THE EFFECT OF TAX COMPLIANCE STRATEGIES ON GOVERNMENT TAX REVENUE IN KENYA

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DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for award of a degree. I also declare that this contains no material written or published by other people except where due reference is made and author duly acknowledged.

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Signature……………………………… Date………………………………

I do hereby confirm that I have examined the master's dissertation of

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And have approved it for examination.

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Dissertation Supervisor

ABSTRACT

This study sought to establish the effects of tax compliance strategies on government tax revenue. The specific objectives of the study is to: establish the effect of taxpayer education strategy on tax revenue, determine the effect of improved tax payer services strategy on tax revenue, and assess the effect of law enforcement strategy on tax revenue as well as determine the effect of technology adoption strategy on tax revenue. The study is pegged on three theories namely; the economic deterrence theory, fiscal exchange theory and the regulatory compliance theory. Revenue data between 1980 and 2020 was used in the study. Ordinary Least Squares technique (OLS) was employed to establish the long run relationship between expenditure on taxpayer education, tax payer services, law enforcement and technology on government tax revenues. Breusch-pagan test was used to test for heteroscedasticity and multi-collinearity, Variance Inflation Factor method was used. The study tested for serial autocorrelation since the data was time series nature. The Jarque-Bera test was conducted to test normality for the error term. The relationship between variables was established through correlation analysis and regression analysis. The results indicated a positive and significant relationship between taxpayer education strategy and tax revenue in Kenya (β= 1.128, p=0.012). There was a positive and significant relationship between law enforcement strategy and tax revenue in Kenya (β= 0.429, p= 0.007). Technology adoption strategy had a positive and significant relationship with tax revenue in Kenya (β= 0.199, p= 0.003). Lastly, taxpayer services strategy revealed a positive and significant relationship with tax revenue in Kenya (β= 0.490, p= 0.002). The study concluded that taxpayer education strategy, law enforcement strategy, technology adoption strategy and taxpayer services strategy affected tax revenue in a positive and significant way. The study recommends that the government should continue providing taxpayer education. Further, the government should continue to up its tax compliance enforcement efforts. The government should spend more on technology usage which will help in the administration of the tax system and lastly it should pursue alternative measures in its quest to improve on the level of tax efficiency and effectiveness.

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DEDICATION

I dedicate this dissertation to my family who bore the demands of this course. I wish to appreciate my friends for their constant prayers for me and bringing me up the way they did.

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ABBREVIATION AND ACRONYMS

CRA:	Commission on Revenue Allocation
GDP:	Gross Domestic Product
GOK:	Government of Kenya
ITEP:	Institute of Taxation and Economic Policy
KNBS:	Kenya National Bureau of Standards
SAS:	Self-Assessment System
SMEs:	Small and Medium Enterprises
TAM:	Technology Acceptance Model
TMP:	Tax Modernization Program
VAR:	Vector Auto Regression
VAT:	Value Added Tax

OPERATIONAL DEFINITION OF TERMS

Tax Compliance: Adherence to the administrative rules of lodging and paying taxes on time. This includes compliance with the reporting requirements, procedural rules and regulations.

Tax Rates: Tax rates refer to the rate at which a business or person is taxed on income. It also refers to the rate of tax on goods and services.

Tax Audits: This is the activity carried out by any revenue agency to establish if the true value of tax liability has been paid by the tax paying entity.

Tax Revenue: Yearly revenue collected by the tax agency from persons or entities on whom tax levies are imposed.

Fines and Penalties: A fine or penalty is a levy imposed on an individual for failing to willingly honor his or her obligations as per the tax regulations.

Tax incentives: A tax incentive is a benefit meant to entice and encourage voluntary compliance by taxpayers with aim of boosting levels of tax revenue to be realized.

Tax evasion: Are the illegal and intentional actions taken by individuals to avoid adherence to their tax liability obligations.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The sole and realistic way of mobilizing resources to meet public expenditure on goods and services required by the citizenry is taxation (Marina, 2020). However, this is not entirely the case since some third world countries have alternative sources of revenue besides taxation like user fees and licenses levied on services provided by government ministries, departments and state agencies, including proceeds from the disposal of public assets and denationalization of ailing state corporations. Furthermore, a number of emerging economies rely heavily on external funding as an alternative source of income (Barnett & Grown, 2014).

Globally, Confucianism influences both Chinese social and individual ethical values, any attempt to foster greater tax compliance in China should appeal to the importance of taxes as contributions to the public funding of family and community welfare (Fan & Liu, 2020). However, what was missing from previous research is that the assumption about Chinese ethical values was overly narrow. Apart from Confucianism, another Chinese philosophy known as Legalism is also influential in prompting ethical behaviour, in particular on regulatory issues. Therefore, tax compliance in China drawing on Chinese ethical values should include both incentives and disincentives to prompt individuals to comply with their tax obligations (Deng Yan, & Sun, 2019).

Regionally, Oyelade (2016) perceived low tax compliance in Nigeria as unpleasant; this is rampart because of ineffective administration encouraged by overreliance on crude oil revenue which resulted to neglect of taxation. Statistical evidences in Nigeria affirmed that, barely ten million taxpayers registered under personal income tax in all the States of the Federation, Federal Capital Territory (FCT) inclusive (Augustine & Enyi, 2020). About 4.6 million out of these taxpayers are covered by the Lagos State Internal Revenue Service (LIRS) alone. Average of 1.5% of the rest is under the coffer of each of the 35 States of the Federation including the FCT (Adegboye, Alao-Owunna & Egharevba, 2018).

Generating revenue locally is given precedence by many nations in sub-Saharan Africa (Drummond et al., 2012). Raising revenue enables governments in developing countries achieve financial superiority, avail basic state amenities to its people, lower dependency on external support which in most cases has strings attached and diversify sources of revenue. On the contrary, tax avoidance and evasion in the local scene has hampered the growth of domestic tax base (IMF 2018). Even with the increasing and persistent world-wide challenge of tax non-compliance (McKerchar & Evans, 2019), it is evident that most developing economies especially in the sub-Saharan Africa are the worst affected (Cobham 2015; Fuest & Riedel, 2019). Masinde and Makau, (2010) assert that taxes are crucial in budgetary projections of an economy and one of the major reasons why taxes are levied is to raise revenue for economic management and allocation of resources for economic stabilization.

Numerous interventions in the form of administrative initiatives have been put in place in the past by the Kenyan Government to enhance revenue generation. Among the interventions implemented to boost tax revenue was self-assessment systems (SAS) in the year 1992. The aim of the strategy was to enhance voluntary compliance, ease the complexity involved in evaluating tax returns and make the process of raising tax revenue more effective (cut down the cost of collecting tax revenue) (Masinde et al,. 2016). Even with the various tax management changes, the degree of adherence to revenue collection regulations has remained minimal (Makau et al, 2020).

The tax compliance challenge has two main approaches the first is derived from economic rationality that is based on economic analysis and the second approach concerns with issues of behavior and borrows heavily from ideas and research findings in other fields like psychology and sociology (OECD, 2014). These two approaches are often perceived to provide alternative explanations on tax compliance (Valeria, 2014).

According to Masinde and Makau (2018), taxes play an important role in the budget of any economy and one of the main reasons why the government imposes taxes is to generate income to manage the economy and redistribute resources. Over the years, the Kenya government has undertaken various revenue administration reforms aimed at enhancing revenue collection. One of the measures that have been implemented in order to increase revenue collection in Kenya was the introduction of self-assessment systems (SAS). The objectives of this system was to increase voluntary compliance, reduce tax authorities burden of assessing tax returns and increase tax collection efficiency (reduce tax collection costs) (Masinde *et al.*, 2010). However, despite various administrative reforms, levels of tax compliance have remained quite low. A survey conducted by KRA, KIPPRA and the Treasury, based on 1999/2000 data revealed that VAT payment compliance was as low as 55% while return lodgment compliance was 65% (Makau *et al.*, 2019).

Several important revenue measures were included from the 2014/15. Such measures ranged from revision of the Excise and Income tax Acts, increased taxes on iron and steel products, enhanced and better tax administration, more specifically in relation to value Added Tax and changes to the Income Tax Act to curb tax avoidance by international firms operating in Kenya (GOK, 2016). The reforms initiated and effected in September 2013 reflected the full year effects of value Added Tax reforms that led to increased revenues as well as the impact of the measures that led to the incorporation of the land lord into the tax base. The measures were expected to contribute about 1.3% of GDP in 2014/15 (GOK, 2016). Aggregate tax revenue as a percentage of the GDP was expected to average 22% in the subsequent two fiscal years whereas total expenditure and net lending were to remain above 30%, and the overall budget deficit was to continue to be above 8% of the GDP (Odero, Kipyego & Reeves, 2015).

1.1.1 Tax Compliance Strategies

The use of taxpayer education, law enforcement, technology adoption and taxpayer services strategy have been the core strategies by KRA in an effort to raise their tax base (Gitaru, 2017; Abdul & Wang'ombe, 2018; Nyakundi, 2018). Revenue authorities are generally required to achieve as good a compliance outcome as possible (i.e., to maximize the overall level of compliance with the tax laws). The primary goal of a revenue authority is to collect the taxes and duties payable in accordance with the law and to do this in such manner that will sustain confidence in the tax system and its administration. The actions of taxpayers, whether due to ignorance, carelessness, recklessness, or deliberate evasion as well as weaknesses in a tax administration, mean that instances of failure to comply with the law are inevitable. Therefore, tax administration should have in place strategies and structures to ensure that non- compliance with tax law is kept to a minimum (Gardiner, 2019).

Jackson (2020) argues that improving tax compliance requires long-term reform efforts, beginning with strengthening the organization and management of the revenue agency, implementing robust collection systems (e.g., payment and withholding systems) and building capacity in core tax administration functions (registration, filing and payment enforcement, debt collection, audit, taxpayer services, and processing of appeals). Keen et al. (2013) argue that reform of the legal framework and judiciary is also often required to ensure that the necessary powers, penalty regimes, and dispute resolution processes are in place. Increasingly, information and communications technology is playing a critical role in compliance management (e.g., through automatic gathering of third-party information as a by-product of natural business processes; use of electronic invoices to facilitate real-time transaction monitoring and verification; and analysis of revenue risks).

Reform priorities to improve tax compliance differ across countries and regions, reflecting variations in stages of development, administrative capacity, and scope of tax abuse (Gardiner, 2019). The relatively wider tax gaps and lower revenue productivity of developing and emerging economies generally suggest potential for bigger revenue yields from compliance improvement initiatives. For these countries, getting the fundamentals of revenue administration in place (especially taxpayer service operations and effective audit and enforcement) should be the first step (Machogu & Amayi 2019). According to the Tax Justice Network Africa, (2011) a taxpayer compliance program is a high level plan which brings together in a single document a description of the most significant compliance risks identified in the tax system and sets out the broad detail of how the revenue agency intends to respond to those risks. It does not attempt to cover every aspect of a revenue agency's operational activities. Compliance programs are commonly structured around major taxpayer segments (e.g., large businesses, medium-size enterprises, small and micro enterprises, and individuals) and address compliance risks relevant to these segments (Spitzer, 2018).

While sound legislation is the cornerstone of achieving a good compliance outcome, it is nevertheless often a costly response to any given non-compliance situation (McKerchar & Evans, 2019). Therefore, consideration of the external legislative context represents an attempt to look at existing legislation in action in an effort to identify weaknesses and threats that may need to be addressed or mitigated through administrative practices (Makau et al, 2020). The role of the authority is to operate within the law. Whilst recommending changes to legislation does represent a legitimate compliance approach for revenue authorities, this guidance note concentrates on administrative rather than legislative solutions (Tanzi & Zee, 2020).

Revenue authorities throughout the world operate within socio-political contexts (Gardiner, 2019). Occasionally, governments will place obligations upon authorities that might not have otherwise represented a compliance risk worthy of administrative intervention. These additional obligations nevertheless form part of the context within which the authority must operate and represent a very real impost on resource allocation and usage that must be managed. Public opinion represents an important consideration for revenue authorities. The regard in which an authority is held within the community has a direct impact not only upon the community attitude towards compliance but also upon the ability of the revenue authority to successfully administer the taxation system and upon the morale of revenue agency staff (Tax Justice Network Africa, 2019).

