

**THE CAUSAL EFFECT BETWEEN TAX REVENUE AND ECONOMIC  
GROWTH IN KENYA**

**BY**

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## DECLARATION

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**DEDICATION**

I dedicate this research project to my wife (Jane Wairimu) and son (Trevor Kimani), my parents, my supervisors and friends for their continued support and encouragement throughout my studies. Thank you and God sanctify you abundantly.

## ABSTRACT

The rapid-sporadic growth in government expenditure in Kenya has triggered concerns among policy makers on the repercussion of such growth on tax collection and the effect on the long run economic growth. The study sought to explore the relationship between tax revenue and economic growth in Kenya. The specific objectives were to; establish the causal effect between PAYE, corporation tax, value-added tax, and excise duty on economic growth in Kenya. The study was anchored on the dynamic theory of public spending, taxation, and debt, the benefit theory, ability to pay theory, neo-classical theory of growth and endogenous growth theory. The causal research design was adopted in the study. The study used secondary data that was obtained from the Central Bank of Kenya and the Kenya National Bureau of Statistics for the period 1989 to 2019. Time series analysis technique was adopted to determine the relationship between tax revenue and economic growth. The findings revealed that independently ( $\beta=1.198204$ ,  $P=0.0011$ ) and jointly ( $\beta=21.81471$ ,  $P=0.0416$ ), PAYE had a positive and significant relationship with economic growth. Results also indicated that independently ( $\beta =1.180804$ ,  $P=0.0008$ ) and jointly ( $\beta=22.50137$ ,  $P=0.0339$ ), corporation tax had a positive and significant relationship with economic growth. Results further revealed that independently, value-added tax had a positive and significant relationship with economic growth in Kenya ( $\beta =2.823958$ ,  $P=0.0011$ ). In addition, the findings showed that independently, excise duty had a positive and significant relationship with economic growth in Kenya ( $\beta =2.423642$ ,  $P=0.0040$ ). The study concluded that tax revenue contributes significantly towards enhancing economic growth in Kenya. The study recommendation is that the government of Kenya should strengthen tax policies, which is likely to increase revenue collection. The study also recommends that the government of Kenya should make structural adjustments to value-added tax and excise duty related policies, to ensure that there is adequate collection of taxes from these channels since there are less inconvenient and burdensome to the taxpayer since they are incorporated on the price of commodities and are not paid in lump sum like direct taxes and the taxpayer may not feel the burden of the tax since the obligation to collect and remit is placed on third parties. Further, consumption taxes (VAT & Excise tax) have a wider tax base which is paramount in ensuring equitable distribution of the tax burden on the target population.

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**ABBREVIATIONS & ACRONYMS**

<b>CIF</b>	Cost of Insurance
<b>CIT</b>	Corporate Income Taxes
<b>CMA</b>	Capital Market Authority
<b>COMESA</b>	Common Market for Eastern and Southern Africa
<b>EAC</b>	East African Community
<b>EGMS</b>	Excisable Goods Management System
<b>EPPO</b>	Export Promotion Programme Support
<b>EXD</b>	Excise duty Tax
<b>GDP</b>	Gross Domestic Product
<b>GNP</b>	Gross National Product
<b>GOK</b>	Government of Kenya
<b>ITEP</b>	Institute of Taxation and Economic Policy
<b>KRA</b>	Kenya Revenue Authority
<b>LTU</b>	Large Taxpayers Unit
<b>MSMEs</b>	Micro, Small and Medium Enterprises
<b>MUB</b>	Manufacture under Bond
<b>NSSF</b>	National Social Security Fund
<b>NTA</b>	National Taxpayers Association
<b>PAYE</b>	Pay As You Earn
<b>PIN</b>	Personal Identification Number
<b>PIT</b>	Personal Income Tax
<b>SED</b>	Single Entry Document
<b>TJN-A</b>	Tax Justice Network-Africa
<b>TMP</b>	Tax Modernization Programme

<b>TOT</b>	Turnover Tax
<b>TREO</b>	Tax Remissions Export Office
<b>VAT</b>	Value Added Tax
<b>WCO</b>	World Customs Organization
<b>WTO</b>	World Trade Organization

## OPERATIONAL DEFINITION OF TERMS

- Corporation tax:** is a tax on the profits of a corporation. The taxes are paid on a company's taxable income, which includes revenue minus cost of goods sold, general and administrative expenses, selling and marketing, research and development, depreciation, and other operating costs.
- Excise Duties:** Also known as a "sin tax", levied on certain products and services with little discriminatory intent. It is taxed on alcoholic beverages, tobacco products, petroleum products, motor vehicles. Carbonated drinks, bottled water, cosmetics, jewelry and telecommunications. Subject to the Excise Act 2015 and the Customs and Excise Act (Chapter 472) of Kenya.
- GDP:** This is the gross domestic product, which represents the total production of the country by all residents regardless of nationality. In this study, GDP is measured by market prices.
- PAYE:** is a method of collecting tax from individuals in gainful employment. PAYE is deducted by the employer and remitted to KRA on behalf of the employee.
- Tax Revenue:** It consists of tax revenues collected by Kenyan government bodies for income from mandatory deductions and is divided into two broad categories such as direct taxes and indirect taxes.
- Value Added Tax (VAT):** is an indirect consumption tax levied in Kenya on the delivery of certain local goods and services as well as imports. The value added tax was introduced in 1989 to replace the value added tax currently levied under the Value Added Tax Act 2018. It is an additional tax levied on the added value from one transaction to the next in the value chain and is calculated as a percentage of the value of the goods or services.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.0 Chapter Overview**

This chapter presents background information on the study concepts, research problem, objectives, hypotheses, significance and scope of research. The intent of the study was to establish the relationship between tax revenue and economic growth in Kenya.

#### **1.1 Background of the Study**

Economic growth is the increase or improvement in the inflation-adjusted market value of the goods and services produced by an economy over time (Sergi, Popkova, Bogoviz, & Ragulina, 2019). Economic growth has been used to increase the capacity of the economy to produce goods and services over time. Economic growth is measured by both real growth and nominal growth. Real economic growth occurs when the rate of change in total productivity increases, driven by the capacity of an economy that can increase its production every year, driven by natural and human resources. Contrary nominal economic growth is when output of a country is rising merely because of increase in the price of commodities or increase in the pay rates. (Feldstein, 2017). This is usually growth in numbers but no growth in real sense because the state is not showing progress in real sense. The growth is usually determined by the rate of inflation which is not a reflection of a country increase in productivity.

According to the World Bank, Kenya's Gross Domestic Product (GDP) was \$87.91 billion in 2018. That is equivalent to 0.14 percent of the world economy. In 1960, Kenya's average GDP was \$16.65 billion and reached a record \$87.91 billion in 2018, and a record low of \$0.79 billion in 1961. Real growth grew in GDP, according to the

African Development Bank Kenya in 2018 was up around 5.9% from 4.9% in 2017, mainly due to favorable weather, reduced political uncertainty, improved business climate and strong private consumption.

Taxation is very important because it provides sovereign governments with the funds, they need to finance development activities and thereby accelerate economic growth. In any country, developed or developing, resource mobilization is an important aspect to achieve higher economic growth. In a developing country like Kenya, tax money plays a critical role. Understanding the causal relationship between government taxation and economic growth is critical from a political standpoint, particularly for developing countries like Kenya, which suffer from persistent and persistent budget deficits, resulting in rising debt and slow economic growth, while also introducing a new tax on the existing tax base, resulting in an increase in tax liability.

According to McGraw (2020), a tax is a necessary payment imposed by the government on individuals and fictional individuals as business players to cover the costs of providing mutual benefits to a country's citizens. Taxes are designed to compel a household or business to transfer purchasing power to the government for direct use or to be distributed to others. It is considered a mandatory tax because the taxpayer has to pay the required amount without expecting relevant data on the return of goods or services from the relevant government. Tax is an unintentional payment by a person or legal entity to the government in accordance with state laws.

According to the OECD (2008), governments have four main revenue sources: taxes, fees, credit, and money creation. Tax revenue, on the other hand, is the primary source of income, as it is paid to society for public goods and services. Income from government property and companies, money from the sale of government assets, and



donations from other governments and international organizations are among the other sources.

According to Bruce et al. (2006), the most important role of the tax system is to generate enough income to finance the provision of public services. Governments are responsible for a wide range of goods and services for their citizens, including health care, education, national security, law enforcement, and economic management. As a result, the government requires enough revenue to fund the supply of these goods and services. Kenya's government has pledged to provide new public goods and services throughout the last ten years, including free primary and secondary education, free maternal care, and elementary school laptops. This means that government spending is skyrocketing, and the government must immediately produce enough income to satisfy the public sector's mounting demands.

According to Chigbu and Appah (2011), the tax system is utilized as a fiscal policy tool to influence investment and regulate the production and consumption of commodities and services in addition to producing revenue. Taxes are also levied by the government for reasons of stabilization, distribution, and distribution, according to Moki (2012). The general tax rate can be set to keep employment, prices, economic growth, and the balance of payments stable. Governments can also try to impact income and wealth distribution by changing the tax structure.

### **1.1.1 Global perspective**

In academia and politics, the impact of tax policy on a country's economic growth and related activities like entrepreneurship and employment has proven to be a persistent and contentious problem. In politics, this controversy has escalated in recent years as

several countries have lowered and raised their taxes in various ways to meet their budgetary needs in hopes of encouraging long-term growth and new business.

In academia, the extensive literature on taxes and government growth also offers very different methods and results. Recent studies do all sorts of things: tax cuts boost growth, have no effect on growth, curb growth or produce no clear results. Effects of various taxes; Revenue, business, property, and sales; vary widely within and between studies. In academia, the question of whether growth in government spending is the driving force behind increasing government revenues remains unresolved in the literature on public finance. The fact remains that scientists of all ages around the world have failed to reach agreement on the direction of the causal link between government expenditure and revenue. The results of many empirical studies on current topics differ across countries and economies. While the fiscal synchronization hypothesis exists in some countries, it does not hold up in others (M'Amanja, 2006).

The government's decision on these two fiscal variables has become an important consideration from time to time. Should the government collect revenue first and then spend it, or spend and then collect revenue first to offset the initial fiscal imbalance created because of increased spending beyond the income-generating capacity of the economy? Are government decisions on revenue separate from spending decisions? Understanding the relationship between these two fiscal variables is an important aspect of the formulation and strategy of fiscal policy. In theory, the causal relationship between government spending and income is related to different schools of thought. The direction of the causal relationship between the two fiscal variables is a point of contention among experts (Omondi, 2014).

The government must first spend and then collect revenue to balance what is known as the fiscal equation. This view is based on the theory of compensation finance, which creates budget deficits to stimulate economic growth. Then, through the built-in mechanism, the budget multiplier effect will eliminate the output gap and create a higher tax base from which additional tax revenue will be generated to cover the budget deficit originally created (Muriithi & Moyi, 2003).

For classical economics, the budget must always be balanced. Government spending should not exceed revenue. This school of thought believes in what is known as fiscal neutrality. They believe that any discrepancy between government spending and income can affect the functioning of the economy. This can have a distorting effect on the functioning of the pricing system. Therefore, in this context, tax neutrality dictates the tax spending paradigm. This view is the opposite of the Keynesian view. What conveys both extremes is the fiscal synchronization hypothesis, a situation in which the motivation to increase income and expenditure is determined at the same time (Sobhee, 2004).

