai, M., & Shrub, I. (2018). Constitutional principles of taxation: doctrinal approaches to typology. *Baltic Journal of Economic Studies*, *4*(3), 259-263.

Sandmo, A. (2005). The theory of tax evasion: A retrospective view. *National Tax Journal*, *58*(4), 643-663.

Shang, J. (2016). *An Empirical Study on China's Regional Tax Revenue Performance* (Unpublished Doctoral dissertation, University of Gloucestershire)

Shen, Y., Li, S., & Wang, X. (2021). Impacts of two tax reforms on inequality and welfare in China. *China & World Economy, 29*(3), 104-134.

Smith, A. (1776). *An Inquiry into the Nature and Causes of the Wealth of Nations.* Oxford University Press.

Soldatos, G. T. (2016). The Laffer Curve, Efficiency, and Tax Policy: A Note. *Jahrbuchfür Wirtschaftswissenschaften, 67*(3), 255.

Terefe, K. D., & Teera, J. (2018). Determinants of tax revenue in East African countries: An application of multivariate panel data cointegration analysis. *Journal of Economics and International Finance, 10*(11), 134- 155

Trivedi, V. U., Shehata, M., & Mestelman, S. (2005). Attitudes, incentives, and tax compliance. *Canadian Taxation Journal, 5(3)*, 29-36.

Udezo, N. O., & Onuora, J. K. J. (2021). Effect of tax reforms on revenue performance in Nigeria. *Journal of Innovative Finance and Economics Research*, *9*(1), 118-130.

APPENDICES

Appendix I: Research Data

Year	Quarter	Revenue collection	Tax reforms	Interest rate	Inflation rate	Unemployment rate
2012	1	6.0549	0.0000	18.0000	16.8700	2.8600
	2	6.2199	0.0000	18.0000	11.7767	2.8600
	3	5.4487	0.0000	14.7500	6.3833	2.8600
	4	5.8929	0.0000	11.0000	3.5300	2.8600
2013	1	6.1117	0.0000	9.5000	4.0767	2.8700
	2	6.2927	0.0000	8.5000	4.3667	2.8700
	3	5.5786	0.0000	8.5000	6.9967	2.8700
	4	6.0065	0.0000	8.5000	7.4233	2.8700
2014	1	6.2131	0.0000	8.5000	6.7800	2.8200
	2	6.3662	0.0000	8.5000	7.0333	2.8200
	3	5.6046	0.0000	8.5000	7.5433	2.8200
	4	6.0421	0.0000	8.5000	6.1800	2.8200
2015	1	6.2753	0.0000	8.5000	5.8167	2.8000
	2	6.4282	0.0000	8.5000	6.9933	2.8000
	3	5.6877	0.0000	11.5000	6.1433	2.8000
	4	6.1069	0.0000	11.5000	7.3500	2.8000
2016	1	6.3010	1.0000	11.5000	7.0233	2.7600
	2	6.4759	1.0000	10.5000	5.3567	2.7600
	3	5.7390	1.0000	10.5000	6.3333	2.7600
	4	6.1502	1.0000	10.0000	6.5000	2.7600
2017	1	6.3674	1.0000	10.0000	8.7700	2.6900

Year	Quarter	Revenue collection	Tax reforms	Interest rate	Inflation rate	Unemployment rate
	2	6.5263	1.0000	10.0000	10.7967	2.6900
	3	5.7730	1.0000	10.0000	7.5233	2.6900
	4	6.1887	1.0000	10.0000	4.9833	2.6900
2018	1	6.4032	1.0000	10.0000	4.4900	2.6400
	2	6.5489	1.0000	9.5000	3.9867	2.6400
	3	5.8016	1.0000	9.0000	4.6967	2.6400
	4	6.2244	1.0000	8.5000	5.6067	2.6400
2019	1	6.4352	1.0000	8.5000	4.3967	2.6400
	2	6.5894	1.0000	8.5000	5.5900	4.7000
	3	5.8435	1.0000	8.5000	5.0333	5.3000
	4	6.2706	1.0000	8.5000	5.4433	4.9000
2020	1	6.4688	1.0000	7.7500	6.2633	5.2000
	2	6.5962	1.0000	7.0000	5.3100	10.4000
	3	5.7770	1.0000	7.0000	4.3067	7.2000
	4	6.2088	1.0000	7.0000	5.2633	5.4000
2021	1	6.4330	1.0000	7.0000	5.7900	6.6000
	2	6.6003	1.0000	7.0000	5.9833	6.6000
	3	5.8948	1.0000	7.0000	6.6767	6.6000
	4	6.3228	1.0000	7.0000	5.9933	6.6000