Spitzer (2018) explains that in a world of limited resources, the manner in which a compliance risk is to be addressed must be taken into consideration. This is not only because of the need to spread resources to achieve a balanced programme of compliance activity but also to ensure that the manner of treatment is acceptable to community standards. The costs of compliance to the community need to be commensurate with the level of compliance risk exposure if the county is to be able to meet its global objectives of collecting the revenue in a manner that sustains community confidence (Kochanova, Hasnain & Larson, 2020). Community standards and the potential impact of compliance obligations are aspects of the operating context that a county management must clearly understand in order to frame an effective compliance treatment programme.

Jackson (2020) posits that improving tax compliance requires long-term reform efforts. This may begin with strengthening the organization and management of the revenue agency, implementing robust collection systems (e.g., payment and withholding systems) and building capacity in core tax administration functions (registration, filing and payment enforcement, debt collection, audit, taxpayer services, and processing of appeals). Keen et al., (2013) argue that reform of the legal framework and judiciary is also often required to ensure that the necessary powers, penalty regimes, and dispute resolution processes are in place. Increasingly, information and communications technology are playing a critical role in compliance management through an automatic gathering of third-party information as a by-product of natural business processes; use of electronic invoices to facilitate real-time transaction monitoring and verification; and analysis of revenue risks.

Jayapalan (2018) asserts that the key objective of the tax agency is to levy taxes and other fees as required by the law and do to it in a way that aims to achieve and maintain the confidence of the tax regime and its management. However, cases of noncompliance with tax regulations by the tax payers, either because of lack of information, laziness, recklessness, or by willingly evading, and also loopholes in a tax arrangement are unavoidable. Consequently, any administration of tax is required to put in place mechanisms and policies that make it hard for any attempt to avoid adherence to the tax regulations difficult and unachievable. The fundamental role of a tax agency (and vested interest) is to ensure that taxpayers and other stakeholders are well aware of their requirements as dictated by the tax laws of the country (Gardiner, 2019). Taxpayers on their side have a crucial and essential responsibility to fulfill in order to meet their obligations, because in many occasions they in a better position to understand it is their duty to follow the tax laws in its entirety (Siti, Normala Sheik & Obid, 2017).

1.1.2 Tax Compliance and Tax Revenue

According to Institute of Taxation and Economic Policy (2018), a great proportion of revenue authorities have digressed from the traditional tax management assessment regimes where all or to a larger extent tax reports are scrutinized or examined as a precondition for before being issued to the taxpayers. The regime of choice of late is the self-evaluation and adjustment mechanism that bases its confidence on the taxpayer’s own initiative to adhere to their tax obligations to subscribe to the tax register, maintain up to date records, submit accurate tax returns and honor their tax liabilities with minimum or without the intervention of a tax body (Kochanova, Hasnain & Larson, 2020).

Article 209 of the Constitution of Kenya 2010 prescribes the right to levy taxes or accumulate revenue for both the central government and the devolved units of governance (GOK, 2019). The distribution of the tax collection authority between the two levels of government is meant to respect and enhance the spirit of devolution, whose structure makes it possible for the central government to have greater mandate over a bigger portion of taxes with substantial revenue base. Specifically, the central government is particularly in charge of imposing income tax, excise duties, VAT, and customs (GOK, 2019). About 20% Kenya's tax income-to-GDP ratio from the year of 2010 has been the best in standards by regional comparisons; this is far above the tax-to-GDP ratios in Tanzania (17.4% in the fiscal year 2013/14) and Uganda (13% in fiscal year 2013/14). The economic short fall (including foreign aid) was approximately 5% of the gross domestic product running over the financial periods of 2011/12 and 2012/13, growing up to 5.6% from 4.0%, respectively. This development remained constant besides the adoption of new and advanced systems and structures to operationalize the 2010 supreme law in Kenya (the constitution), both at the central government level as well as among the 47 devolved units of government, that has made it necessary for the state to expand its expenditure; and increased demands by government employees to have their basic pay and other employment allowances (Odero, Reeves & Kipyego, 2015).

The taxpayers' belief and tendency to comply is always a consequence of a number of elements of compliance that finally affect taxpayer's attitude. The conditions that affect adherence to tax requirements and failure to voluntarily honour tax obligations by individual taxpayers are not uniform among different economies and also are different from one tax entity to (Kirchler, 2017). These range from taxpayer attitude towards the tax regime and the tax collection agency (Ambrecht, 2018) group pressures and or individualized practices; taxpayer awareness regarding the workings of the tax system/tax regulations (Silvani, 2012; Le Baube, 2012). Including other benefits such as motivational incentives (Feld, Frey and Targler, 2016) and coercive forms like fines (Allingham & Sandmo, 2015); high penalties in case of non-compliance (Slemrod, 2014; Le Baube, 2015); implementation activities that include regular tax audits; possibility of non-compliance discovery.

Adherence to tax obligations has gradually developed and grown into a major field of focus for studies in social and financial psychology (Newman, Mwandambira, Charity & Ongayi, 2018). This concept has been looked at and tackled from a variety of standpoints leading to the understanding of the varied aspects of behavioral attitudes by the tax payers. Attitudes of a tax payer have been determined, current cultural practices defined and the lay philosophies held by people with regard to fulfilling their yearly tax liabilities and declarations examined (Kirchler, 2017). Experimental findings point to the fact that adherence to taxation requirements has resulted in higher and rising levels of government revenue and verification reports and a generally encouraging decline in the overall tax rates based on yearly tax returns (Kochanova, Hasnain &

Larson, 2020). Tax liability payment will also be highly efficient when the tax payer anticipate improvement in provision of welfare amenities paid for by the tax revenue with any change in percentage penalties appearing to cause minimal impact on tax liability payment tendency (Almet et al., 2019).

1.2 Statement of the Problem

Efficient self-assessment structures are reinforced by a controlling approach that identifies that voluntary compliance was optimized through an appropriate balance of taxpayer education and assistance, simple laws and procedures, and risk-based verification programs. Article 209 of the Constitution of Kenya (2010) outlines powers to impose taxes or raise revenue by the national government (GOK, 2019). The taxes are dipping and yet KRA is spending a lot on the strategies of collecting data. The persistent failure to meet revenue projections has come with far-reaching ramifications for the economy. The country has been compelled to borrow heavily from the local and international markets, a scenario that has partly sparked the current row over controlling lending rates. Banks, struggling to obtain deposits, have been raising the cost of loans to stay afloat. The relatively wider tax gaps and lower revenue productivity of developing and emerging economies that contribute to galloping budget gaps can be reduced if implemented tax reforms incorporate effective tax compliance strategies to help raise more tax revenue (Odero, Reeves & Kipyego, 2019). However, the link between these tax compliance strategies and the level of tax revenue has not been established in Kenya. This is the knowledge gap that this study attempts to fill.

In addition, studies done on tax compliance strategies present research gaps; Ibrahim and Alagidede (2018) who studied growth rate of economic activity on tax revenue in Nigeria. Gacanja

(2012) conducted an empirical case study of Kenya on tax revenue and economic growth. Basirat, Aboodi and Ahangari, (2014) focused on inflation rate and tax revenue ratio. Guzman, Ocampo and Stiglitz, (2018) examined the exchange rates and tax revenue growth. Munthali et al., (2017) examined the exchange rate volatility on economic growth Dobrotă (2016) studied the depreciation of currency on tax revenue. The studies present research gaps that this study sought to fill by analyzing the effects of tax compliance strategies on the level of tax revenue in Kenya.

1.3 General Objective

The general objective of the study was to analyze the effect of establish the effects of tax compliance strategies on the level of tax revenue in Kenya.

1.3.1 Specific Objectives

The specific objectives of the study are:

i. To establish the effect of taxpayer education strategy on the level of tax revenue in Kenya
ii. To establish the effect of law enforcement strategy on the level of tax revenue in Kenya
iii. To determine the effect of technology adoption strategy on the level of tax revenue in Kenya
iv. To determine the effect of taxpayer services strategy on the level of tax revenue in Kenya

1.4 Research Hypotheses

The study tested the following hypotheses:

H_{01}: Taxpayer education strategy has no significant effect on the level of tax revenue in Kenya,

H_{02}: Law enforcement strategy has no significant effect on the level of tax revenue in Kenya,

H_{03}: Technology adoption strategy has no significant effect on the level of tax revenue in Kenya,

H_{04}: Taxpayer services strategy has no significant effect on the level of tax revenue in Kenya

1.5 Significance of the Study

1.5.1 Macroeconomic Players

The study findings may be of significance to the Government of Kenya on the management of Kenya Revenue Authority as they will gain understanding of the determinants of tax revenue and therefore formulate informed policies that will address the problem of tax revenue in Kenya. The government of Kenya was able to know the factors which can influence voluntary tax compliance and establish ways of implementing taxpayer friendly strategies so as to enhance tax collection. The government will also be able to establish ways of promoting voluntary tax compliance among its citizens and thus reduce the cost of tax collection and increase the tax revenue so as to reduce the budget deficit.

1.5.2 Policy Makers

The study findings will also be beneficial to the government and policy makers especially at the National Treasury as they will gain understanding of the tax compliance and tax revenue in Kenya and hence formulate policies aimed at enhancing the tax revenue in the country.

1.5.3 Taxpayers

The tax payers in the country will appreciate the need to voluntarily comply and meet their tax obligations to avoid penalties and enhance their government's ability to meet its civic obligations.

1.5.3 Researchers and Academicians

The study will add to the existing body of knowledge in the area of tax compliance and tax revenue in Kenya. This may act as a basis upon future research in the area of the study are anchored.

1.6 Scope of the Study

This study is focused on the effect of tax compliance strategies on the level of tax revenue in Kenya. The study was limited to taxpayer education strategy, law enforcement strategy, technology adoption strategy and taxpayer services strategy. The study was based on country wide data covering the period between 1995 and 2020 and focused on the effect tax compliance strategies on revenue performance in Kenya.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter discusses theories relevant to the study. The concept of the study is developed under the conceptual framework section and finally reviews of empirical studies that have previously been conducted on the area of tax compliance strategies and level of tax revenue.

2.1 Theoretical Review

The theoretical framework is the structure that can hold or support a theory of a research study. It introduces and describes the theory which explains why the research problem under study exists. Economic Deterrence Theory, Fiscal Exchange Theory, Regulatory Compliance Theory and Fiscal Psychology Theory informed the study.

2.1.1 Economic Deterrence Theory

The Deterrence formulation, one of the models based on economic principles, was developed by Allingham and Sandom (2015) who improved on the anticipated value model of unlawful action advanced by Becker (2008) to the taxation concept. This school of thought integrates the understanding of an economically normal taxpayer who will voluntarily avoid paying tax as long as the expected returns from non-compliance are higher to the anticipated consequence of getting apprehended.

The proponents of the economic deterrence theory argue that a taxpayer's behaviour is determined by factors that include the rate of tax, anticipated benefits of avoidance to honor tax obligations and the possibility of discovery and associated penalties for evasion attract punitive costs (Allingham & Sandmo 1972; Becker 1968). The implication of this is that if discovery is possible and punitive measures are extreme, a small percentage of a given tax paying population will be willing to avoid honoring their obligations. In the Contrary to this position, if tax audit possibilities are low and attributed fines are weak, the projected rate of voluntary tax evasion will be quite high. This model therefore predicts considerable nonconformity with the tax requirements. Even though, this formulation has been questioned for extensively advocating for the coercive motivation to adherence, instead of the standard norm of consensus (Sandmo 2015) there exist sufficient prove to back the significance of the deterrence approaches as a remedy to low levels of compliance (McKerchar & Evans 2019).The founders of the economic deterrence model assert that individuals willingly decide to observe or go against the regulations considering the anticipated benefits and disbenefits of their actions.

Fines and penalty rates may substitute each other due to their multiplicative linkages as long as neither of them is set to zero (Kirchler et al 2017). Higher fines simply make evading taxes more hazardous for taxpayers and should deter them from evasion. Empirically, the deterrent effect of fines could not always be supported. The observed effects were weaker than expected and some studies even suggest that an increase of penalties can have undesirable effect and result in more tax avoidance (Kirchler et al, 2017).

The overall assumption of the economic deterrence theory is that adherence to tax laws relies fundamentally on tax audit and penalty. Implications of this assertion are that taxpayers will honor their tax obligations because of the fear of sanctions. The theoretical ideologies of monetary restriction have also been extensively accepted by tax managements in the process of formulating implementation plans that are fundamentally based on punishments and the fear of getting detected and apprehended.

2.1.2 Fiscal Exchange Theory

The proponents of the fiscal exchange theory assert that the occurrence of expenditures by the government a recipe to encourage greater adherence to tax obligations and that state can enhance voluntary submission by availing amenities that people favor in a highly effective and manageable fashion (Cowell & Gordon 1988).