From a global perspective of taxes levied on OCED countries the average taxes as a percentage of GDP from the 36-member country was 33.7% in 2015, 34% in 2016 and 34.2% in 2017 respectively. The summary presented in table 1 indicates taxes levied in 15 countries;

**Table 1.1: A Summary of average taxes as a percentage of GDP in OCED countries**

	Tax revenue as % of GDP				Tax revenue as % of total tax revenue in 2016				
	2017 (provisional)	2016	2015	2000	Personal Income Tax (PIT)	Corporate Income Tax (CIT)	Social Security Contributions (SSC)	Value added Tax(VAT)	Consumption Tax
<b>Average OCED Tax as % of GDP</b>	<b>34.2</b>	<b>34.0</b>	<b>33.7</b>	<b>33.8</b>	<b>23.8</b>	<b>9.0</b>	<b>26.2</b>	<b>20.2</b>	<b>12.5</b>
Austria	41.8	42.2	43.1	42.3	21.6	5.6	34.7	18.3	10.0
Belgium	44.6	44.1	44.8	43.5	27.7	7.8	31.1	15.4	9.1
Canada	32.2	32.7	32.7	34.8	36.3	10.5	14.9	13.5	9.7
Denmark	46.0	46.2	46.1	46.9	53.5	5.8	0.1	20.4	11.6
France	46.2	45.5	45.3	43.4	18.8	4.5	36.8	15.2	9.2
Germany	37.5	37.4	37.0	36.2	26.6	5.2	37.6	18.5	8.6
Greece	39.4	38.8	36.6	33.4	15.2	6.5	28.5	21.2	18.4
Japan	0.0	30.6	30.6	25.8	18.6	12.0	40.4	13.3	7.1
Italy	42.4	42.6	43.1	40.6	25.8	5.0	30.1	14.4	13.8
Mexico	16.2	16.6	15.9	11.5	20.4	21.0	13.0	23.7	15.1
Netherlands	38.8	38.4	37.0	36.9	18.5	8.7	38.2	17.6	11.9
Slovakia Republic	32.9	32.4	32.2	33.6	10.2	10.8	43.5	20.6	12.4
Sweden	44.0	44.0	43.1	49.0	29.8	6.2	22.6	20.9	7.2
United Kingdom	33.3	32.7	32.2	32.9	27.4	8.3	18.9	20.8	11.5
United States	27.1	25.9	26.2	28.2	40.3	7.6	24.0	0.0	16.5

### **1.1.2 African Perspective**

The extent to which taxation in African countries stimulates economic performance is an issue that has continued to attract pragmatic debate due to limited accountability. In 2014, there was a 34.4 percent growth in 8 African nations, including Cameroon, Ivory Coast, Mauritius, Morocco, Rwanda, Senegal, South Africa, and Tunisia, compared to the OECD average, which was only 0.2 percentage points higher than in 2000. These eight African countries' income figures account for over a quarter of Africa's total GDP (African Income Statistics, 2018).

Analysts also expressed concern about some African countries, particularly with regard to tax revenues, particularly grants such as foreign aid (Kenya) and government real estate leases such as oil (Nigeria and Angola) and bauxite in the case of Zambia; In such countries, the economy is usually very unstable, so their income is unstable and cannot be predicted by tax revenues. The problematic question is whether tax revenues will increase in proportion to national income. This is necessary given the fall in international oil prices and the raw material market. Different points of view and disaggregated outcomes can be found in the empirical literature. Taxation and economic growth have a favorable link, according to Ugwanta and Ugwuanyi (2015). Daba and Mishra (2014), on the other hand, found unfavorable connections. They point out that progressive taxes appear to discourage investment, risk taking and entrepreneurship, as many of these risky activities are carried out by high-income risk takers.

On the other hand, numerous researchers (N'Yilimon, 2014) found no significant association between the variables (Osundina and Olanrewaju, 2013). According to studies, taxation has a minor impact on national growth. According to studies, while an effective excise tax boosts investment, the overall tax burden has little influence on

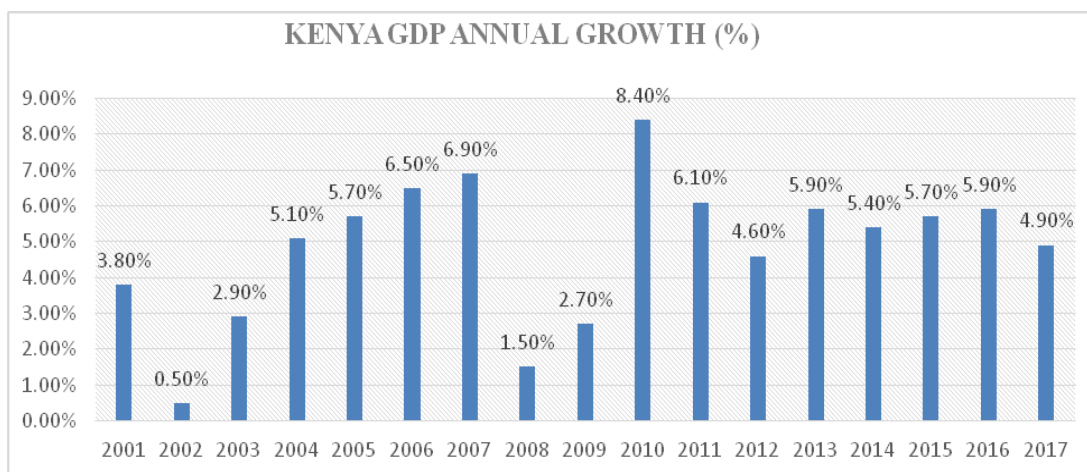
investment or economic growth. According to various experts, the effect of taxation does not lead to homogeneous results; For example, when examining the effects of taxation on the economy (Jens, 2011), researchers find that corporate taxes are the worst for the economy, as are taxes on personal income, consumption, and property. Indeed, the progress of income taxes undermines economic growth.

Productivity and growth are stifled as the greatest level of marginal income rises. Conflicting findings about the relationship between taxation and economic growth prompted this research, which intends to investigate the short- and long-term dynamics of these factors in Africa.

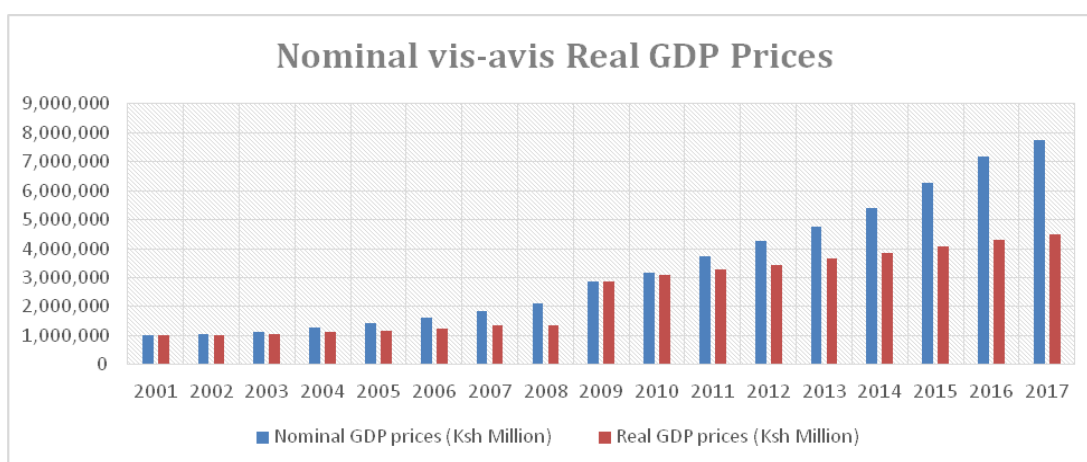
### **1.1.3 Kenyan Perspective**

Income taxes, value added taxes, excise taxes, and import tariffs are the primary sources of revenue for Kenya's government. Income tax is a direct tax on an individual's earnings from job, self-employment, corporate profits, rental income, dividends, interest, pensions, royalties, administrative income, and professional fees, as defined by the Kenyan Income Tax Act. Kenya's government relies heavily on income taxes as a source of revenue. In the 2016/2017 financial year, for example, income tax reached 47% of total tax revenue (KRA, 2017).

Corporate tax and income tax are the two primary components of Kenya's income tax. Limited liability firms, trusts, and cooperatives are all subject to corporate taxes. Domestic corporations are taxed at 30% of taxable income, whereas international companies are taxed at 37.5 percent. Personal income tax is calculated using a five-tiered rate structure, with modifications made every few years. Figures 1.1 and 1.2 illustrate Kenyan GDP growth (%) and absolute figures in form of nominal and real GDP.



**Figure 1.1: Kenya GDP Growth Rate (2001-2017, CBK: Kenya)**



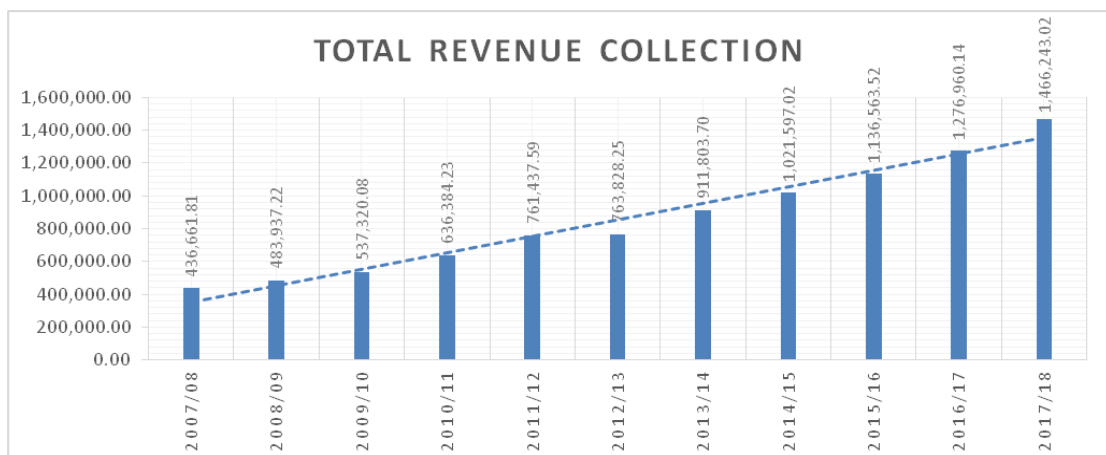
**Figure 1.2: Kenya Nominal and Real GDP Prices From (2001-2017, CBK: Kenya)**

Some excise taxes are intended at raising income, while others are focused at limiting specific consumption-related activities, according to Hyman (2010). The excise tax, which is an indirect tax on Kenyan goods and services, is a major source of revenue for the government and is also intended to discourage the use of dangerous products like tobacco and alcohol. Cigarettes, beer, wine, and spirits, as well as mineral water, are the most common customs products in Kenya.

Import and export duties are the two main components of tariffs. Import and export of certain products and services are subject to customs taxes. Tariffs are used to produce revenue as well as to facilitate commerce and to protect or promote local

manufacturing businesses. Value Added Tax (VAT) is an indirect tax on the consumption of goods and services that is levied at every level of the manufacturing and distribution chain, including retail.

Imported taxable products and services are likewise subject to value added taxes. Kenya's regular sales tax rate is 16 percent, according to Kenyan tax authorities. Exports of goods and services are covered by zero shipments, whereas financial services from banks and most agricultural products in unprocessed or canned form are covered by duty-free shipments. As a result, individual tax reactions to variations in economic development must be examined. Income tax, at 40%, contributed the most to tax revenue in the recent decade, according to Mutua (2015), followed by VAT at 28%. Excise and duty each contributed 21% and 11%, respectively.



**Figure 1.3: Kenya's Tax Revenue from 2008 To 2017**

In the recent past, there has been growing concerns on the ever-increasing public debt by Kenyan government to fund infrastructure development which forms the bottlenecks to boost sustainable growth. Although (IMF, 2016) rates the Kenya's risk of external debt distress to be low, there has been growing concerns over ever narrowing debt to GDP ratio which has been associated with possible external shocks due to stressed margins. According to the National Treasury (2019), the Kenya's



public and publicly guaranteed debt remains sustainable and as at end December 2019, it stood at Kes 4,571.6 billion equivalent to 53.1 per cent of GDP in nominal terms.

The borrowing phenomena based on economic surveys has created room for spending spree constraining money circulation due to high appetite for credit both locally and internationally to service maturing covenant's and cater for ballooning recurrent expenditure. This leaves too little to cater for capital expenditure and settlement of debts leading to repo-effect on the private sector due to credit squeeze as financial institutions perceive the government as risk-free amidst the rate capping law which was introduced in 2016 capping loan pricing to four basis above the central bank rate (CBR). The ballooning debt appetite has created a paradox which necessitates for more taxes to be raised to service the debts amidst concerns on economic viability of the funded projects, corruption which curtails cash flows from the funded projects to self-sustain on settlement of the debt commitments.

The government created an economic recovery strategy for the Wealth and Employment Action Plan in 2003, and the efforts it took helped the Kenyan economy recover. The economy increased significantly between 2003 and 2007, with the highest growth rate of 7% in 2007. However, post-election violence in 2008 broke this steady progress, lowering the growth rate to 1.5 percent. In the period 2003-2011, the lowest growth rate was 1.5 percent in 2008, while the highest was 7 percent in 2007.

Income tax, value added tax, excise tax, and import duties contributed for 47 percent, 28 percent, 16 percent, and 9 percent of total tax revenue in the 2016/2017 fiscal year, respectively. Because absolute data provide little information regarding the

relationship between tax income and economic growth, it is necessary to investigate the relationship using concepts such as elasticity and buoyancy (Menjo, 2016).