Accordingly, taxpayers majorly look at the direct benefit for using their resources to pay tax; this may be through provision of public goods and services (quid pro quo). This model interprets the process of taxation and the provision of goods and services of public interest in the form of a contractual connection that binds the government through its tax management authority and the tax paying agents (Moore 2014). Citizens of a country and organizations may voluntarily honor their tax obligations because they appreciate the benefits of the amenities availed by the state, they recognize that their tax remittances are significant by either helping to fund provision of public utilities that include goods and services or by motivating other citizens to voluntarily participate in tax payment (Fjeldstad & Semboja, 2019). The anticipated progressive rewards or incentives are likely to enhance the possibility of voluntary compliance by the taxpayers; this will be with minimal or zero coercion. Irrespective of the fact that a number of taxpayers may not be able to determine the actual benefit of the provisions by the government as rewards for their tax payment commitment, it is possible to be able to argue that taxpayers elicit overall impressions and feelings with respect to their own and others' improved conditions of exchange with their state (Richupan, 1987). Therefore, it is significant to have a general assumption that taxpayer attitude towards tax compliance is influenced by his/her fulfillment or failure to achieve fulfillment with regard to his/her conditions of interaction with the state. Finally, when the regime of taxation is seen as being unfair and unjust, fraud may, at least partly, be viewed as a concerted effort by the tax paying agent to alter his conditions or preference to transact with the government. This fiscal exchange principle has attracted great interest as a center of focus and is satisfactorily developed theoretically.

This model proposes that, attitudes of the members of any civilization are always influenced by existence of fixed elements that bear their origin from particular environments and stream from a well-established and structured manner. The tendency to fulfill a certain behavior will always depend on the fact that the individual has a purpose towards that behavior (behavioral intention).This intention or objective on its part is dependent upon on three fundamental conditions: the attitude of the individual towards the behavior, subjective values and perceived behavioral control. The three elements too are said to be influenced by behavioral beliefs, normative beliefs and control beliefs.

The fiscal exchange model thus, bases its subject matter on the morals, beliefs and ethical inclinations of the taxpayer. Accordingly, this theory asserts that an individual intending to pay taxes may voluntarily comply even when the possibility by the tax authority to detect is low. On the contrast, economic theories put extreme emphasis on enhanced audits and punishments as alternatives to non-compliance, the fiscal exchange models greatly focus in altering tax payer perceptions and attitudes with regard to a tax regime.

2.1.3 Regulatory Compliance Theory.

The Theory of Regulatory Compliance was first proposed in the 1970's when the relationship between compliance with rules was compared to compliance with best practice standards and outcome data. The Theory of Regulatory Compliance (TRC) deals with the importance and significance of complying with rules or regulations. This theory has implications for all rule, regulatory, and standards development throughout human service and economic domains. Its emphasis on selecting the right rules rather than having more or less rules and the nature of these rules as being significantly predictive of positive outcomes by being in compliance with said rules.

The compliance theory provides justification for the empirically established behavior of the tax controllers to institute concurrently numerous, heterogeneous targets (Jayapalan, 2018). Empirical studies confirm the possibility of having a combination of physical, psychological and normative targets taking effect on compliance and noncompliance tendencies. In particular, a regulate could be focusing on enhancing his profitability, safeguard self from any anticipated loss, derive pleasure, and respond in an appropriate manner, all at once (Karingi et al., 2015). However, Machogu and Amayi (2013) believe that the said targets may not necessarily translate into a generally accepted standard for utility. Therefore, the theories advocating for voluntary compliance rely only on one kind of these motives, particularly the rational actor theories of compliance, assume and fail to account for a substantial portion of the empirical certainty, the way a number of experimental studies have concluded.

The popular and significant contribution by the proponents of the compliance theories is the suggestion to combine varied formulations of response. If considered separately, each of these models puts aside the intricacy of purposes noticeable in convincing situations. However, when considered collectively, the models are able to convincingly provide explanations for almost all the interpretations, based on the assumption that the actors who constitute compliers and non-compliers can be categorized for instance as: utilitarians" "unprincipled calculators" "bad apples" and or "opportunists". Alternatively, they could be the dutiful "virtuous" actors, citizens, or good apples.

2.1.4 Fiscal Psychology Theory

This theory of tax compliance assumes that psychological factors including moral and ethical concerns are also important to taxpayers. Among these theories is the Theory of Planned Behavior which was developed by Ajzen in 2011. This theory is a successor to the Theory of Reasoned Action of Fishbein and Ajzen (2005), Ajzen and Fishbein (2020) and Ajzen (2008). This theory tries to explain human behavior.

According to this theory, behaviors of the individuals within the society are under the influence of definite factors, originate from certain reasons and emerge in a planned way. The ability to perform a particular behavior depends on the fact that the individual has a purpose towards that behavior (behavioral intention). Behavioral intention in turn depends on three factors that is Attitude towards the behavior, Subjective norms and Perceived behavioral control. These three factors are also under the influence of behavioral beliefs, normative beliefs and control beliefs.

The focus of this theory therefore is on the taxpayer’s morals and ethics. The theory suggests that a taxpayer may comply even when the probability of detection is low. As opposed to the economic theories that emphasize on increased audits and penalties as solutions to compliance issues, psychological theories lay emphasis on changing individual attitudes towards tax systems.

2.2 Empirical Review

This section reviews studies previously done on macroeconomic factors on tax revenue. The literature review was categorized on tax payer education, law enforcement, technology adoption and taxpayer services on tax revenue.

2.2.1 Tax Payer Education on Tax Revenue

Maseko (2014) carried out a study which sought to examine the effects of tax education on tax compliance for small taxpayers in. The study revealed that there was a positive significant relationship between tax education and taxpayer compliance. The study further revealed that indeed taxpayers are with different business situations from large businesses which cause them to bear high tax compliance burdens than SMEs. In addition, the study also revealed that there existed negative perceptions of small taxpayers regarding tax fairness; tax service quality as well as government expenditure priorities greatly affect their tax compliance decisions in the country.

Andarias (2016) carried out a study to analyse how taxpayer registration affects tax compliance and was able to establish that indeed taxpayer registration is an important tool if properly used, this is primarily because taxpayer registration enhances tax compliance. In addition, the study was able to establish that taxpayer registration can as enhance problem solving among taxpayers. The study further posited that technology adoption by taxpayers needs to be encouraged because it is the only way through which compliance by registration can be achieved easily.

Christina, Deborah and Gray (2018), conducted a tax payer education on tax revenue. The objective of the study was to determine the tax compliance among tax payers with tax penalty amnesty system. Using questionnaires administered to the participants of this amnesty program, the respondents identified factors that made them not to pay their taxes due, within the statutory period and not declaring the correct taxable income as; complexity of the tax laws, ability to pay, ignorance of the tax laws and the perceptions of high tax rates and unfairness of the tax system

Angus Young (2016) researched on Kenya's individual tax compliance. While empirical research in this jurisdiction is still in its infancy, the scale of the problem might be under estimated, or at least over looked. The effectiveness of media campaigns in the TV, use of tax information magazines, business customers/prospects and national newspapers will enhance awareness, tax filing, and ultimately tax morale among the tax payers. Clear scope of work- Periods and records to be covered have been clearly defined under tax laws which are advertised under print media channels, returning of confiscated tax payers records; 18 the law requires KRA to return such records within 6 months.

Bergman (2014) investigated tax compliance behaviour in Argentina using two approaches; the measures to enhance commercial taxpayers and extensive campaigns and audits which will increase the probability of detection among taxpayers. The results suggested that as the number of audits and the probability of detection increased, taxpayers were encouraged to comply with tax laws and accurately report their income which had a positive impact on tax revenue. This suggests that unintentional evasion may occur rather than intentional evasion. He also claimed that the lack of audits and investigations implemented by tax authorities in the 1980s in Argentina had driven taxpayers to behave recklessly. Moreover, as taxpayers were aware that they would not be detected due to lack of investigations, they incorporated more complex tax evasion strategies and less traceable documentations so that they could pay less tax. Findings by Bergman are consistent with the theoretical proposition that the fear of detection influences the level of compliance behavior, suggesting that the evaders take precautionary measures when the perceived risk of detection is high. Findings from Bergman have also evidenced that probability of being detected plays a significant role in inducing compliance behavior.

Normala and Obid (2013) conducted a study to examine the influence of tax education, as a proactive approach to enhance voluntary tax compliance, among taxpayers, in Malaysia. There was a move from the official assessment of taxes, to a self-assessment system, in 2004. Under the self-assessment system, a taxpayer assesses his tax liability, pays taxes to the revenue authority, and later on the revenue authority conducts audits to establish the accuracy of the declarations in returns and payment, thus a high voluntary tax compliance system. Using questionnaires administered to taxpayers and tax officials, the respondents confirmed that an increase in tax knowledge would increase the level of voluntary tax compliance. The statistical findings, confirm that there is a significant relationship between the level of tax education and the level of voluntary tax compliance.

Taxpayers that are better educated generally know more about tax law and fiscal connections and thus are in a better position to assess the degree of compliance (Jayapalan, 2018). However, according to KRA there are still people with lower education with an acquired high knowledge about taxation. The complexity of tax information is not perceived the same way, and some taxpayers find it more difficult to understand than others. According to survey findings, taxpayers that are less educated are consequently less exposed to information about tax compliance and the relevant regulations covering tax. As a result, they require constant assistance. Knowledge about taxation, the benefits of taxation and the dangers of non-compliance remain a key impediment to tax compliance in many countries. Kenya has been implementing a continuous tax education for taxpayers and children as future taxpayers (Palil, 2017). Kenya has developed interactive websites, disseminate leaflets together with tax returns, opened call centers created advertisements or supplied reminders via television and radio (e.g. to remind taxpayers of deadline dates for filings). In addition to tax education, knowledge about tax laws also plays a major role in determining taxpayers‟ compliance behavior. Carroll (2011) on taxation among SME‟s in the informal sector in Ghana found out that despite the fact that more than half (65 per cent) of the SMEs surveyed were aware that they have to pay taxes. More than half were not well informed as to why they paid tax and more than 50% did not enjoy the benefits of paying it. However, tax education alone cannot guarantee continued tax compliance.

Small business owners must be knowledgeable about the different compliance measures and requirements in order to pay appropriate taxes. The need to apply differential taxation rules depending on the amount of income or the characteristics of the taxpayer among small business owners is a reason for non-compliance (Joulfaian & Rider, 2018). The small businesses bear a higher compliance burden due to the tedious compliance procedures required by tax authorities. Substantial knowledge about the procedural aspects of tax laws is required. However this is a challenge since tax laws tend to be changed frequently (Chittenden et al, 2013), are more complex and ambiguous than laws in general (Carners & Cuccia, 2018). Often, tax laws are too complex to be understood (Kirchler, 2017) a characteristic of many small business owners. The small business owner managers deal with the knowledge deficiencies by seeking the help of tax practitioners but tend to handle part of the tax paying process themselves (Coolidge et al, 2019) and will have to keep necessary records. In order to be informed to keep the records and to fill out the forms imply that acquiring taxation knowledge is costly in terms of time. It is also costly in terms of money to get the tax literature and tax practitioners.

The tax systems are complicated with numerous processes for example licensing (Abdul-Jabbar, 2018). These make it difficult and expensive for the small firms to act in good faith. Compliance costs have been shown to be highest for small businesses if incomes are low (Blumenthal & Slemrod, 2019). The type of knowledge acquired matters: the general knowledge in terms of education and tax specific knowledge influence the ability and willingness to comply or evade. General knowledge will be used to evade just as it is used to comply. Tax specific knowledge will lead to an increase in compliance; the assumption being to learn about taxes will also mean to learn about their function in the society. Hence, tax specific knowledge is necessary to enable the small business owners to comply and increase their willingness to comply.

According to Nyakundi (2018), lack skills on and access to online tax registration and returns. Even those with modern education lack computer skills that can enable them to use the online services for tax registration and returns. Most prospective entrepreneurs are not aware of business start-up regulations and taxation procedures due to lack of effective information dissemination strategies on government policies. The lack of access to accurate information prevents the sector from entering into the formal economy.