### **1.2 Statement of the Problem**

In an ideal situation, the taxes collected by the government should mirror the status of the economy in terms of gross domestic output or productivity. The Kenyan tax to GDP ratio has been declining in the last 6 years averaging 17.7% between 2013 and 2019 which recorded 19% and 16.7% respectively thus denoting an inverse relationship between the GDP and the country's tax revenues. Moreover, the country GDP has averaged 5.85% over the last 10 years raising concerns as to why tax to GDP ratio has been shrinking and not growing at an increasing rate of economic growth.

The Kenyan government has recorded a persistent budget deficit which is one of the probable and the single most important statistic measure of the impact of revenues shortages on the economy as a fiscal policy. Budget deficits have become a common element of public sector funding around the world (Ariyo, 1997). This is partly due to developing countries' desire to respond positively to their inhabitants' ever-increasing expectations, but it is also owing to the inefficiency, corruption, and bad planning of low-yield development initiatives. It is not self-liquidating to amortize foreclosed liabilities. Consequently, the projected economic growth mostly based on infrastructure programs does not improve the wellbeing of the economy thus stagnated tax base and the declining trend witnessed over time.

According to Chipeta (1998), taxes as a source of income for the government constantly do not generate sufficient revenue to finance government spending and thus continuously contribute to the budget deficit. Therefore, developing countries

have issued domestic and foreign credit as an alternative source of short-term deficit funding. This deficit financing phenomenon has become the norm in most developing countries where the majority of the citizens are poor and unemployed because the economy does not offer adequate opportunities and therefore the population depends on the state to provide necessary public goods and services.

Notably, reliance on external funds has become unsustainable due to inflationary conditions given the recent global economic shocks and crisis due to pandemics and the stringent donor conditions slapped on many developing countries. As analysts from Bretton Woods Institutions point out, "it makes no sense to maintain the current mismatch between the volatile (short-term) nature of aid flows and the long-term nature of commitments" that belongs to and is wholly consistent with their Plan and the budgeting process.

This conflicting connection between tax income and economic growth is not adequately accounted for in the empirical literature, as evidenced by this mixed tendency. In 2010, Kenya recorded the highest economic growth rate of 8.4%; however, this has stagnated at an average of 5.85% in the last one decade. As such, there are concerns as to the possible cause of such stagnation in economic growth and declining trend in tax-GDP ratio despite positive growth recorded year in year out over the same period. The literature also does not show a possible causal relationship between taxes and economic growth.

Previous research has shown that a stable and flexible tax system is the door to sustainable economic growth. Therefore, tax revenue is an important step in an effort to increase the economic growth and prosperity of a country. According to statistics, Kenya's tax revenues fluctuate, as does economic growth; this requires the need to

examine whether there is a relationship and causality between variables. This study aims to fill the knowledge gap by examining the relationship between tax revenue and economic growth in Kenya.

### **1.3 General Objective**

The general objective of this study was to establish the relationship between tax revenue and economic growth in Kenya.

### **1.4 Specific Objectives**

The specific objectives of the study were:

- i. To determine the causal effect between PAYE and economic growth in Kenya.
- ii. To establish the causal effect between corporation tax and economic growth in Kenya.
- iii. To find out the causal effect between value-added tax and economic growth in Kenya.
- iv. To assess the causal effect between excise duty on economic growth in Kenya.

### **1.5 Hypotheses of the Study**

The study was guided by the following research hypotheses:

**H0<sub>1</sub>:** There is no bi-directional effect between PAYE and economic growth.

**H0<sub>2</sub>:** There is no bi-directional effect between corporation tax and economic growth.

**H0<sub>3</sub>:** There is no bi-directional effect between value-added tax and economic growth in Kenya.

**H0<sub>4</sub>:** There is no bi-directional effect between excise duty and economic growth in Kenya.

## **1.6 Significance of the Study**

These results are important for the government in making tax decisions. The results show whether the increase in tax revenue in the sample period is due to discretionary tax policies or due to the expected automatic increase in tax revenue when gross domestic product rises.

Politicians would benefit from the poll results since they provide data that can be used to evaluate the success of Kenya's tax system over the last decade. It also includes data on individual tax responsiveness to fundamentals and general growth fundamentals, which policymakers can utilize to build appropriate tax reform policies to boost the tax system's productivity. The future development of tax income in Kenya can be anticipated and affected using a model to establish the relationship between tax revenue and economic growth.

Academics and scholars will be interested in this study since it adds to the current literature on the performance of Kenya's tax system and essential components. This study updates the literature on Kenya's tax system productivity and gives fresh estimates of the elasticity and buoyancy of tax receipts for the whole tax system as well as for individual tax system components. Researchers are also interested in it since it provides a foundation for future research.

## **1.7 Scope of the Study**

The study used data provided by government agencies such as central bank, Kenya National Bureau of Statistics, Ministry of Finance and Kenya Revenue Authority. Time series data was collected for the period from 1989 to 2019. The independent variables of the study included components of tax revenue, that is, corporation tax,

PAYE, value added tax and excise duty tax which constitutes the highest sources of government taxes. The dependent variable was economic growth measured using GDP.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter focuses on a review of the study topic's existing literature. The theoretical postulates are addressed in the first part. The second section examines tax collections and economic growth in both the global and Kenyan economies empirically.

#### **2.2 Concepts of the Study**

##### **2.2.1 Concept of Economic Growth**

In research, economic growth has been used to increase the capacity of the economy to produce goods and services over time. Economic growth is measured by both real growth and nominal growth. Real economic growth occurs when the rate of change in total productivity increases, driven by the capacity of an economy that can increase its production every year, driven by natural and human resources. Contrary nominal economic growth is when output (GDP) of a country is rising merely because of increase in the price of commodities or increase in the pay rates. This is usually growth in numbers but no growth in real sense because the state is not showing progress in real sense. The growth is usually determined by the rate of inflation which is not a reflection of a country increase in productivity.

According to the World Bank, Kenya's gross domestic product (GDP) was \$87.91 billion in 2018. That is equivalent to 0.14 percent of the world economy. In 1960, Kenya's average GDP was \$16.65 billion and reached a record \$87.91 billion in 2018, and a record low of \$0.79 billion in 1961. Real growth grew, according to the African Development Bank Kenya GDP in 2018 was up around 5.9% from 4.9% in 2017, mainly due to favorable weather, reduced political uncertainty, improved business

climate and strong private consumption, as well as the introduction of everyday life, Kenya's Big Four Order (B4), launched in 2017 with a focus on manufacturing, public health, affordability, housing, and food security (African Development Bank, 2019). The program aims to promote structural change by addressing entrenched social and economic challenges and accelerating economic growth to at least 7% per year. By implementing the Big Four, the country wants to reduce poverty and create jobs. Since 2013, the national debt ratio has risen dramatically, reaching a high of 57 percent at the end of June 2018, with half of the debt financed from outside sources. In addition, the proportion of loans from non-concessional sources grew, owing in part to Kenya's February 2018 Eurobond offering of US\$2 billion. The International Monetary Fund's debt sustainability review in October 2018 upped the risk of debt stress to a moderate level. It's imperative to note increasing debt levels has a direct impact on country GDP due to high risk of default which may lower the country ability affordable debts for infrastructure development and budgetary support hence diminished rate of economic growth.

### **2.2.2 Concept of Tax**

Tax systems are principally set up to aid in collection of tax revenues aimed at financing public expenditures. Tax is a mandatory tax by the government on every individual or legal entity to fund the common good of the nation. Taxes are also known as mandatory finance charges, or taxes levied on taxpayers by the government to fund various public expenditures. The main source of income in Kenya is taxes, which account for more than 90% of revenue (KRA, 2016). The main type of taxes in Kenya includes; Income tax, VAT, excise duty and revenues collected in form of Appropriations in Aid (AIA) such as service fees and charges.



Taxes account for major sources of government revenue. There has been a shortfall in revenues due to increasing public expenditure over the last 10 years thus driving the government to devise ways on increasing taxes to meet public expenditure both capital and recurrent expenditures. According to KNBS (2018) the total tax collection in 2015/2016 amounted to Kes 1,136 Billion, in 2015/2016, Kes 1.276 Billion in 2016/2017 and Kes 1,466 Billion in 2017/2018 representing an increase of 10.1% in 2015/2016, 10.9% in 2016/2017 and 12.9% in 2017/2018 compared to average GDP growth of 4.9%. As a result, there is a clear mismatch between tax collection and economic growth.

#### **2.2.2.1 Concept of Income Taxes**

Personal income tax and corporate income tax are two types of direct taxes placed on natural persons and legal companies. Income tax is a type of direct tax applied on earnings from a variety of sources, including trade, employment, rent, dividends, interest, and pensions. Corporations, limited liability firms, trusts, member clubs, corporations, and cooperatives all pay corporate income tax on their profits. Both income tax and corporate tax are based on the Income Tax Act, Limit 470. The Act defines a taxable person, the details for determining taxable income and the applicable rate. The Income Tax Act is also complemented by additional laws such as the 2015 Tax Procedures Act and annual financial statements, which amend the applicable taxable income rates and income. In this study, income tax is defined as a combination of income tax and corporate tax.

#### **2.2.2.2 Concept of Value Added Tax**

Kenya imposes an indirect consumption tax on the supply of some local goods, services, and imports. Value Added Tax was introduced in 1989 to replace sales tax and is regulated under the Value Added Tax Act 2013. It is the percentage of value of

goods or services levied on delivery of taxable goods or services in Kenya and on imports of taxable goods. The rate of VAT is levied between 0% and 16%. The government in 2018 introduced VAT on petroleum products which attract tax at the rate of 8% in an effort to boost revenues collections which has been dwindling despite ever increasing expenditures financed by external and internal debts. This therefore necessitated the government to introduce VAT on petroleum products with an intention to boost revenue streams.

### **2.2.2.3 Concept of Excise Duty Tax**

This is an indirect tax levied on manufacture, sale, or use of locally produced goods (such as alcoholic drinks, fuel or tobacco products, airtime, and financial services such as bank transactional charges). The tax is administered with a bit of discriminative intent to discourage purchase of particular goods. The tax is administered as a percentage of the company revenue instead of the income delivered from the goods. The tax is also known as a 'sin tax' as it's meant to discourage or reduce consumption of certain products and services. In Kenya, the tax is imposed under Excise Duty Act, 2015.

### **2.2.2.4 Tax revenue to GDP ratio**

The goal of this notion is to see if state tax revenues increase faster than national income or GDP. The tax-to-GDP ratio, or tax revenue as a percentage of GDP, is a metric that gives some of the data needed to assess the government's budget imbalance. If the country spends more and receives less than the total, the deficit increases every year.

In developed countries, tax revenues increase significantly during economic booms and decline significantly during recessions. The connection is usually reflected in the

following answers; If tax revenues increase and GDP does not increase then tax rates will increase, and if tax revenues decrease and GDP increases then tax rates will decrease.

### **2.3 Theoretical Framework**

The study was anchored on the following theories: the dynamic theory of public spending, taxation, and debt, the benefit theory, ability to pay theory, neo-classical theory of growth and endogenous growth theory.

#### **2.3.1 Dynamic Theory of Public Spending, Taxation, and Debt**

This theory is based on the tax smoothing approach of fiscal policy, pioneers (Barro, 1979) who predicted that governments would use budget surpluses and deficits as buffers to ease tax rates if changes were too drastic. Governments then run a deficit when they need high government spending and a surplus when they need little. This approach is based on the assumption that governments have good intentions, that government spending needs will fluctuate over time, and that measurable income tax costs are a salient characteristic of tax rates (Battaglini & Coate, 2008).

This theory investigates political jurisdiction, in which political decisions are determined by a legislature made up of elected representatives from distinct geographical areas. The legislature can raise money in two ways: by a proportional tax on labor income or through capital market borrowing. A one-month bond is used to secure the loan. If legislators so desire, they can purchase bonds and use the interest income to pay future public spending. Public funds are utilized to pay the supply of public amenities that benefit all citizens, as well as regional transfers that are viewed as pork barrel costs. Citizens' perceptions of the value of public assets are volatile, reflecting shocks such as war or natural calamities. Legislators make policy decisions

by a majority (or supermajority) vote, and the Baron and Fereon (1989) legislative negotiation approach is used to represent legislative policy making in each era. The public debt level functions as a government variable that generates a dynamic relationship between policy decision-making periods.