2.2.2 Law Enforcement and Tax Revenue

Dublin and Wilde (2018) conducted an empirical analysis of federal tax auditing and compliance in USA. The study had an objective of establishing the relationship between tax audits and compliance from IRS tax returns made in 2006. Data was analyzed by Ordinary Least Square regression. Among other variables that contributed to increased tax compliance, which in turn enhanced tax revenues, Dublin and Wilde found that there was a strong deterrence effect on non-compliance. They concluded that IRS was effectively right to direct its resources to audit conductions to enhance tax revenue.

Feld and Tyran (2012) found that the tax compliance is higher on average in endogenous penalty treatment in which subjects are allowed to approve or reject the proposal of a penalty as compared to an exogenous penalty treatment where penalty is imposed by the experimenter. The main explanation why people show higher tax morale if they are allowed to vote on a penalty is legitimacy. Compliance rates are higher if the penalty is accepted than in the case it is rejected.

Naibei, Momanyi and Oginda (2012), in their study on the relationship between income size, inspection and VAT compliance on private firms in Kenya sampled 233 registered firms where questionnaires were administered to the respondents. Data was analyzed through correlation analysis. The results showed that there was a higher VAT compliance level on those firms which had undergone a tax audit by KRA. 58% of the businessmen agreed that tax audits acted as deterrence on tax evasion. This in effect had a positive effect on the VAT revenues collected by KRA.

Osebe (2019) reveals that tax compliance cost is a contributory factor to tax compliance. From the study findings, there is enough indication that tax compliance cost is associated with high levels of tax compliance thereby increasing tax revenues. Taxpayers do a cost-benefit analysis of the cost of being caught through audits and the probability of being penalized, together with the possibility of criminal sanctions and where the magnitude is high; they end up following tax law and in effect comply. The study also provides some preliminary evidence that fines and penalties play a vital role in improving tax revenue.

Nyaga (2014) conducted a study on tax compliance, enforcement and taxpayer service in Kenya purposed to explore the relationship between enforcement policies and taxpayer service on tax compliance. The study used simple regression analysis of aggregate variables representing enforcement measures against audit, penalties, criminal sanctions and taxpayer service. A sample frame list of self-employed individual taxpayers was used for 2003 to 2012. Nyaga found that audit and penalty had a positive relationship with tax compliance and hence tax revenue and taxpayer service and criminal sanctions had a negative relationship.

Mararia (2014) evaluated the effect of Integrated Tax Management System (ITMS) on tax compliance by the small and medium enterprises in Nairobi central district. The target population for the study comprised of 200 taxpayers out of which 100 taxpayers were picked as a representative sample. Data was analyzed by use of Statistical Package for Social Sciences. Although the study was mainly on ITMS effect on tax compliance, the study found that penalties and fines had a significant positive relationship with tax compliance. This resulted to an overall increase in collections as penalties and fined deterred tax evasion by taxpayers.

The impact of fines towards the level of compliance is significantly positive under normal circumstances (Obid, 2014). However, the relationship between fines and level of compliance is distracted if corruption exists. This is because the taxpayer would be given a second chance and discharged from the wrongdoing if tax officers tend to receive bribery even with the implementation of higher fines or penalties. If the total amount of corruption is weighed less than the fines and penalties, as if there is a reduction in the audit probability and probability of detection, and then taxpayers may find ways and take risk to evade tax. This is a situation of “a general loss of trust in public institutions” (Cummings, et al, 2016).

2.2.3 Technology adoption and Tax Revenue

Christina, Deborah and Gray (2013), conducted a study to determine the economic and behavioral factors affecting tax compliance among taxpayers. The objective of the study was to determine the economic and behavioral factors affecting the tax compliance among tax payers with tax penalty amnesty system. Using questionnaires administered to the participants of this amnesty program, the respondents identified factors that made them not to pay their taxes due, within the statutory period and not declaring the correct taxable income as; complexity of the tax laws, ability to pay, ignorance of the tax laws and the perceptions of high tax rates and unfairness of the tax system.

Ling Aham and Nawawi, (2018) sought to examine the ICT skills needed by a fresh accounting graduate when first joining a tax firm; to find out usage of electronic tax (e-tax) applications in tax practice; to assess the rating of senior tax practitioners on fresh graduates' ICT and e-tax applications skills; and to solicit tax practitioners' opinion regarding integrating ICT skills and tax software into a tax course. The study adopted survey research design that was conducted online by use of questionnaires. The study found out that knowledge of ICT and electronic tax systems among students had positive impact on compliance. Such electronic media `broadcast or storage media that take advantage of electronic technology may include television, radio, internet, and any other media that requires electricity or digital encoding of information. Electronic media is often used in contrast with print media.

Jotham (2016) carried out a study to examine the influence of technology in tax administration and established that technology in taxpayer registration is an essential tool as it leads to enhanced efficiency. The study was able to reveal that the registration of taxpayers by way of tax systems and new technology helps to eliminate errors that will otherwise be committed in the absence of such technology. In addition, the use of technology in taxpayer registration allows for tax personnel to effectively handle more than one task through the integration of a number of procedures into one information system so as to enable easy operation ability. This therefore enhances compliance by taxpayers because they can be able to compile all there in formation in one user interface and thus it because easy to manipulate any data so as to make it useful.

McKerchar and Evans (2013) examined whether tax technology has a role to play when in it comes to taxpayer registration and how this further affects tax compliance. His study was able to reveal that technology helps in the facilitation of various taxpayer tasks in enhancing tax compliance given that it provides easy access to taxpayer information, as it enhances the various ways of making payments on the taxpayer platforms offered by the tax systems. The study further established that the adoption of technology enhances system administration in the event that the taxpayers are made familiar to the various developments in terms of new technology for tax systems.

Jenkins (2017) examined the role of technology on tax administration and established that indeed the tax system can never work better than its tax administration, but even the best tax administration would certainly fail to turn a bad tax system into a well-operating one. In the study, it was further established that tax compliance did not necessarily happen as a result of many ambitious tax reforms. In his argument, these reforms can only become effective is there is permanent reorganization of the tax administration. In fact he perceives that compliance can easily be enhanced through daily improvements as compared to ambitious tax reforms.

Sigey (2017) researched on the impact of automation as a structural change strategy on customs clearing procedures at Kenya Revenue Authority. The study, sought to find out and explain the actual impact of automation on clearance procedures in the customs service department of the KRA. Sigey's findings indicated that automation of clearance procedures in the local tax department greatly enhanced operational usefulness and productivity, increased employees professionalism and productivity, reduction of operational costs and improved governance. The study recommended that the KRA management should think about the safety of the system in regards to manipulation which can be a significant danger to the organization and to the Kenyan Government as a whole. The study focused on implementation of ICT.

Ling and Nawawi (2018) conducted a study in Malaysia on coordinating skills in advanced Information and Communications systems and tax software in tax education. The study's target population was tax practitioners and its aim was to establish the basic skills needed by taxpayers to be able to effectively use an online tax system. The study discovered that three special abilities were required for the best interaction between an individual and a computer based tax system namely, spread sheet software, word-processing software and e-mail. These findings from the study has inferences on the present study as in during ascertaining of the effectiveness of ICT support services, the basic skills that system user sought to possess must be considered.

According to Russel (2010), improving tax compliance needs to have long-term reform efforts, that starts with strengthening the organization as well as management of the revenue agency, implementing robust collection systems notwithstanding building capacity in core tax administration functions (registration, filing and payment enforcement, debt collection, audit, taxpayer services, and processing of appeals). Gordon (2010) further argues that the technology issue for tax authorities is regarded to be different to that of their taxpayers. There indeed appears to be a general acceptance that technology is likely to play a very essential role in tax management.

According to Gardiner (2019), electronic methods continue to be used for administrative functions, which include business tax registration among others. There is however, the need to clearly address the distinctions among various electronic channel alternatives, so as to offer a clarification of the existence of a difference between the communications vehicle from the sender to the receiver, and the form that the data takes. This means that indeed choices made by a tax agency can go a long way in affecting the implementation strategy employed by the state, in no small part because of the varying capabilities of the targeted filer demographic. These choices are without doubt likely to determine the timeliness with which the agency can make use of the application, as well as the degree of necessity of a commitment to working with other tax authorities. As such, most authorities have invested heavily in the recruitment for or developing their computer audit capabilities.

According to Duncan (2018), technology that has been in use in tax administration varies widely in scope and complexity. Taxpayers also vary widely in their readiness to accept and utilize new technologies. For these reasons, best practices today go a long way in recognizing that indeed there is no one single technology solution for taxing authorities. The major technological advancement used in tax administration include Internet, E-file, especially Fed/State filing programs, Interactive Voice Response (IVR), Electronic Data Interchange (EDI) and Payment Methods.

Holniker (2015) argues that the use of the system has brought about a significant improvement in the revenue collection time for tax payers. Revenue mobilization is considered as one of the key factors key for economic development of nations and links into national agenda on social wellbeing, poverty reduction and economic development of countries and their citizens. Kenya Revenue Authority is considered as a mandatory element when it comes to the movement of goods across borders and the procedures applied to these goods significantly influence the role of national industry in international trade and their contribution to national economy.

According to Hawley (2016), modern trading practices make it essential for Kenya Revenue Authority administrations to offer simple, predictable as well as efficient procedures for the clearance of goods and movement of people while simultaneously tackling increasingly complicated national and international requirements to ensure compliance with national laws, international agreements and meeting security challenges. Travis (2014) also indicated that in a bid to strengthen and go beyond existing programmes and practices, Kenya Revenue Authority has put in place a regime that seeks to enhance the security and facilitation of revenue collection. A Framework of Standards is indeed a regime that enhances the security and facilitation of international trade.

According to Sani (2019), automation system helps to improve revenue collection. This is because they are based on the electronic payment system via applications such as toll revenue collection, automatic fare collection, bus revenue system and parking system. Additionally by automating revenue collection, service providers are in better audit trail since all transactions captured can be detailed by time, whom and where. This prevents revenue loss through abuses as all moves are recorded electronically. Automation also provides huge transactions that need to be handled efficiently. According to him, automating revenue collection is key especially within the revenue collection agencies, which therefore requires fast and efficient output, as there will always be a trade-off between control and operational needs.

According to Reinganum and Wilde (2016), improved technology in tax administration alone is not entirely positive, however its benefits include features such as 24/7 access to taxation services, services from the comfort of one's home, lower services‟ costs, reduced burden on tax officers, as well as automated procedures. However, the most important negatives include high costs, additional communication channels to be managed, additional knowledge requirements, and the need for policies and plans. According to Erard (2012) planning the anticipated costs in tax administration, is often limited to the purchase costs for equipment, with many parties neglecting to consider the costs of maintaining and upgrading ICT, educational costs for users both tax officers and taxpayers alike, and costs for additional human resources, for management, and maintenance of ICT (or outsourcing costs).

According to Hussein et al., (2016), the first introduction of the e-filing system in Malaysia in 2006 was plagued with negative reaction and debated in the mass media. The year 2011 saw 0.7 million tax assessment submission via e-filing and the figure rose to 1.18 million submissions in 2015 despite complaints about network congestion problem. With improved infrastructure the figure increased to 1.6 million submissions in 2014 with an improved overall amount of actual tax collection. Kana and Barraza (2017), conclude that indeed the challenge is the use of technology to continuously promote compliance with tax duties, while seeking ways in ensuring at the same time that tax administration becomes more efficient and transparent. As for Brand (2016), there is the need to protect taxpayers personal as well as financial data. In this respect, tax administration needs to tackle the problem known as the big brother syndrome. This usability helps lower cost of communication channels (internet), the function of electronic tax processes and at the same time the increased participation of taxpayers is likely to create a socio-economic environment, which is predicted to satisfy both the tax administration and the taxpayers.

Andarias (2016) while looking at the importance of technology established that, technology is considered as an efficient tool when properly used; otherwise it can also become a problem which needs to be solved, rather than the solution. Technology that has been widely used in tax administration comprises of computer, internet and software applications. Technology is considered to be only efficient when handled by well-trained personnel and embedded in the workflow of the organization. Good technology needs only be applied in tax administration if indeed it satisfies some basic principles which include; reducing life of tax, improving efficiency as well as reducing errors in procedures, increasing multi-tasking levels of tax officers and facilitating taxpayers in complying with tax regulations (Fu et al., 2016). The element of reducing the life-time of the tax", proper technology needs to ensure that indeed the time period between the date a property or service become liable for tax and the payment of this tax or rate is reduced to the minimum. All technological advances used in automation processing, mass data processing as well as elimination of administrative challenges fall in this category.

2.2.4 Taxpayer Services and Tax Revenue

Sawitri, Perdana, Muawanah and Setia (2017) conducted on the effect of Taxpayer Services and Tax Revenue. The research was a survey research using explanatory research. The population in this study are all individual taxpayers by the number of samples taken a number of 100 respondents. Methods of data collection by questionnaire using a Likert scale with convenience sampling method. The data were analyzed using path analysis use equipment SPSS version 16 program. The results showed that: knowledge of the tax effect on taxpayer awareness; the service quality consciousness affect the tax authorities the taxpayer; awareness of taxpayers effect on tax compliance; knowledge of the tax effect on tax compliance; service quality affects the tax authorities on tax compliance. The knowledge of tax effect on tax compliance through taxpayer awareness. The quality of service influence taxpayer compliance through taxpayer awareness.

Bergman (2014) investigated tax compliance behaviour in Argentina using two approaches; the measures to enhance commercial taxpayers and extensive campaigns and audits which will increase the probability of detection among taxpayers. The results suggested that as the number of audits and the probability of detection increased, taxpayers were encouraged to comply with tax laws and accurately report their income which had a positive impact on tax revenue. This suggests that unintentional evasion may occur rather than intentional evasion. He also claimed that the lack of audits and investigations implemented by tax authorities in the 1980s in Argentina had driven taxpayers to behave recklessly. Moreover, as taxpayers were aware that they would not be detected due to lack of investigations, they incorporated more complex tax evasion strategies and less traceable documentations so that they could pay less tax. Findings by Bergman are consistent with the theoretical proposition that the fear of detection influences the level of compliance behavior, suggesting that the evaders take precautionary measures when the perceived risk of detection is high. Findings from Bergman have also evidenced that probability of being detected plays a significant role in inducing compliance behavior.

Mikessel (2013) proposed that the fundamental objective for any revenue authority is to have an effectively and efficiently program of program of taxpayer services. The generally complicated guidelines for tax payment together with the vast and raising numbers of potential taxpayers to be taken care of by a taxation program requires that all revenue authorities should depend considerably on taxpayers' tendency to voluntarily comply in order to realize and even surpass the tax level expected of them. When the tax authority has to obtain optimum levels of voluntary conformance, taxpayers and their agents must operate within an efficient standard of services to enable understand that it is their duty according to the law to follow the regulations expected of them in the event of fulfilling tax payment responsibility.

According to Mohani (2019), income authorities preferably require a logical approach or system in order for them to be able to arrive at an ideal range of networks for service provision, the one that obtains greater levels of efficiency and at the same time also meets its productivity aims from both the perspectives of the income management authority and the taxpayer at large. The expression channel strategy has been devised under the sophisticated present business language to explain such a framework of operation. A channel strategy influences to a large extent the organizational arrangements that include the technical and physical infrastructure, the entire service provision channels, services content, management procedures, processes and culture.

According to Hai and See (2017), extra tax costs that is expected to be incurred in future, if a taxpayer engages in non-compliance activities, for example, fines, penalties or even imprisonment might be charged towards evasion. When tax non-compliance activities are detected and the possibility of the non-compliance is being detected by tax authority, it is necessary for taxpayers to know the consequences of future tax costs if he/she intends to engage in tax non-compliance activities Tax audit will be conducted by tax authorities to find out those who have engaged in non-compliance activities and transactions. The taxpayer will then be penalized if caught engaging in non-compliance activities once the audit is complete.

Before taxpayers decide to engage in non-compliance activities, it is a norm that they weigh the benefits to be derived from it and find out whether they are greater than the fines or punishment when caught later based on the economic model (Bărbuţă-Mişu, 2018). The models of tax non-compliance, the deterrence model and the pure gamble model explain this concept better. Future tax costs, which include fines, penalties and imprisonments, are related to the deterrence theory in tax non-compliance which was first formulated by (Allingham & Sandmo, 2018). In order to maximize the expected utility derived from the benefits after tax penalty, the taxpayers have to make the decision whether to evade and how much to evade. It also depends on the level of risk preference of the taxpayers. On the other hand, the considerations from various aspects and moral constraints are neglected by the pure gamble model. Under this model, the taxpayer who engages in tax non-compliance merely wants to evade tax, assuming as a game against .nature (Bosco & Mittone, 2017).

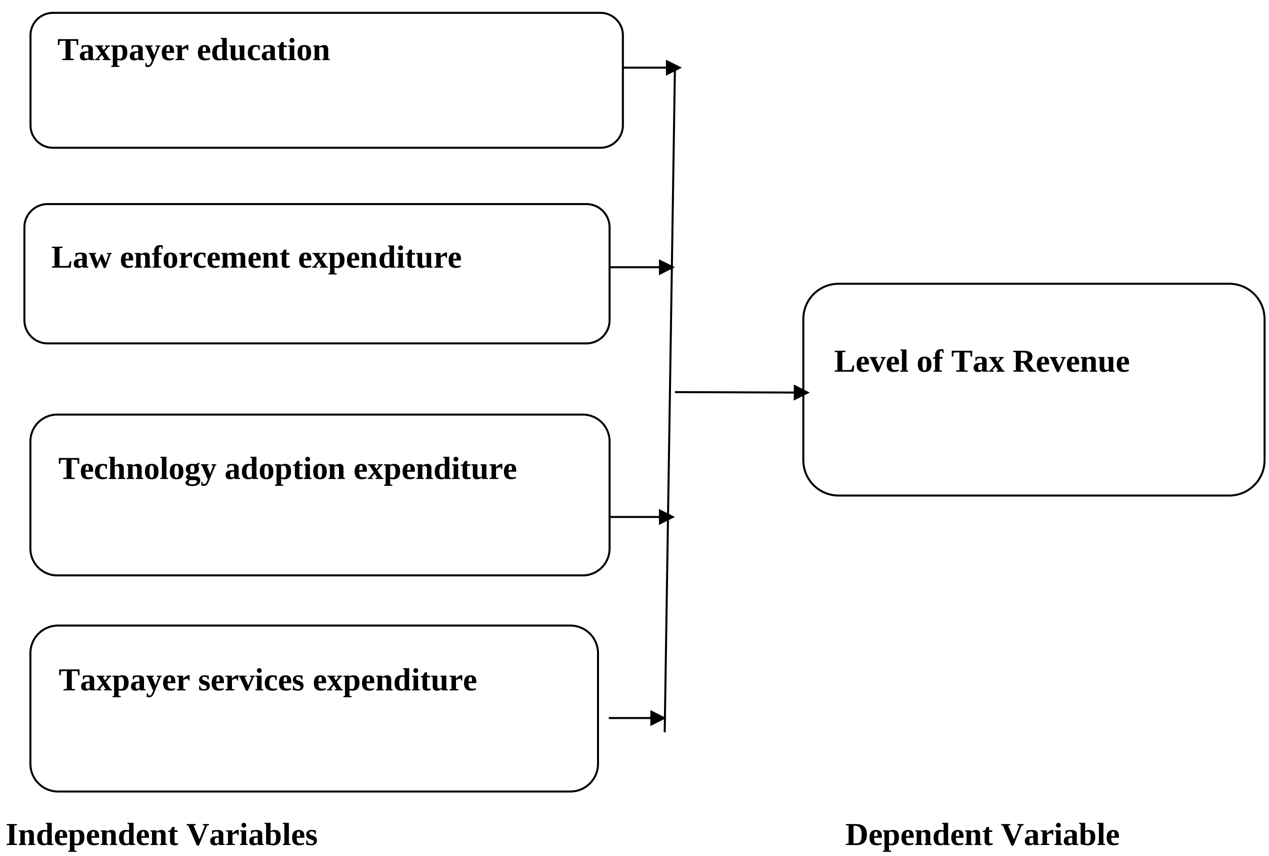
Christiansen (2018) observed that higher compliance level will be achieved as a result of increase in fines as compared to tax audit. However, a taxpayer would definitely subvert the perception towards fairness within the tax regime, if he or she unintentionally made a mistake or misinterpreted the complex and ambiguous tax law but was charged with inappropriate or high fines. According to Obid (2014), both fines and tax audit do have significant impact on the level of tax compliance, although this will greatly undermine the taxpayers' confidence if they felt the existence of unfairness in the tax system.

2.3 Conceptual Framework

A conceptual framework is the researcher's synthesis of literature on how a phenomenon is explained. It is a map in written or graphical form that shows the logical relationship of ideas in a research (Creswell, 2014). Figure 1 presents the conceptual framework of the study. As shown, the study has four independent variables and one dependent variable. The independent variables are Technology adoption strategy, Law enforcement strategy, Taxpayer services strategy and Taxpayer education strategy while the dependent variable is level of tax revenue.

Figure 1

Conceptual Framework



2.4 Operationalization of Variables

The independent and dependent variables are operationalized as shown in Table 1.

Table 1

Operationalization of Variables

	Variable	**Measurement**
Dependent Variable	Tax revenues (TR_t)	Log total Tax revenues.
Independent Variable	Taxpayer education strategy(TE_t)	Taxpayer Education Expenditure/Total Expenditure
Independent Variable	Law Enforcement strategy LE_t)	Law Enforcement Expenditure/Total Expenditure
Independent Variable	Technology strategy (T_t)	Technology Expenditure/Total Expenditure
Independent Variable	Taxpayer services strategy (TS_t)	Taxpayer Services Expenditure/Total Expenditure

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Chapter three on the research methodology presents the analysis of the study relating to effects of financial inclusion on economic growth. The chapter involves giving procedures to be followed when carrying out a field work and showing its relevant concepts to the study. The chapter entails the research design, study population, research instruments, data collection and data analysis.

3.2 Research Design

Research design represents an organized structure of inquiry that seeks to answer research questions and help in giving a summary of research data in a meaningful way (Berger & Torres, 2016). Research design is relevant to the study as it provides a framework on how the study is to be arranged, to be conducted and ways on how data is to be collected and analyzed. The study adopted a descriptive research design given that it generates contents of what, when, why, where and how when capturing the quantitative features of the research (Mugenda, 2012). The descriptive research design mirrored the longitudinal reflection of the historical data to envisage tax revenue in time series.

3.3 Study Population

Mugenda (2012) stated that population involves set of elements, events, individuals, events, cases or objects with special observable features that the researcher has an interest in and wants to find more about its specifications for decision making. The study population was the Kenya Revenue Authority. The study used the financial information and economic growth from Kenya Revenue

Authority. The study used technology adoption expenditure, law enforcement expenditure, taxpayer services expenditure and taxpayer education expenditure for the past 26 years 1995-2020.

3.4 Sample and Sampling Techniques

Sampling is a process which enables a researcher to gather a few things or people together that represent the characters of the whole population under study. (Blumberg, Cooper & Schindler, 2014). According to McMillan and Schumacher (2014), census is a study where all members, objects or things in the population take part in the research. Census technique is suitable when the levels of accuracy and reliability required in the study are very high. Additionally, census is preferred when the members of the population are few. This research used census technique to Kenya Revenue Authority in Kenya.

3.5 Data Collection

According to Sreejesh, Mahopatra and Anusree (2014), data collection methods are means by which information on specific agenda is obtained and subjected to further investigations for comparisons and decision making. There are many methods of data collection of which the choice depends on the nature of the information provided, study objectives, research design and expected results. The study used time series data of Kenya government tax revenue collected for the period 1995 to 2020. The data sources KRA publications and Economic surveys. The data on expenditure on taxpayer education, taxpayer services, law enforcement and on technology was extracted from the publication and cleaned using Excel spreadsheet. Data on tax revenue was extracted from economic surveys.

3.6 Data Analysis

Data analysis is the process of creating a defined system with working structure plan that entail examining mathematical information on data collected and processing it to a meaningful information (Cooper & Schindler, 2013). Time series model was used. The research used a regression model in time series using STATA software. The study regression analytical model as shown;

$TX_t = \beta_{0t} + \beta_1 TPE_t + \beta_2 LEE_t + \beta_3 TAE_t + \beta_4 TSE_t + \epsilon$

Whereby:

TX = Tax Revenue

TPE = Taxpayer education strategy

LEE = Law enforcement strategy

TAE = Technology adoption strategy

TSE = Taxpayer services strategy

ϵ = Error term

3.7 Diagnostic Tests

Diagnostic tests were conducted to find out whether the data has met the assumptions of regression models since any data contravening the presumptions of the regression would yield spurious outcomes. This study conducted autocorrelation tests, heteroscedasticity tests, multicollinearity tests, and normality assumptions test to evaluate the data collected before the actual analysis.