### **2.3.2 The Benefit Theory**

This theory is also known as the "service cost theory". This theory is based on the contractual relationship between taxpayers and taxpayers. Taxation is presented as a fee to taxpayers on goods and services offered by the state. According to Vosslander (2010) taxes should therefore be low or zero for those who do not receive state aid and high for those who receive the most from the state. According to performance theory, the amount of tax is determined automatically, because the taxpayer pays the received state benefits on a pro rata basis. In other words, those who get the most from government services pay the most taxes. Two models are discussed while discussing the utility approach: the Lindahl model and the Bowen model. The supply curve for public services in Lindahl's model implies that the creation of social goods is linear and homogeneous. Because the state is not for profit, it expands its supply until a voluntary exchange balance is attained at some time (Hammond, 2015).

Bowen's model is more operational because it shows that the opportunity cost of private goods is abandoned when social goods are produced at increasing costs. For example, if two taxpayers (A and B) share social services/goods, their demand for social goods is represented by  $a$  and  $b$ ; thus,  $a + b$  is the overall demand for social goods. The supply curve demonstrates that items are produced under cost-increasing conditions. The value of lost private goods is the price of producing social goods, hence  $a + b$  is also the demand curve for private goods. According to the taxpayers'

wishes, the intersection of the cost and demand curves defines how national money should be split between social and private goods (Hammond, 2015).

### **2.3.3 Ability to Pay Theory**

The ability-to-pay is on the dominant theory of taxation, which is interpreted in terms of sacrifice which portends that those with greater ability to pay taxes should bear the greatest responsibility in shouldering the tax burden. The theory justifies the progressive taxation concept. Payment ability usually denotes more than pure talent: not only do those who have more, but should pay more. Although solvency can be used to support proportional taxes, progressive taxes are more typically used. So, if A earns  $x$  times as much as B, he may pay  $x$  times as much as B. This can usually happen; The question arises, however, whether an obligation can be created through possibility. It also says little about how much more someone with a higher income will have to pay (Vosslander, 2010).

This is the broadest and most widely used theory of equity or equity in taxation, which assumes that tax payments should be based on solvency and that citizens of a country should pay taxes to regulatory agencies. It seems that a very fair and equitable tax should be determined on the basis of individual taxability. For example, if person A is taxed more than person B, person B must pay more tax than person B.

The main challenges of the theory is in its actualization where the problem arises on assessment the payment capacity. The economists are not unanimous as to what a person's ability or ability to pay should be the exact measure. Different proponents have suggested different ways of assessment of the ability with many economists aligning their arguments on expenditure-based tax, income-based tax and property ownership models of assessment of the taxpayers' ability.

### **2.3.4 Neo-Classical Theory of Growth**

The macroeconomic production function, in which the factors of production influence national production, underpins the majority of economic growth theories. If land is maintained constant, growth occurs in three ways, according to the neoclassical theory created by Solow-Swan (1956): an increase in labor supply, an increase in capital funds, and an increase in productivity. More output is produced when the labor supply is increased. When more individuals are involved in a country's output, such as through immigration or when unemployed people take jobs, real production rises. Increased physical, and human capital are the two components of increased capital. Physical capital boosts output by increasing labor productivity and directly providing useful services. Increased output can be achieved by investing in technology such as computers and machinery, which can cut working hours.

Because people with talents are more productive than persons without skills, human capital promotes economic growth. Universities and on-the-job training are used to invest in human resources. A rise in productivity explains an increase in production, which is accounted for by an increase in investment (labor and capital). According to the idea, population increase and the rate of technical progress, both of which are considered exogenous, influence the long-term growth rate (Burda & Wyplosz, 2001). This theory has a few short ramifications. To begin with, it provides an insufficient explanation for economic growth. Second, the idea fails to explain why some countries remain wealthy while others remain impoverished, and why some countries grow swiftly while others stagnate. The theory underlines the variable of economic growth in this study.

### **2.3.5 Endogenous Growth Theory**

Paul Romer and Robert Lucas in 1990 were the leading proponents of the endogenous growth theory. This approach emphasizes the importance of continuously providing additional resources to workers in order to boost productivity. Physical capital, human capital, and knowledge capital are all resources in this scenario (technology). As a result, growth is driven by the accumulation of factors of production, which in turn is the result of private sector investment. This demonstrates that, at least in the long run, the government can only impact economic growth via influencing capital investment, education, and research & development. Better education becomes the key to economic progress under this strategy.

Higher levels of private or public sector investment, a lower share of government spending in GDP, higher school enrolment rates, and more political stability are all related with faster economic growth (Pan & Ngo, 2016). Technical change, in contrast to neoclassical growth theory, is no longer based on chance, but can be aided and aided through suitable measures. Endogenous theories consider technical change to be factors that can be impacted by political actions and must be included in the production function alongside conventional capital expenditure, rather than unexplainable and incidental as in neoclassical theory. Consumption taxes, investment and research subsidies, and moving resources from government consumption to government investment are all examples of government policies that can influence economic growth (Folster & Henrokson, 1997). The theory supports the variable of economic growth in this study.

## **2.4 Empirical Literature**

### **2.4.1 Tax Revenue and Economic Growth**

Nyamongo (1987) looked at the patterns and composition of Kenyan government revenues and expenditures. Since World War II, according to Nyamongo, the public sector's involvement in most economies has expanded dramatically. The share of total government spending in GDP in industrialized and developing countries is 30 percent and 25 percent, respectively. The expanded role of government, which is funded primarily through taxes, is believed to be due to the power of government to distribute resources efficiently when markets do not, due to market capitalism, and government trying to help the poor.

Helms (1985) examined the effect of taxes on economic growth. The findings suggest that tax hikes at the state and local levels promote economic growth when tax revenues are used to fund public service improvements rather than transfer payments by the government. This is attributed to services that are valued more than labour and business, resulting in increased productivity. Helms also find a negative association between tax hikes and economic growth when taxes are utilized for transfer payments or income redistribution, according to the researchers.

As factors of economic performance, economic policies and macroeconomic conditions have also gotten a lot of attention. This is because they have the power to shape the environment in which economic growth occurs (Barro & Sala-i-Martin, 1995). By investing in human resources and infrastructure, as well as upgrading political and legal structures, economic policies can influence numerous areas of the economy. Furthermore, a stable macroeconomic environment can encourage growth by eliminating uncertainty, whereas macroeconomic instability can stifle growth by affecting productivity and investment. Several macroeconomic factors identified in



the literature that have an impact on growth are inflation, fiscal policy, budget deficit and tax burden (Fischer, 1993).

Jepkemboi (2008) investigated the macroeconomic factors that influence Kenya's tax income share. Kenya's financial structure, according to Jepkemboi, demonstrates a constant growth pattern in government spending and revenues, with expenditures always exceeding revenues. A substantial budget deficit is caused by a mismatch between revenue and expenditure. Taxes are still not as productive as they should be, even after-tax reform. Poor tax revenue growth might suggest either a tax structure shortfall or insufficient government efforts, both of which are influenced by a range of circumstances.

Research on tax reform and revenue mobilization in Kenya was done by Moyi and Muriithi (2003). One of the key objectives of Kenya's tax reform is to ensure that the tax system can be used to address long-term budget deficits. This is accomplished by tax policies that try to alter individual tax profitability in response to changes in national revenue. Furthermore, given highly elastic returns on national income, income tax is projected to be dominating (proxy basis). The ideas of resilience and buoyancy are used in this study to see if Kenya's tax reform is fulfilling these objectives. The data show that reforms have had a positive impact on the overall tax structure and on individual tax procedures.

Okech and Mburu (2011) examined how tax receipts in Kenya responded to changes in national income. Kenya's tax structure is neither flexible nor dynamic, according to the findings of this study. All of the country's key tax components are likewise inelastic, according to the report. Income taxes and consumption taxes have varying units across the study period, contrary to Muriithi and Moyi (2003), who concluded

that both taxes had a lift. The study finds that although the Kenyan tax system has initiated various tax reforms, it is still not responsive to changes in economic growth. Therefore, necessary corrective actions are needed to correct the inelasticity of various taxes with respect to the tax reforms introduced and implemented.

Kabbashi (2005) examined the effects of trade liberalization on income mobilization and stability in Sudan. This study examines the buoyancy and resilience of the tax system in Sudan, with a particular focus on the effects of trade liberalization on revenue mobilization and the stabilizing role of the fiscal sector. The results show that the Sudanese taxation system as a whole is not variable and inflexible. Tax returns for import tariffs have increased due to various changes in fiscal policy, according to a comparison of the measure of buoyancy and nominal elasticity over the reference period.

Using Nigeria as a case study, Abiola and Asiweh (2012) investigate the impact of tax administration on government income in developing nations. The study indicates that diversification of revenue sources is critical for Nigeria's economic development if it is to compete on a level playing field in terms of increasing residents' living circumstances. Researchers conclude that the focus on oil and gas revenues is due to putting all the eggs in one basket, suggesting that technological developments can render these mineral resources obsolete and eventually divert them to environmental resources such as solar energy. The researchers also point out that oil price fluctuations are a major problem. In order for the state to build a culture of sustainable development, it is necessary to review and restructure tax policies and the state administration system.

Omodero, Ekwe and Ihendinihu (2018) used a case study from Pakistan from 1980 to 2008 to investigate the impact of income disparity on economic growth. The variables examined have cohesive cohesiveness. The results show that the income gap is significant and has a negative impact on economic growth. Econometric results show that a large difference between assigned income and actual income has a significant and negative impact on economic growth (in the case of Pakistan, income tends to be smaller than set income). This difference can be reduced by eliminating exceptions and special procedures. A real increase in sales can only be effective if the collective benefits of all parties involved are maintained fairly and fairly.

#### **2.4.2 PAYE and Economic Growth**

In Nigeria, Osho (2014) looked at the impact of wages and income on social and economic development (using GDP as a proxy). The Central Bank of Nigeria's statistical bulletin provided secondary time series panel data for the years 2009 to 2018. For data analysis, this study employs the Ordinary Least Squares technique, which is based on computer software version E-View 10, with gross domestic product as the independent variable, a proxy for social and economic development, and personal income tax and personal value decline - additional tax as the dependent variables. Both income tax and VAT have a considerable favorable effect on socioeconomic development, according to the findings of the study. Based on these findings, the government should strengthen the tax administration system to increase tax income and implement tax training courses to ensure voluntary tax compliance.

Using a simple model of endogenous growth, Kairanya (2016) investigated the impact of taxation in general, as well as the impact of indirect and direct taxes on economic growth. This study examines the influence using time series data from 1975 to 2014. The endogenous growth model, which was first utilized by Egen and Skinner, is used

in this work (1996). Lee Young (2004) enhanced this model by defining an econometric model to analyze the influence of taxes on the rate of increase of gross domestic product per capita. To analyze the influence of tax reform on Nigeria's economic growth, Ogbonna and Appah (2012) employed the same econometric model specification but took a country-specific approach. The long-term cointegration equation is calculated using the ordinary least squares approach in this work. To determine homoscedasticity, serial autocorrelation, multicollinearity, and normality of variables, preliminary tests were performed. The findings demonstrate the importance of explanatory variables in explaining GDP in general. Indirect taxes, direct taxes, other taxes, interest rates, foreign direct investment, and net exports account for 96.8% of the fluctuation in GDP, according to the coefficient of determination.

Changes in income taxes have an impact on long-term economic growth, according to Gail and Samuick (2014). Tax reform's structure and financing are crucial to economic growth. Lowering tax rates can motivate people to work, save, and invest, but if tax cuts aren't accompanied by immediate spending cutbacks, the federal budget deficit would likely rise, reducing long-term savings and raising interest rates. The overall impact on growth is unknown, but many projections indicate that it will be minor or negative. The findings reveal that not all tax changes have the same effect on economic growth. In the long run, reforms that boost incentives, eliminate existing subsidies, avoid unanticipated gains, and avoid scarce resources will benefit the economy's size, but they may also create trade-offs between equity and efficiency.

Riba (2017) used quarterly data from 2003 to 2016 to determine the long-term link between taxes and economic growth at the aggregate tax rate, as well as at the key levels of income tax types, corporation taxes, and value added tax, using the Autoregressive Distributed Delay (ARDL) framework. This model is based on the

total income approach to GDP, which is derived from the theory of economic growth. The findings show that the long-run equilibrium exists exclusively at the level of tax kinds. The findings of the causal analysis support the premise that economic growth stimulates changes in aggregate taxes, sales taxes, and sales taxes, and that growth and sales taxes are linked. The findings suggest that taxes and growth have a positive relationship, with an increase in VAT leading to increased growth and an increase in VAT and VAT driven by economic growth.