3.7.1 Multicollinearity Test

Multicollinearity test was done to determine whether the variables are directly related in a regression analysis. The intensity of the association between variables is assumed to be between 1 and -1. Where 1 denotes perfect positive association, -1 expresses a perfect negative association while a coefficient nearing zero suggests a weak interrelationship between the variables (Iacobucci *et al* 2017). Multicollinearity problems arise when the correlation between the explanatory variables is greater than 9 (Malhotra, 2007). However, Gujarati (2004) argues that what matters most is the degree of the multicollinearity and not its presence or absence. Consequently, this study adopted Field's (2009) recommendation that variables greater than 9 should be avoided and hence the research flagged any combinations that are higher than 9 for elimination. Additionally, to test for multicollinearity, Variance inflation factors (VIF) test was used (Nachtscheim, 2004).

3.7.2 Autocorrelation Test

Autocorrelation occurs when data seem to pick up on a certain trend over time. The data, in this case, produce some similarities in the rates of change over successive periods of time. Models with autocorrelation suggest that they are well defined which suggests that the key variable(s) are missing from the model. Autocorrelation test was conducted to determine if the data contravenes the attributes of the Ordinary Least Square (OLS), which culminates to wrong outcomes in hypothesis testing. The study used Breusch Godfrey test to ascertain whether the data collected has a serial autocorrelation.

3.7.3 Normality Assumptions

According to Kothari (2004), the normality assumption is the possibility that the gathered data is normally distributed over the sampled population. Brooks (2008) adds that normality tests are executed to evaluate whether the data set is well represented by a normal distribution. Linear regression models presume that the error term is normally distributed at a mean of zero and constant variance. Normality Assumptions was done to confirm if the data meets the normality assumption. The study used Jacque Bera test for normality testing.

3.7.4 Heteroscedasticity Test

In regression models, the error term difference or variance is assumed to be constant across observations. If this assumption is violated, the random variable is called heteroscedastic. If the control model is heteroscedasticity, then the analysis is not correct. According to Williams (2016), heteroscedasticity gives equal weight to all observations and causes the standard errors to be discriminated and consequently results in an incorrect conclusion when testing the hypothesis. This study used Breusch-Pagan test to check for existence of heteroscedasticity in the data collected.

3.7.5 Unit Root Tests- Stationary Test

Unit root tests wasconducted using the Dickey Fuller Test test to establish whether the variables are stationary or non-stationary. The purpose of this is was to avoid spurious regression results being obtained by using non-stationary series. The null hypothesis of this test is that all have unit root. If any of the variables has unit root, the researcher would difference it and run the equations using the differenced variable.

Table 2

Summary of Tests

No	Diagnostic Test	Mode of Test	Rule
1	Autocorrelation Tests	Breusch Godfrey Test	Reject if p-value is <0.05
2	Heteroscedasticity Tests	Breusch-Pagan Test	Reject if p-value is <0.05
3	Multicollinearity Tests	Variance Inflation Factors (VIF)	Reject if VIF > 10
4	Normality Assumptions	Jacque Bera Test	Reject if p-value is <0.05
5	Stationarity Test	Dickey Fuller Test	Reject if p-value is <0.05

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

This section presented the findings from the results and their analyses as to their relevance to the objectives and hypotheses. The findings are presented in tables and narrations as per the specific objectives. In addition we have presented the descriptive statistics, and the diagnostic tests. The chapter further presented the results of the models that was adopted in order to achieve the study's objective.

The data was obtained from the tax revenue expenditures for the KRA database. The data was also checked for completeness and any outliers from excel before importing to STATA where it was set to time series data. As per the operationalization of our study variables, taxpayer education expenditure was obtained from as the taxpayer education expenditure to total expenditure, law enforcement expenditure was obtained from law enforcement expenditure to total expenditure, technology expenditure was obtained from technology expenditure to total expenditure and taxpayer services expenditure was obtained from taxpayer services expenditure to total expenditure. Lastly, tax revenue was obtained a solid figure from the total tax revenue realized for the 26 years.

4.2 Descriptive Statistics

The descriptive statistics shows the mean, standard deviation, minimum and maximum values of the variables for period 1995-2020. Tax revenue was depicted in millions while Taxpayer Education Expenditure, Law Enforcement Expenditure, Technology Expenditure, Taxpayer

Services Expenditure were depicted in percentage to total expenditure. The results are depicted in percentages and are presented in Table 3.

Table 3

Descriptive Statistics

Variable	Years	Mean	Std. Dev.	Min	Max
Tax revenue	26	585,590.9	497,072.6	103,567	1,607,000
Taxpayer education expenditure	26	16.24	1.20	14.54	19.0
Law enforcement expenditure	26	21.21	3.30	18.56	36.0
Technology adoption expenditure	26	33.20	2.66	25.2	36.94
Taxpayer services expenditure	26	16.39	1.51	12.1	18.47

Tax revenue depicted in millions had a mean of 585,590.9 and a standard deviation of 497,072.6. The minimum ratio was 103,567 and the maximum of 1,607,000. The minimum and the maximum indicated a wide gap in tax revenue collected over the years where the maximum was Ksh1.6 trillion. Taxpayer education expenditure had a mean of 16.24 and a standard deviation of 1.20. The minimum ratio was 14.54 and the maximum of 19.0. The expenditure for taxpayer education was below 20% to total expenditure. Law enforcement expenditure had a mean of 21.21 and a standard deviation of 3.30. The minimum ratio was 18.56 and the maximum of 36. The mean implied that most of the law enforcement expenditure was below 20% of the total expenditure.

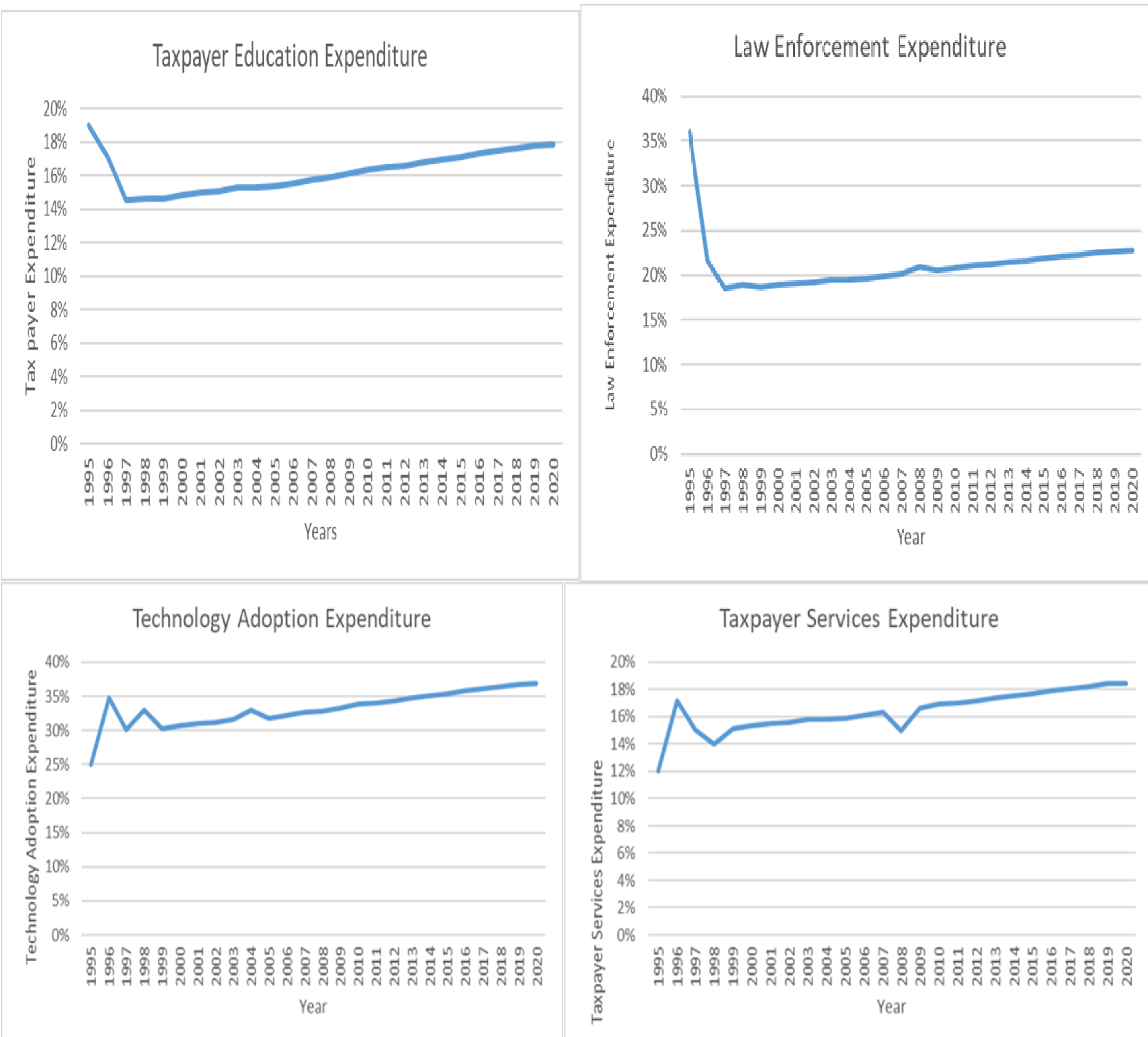
Technology expenditure had a mean of 33.20 and a standard deviation of 2.66. The minimum ratio was 25.2 and the maximum of 36.94. Expenditure on technology was the highest at 33.20% and this can be explained by the increased use of technology in tax revenue collection such as itax platforms. Taxpayer services expenditure had a mean of 16.39 and a standard deviation of 1.51. The minimum ratio was 12.1 and the maximum of 18.47. The mean also implied that most of the taxpayer services expenditure was below 20% of the total expenditure.

4.3 Trend Analysis

This section presents the analysis of the trends of the variables. The study conducted a trend analysis to establish the movement of the variables overtime for the period 2014-2019. The trend analysis is as shown in Figure 2.

Figure 2

Trend Analysis



The trend analysis for taxpayer expenditure indicated a slight decrease form the year 1995 to 1997. However, the trend indicated a steady increase from 1997 towards the year 2020. The trend analysis for law enforcement expenditure depicted a drop from 1995 to 1996. The trend thereafter had a moderate increase towards the end of the study period in 2020. The trend for law enforcement expenditure depicted a sharp increase from the year 1995 to 1996. There was slight drop in 1997 and the trend increased steadily towards the end of the study period in 2020. Lastly, the trend for taxpayers' services expenditure shows an increase from the year 1995 to 1996. There was a slight drop in 1997 to 1998 and thereafter a continuous increase until the end of the study period in 2020.

4.4 Diagnostics

The study conducted out different diagnostic tests to make sure that the postulations of Classical Linear Regression Model (CLRM) are not contravened. The pre-estimation tests conducted in this case were the Test for Multicollinearity, Test for Autocorrelation, Normality Test, Heteroscedasticity Test and Unit Root Tests- Stationary Test. The study performed these tests to avoid spurious regression results.

4.4.1 Test for Multicollinearity

Multicollinearity was assessed in this study using the variance inflation factors (VIF). According to Field (2009) VIF values in excess of 10 is an indication of the presence of Multicollinearity. The results are illustrated in Table 4.

Table 4

Multicollinearity

Variable	**VIF**	**1/VIF**
Taxpayer education strategy	7.94	0.126
Law enforcement strategy	4.09	0.244
Taxpayer services strategy	3.22	0.311
Technology strategy	2.04	0.490

As shown in Table 4, Taxpayer Education Strategy had a VIF value of 7.94, Law Enforcement Strategy had a VIF value of 4.09, Taxpayer Services Strategy had a VIF value of 3.22 and Technology Strategy had a VIF value of 2.04. Therefore, the results revealed that there was no multicollinearity since all the values for VIF were less than 10.

4.4.2 Test for Autocorrelation

Autocorrelation Test was conducted to determine if the data contravenes the attributes of the Ordinary Least Square (OLS), which culminates to wrong outcomes in hypothesis testing. The study used Wooldridge Test for Serial Correlation to ascertain whether the data collected has a serial autocorrelation.

Table 5

Serial Correlation Tests

Durbin's alternative test for autocorrelation

lags(p)	chi2	df	Prob > chi2
1	0.872	1	0.3503

The results for the Wooldridge test for autocorrelation indicated that the chi2 value was 0.872 and the P-value was 0.3503 indicating that the F-test is not statistically significant at 5% level. Hence, the null hypothesis of no autocorrelation was supported and the study concluded that residuals are not auto correlated.

4.4.3 Normality Test

To test for normality, the study applied the Jaque Bera test method. The Jarque–Bera test is a goodness-of-fit test of whether sample data have the skewness and kurtosis matching a normal distribution. Normality was checked on the residuals of a model, because those assumptions apply to the unexplained variance of a model. The hypothesis was that the data was normally distributed. The results are as shown in Table 6.

Table 6

Normality Test

. jb residuals		
Jarque-Bera	normality test: 9.17 Chi(2)	0.083
Jarque-Bera	test for Ho: normality:	

The results in Table 6 indicated that the Chi-square value was 9.17 and the P-value was 0.083 which was larger than the 0.05. We thus concluded that the data was normal since the p-value was larger than the critical 0.05.

4.4.4 Heteroscedasticity Test

In regression models, the error term difference or variance is assumed to be constant across observations. If this assumption is violated, the random variable is called heteroscedastic. If the control model is heteroscedasticity, then the analysis is not correct. This study used Breusch-Pagan test to check for existence of heteroscedasticity in the data collected with the hypothesis that the data was homoscedastic.

Table 7

Heteroscedasticity Test Results

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity
Ho: Constant variance
Variables: fitted values of Tax Revenue
chi2(1) = 4.23
Prob > chi2 = 0.098

The hypothesis was therefore not rejected at a critical p value of 0.05 since the reported value for the chi2 (1) was 4.23 with a p-value of 0.098 which was larger than the critical 0.05. Thus, the data did not suffer from statistically significant heteroscedasticity.

4.4.5 Unit Root Tests- Stationary Test

Unit root tests was conducted using the Dickey Fuller Test to establish whether the variables are stationary or non-stationary. The purpose of this is to avoid spurious regression results being obtained by using non-stationary series. The null hypothesis of this test was that all have unit root. The results are as shown in Table 8.

Table 8

Dickey Fuller Test

Variable	Statistics	Inverse chi-squared (P)	Inverse normal (Z)	Inverse logit t
Tax revenue	t-statistic	55.6458	-6.2346	-4.3358
	p-value	0.0094	0.0005	0.0028
Taxpayer education strategy	t-statistic	72.8840	-5.0898	-6.0287
	p-value	0.0000	0.0000	0.0000
Law enforcement strategy	t-statistic	101.7276	-5.9891	-8.6733
	p-value	0.0000	0.0000	0.0000
Technology strategy	t-statistic	50.7351	-2.4949	-2.8119
	p-value	0.0002	0.0063	0.0034
Taxpayer services strategy	t-statistic	78.1389	-2.8583	-5.7291
	p-value	0.0000	0.0021	0.0000

The Dickey Fuller tests indicated that the variables tax revenue, taxpayer education expenditure, law enforcement expenditure, technology expenditure and taxpayer services expenditure had a p-value of >0.000 and thus the null hypothesis was rejected. The study therefore concluded that the variables under consideration do not have unit root and are therefore stationary at significance levels.

4.5 Correlation Analysis

The study conducted correlation analysis for the various variables that are taxpayer education strategy, law enforcement strategy, technology adoption strategy and taxpayer services strategy on the level of tax revenue in Kenya in order to examine the nature of the statistical relationships between each pair of variables. Table 9 shows the correlation matrix of all the variables included in the study.

Table 9

Correlation Matrix

Variables	Tax revenue	Taxpayer education strategy	Law enforcement strategy	Technology adoption strategy	Taxpayer services strategy
Tax revenue	1.000				
Taxpayer education strategy	0.603	1.000			
	0.001				
Law enforcement strategy	0.760	0.682	1.000		
	0.013	0.000			
Technology adoption strategy	0.827	0.371	-0.269	1.000	
	0.000	0.062	0.184		
Taxpayer services strategy	0.844	0.407	-0.240	0.291	1.000
	0.000	0.039	0.238	0.000	

The results in Table 9 show that taxpayer education strategy had a positive and significant relationship on the level of tax revenue in Kenya (r= 0.603, p=0.001). Law enforcement strategy had a positive and a significance relationship on the level of tax revenue in Kenya (r=0.760, p=0.013). Technology adoption strategy had a positive and significance relationship on the level of tax revenue in Kenya (r= 0.827, p= 0.000). Lastly, taxpayer services strategy had a positive and a significance relationship on the level of tax revenue in Kenya(r=0.844, p=0.000). This positive coefficient implied that an increase in taxpayer education strategy, law enforcement strategy, technology adoption strategy and taxpayer services strategy led to an increase on the level of tax revenue in Kenya.

4.6 Regression Analysis

The study conducted regression analysis to establish the statistical significance relationship on the determinants tax compliance strategies and the level of tax revenue in Kenya. The variables were taxpayer education strategy, law enforcement strategy, technology adoption strategy and taxpayer services strategy on level of tax revenue in Kenya. The regression includes techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent and one or more independent variables. The results are presented in Table 10.

Table 10

Regression Analysis

Tax Revenue	Coef.	Std. Err.	t	P>|t|
Taxpayer education strategy	1.128	0.411	2.740	0.012
Law enforcement strategy	0.429	0.143	3.000	0.007
Technology adoption strategy	0.199	0.059	3.350	0.003
Taxpayer services strategy	0.490	0.140	3.500	0.002
_cons	0.182	0.529	0.340	0.735

F(4, 21) = 33.79
Prob > = 0.0000
R-squared = 0.7655
Adj R-squared = 0.7399

The fitted model was;

Tax revenue = 0.182 + 1.128TPE + 0.429LEE + 0.199TAE + 0.490TSE

Where:

TX = Tax Revenue

TPE = Taxpayer education strategy

LEE = Law enforcement strategy

TAE = Technology adoption strategy

TSE = Taxpayer services strategy

The overall R squared of 0.7655 implied that the four variables namely taxpayer education strategy, law enforcement strategy, technology adoption strategy and taxpayer services strategy explained 76.5% on the variations on level of tax revenue in Kenya. The overall model was significant as indicated by the Prob>chi2 of 0.000 with an F (4, 21) of 33.79. In addition, the constant of 0.182 showed that taxpayer education strategy, law enforcement strategy, technology adoption strategy and taxpayer services strategy are held constant, tax revenue will remain at 0.182 units.

The results further portrayed a positive and significant relationship between taxpayer education strategy and tax revenue in Kenya (β= 1.128, p=0.012). There was a positive and significant relationship between law enforcement strategy and tax revenue in Kenya (β= 0.429, p= 0.007). Technology adoption strategy had a positive and significant relationship with tax revenue in Kenya (β= 0.199, p= 0.003). Lastly, taxpayer services strategy revealed a positive and significant relationship with tax revenue in Kenya (β= 0.490, p= 0.002).

4.7 Discussion of Findings

The objective of this study was to analyze the effect of establish the effects of tax compliance strategies on the level of tax revenue in Kenya. The variables of interest were taxpayer education strategy, law enforcement strategy, technology adoption strategy and taxpayer services strategy on the tax revenue. The pre-estimation tests conducted on Multicollinearity, Serial Correlation Tests, Normality Test, Heteroscedasticity Test and Unit Root Tests which indicated that the underlying assumptions were fit for regression analysis.

The first objective of the study was to establish the effect of taxpayer education strategy on the level of tax revenue in Kenya. Correlation results showed that taxpayer education strategy had a positive and significant relationship on the level of tax revenue in Kenya ($r= 0.603$, $p=0.001$). Further, regression analysis portrayed a positive and significant relationship between Taxpayer Education Expenditure and tax revenue in Kenya ($\beta= 1.128$, $p=0.012$). This implies that a unitary increase in taxpayer education strategy led to an increase in tax revenue in Kenya by 1.128 units holding other factors constant. Since the P-value of $0.12<0.05$, the null hypothesis was rejected that Taxpayer education strategy has no significant effect on the level of tax revenue in Kenya.

The findings agree with Maseko (2014) who carried out a study which sought to examine the effects of tax education on tax compliance for small taxpayers and revealed that there was a positive significant relationship between tax education and taxpayer compliance. The study further revealed that indeed taxpayers are with different business situations from large businesses which cause them to bear high tax compliance burdens than SMEs. The study by Andarias (2016) on taxpayer registration and tax compliance established that taxpayer registration is an important tool if properly used, this is primarily because taxpayer registration enhances tax compliance. In addition, the study was able to establish that taxpayer registration can as enhance problem solving among taxpayers. The study further posited that technology adoption by taxpayers needs to be encouraged because it is the only way through which compliance by registration can be achieved easily. The findings agree with Christina, Deborah and Gray (2018), identified factors that made them not to pay their taxes due, within the statutory period and not declaring the correct taxable income as; complexity of the tax laws, ability to pay, ignorance of the tax laws and the perceptions of high tax rates and unfairness of the tax system. The study by Normala and Obid (2013) confirmed that an increase in tax knowledge would increase the level of voluntary tax compliance. The statistical findings, confirm that there is a significant relationship between the level of tax education and the level of voluntary tax compliance.

The second objective of the study was to establish the effect of law enforcement strategy on the level of tax revenue in Kenya. Correlation results showed that law enforcement strategy had a positive and significant relationship on the level of tax revenue in Kenya ($r=0.760$, $p=0.013$). Further, regression analysis portrayed a positive and significant relationship between law enforcement strategy and tax revenue in Kenya ($\beta= 0.429$, $p= 0.007$). This implies that a unitary increase in law enforcement strategy led to an increase in tax revenue in Kenya by 0.429 units holding other factors constant. Since the P-value of $0.007<0.05$, the null hypothesis was rejected that law enforcement strategy has no significant effect on the level of tax revenue in Kenya.

The findings are consistent with Dublin and Wilde (2018) who conducted an empirical analysis of federal tax auditing and compliance and found that there was a strong deterrence effect on non-compliance. They concluded that IRS was effectively right to direct its resources to audit conductions to enhance tax revenue.” The findings by Feld and Tyran (2012) found that the tax compliance is higher on average in endogenous penalty treatment in which subjects are allowed to approve or reject the proposal of a penalty as compared to an exogenous penalty treatment where penalty is imposed by the experimenter. The main explanation why people show higher tax morale if they are allowed to vote on a penalty is legitimacy. The findings are in line with Naibei, Momanyi and Oginda (2012), study on the relationship between income size, inspection and VAT compliance on private firms that there was a higher VAT compliance level on those firms which had undergone a tax audit by KRA. 58% of the businessmen agreed that tax audits acted as deterrence on tax evasion. This in effect had a positive effect on the VAT revenues collected by KRA. Nyaga found that audit and penalty had a positive relationship with tax compliance and hence tax revenue and taxpayer service. Mararia (2014) found that penalties and fines had a significant positive relationship with tax compliance. This resulted to an overall increase in collections as penalties and fined deterred tax evasion by taxpayers.

The third objective of the study was to determine the effect of technology adoption strategy on the level of tax revenue in Kenya. Correlation results showed that technology adoption strategy had a positive and significant relationship on the level of tax revenue in Kenya ($r = 0.827$, $p = 0.000$). Further, regression analysis portrayed a positive and significant relationship between technology adoption strategy and tax revenue in Kenya ($\beta = 0.199$, $p = 0.003$). This implies that a unitary increase in technology adoption strategy led to an increase in tax revenue in Kenya by 0.199 units holding other factors constant. Since the P-value of $0.007<0.003$, the null hypothesis was rejected that technology adoption strategy has no significant effect on the level of tax revenue in Kenya.

The findings are consistent with Ling Aham and Nawawi, (2018) who examined the ICT skills needed by a fresh accounting graduate when first joining a tax firm; to find out usage of electronic tax (e-tax) applications in tax practice and study found out that knowledge of ICT and electronic tax systems among students had positive impact on compliance. Such electronic media `broadcast or storage media that take advantage of electronic technology may include television, radio, internet, and any other media that requires electricity or digital encoding of information. Electronic media is often used in contrast with print media. Jotham (2016) found that use of technology in taxpayer registration allows for tax personnel to effectively handle more than one task through the integration of a number of procedures into one information system so as to enable easy operation ability. This therefore enhances compliance by taxpayers because they can be able to compile all there in formation in one user interface and thus it because easy to manipulate any data so as to make it useful. McKerchar and Evans (2013) study further established that the adoption of technology enhances system administration in the event that the taxpayers are made familiar to the various developments in terms of new technology for tax systems. Jenkins (2017) established that tax compliance did not necessarily happen as a result of many ambitious tax reforms. In his argument, these reforms can only become effective is there is permanent reorganization of the tax administration. Sigey (2017) findings indicated that automation of clearance procedures in the local tax department greatly enhanced operational usefulness and productivity, increased employees professionalism and productivity, reduction of operational costs and improved governance. Ling and Nawawi (2018) findings from the study has inferences on the present study as in during ascertaining of the effectiveness of ICT support services, the basic skills that system user sought to possess must be considered.