The influence of tax income on the Nigerian economy was studied by Ojong, Anthony, and Arikpo (2016). The goal of this research was to look into the link between oil profit taxes and the Nigerian economy. The information was gathered using a survey method from the Central Bank Statistics Bulletin. The association between the dependent and independent variables was established using a basic least squares multiple regression model. The findings reveal that the oil profit tax has a major impact on Nigeria's economic growth. He stated that there is a strong link between non-petroleum revenue and Nigeria's economic growth. The findings also reveal that there is no link between company taxes and Nigeria's economic growth. It is suggested that the government work to ensure that social services are available in all parts of the country.

### **2.4.3 Corporation tax and Economic Growth**

Oz Jalanman (2019) uses a VAR panel for 29 OECD nations from 1998 to 2016 to compare the dynamic relationship between economic growth and corporation tax rates during the recent financial crisis and non-crisis eras. Corporate tax has a major detrimental impact on economic growth, according to the findings. Furthermore, the recent financial crisis has impacted the endogenous relationship between corporation taxes and economic development. There is only one-sided causality from corporation

tax rates to economic growth during crisis-free periods, according to the Granger causality test. Surprisingly, during times of crisis, there is no causal association between company taxation and economic growth. The findings indicate that the recent financial crisis has had a major influence on the endogenous relationship between corporation tax rates and economic growth.

Baranová and Jancková (2012) looked at the relationship between corporation taxation and long-term economic growth. The neoclassical growth model is combined with human capital in this approach. Furthermore, the variable model depicts the various ways in which the company tax burden can be assessed, particularly the micro-forecasting method's tax rate, which is broken down into corporation tax, implicit capital tax rate, and effective tax rate. The panel regression methodology, as well as associated data analysis tools, are employed by default. EU member countries make up the sample. The annual frequency for the years 1998 to 2010 is used as the reference period. The findings revealed that corporate taxes has a considerable impact on a country's long-term economic growth.

Onakoya and Afintinni (2016) examined the extent to which tax revenues increase Nigeria's economic growth. A simple least squares model is presented in which corporate income tax (CIT), oil profit tax (PPT) and value added tax (VAT) are used as predetermined variables for economic growth as measured by real gross domestic product (GRDP). The results show that taxation has a positive impact on Nigeria's economic growth. Therefore, this study recommends further promoting and expanding the collection of VAT and sales tax while more policy efforts should be made to ensure a stable business environment in the region of the country's oil sector for better PPT coverage.

The impact of taxation on economic growth in South Africa was studied by Dladla and Khobai (2018). The autoregressive distribution-delay (ARDL) technique was developed using annual data for South Africa from 1981 to 2016. Taxes have a negative link with economic growth in South Africa, according to empirical findings. Economic growth, trade and openness, capital and integrated taxation are some of the study's findings. This document demonstrates the importance of fiscal policy in boosting South Africa's long-term economic growth.

From 2007 to 2015, Gashi, Aslani, and Bokoli (2018) investigated the impact of Kosovo's tax regime on economic growth. The goal of this research is to determine the impact of various forms of taxes on economic growth. This approach is based on a comparison of data from primary and secondary sources. The research hypotheses were examined using the STATA application/software to calculate the influence of the tax structure on economic growth using econometric models and linear regression analysis. The econometric model includes many independent variables (tax types) as well as GDP as the dependent variable. The findings reveal that most taxes have a positive impact on GDP growth; however, not all taxes have the same impact on economic growth.

Using annual time series data from 1980 to 2014, Navaratnam and Mayandy (2016) investigated the influence of budget deficits on economic growth in a number of South Asian nations, including Bangladesh, India, Nepal, Pakistan, and Sri Lanka. In vector autoregression, the text employs cointegration analysis, bug fix modeling, and tests for Granger causal linkages (VAR). The findings of this study demonstrate that budget deficits have a detrimental influence on economic growth in the South Asian countries analyzed, with the exception of Nepal, where the impact is positive. The findings also demonstrate that the causal direction for SAARC countries is varied,

with budget deficits leading to economic growth in Bangladesh, Nepal, and Pakistan, but not in India and Sri Lanka.

Dzingirai Canicio (2014) investigated the mystery surrounding the assumption that high tax revenue growth is a *prima facie* and leading indicator of a high standard of living as a result of high economic growth generated by the government's multiplier process for Zimbabwe, income increases between 1980 and 2012, and the relationship between tax revenue and economic growth in Zimbabwe in the short and long run. Taxes have been proved to have an impact on resource allocation and frequently impede economic progress, both theoretically and experimentally. To accomplish this, the researchers used the Granger causality test, the Johansen cointegration test, and the vector error correction model. However, the findings of this analysis clearly illustrate that with a 30 percent short-run adjustment rate to the long-run equilibrium level, economic growth and total state tax collections are independent.

#### **2.4.4 Value-added tax and Economic Growth**

Ormaechea and Morozumi (2019) found whether VAT could have a different effect on long-term growth depending on whether it was increased at standard rates or by C-efficiency (a measure of the deviation of VAT from perfectly levied taxes charged all at once). refers to total consumption). There are two main findings. First, for a given total tax revenue, an increase in VAT, financed by an income tax reduction, will only promote growth if VAT is increased through C-efficiency. Second, the increase in efficiency level which is offset by a decrease in standard rates also encourages the growth of certain VAT revenues. Therefore, the conclusion is that in OECD countries the expansion of the VAT base through tariff reductions and exemptions is more conducive to higher long-term growth than standard rate increases.



Inyama and Ubesie (2016) examined the effect of VAT and import duties, as well as consumption taxes, on economic growth in Nigeria. Secondary sources were examined in data collection, while in data analysis a simple regression technique was used to test the research hypothesis. Furthermore, correlation analysis was utilized to examine the relationship between non-oil sources of revenue and Nigeria's GDP. The findings reveal that all oil tax revenues have an impact on Nigeria's GDP. The strength of the association between the factors analyzed was quite strong for all variables in the section on the relationship between the factors examined. The study concludes that one of the key drivers of Nigeria's gross domestic product is VAT, import charges, and excise taxes. The significant link between variables indicates that sources of income can be utilized to predict the value and condition of a country's gross domestic product. Therefore, federal, state, and local governments can fund their fair share of capital and recurring budgets through non-oil tax revenues.

Alavuotunki, Haapanen and Pirttil (2019) examined the effects of the introduction of VAT on inequality and government income using newly published macro data. We present conventional regression with fixed effects by country and analysis of instrumental variables in which value added tax recognition is instructed, using prior values from neighboring countries' value added tax systems as tools. In contrast to previous work, the results show that the effect of VAT receipts is not positive. The results show that income inequality increases with the introduction of VAT, while consumption inequality remains unaffected.

Oynipreye (2016) empirically studies the link between VAT, total government revenue, and gross domestic product in order to assess the influence of VAT on government revenues as well as the impact of VAT on the Nigerian economy's economic performance. The data for this study was analyzed using appropriate

econometric approaches, and the Phillip-Perron root test revealed that all variables did not shift on the first difference. During the reference period, the study found a significant long-term positive association between VAT and total government revenue and Nigeria's gross domestic product.

Erero (2015) analyzed the effect of an increase in value added tax (VAT) through a general balance model that can be calculated dynamically. The model database contains a social accounting matrix for 2010. All major South African taxes are broken down by income decile in the SAM and household sector, with the top decile further divided into five divisions. For the period 2012 to 2018, five alternative simulations were done, ranging from a 1% to 5% VAT rise. Our findings suggest that when government income is higher in lower-income households, a percentage rise in VAT has no negative impact on them. A 1% increase in the VAT rate, for example, will effect investment by increasing the cost of capital. Any change in capital funds will have an impact on output and labor demand, which might affect the standard of life of people of all income categories. GDP increased by 0.02173 percent in 2013, indicating a favorable trend from 2013 to 2018. This suggests that GDP is dependent on other variables such as investment and consumption in the short term, both of which are positively affected by the shock.

The influence of VAT on income in Nigeria was investigated by Onaolapo, Aworemi, and Ajala (2013). The Statistical Bulletin of the Central Bank of Nigeria (2010), the yearly reports of the Federal Internal Revenue Service, and the Chartered Institute of Taxation of Nigeria were used as secondary data sources. Stepwise regression analysis was used to analyze the data. The findings reveal that in Nigeria, VAT has a statistically significant impact on income. This study recommends real dedication and

honesty to all VAT agencies with regard to collection and payment, and the government should do its best to improve the way VAT is collected.

From the beginning through the end of 2014, Gatawa, Aliero, and Aishatu (2016) experimentally investigated the influence of VAT on the level of economic activity in Nigeria. The Johansen Joint Integration Test was used to examine secondary data for this investigation (1988). Quarterly data is available from the fourth quarter of 1994 to the fourth quarter of 2014. The study discovered that VAT has a strong positive impact on economic growth. Other government revenues, which include all oil income and other federal revenues with the exception of VAT, were likewise found to be positively connected to economic growth throughout the period studied. The study recommends maintaining VAT in this way; all identified administrative gaps must be closed in order to continue to make a greater contribution to the country's economic growth. Accountability and transparency must also be prioritized in the management of all government revenues.

Using the Arellano-Bond-Dynamic-Panel GMM assessment, Abd Hakim, Karia, and Bujang (2016) looked at the impact of taxes on goods and services on economic growth in emerging and developed countries. GST is inversely connected with economic growth in poor countries, but statistically significant and positively correlated with economic growth in industrialized countries, according to empirical findings. They arrive to the conclusion that using a fixed rate VAT at the moment is the least efficient way to raise incomes and drive growth in emerging countries. As a result, the application of GST in developing nations needs to be reconsidered in order to generate better income and economic growth without putting a strain on consumption and real per capita income.

Nchor (2016) looked at the impact of VAT on Nigerian economic growth from 1994 to 2016. Using secondary data sources, this study employs the OLS and Granger causality techniques. The GDP growth rate is the dependent variable, whereas the explanatory variables are value added tax (VAT) and customs and excise tax (CED). The findings revealed that VAT and IBD had no discernible impact on economic development. He also demonstrated that the variables had no causal relationship. As a result, this study recommends, among other things, the efficient and effective use of VAT revenues for infrastructure development to increase productivity; budget discipline, strengthening anti-corruption institutions, ensuring the rule of law and good governance, and increasing the capacity of tax officials by improving their work environment through training and retraining to increase productivity.

In Nigeria, Chigbu and Ali (2014) investigated the relationship between VAT and economic growth. This article illustrates that VAT has a beneficial influence on economic growth supported by real GDP using the Engle and Granger cointegration technique on a sample of annual data from 1994 to 2012. The findings also reveal that there is no long- or short-term link between VAT and GDP. As a result, the government should implement productivity measures to boost VAT's contribution to Nigeria's economic growth.

Yoshino and Abidhajaev (2017) investigated the impact of VAT on Uzbekistan's economic growth. A modified version of the model used by Gatawa et al (2016) in their study of the effect of VAT on economic growth in Nigeria was utilized in this study. The results suggest that a positive shock in VAT collection has a positive effect on GDP growth after accounting for the lagging effect and likely endogeneity of the variables. VAT has a very good effect on economic growth, according to this study. Other government revenues, which include all oil income and other federal revenues

except for VAT, were likewise found to be positively connected to economic growth throughout the period studied.

Njogu (2015) studied the impact of VAT on Kenya's economic growth. The causal research design was adopted for this investigation. Since the beginning, the study's target audience has been quarterly reports on the condition of the Kenyan economy in terms of productivity as measured by GDP, consumer prices as assessed by the consumer price index, and employment as measured by the unemployment rate. From 1990 until 2014, the KRA regulated VAT. In order to boost overall GRDP, the researcher advises KRA to aim to cut and/or maintain a low VAT rate. In terms of the impact of the VAT rate on economic growth as measured by the CPI, the data reveal that a 9.2% increase in the CPI incidence corresponds to a 9.2% increase in the VAT rate.

#### **2.4.5 Excise Duty and Economic Growth**

The influence of fuel taxes on economic growth in South Africa was investigated by Ncanywa and Mgwangqa (2018). The findings suggest that economic growth and gasoline taxes have a long-term negative relationship. The conclusion is that the economy must grow faster in order to boost tax revenues and government spending. Strong revenue collection is thus contingent on strong economic growth and efficient tax administration. A growth-oriented tax system has the effect of reducing tax distortions while also providing incentives for economic development drivers.

For the period 1973 to 2010, Owino (2019) looked at the impact of tariffs and excise taxes on Kenyan economic growth. Two studies have sparked this investigation. First, there are current empirical discrepancies, and second, there is a significant knowledge vacuum due to a lack of empirical literature on Kenya. As a result, in this study, an

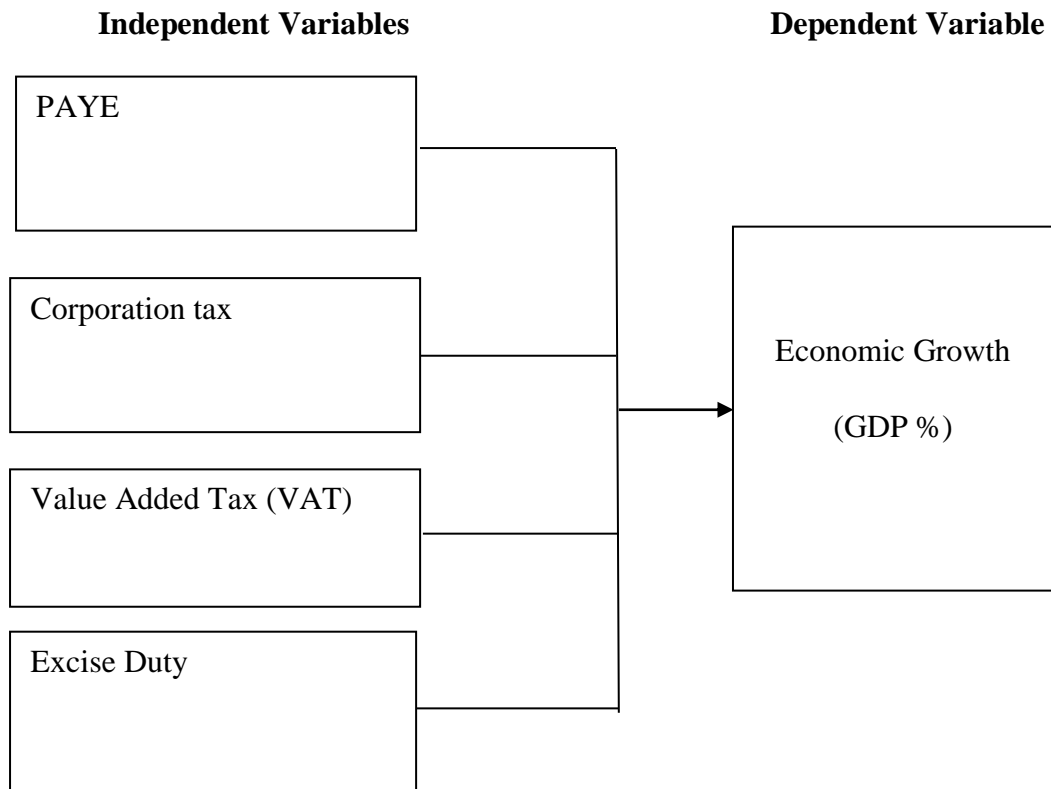
attempt was made to unite the various viewpoints as well as to bridge the knowledge gap. The theoretical framework is based on an endogenous growth model, and the study uses a correlational research design based on its ability to determine the degree and direction of the association between variables. Tariffs and excise taxes are positively associated to economic growth in Kenya, according to empirical findings.

Because the financial and economic crises also impacted the tax system, Szarowska (2013) examined the impact of changes in the tax burden on economic growth and offered direct empirical data in the European Union. It analyses implicit tax rates on consumption, labor, and capital, and uses the Eurostat definition to categorize the tax burden by economic function. This study is based on annual data from 24 EU Member States from 1995 to 2010. The primary research methodologies were panel regression and a paired Granger causality test. According to the theory, the results confirm that consumption taxes have a statistically significant beneficial influence on GDP growth whereas wage taxes have a statistically significant negative effect. There is a causative relationship between changes in the implicit tax rate on consumption and GDP growth in the short term, as well as a causal relationship between GDP growth and changes in the implicit tax rate on capital and labor.

Reynolds (2016) investigated the economic impact of excise taxes. This study uses a general equilibrium model that can be constructed statically to determine the impact of a 10% excise tax increase on the South African economy. The influence on the country's gross domestic product, trade, and pricing, as well as changes in factor markets and household welfare, is examined in the Northern and Western Capes (the country's two primary wine-producing provinces). The findings reveal that most South African households will have lower real consumer expenditure, and that all households in the Northern and Western Cape will suffer losses. Furthermore, low-

income households will bear the brunt of the consequences because they spend more money on alcohol and tobacco. However, these results do not capture the benefits of reducing the negative externality resulting from a decrease in demand due to higher alcohol prices and are therefore most likely an upper limit to any social loss.

## 2.5 Conceptual Framework



**Figure 2.1: Conceptual Framework**

**Source: Researcher 2021**

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter provides details on the methodology used in this study. This chapter then presents the data used for the purpose of this study and their sources, the research design used, model specifications and model evaluation, data collection methods, and data analysis and presentation methods.

#### **3.2 Research Design**

The research design describes the type of research and the framework created by the researcher to find a solution to the research question. According to Kothari (2009), research design is a research plan by which research objectives are achieved. It is a structure or framework for solving a particular problem, orienting, and systematizing research.

This study used a causal relationship design, which employs time series data to establish a link between the dependent and independent variables. According to Sekaran and Bougie (2010), causal investigations are conducted if explicit causal links are needed. According to Zikmund et al. (2010), causal research allows for causal inference, which is the conclusion that when one thing happens, another specified item happens as well. The goal of this study is to see if economic growth is to blame for the increase in tax revenue.

#### **3.3 Target Population**

The population, according to Cooper and Schindler (2003), is a generic collection of elements from which we seek to derive conclusions. The goal of this research is to look at the relationship between tax revenue and economic growth from 1989 to 2019.



This is a census study, with a population of annual time series data on tax receipts, gross domestic product, and tax base spanning 31 years, from 1989 to 2019.

### **3.4 Sample Size**

The sample, according to Sekaran and Bougie (2010), is the population's subject. Using a sample of the population to make conclusions for the entire population is known as sampling. The population can be evaluated by looking at each individual in the population or by looking at a sample of the population so that the researcher can develop conclusions that can be summarized for the target population. When the population is vast, sampling is normally utilized, however the population for this study is tiny because the participants are only 31 years old. As a result, rather than taking a sample, the researcher conducts a census.

### **3.5 Sampling Frame**

A sampling frame is a list of all the items in the population. It is a complete list of every item one wants to study. The study involved KNBS, Central Bank and Kenya revenue Authority as the sampling frame from where the secondary data was obtained.

### **3.6 Data Collection**

Data is underscored as the raw material according to (Xing, Wei Cui, & Xi , 2018) whose transformation into information can be achieved through data processing. On the other hand, data collection is the process of systematically collecting and measuring information about the variables of interest that make it possible to answer the research questions, test hypotheses, and draw conclusions about research results. The survey is based on secondary data from government publications such as summary statistics from the Kenya Bureau of Statistics, financial budget estimates,

and revenue data from the Kenya Revenue Authority. The researcher collected data from various sources of state revenue, including Income Tax (PAYE), Corporate Tax, Value Added Tax (PPN), and Excise Tax, which are the main tax revenues. Information on the dependent variable (economic growth) was collected from the National Bureau of Statistics of Kenya. This study used annual data from 1989 to 2019. The use of secondary data is justified by the fact that these sources have reliable information for the current study.

### 3.7 Data Analysis

Data were analyzed with EVIEWS software. This study accepts descriptive statistics such as mean, standard deviation, minimum and maximum. This study used a time series regression analysis to assess the relationship between tax revenue and economic growth, as illustrated in the four equations below.

$$GDP_t = \beta_0 + \beta_1 PAYE_t + \varepsilon_t \dots \dots \dots (i)$$

$$GDP_t = \beta_0 + \beta_1 corp_t + \varepsilon_t \dots \dots \dots (ii)$$

$$GDP_t = \beta_0 + \beta_2 VAT_t + \varepsilon_t \dots \dots \dots (iii)$$

$$GDP_t = \beta_0 + \beta_3 EXC_t + \varepsilon_t \dots \dots \dots (iv)$$

$$GDP_t = \beta_0 + \beta_1 PAYE_t + \beta_2 Corp_t + \beta_3 VAT_t + \beta_4 EXC_t + \varepsilon_t \dots \dots \dots (v)$$

Where  $GDP_t$  stands for gross domestic product for period t

$PAYE_t$  stands for Pay As You Earn

$Corp_t$  stands for Corporation Tax

$VAT_t$  stands for Value added Tax

$EXC_t$  stands for excise duty and

$\varepsilon_t$  is the error term

The above variable data is collected from secondary data in the records of the Central Bank and records of the KNBS. All various sources of state revenue are calculated in Kenyan shillings.

### **3.8 Diagnostic Tests**

This study adopted diagnostic tests such as unit root tests, co integration test, autocorrelation test, heteroscedasticity, normality and multicollinearity test to determine accuracy of the time series data.

#### **3.8.1 Unit Root Test**

This study conducted an enlarged Dickey-Fuller (ADF) root test to determine whether the data were stationary. The ADF test is performed to ensure that the regression results are reliable and unerring, which must indicate that the mean values and other important statistical parameters remain constant over time according to the regression assumptions. The ADF test is an important stationary test because it provides the possibility of autocorrelation under error conditions and ease of use. The time series has a single root, as indicated by the test statistic being less than the crucial value, which is the null hypothesis of the test. If the t statistic is greater than the critical value (CV), the null hypothesis is usually rejected, indicating that the time series is fixed. Because the preceding assumptions are supported, a time series regression analysis may be done after checking the stationarity of the variables.

#### **3.8.2 Co-integration Test**

Joint integration is used when the variables are not integrated in the same order to demonstrate the existence of a long-term link between the dependent and independent variables. The Johansen test was used in this study to see if there is more than one integration relationship between economic growth and a tax revenue component. Two

methods are typically used when testing joint integrations; two-step Engle-Granger test and Johansen cointegration test. This study uses the Johansen cointegration test because it is known to be more accurate and better than Engel's test for greater integration.

### **3.8.3 Granger Causality Test**

This study used the Granger causality test to test whether there is a one-sided causal relationship between tax revenue and economic growth. By running the Granger Causality Test, this research will help determine whether changes in one variable cause changes in other variables. In addition, the test helps to check whether endogenous variables can be treated as exogenous. One variable causes another when the past and present values of that variable provide statistically significant information about the future. The larger non-causal relationship proposed by Toda and Yamamoto (1995) was assessed using a seemingly unrelated regression to evaluate the causal connection between tax revenue and economic growth in Kenya.

### **3.8.4 Normality Test**

The purpose of the normality test is to find out that all data for the independent variable and the dependent variable are normally distributed. In this study, the normality test is based on the Jarque-Bera, a good health test whether the sample data has a bias and a surplus according to a normal distribution. The null hypothesis is the general hypothesis that distortion is zero and excessive ergotomy is zero. If the probability of JB is greater than alpha ( $\alpha = 0.05$ ), all data are normally distributed (Gujarati & Porter, 2009).

### **3.8.5 Multicollinearity Test**

Multicollinearity occurs in situations where two or more explanatory variables in the multiple regression model are highly linearly related. Multicollinearity is perfect if, for example, the correlation between two independent variables is 1 or -1. When there is significant accuracy between the predictor variables in multiple regression, the estimates of the multiple regression coefficients may change erratically in response to small changes in the model or data. Multicollinearity usually does not reduce the predictability or reliability of the model, it only affects the computations associated with the individual predictors. The multicollinearity test was checked with a correlation matrix to determine the degree of correlation between independent variables. In correlation analysis, an  $r$  correlation coefficient of 0.8 and above is indicative of serious multicollinearity that would result in biased estimates.

### **3.8.6 Heteroscedasticity Test**

Heteroskedasticity occurs when variance disturbance is not constant (Park, 1966). This study used the Breusch-Godfrey test to test the null hypothesis versus the alternative hypothesis when testing the multiplication function of one or more variables (heteroskedastic). If the test statistic value has a probability value greater than 0.05, this indicates that the data is homoscedastic.

### **3.8.7 Autocorrelation Test**

The LM Breusch-Godfrey Serial Correlation test is the basis for the autocorrelation test. There is no autocorrelation if the chi-square value produced via LM surpasses the threshold chi-square value at the significance level (0.05) or if the chi-square probability is larger than 0.05.

### **3.9 Ethical Consideration**

The importance of research ethics is that it governs interactions with people, organizations, and institutions (Christensen, Johnson & Turner, 2014). Permission to collect data was sought from university management and NACOSTI, who were both briefed on the study's goal and significance. To ensure that the data acquired is safe, tamper-proof, and shielded from undesired usage, protection and secrecy have been utilized.

## CHAPTER FOUR

### DATA ANALYSIS, RESULTS AND DISCUSSION

#### 4.1 Introduction

This chapter discusses the data analysis and discussion of the results. The aim of this study is to establish the relationship between tax revenue and economic growth in Kenya. The results are presented in accordance with the research objectives.