The fourth objective of the study was to determine the effect of determine the effect of taxpayer services strategy on the level of tax revenue in Kenya. Correlation results showed that taxpayer services strategy had a positive and significant relationship on the level of tax revenue in Kenya ($r=0.844$, $p=0.000$). Further, regression analysis portrayed a positive and significant relationship between taxpayer services strategy and tax revenue in Kenya ($\beta= 0.490$, $p= 0.002$). This implies that a unitary increase in taxpayer services strategy led to an increase in tax revenue in Kenya by 0.490 units holding other factors constant. Since the P-value of $0.007<0.002$, the null hypothesis was rejected that taxpayer services strategy has no significant effect on the level of tax revenue in Kenya.

The findings agree with Sawitri, Perdana, Muawanah and Setia (2017) study on the effect of Taxpayer Services and Tax Revenue that established that knowledge of the tax effect on taxpayer awareness. The service quality consciousness affect the tax authorities the taxpayer; awareness of taxpayers effect on tax compliance; knowledge of the tax effect on tax compliance; service quality affects the tax authorities on tax compliance. The knowledge of tax effect on tax compliance through taxpayer awareness. The quality of service influence taxpayer compliance through taxpayer awareness. Bergman (2014) results suggested that as the number of audits and the probability of detection increased, taxpayers were encouraged to comply with tax laws and accurately report their income which had a positive impact on tax revenue. This suggests that unintentional evasion may occur rather than intentional evasion. Findings by Bergman are consistent with the theoretical proposition that the fear of detection influences the level of compliance behavior, suggesting that the evaders take precautionary measures when the perceived risk of detection is high. The findings also evidenced that probability of being detected plays a significant role in inducing compliance behavior. Mohani (2019) posited that income authorities preferably require a logical approach or system in order for them to be able to arrive at an ideal range of networks for service provision from both the perspectives of the income management authority and the taxpayer at large.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the study findings, its conclusions and recommendations, presented in consideration to the study objectives used to analyze the effect of establish the effects of tax compliance strategies on the level of tax revenue in Kenya.

5.2 Summary of Findings

This study aimed to analyze the effect taxpayer education strategy, law enforcement strategy, technology adoption strategy and taxpayer services strategy on level of tax revenue in Kenya. The motivation for conducting the study was the fact that while the government of Kenya has over time pursued a battery of policy measures to realize higher tax productivity, over the years, the government has run deficit budgeting. The study used secondary sources of data on all the variables for the period 1995 to 2020. Time series data was estimated corresponding to the study objectives. Diagnostic tests including test for multicollinearity, test for autocorrelation, normality test, heteroscedasticity test and unit root tests- stationary test were conducted on the model emanating from the estimation before their adoption. The test results regarding their statistical appropriateness helped to qualify the model.

5.2.1 Tax Payer Education Strategy on Tax Revenue

The first objective of the study was to establish the effect of taxpayer education strategy on the level of tax revenue in Kenya. Correlation results showed that taxpayer education strategy had a positive and significant relationship on the level of tax revenue in Kenya. Further, regression analysis portrayed a positive and significant relationship between Taxpayer Education Expenditure and tax revenue in Kenya. This implied that a unitary increase in taxpayer education strategy led to an increase in tax revenue in Kenya. Since the P-value was below the critical level, the null hypothesis was rejected that Taxpayer education strategy has no significant effect on the level of tax revenue in Kenya.

5.2.2 Law Enforcement Strategy on Tax Revenue

The second objective of the study was to establish the effect of law enforcement strategy on the level of tax revenue in Kenya. Correlation results showed that law enforcement strategy had a positive and significant relationship on the level of tax revenue in Kenya. Further, regression analysis portrayed a positive and significant relationship between law enforcement strategy and tax revenue in Kenya. This implies that a unitary increase in law enforcement strategy led to an increase in tax revenue in Kenya. Since the P-value was below the critical level, the null hypothesis was rejected that law enforcement strategy has no significant effect on the level of tax revenue in Kenya.

5.2.3 Technology Adoption Strategy on Tax Revenue

The third objective of the study was to determine the effect of technology adoption strategy on the level of tax revenue in Kenya. Correlation results showed that technology adoption strategy had a positive and significant relationship on the level of tax revenue in Kenya. Further, regression analysis portrayed a positive and significant relationship between technology adoption strategy and tax revenue in Kenya. This implies that a unitary increase in technology adoption strategy led to an increase in tax revenue in Kenya. Since the P-value was below the critical level, the null hypothesis was rejected that technology adoption strategy has no significant effect on the level of tax revenue in Kenya.

5.2.4 Taxpayer Services Strategy on Tax Revenue

The fourth objective of the study was to determine the effect of determine the effect of taxpayer services strategy on the level of tax revenue in Kenya. Correlation results showed that taxpayer services strategy had a positive and significant relationship on the level of tax revenue in Kenya. Further, regression analysis portrayed a positive and significant relationship between taxpayer services strategy and tax revenue in Kenya. This implies that a unitary increase in taxpayer services strategy led to an increase in tax revenue in Kenya. Since the P-value was below the critical level, the null hypothesis was rejected that taxpayer services strategy has no significant effect on the level of tax revenue in Kenya.

5.3 Conclusion

The study concluded that taxpayer education strategy, law enforcement strategy, technology adoption strategy and taxpayer services strategy affected tax revenue in a positive and significant way. Each of the specific conclusions is as discussed;

The study concluded that taxpayer education strategy has a positively and significantly relationship with tax revenue in Kenya. The positive coefficient for taxpayer education strategy implied that increase in the taxpayer education strategy improved on the tax revenue in Kenya. The study concluded that law enforcement strategy has a positively and significantly relationship with tax revenue in Kenya. The positive coefficient for law enforcement strategy implied that increase in the law enforcement strategy improved on the tax revenue in Kenya.

The study concluded that technology adoption strategy has a positively and significantly relationship with tax revenue in Kenya. The positive coefficient for technology adoption strategy implied that increase in the technology adoption strategy improved on the tax revenue in Kenya.

Lastly, the study concluded that taxpayer services strategy has a positively and significantly relationship with tax revenue in Kenya. The positive coefficient for taxpayer services strategy implied that increase in the taxpayer services strategy improved on the tax revenue in Kenya.

5.4 Recommendation

Based on the findings of this study, the following recommendations arise;

The study recommends that the government should continue providing taxpayer education since it had a significant effect on tax revenue. It is expected that tax education will enable the taxpayer to understand tax laws and procedures and create a positive tax compliance attitude and should be directed towards behavioral change. Non-compliance may be unintentional, where the taxpayer is not aware of his/her tax obligations or fails to fulfill his/her tax obligations due to ignorance of tax laws and procedures; or intentional, due to the compliance attitudes.

The study found that there is a positive relationship between the expenditure by the tax authority on law enforcement and the tax revenue collected. The implication of this is that the government should continue to up its tax compliance enforcement efforts. This will help it curb tax evasion and underreporting which may lead to low tax revenue realization. Credible law enforcement is an integral part of any compliance strategy as it acts not only to deter tax evasion but also to remind taxpayers that the tax collector is working to maintain the fairness of the tax system by ensuring that all pay their fair share. Administration begins with the law in place. The law represents a component of the context or environment in which a revenue authority operates and it is from this environment that we discern the compliance risks associated with the administration of the law.

The study found a positive relationship between the expenditure on technology adoption and the tax revenue that Kenya's tax authority collected in any given year. The implication of this is that technology enhances the efficacy of tax collection. Thus, the government should spend more on technology usage which will help in the administration of the tax system. Electronic tax filing systems are particularly favourable for governments because they avoid many of the mistakes taxpayers make in manual filings, and they help to prevent fraud by data matching. The data houses developed using electronic tax filings can allow tax inspectors to analyze declarations more thoroughly, and enable policymakers to develop fairer and more efficient policies.

It is further recommended that the state pursue alternative measures in its quest to improve on the level of tax efficiency and effectiveness. Therefore, the administration of coercive measures such as fines and other non-compliance costs should be encouraged to minimize further delayed payment of the tax liabilities. It therefore follows that tax audits by tax management agencies should be considered necessary and compulsory, specifically when non-compliance is detected or suspected to have been committed by the tax paying entity be ignorantly or intentionally.

5.5 Suggestions for Further Research

The study sought to establish the effects of tax compliance strategies on the level of tax revenue in Kenya. The findings emanating from the study point out to the fact that the use of technology, law enforcement and tax education practices are healthy for the authority of income to realize high tax revenues. The study has recommended that the government should scale up its expenditure on these avenues. However, the study fails to determine a cap on the expenditure. Further studies should seek to determine the optimal expenditure that will ensure that the highest possible tax revenue is realized. In addition, given that Kenya is a key player in the East African community, the study can be expanded to cover other East African Counties within the East African community in order to provide result that was useful in that context. A study can be done to cover counties in East Africa.

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APPENDICES

Appendix 1: Data Collection Template

Year	Taxpayer Education Expenditure/Total Expenditure	Law Enforcement strategy/Total Expenditure	Technology Adoption strategy/Total Expenditure	Taxpayer Services strategy/Total Expenditure	Tax Revenue
2020					
2019					
2018					
2017					
1995					

Appendix II: Data Collection Letter

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SCHOOL OF GRADUATE STUDIES AND RESEARCH

KCA/SGS/Sept. 21/1

29th September 2021

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: JACKSON RITEI REG NO.14/04333

It is my distinct pleasure to introduce to you Mr. Jackson Ritei who is a student in our institution pursuing a Master of Science in Commerce at the College of Business.

Jackson is conducting a research on a topic titled: ***"Effect Of Tax Compliance Strategies On Government Tax Revenue In Kenya"*** which is part of the requirements of the program he is pursuing. The research as well as the data procured thereof shall be used for academic purposes only.

Any assistance accorded to him is highly appreciated.

In case of further inquiry, do not hesitate to contact the undersigned.

Yours faithfully,

Dr. Nyaribo Misuko
Dean, School of Graduate Studies & Research

Appendix III: Dataset

Year	Taxpayer Education Expenditure	Law Enforcement Expenditure	Technology adoption Expenditure	Taxpayer services Expenditur e	logTax Revenue	Tax Revenue	r
1995	19.00	36.00	25.00	12.00	5.02	103567	5.054
1996	17.12	21.64	34.82	17.18	5.05	111865	5.505
1997	14.54	18.56	30.09	15.05	5.05	112116	5.108
1998	14.64	19.00	33.00	14.00	5.11	127914	5.248
1999	14.64	18.68	30.30	15.15	5.16	143712	5.138
2000	14.81	18.90	30.64	15.32	5.20	159511	5.191
2001	14.96	19.08	30.94	15.47	5.26	182406	5.233
2002	15.09	19.25	31.22	15.61	5.26	183187	5.283
2003	15.26	19.47	31.57	15.78	5.30	201453	5.339
2004	15.26	19.47	33.00	15.79	5.36	228978	5.628
2005	15.38	19.63	31.83	15.91	5.44	274084	5.388
2006	15.54	19.83	32.16	16.08	5.47	297597	5.442
2007	15.77	20.12	32.63	16.31	5.56	360003	5.513
2008	15.87	21.00	32.84	15.00	5.64	433824	5.178
2009	16.11	20.56	33.34	16.67	5.68	480363	5.636
2010	16.35	20.86	33.82	16.91	5.73	534138	5.707
2011	16.48	21.02	34.09	17.04	5.80	634703	5.747
2012	16.61	21.19	34.37	17.18	5.85	707171	5.797
2013	16.83	21.47	34.82	17.41	5.90	799842	5.872
2014	16.96	21.64	35.10	17.55	5.98	963284	5.922
2015	17.12	21.84	35.42	17.71	6.03	1069393	5.970
2016	17.35	22.14	35.90	17.95	6.08	1199775	6.052
2017	17.48	22.31	36.17	18.09	6.14	1364679	6.101
2018	17.63	22.49	36.47	18.24	6.16	1434798	6.142
2019	17.79	22.70	36.81	18.41	6.18	1510000	6.203
2020	17.85	22.78	36.94	18.47	6.21	1607000	6.225