#### 4.2 Descriptive Statistics

This section provides findings on descriptive statistics as illustrated in Table 4.1.

**Table 4.1: Descriptive Summary Results**

	<b>GDP</b>	<b>PAYE</b>	<b>Corporation Tax</b>	<b>VAT Tax</b>	<b>Excise duty</b>
Mean	3.91173	117424.1	95888.19	130768	66118.3
Maximum	8.4057	395411.5	340856.5	413186	203996
Minimum	-0.7995	359.4900	239.6600	12807	2987.2
Std. Dev.	2.33372	133221.9	109870.9	126608	57618.9
Observations	31	31	31	31	31

The findings in Table 4.1 reveal that the average annual GDP in Kenya for the period 1989 to 2019 was 3.91173 percent with a standard deviation of 2.33372. The minimum value was -0.7995 while the maximum value was 8.4057. This implied that for the period from 1989 to 2019, Kenya's economic growth measured in terms of GDP remained below 10 percent.

Results also indicate that the mean of PAYE generated in Kenya for the period 1989 to 2019 was Ksh 117, 424.1 million annually with a standard deviation of Ksh 133, 221.9million. The minimum value was Ksh 359.49 million, while the maximum value was Ksh 395, 411.5million.

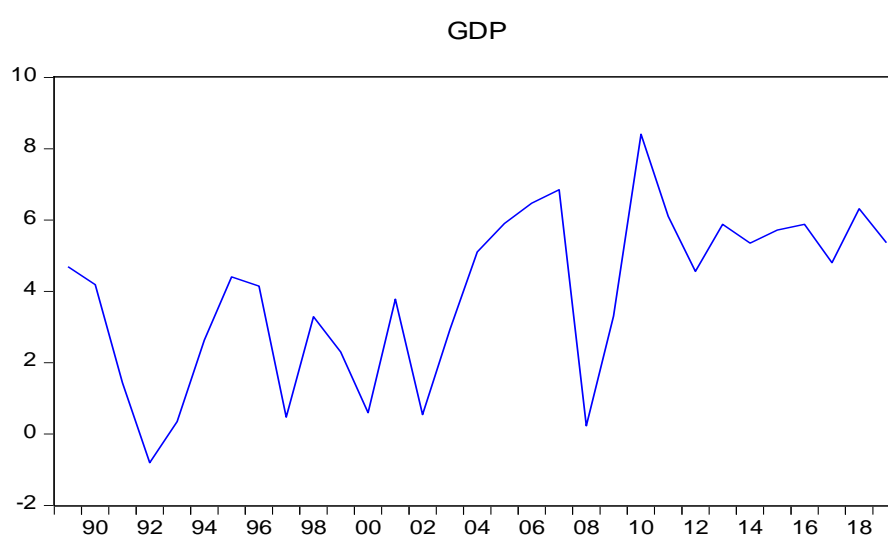
The findings further indicate that the mean of corporation tax generated in Kenya for the period 1989 to 2019 was Ksh 95, 888.19 million annually with a standard deviation of Ksh 109, 870.9 million. The minimum value was Ksh 239.66 million, while the maximum value was Ksh 340, 856.5 million.

The findings further show that the mean of VAT tax generated in Kenya for the period 1989 to 2019 was Ksh 130, 768 million annually with a standard deviation of Ksh 126,608 million. The minimum value was Ksh 12,807 million, while the maximum value was Ksh 413,186 million.

In addition, results indicate that the mean of excise duty generated in Kenya for the period 1989 to 2019 was Ksh 66,118.3 million annually with a standard deviation of Ksh 57,618.9 million. The minimum value was Ksh 2,987.2 million, while the maximum value was Ksh 203,996 million.

### 4.3 Trend analysis

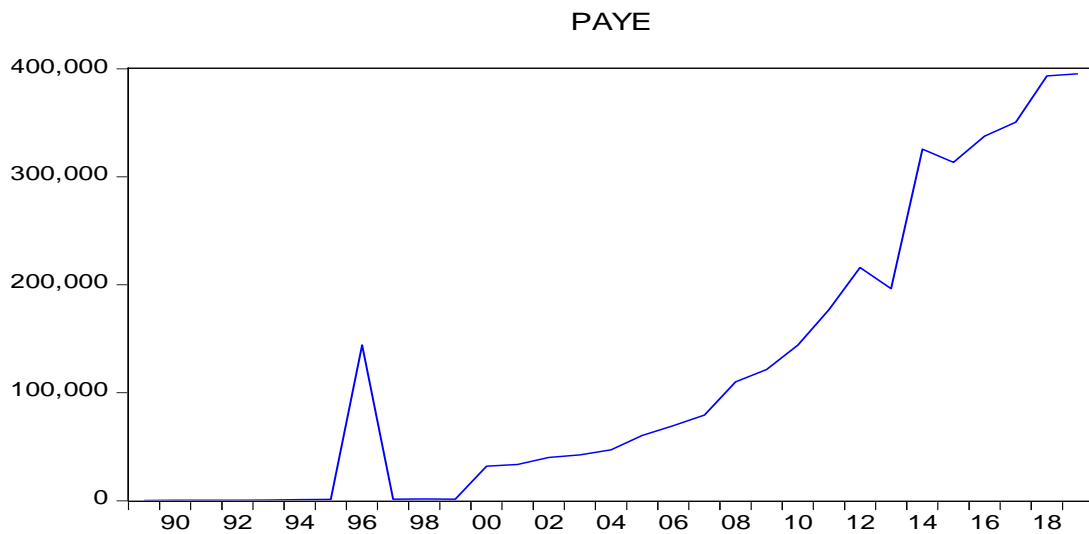
The trend analysis was carried out graphically to illustrate how the study variables changed over time and the results are shown below.



**Figure 4.1: GDP as a Percentage**

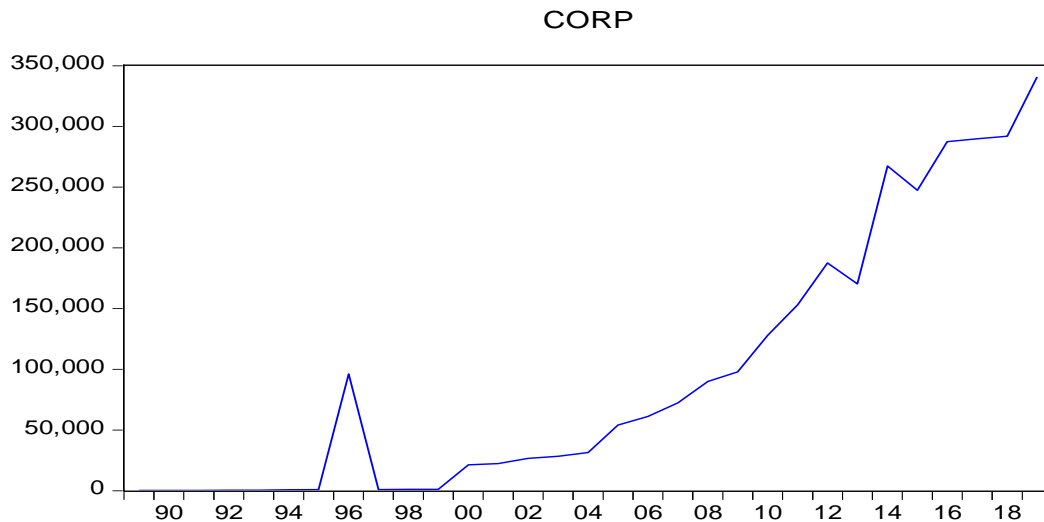


Based on Figure 4.1, economic growth measured in terms of GDP exhibits fluctuating trend throughout the measurement period. The highest economic growth was recorded in 2010, while the lowest was recorded in 1992. The fluctuations could be linked to the dynamic nature of the Kenyan economy resulting from events such as regime changes, which are usually characterized by political uncertainties and violence with investors adopting a wait-and-see approach during electioneering period.



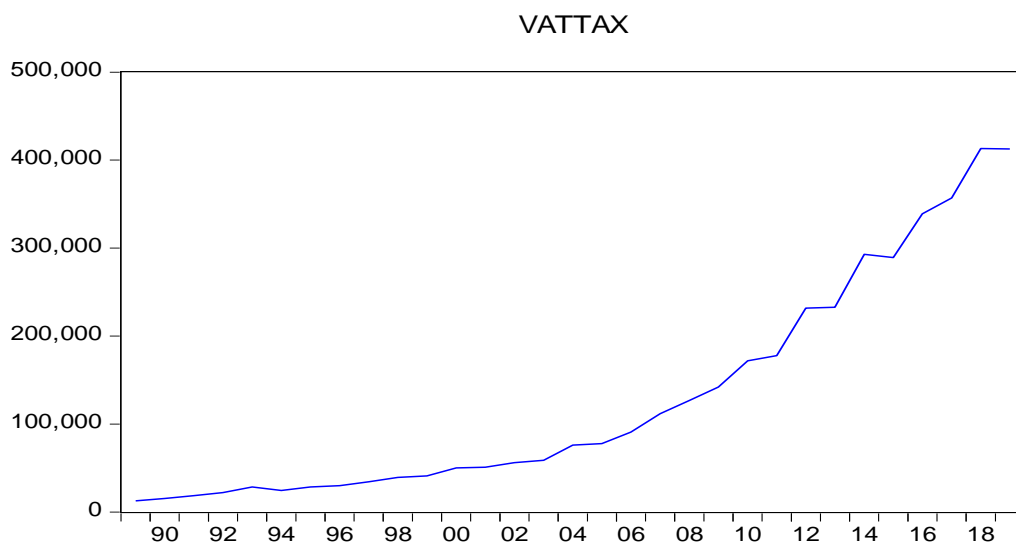
**Figure 4.2: PAYE (Ksh. Million)**

Figure 4.2 demonstrates upward trend of PAYE generated in Kenya throughout the measurement period. This is an indication of efforts the government of Kenya has made to boost revenue collection through income related tax policies.



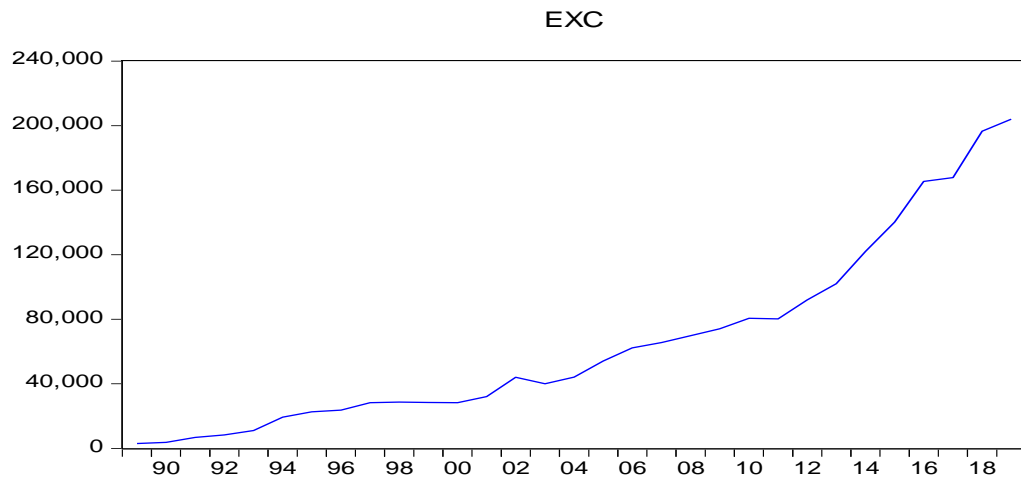
**Figure 4.3: PAYE (Ksh. Million)**

Figure 4.3 illustrates upward trend of corporation tax generated in Kenya throughout the measurement period. This is an indication of efforts the government of Kenya has made to boost revenue collection through income related tax policies.



**Figure 4.4: VAT Tax (Ksh. Million)**

Figure 4.4 demonstrates upward trend of VAT tax generated in Kenya throughout the measurement period. This is an indication of efforts the government of Kenya has made to boost revenue collection through VAT related tax policies.



**Figure 4.5: Excise Duty (Ksh. Million)**

Figure 4.5 demonstrates steady increase in excise duty generated in Kenya throughout the measurement period. This is an indication of efforts the government of Kenya has made to boost revenue collection through excise duty related policies.

#### **4.4 Unit Root Tests**

In most cases, time series data are usually non-stationary, i.e. prior to regression analysis; The single root test was carried out using the Augmented Dickey-Fuller (ADF) test to determine whether the variable was stationary or not. The aim is to avoid erroneous regression results from the use of non-stationary series. Table 4.2 shows the results of the single root test.

**Table 4.2: Unit Root Tests at Level**

Variable	ADF TEST	1% Level	5% Level	10% Level	Prob	Comment
<b>GDP</b>	-3.169463	-3.670170	-2.963972	-2.621007	0.032	Stationary
<b>PAYE</b>	-3.277864	-3.737853	-2.991878	-2.635542	0.0276	Stationary
<b>Corporation tax</b>	-1.963171	-3.711457	-2.981038	-2.629906	0.3001	Non-stationary
<b>VAT tax</b>	-0.687100	-3.679322	-2.967767	-2.622989	0.8347	Non-stationary
<b>Excise duty</b>	-3.445635	-3.670170	-2.963972	-2.621007	0.0171	Stationary

The findings in Table 4.2 reveal that GDP, PAYE and excise duty were stationary (that is, no presence of unit roots), while corporation and VAT tax were found to be non-stationary at level. The two variables were however, found to be stationary at first differencing as indicated in Table 4.3.

**Table 4.3: Unit Root Tests at First Difference**

Variable	ADF TEST	1% Level	5% Level	10% Level	Prob	Comment
<b>Corporation tax</b>	-5.801880	-3.699871	-2.976263	-2.627420	0.0001	Stationary
<b>VAT tax</b>	-9.383742	-3.679322	-2.967767	-2.622989	0.000	Stationary

#### 4.5 Lag length Selection Procedure

Before carrying out the Johansen cointegration test, the optimal length of analysis delay was determined. In this study, the optimal lag length was selected using the Akaike Information Criterion (AIC). The decision rule is to choose the model with the lowest information criterion value. Table 4.4 shows AIC values for lag 1, 2 and 4 respectively.

**Table 4.4: Lag Length Selection**

<b>LAG</b>	<b>AIC</b>
Lag 1	4.418794
Lag 2	4.518843
Lag 4	4.498354

Based on the findings in Table 4.4, lag 1 gave the lowest AIC value; hence the analysis used lag1 as the optimal lag length.

#### **4.6 Johansen Co integration**

This study used the Johansen cointegration test because it is known to be more accurate and better than Engel's test for greater integration.

**Table 4.5: Johansen Test Results**

<b>Hypothesized</b>		<b>Trace</b>	<b>0.05</b>	
<b>No. of CE(s)</b>	<b>Eigenvalue</b>	<b>Statistic</b>	<b>Critical Value</b>	<b>Prob.**</b>
None *	0.880980	114.7910	69.81889	0.0000
At most 1 *	0.610521	53.06541	47.85613	0.0150
At most 2	0.429830	25.71997	29.79707	0.1373
At most 3	0.260860	9.427181	15.49471	0.3273

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

The results in Table 4.5 show that the null hypothesis of a maximum of 2 cointegration equations for the linkage model of tax revenue and economic growth in Kenya is not rejected at the 5% materiality level. The tracking statistic for the null hypothesis is that a maximum of 2 cointegration equations is smaller than the set critical value of 5%. This shows that there are 2 equations for cointegration.

#### 4.7 Vector Error Correction Model

The presence of 2 co-integration equations resulted to carrying out of Vector Error Correction Model (VECM). The findings are shown in Table 4.6.

**Table 4.6: Vector Error Correction**

<b>Error Correction:</b>	<b>D(GDP)</b>	<b>D(PAYE)</b>	<b>D(CORP)</b>	<b>D(VATTAX)</b>	<b>D(EXCDUTY)</b>
CointEq1	-1.506167	-0.219994	-0.212504	0.012582	-0.006585
	-0.45493	-0.1217	-0.12253	-0.00751	-0.00978
	[-3.31079]	[-1.80772]	[-1.73429]	[ 1.67442]	[-0.67352]
D(GDP(-1))	0.465135	0.154609	0.154875	-0.010857	0.010581
	-0.31595	-0.08452	-0.0851	-0.00522	-0.00679
	[ 1.47219]	[ 1.82928]	[ 1.81997]	[-2.08032]	[ 1.55817]
D(GDP(-2))	-0.122147	0.12885	0.127206	-0.00554	0.000383
	-0.24077	-0.06441	-0.06485	-0.00398	-0.00517
	[-0.50731]	[ 2.00049]	[ 1.96154]	[-1.39292]	[ 0.07403]
D(PAYE(-1))	-1.81015	1.626377	1.914412	-0.224872	0.344669
	-14.647	-3.91821	-3.94504	-0.24194	-0.31479
	[-0.12358]	[ 0.41508]	[ 0.48527]	[-0.92945]	[ 1.09490]
D(PAYE(-2))	-10.42233	1.857971	1.950634	-0.281505	-0.149099
	-14.7761	-3.95275	-3.97982	-0.24407	-0.31757
	[-0.70535]	[ 0.47005]	[ 0.49013]	[-1.15336]	[-0.46950]
D(CORP(-1))	2.401905	-2.025982	-2.320676	0.209203	-0.307162
	-14.6329	-3.91444	-3.94125	-0.24171	-0.31449
	[ 0.16414]	[-0.51757]	[-0.58882]	[ 0.86552]	[-0.97669]
D(CORP(-2))	10.69391	-1.946691	-2.042373	0.284802	0.195393
	-14.8087	-3.96147	-3.9886	-0.24461	-0.31827
	[ 0.72214]	[-0.49141]	[-0.51205]	[ 1.16430]	[ 0.61392]
D(VATTAX(-1))	-21.57224	-0.926517	-0.83577	-0.454368	0.764288
	-12.2953	-3.28911	-3.31163	-0.2031	-0.26425
	[-1.75451]	[-0.28169]	[-0.25237]	[-2.23722]	[ 2.89227]
D(VATTAX(-2))	-30.20207	-4.489093	-4.547438	0.264946	0.965928
	-12.4825	-3.33917	-3.36204	-0.20619	-0.26827
	[-2.41956]	[-1.34437]	[-1.35258]	[ 1.28498]	[ 3.60053]
D(EXCDUTY(-1))	2.349776	-0.978253	-0.892187	-0.183802	0.12586
	-6.23695	-1.66844	-1.67987	-0.10302	-0.13405
	[ 0.37675]	[-0.58633]	[-0.53111]	[-1.78409]	[ 0.93893]
D(EXCDUTY(-2))	-6.485113	2.455525	2.312358	0.195112	0.214576
	-6.42769	-1.71947	-1.73124	-0.10617	-0.13814
	[-1.00893]	[ 1.42807]	[ 1.33566]	[ 1.83768]	[ 1.55327]
C	2.895575	0.338417	0.346245	0.057641	-0.067192
	-1.3732	-0.36734	-0.36986	-0.02268	-0.02951
	[ 2.10863]	[ 0.92125]	[ 0.93615]	[ 2.54119]	[-2.27669]
R-squared	0.614081	0.533157	0.52734	0.646731	0.635884
Adj. R-squared	0.348761	0.212203	0.202387	0.403859	0.385554
Sum sq. resids	63.67326	4.556533	4.619158	0.017373	0.029411
S.E. equation	1.994888	0.533651	0.537306	0.032952	0.042874
F-statistic	2.314496	1.661163	1.622818	2.662844	2.540183
Log likelihood	-51.23212	-14.31129	-14.50239	63.66026	56.28986
Akaike AIC	4.51658	1.879378	1.893028	-3.690018	-3.163561
Schwarz SC	5.087525	2.450322	2.463973	-3.119074	-2.592617
Mean dependent	0.140264	0.10317	0.107157	0.04811	0.052733
S.D. dependent	2.472	0.601243	0.601624	0.042678	0.054696

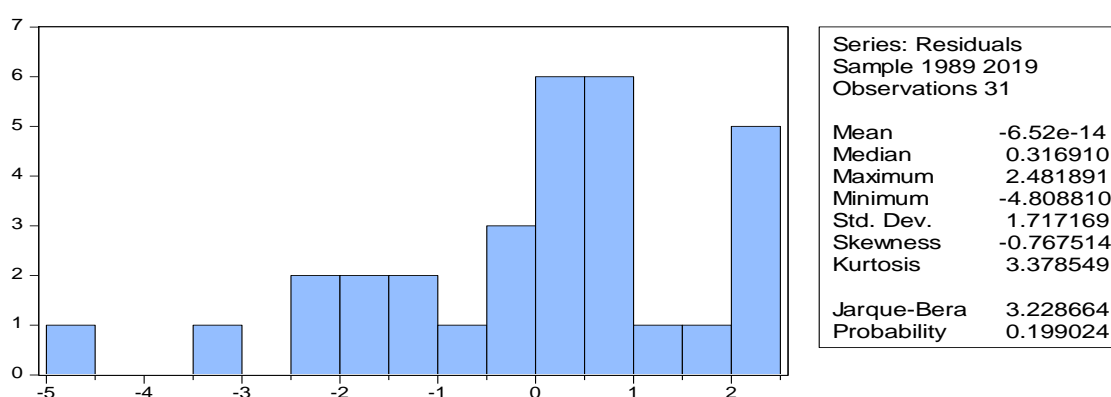
The findings of the study reveal that VAT (VATTAX (-2)) had a long run relationship with economic growth (GDP) as supported by t statistics [-2.41956] greater than 1.96. However, there was no long run relationship between PAYE, corporation tax, excise duty and economic growth (GDP). OLS regression model was further estimated to establish the short run relationship between tax revenue components and economic growth.

#### 4.8 Diagnostic Tests

The study tested several diagnostic tests to ensure that spurious regression results were not reported.

##### 4.8.1 Normality Test

The normality test is based on Jarque-Bera, a good health test whether the sample data has bias and excess according to the normal distribution. The null hypothesis is the general hypothesis that distortion is zero and excessive ergotomy is zero. If the probability of JB is greater than alpha ( $\alpha = 0.05$ ), all data are normally distributed (Gujarati & Porter, 2009).



**Figure 4.6: Jarque– Bera test of Normality**

The findings indicate a probability value of 0.199 >0.05 implying that the all data have a normal distribution.

#### 4.8.2 Multicollinearity Test

Multicollinearity test was checked using correlation matrix to determine the level of correlation between the independent variables. In correlation analysis, an r correlation coefficient of 0.8 and above is indicative of serious multicollinearity that would result in biased estimates. Table 4.7 shows the results.

**Table 4.7: Correlation Matrix**

	GDP	PAYE	CORP	VATTAX	EXCDUTY
GDP	1	0.55772	0.56988	0.55873	0.50155
PAYE		1	0.79943	0.70397	0.70694
CORP			1	0.70961	0.7093
VATTAX				1	0.75631
EXCDUTY					1

The findings revealed that there was no serious multicollinearity between the independent variables. This was supported by correlation values less than 0.8.

#### 4.8.3 Heteroscedasticity Test

The heteroscedasticity test was used to see if the error term in time series data was connected to the observations. The null hypothesis is that there is no heteroscedasticity in the data. The results are shown in Table 4.8.

**Table 4.8: Breush-pagan-Godfrey Test**

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.110020	Prob. F(4,26)	0.9779
Obs*R-squared	0.515977	Prob. Chi-Square(4)	0.9719
Scaled explained SS	0.431654	Prob. Chi-Square(4)	0.9798

The findings reveal a probability value,  $0.9779 > 0.05$ , therefore the null hypothesis that the data does not suffer from heteroscedasticity was accepted. Hence the data did not suffer from heteroscedasticity problem.



#### 4.8.4 Autocorrelation Test

The autocorrelation testing was based on Breusch-Godfrey Serial Correlation LM Test. Results are shown in Table 4.9.

**Table 4.9: Breusch-Godfrey Serial Correlation LM Test**

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	2.563899	Prob. F(2,24)	0.0979
Obs*R-squared	5.457389	Prob. Chi-Square(2)	0.0653

The findings above indicate a probability value,  $0.0979 > 0.05$ , therefore the null hypothesis that the data does not suffer from autocorrelation was accepted implying that there was no autocorrelation.

#### 4.9 Regression Analysis

The findings of the regression model provided in Chapter 3 are presented in this section. The OLS approach is used in the empirical evaluation. The results are displayed below using time series data over the full period.

##### 4.9.1 PAYE and Economic Growth

The study sought to determine the causal relationship between PAYE and economic growth in Kenya.

**Table 4.10: Regression Results; PAYE and Economic Growth**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PAYE	1.198204	0.331136	3.618469	0.0011
C	-1.357117	1.498476	-0.905665	0.3726
R-squared	0.311055			
Adjusted R-squared	0.287298			
F-statistic	13.09332			
Prob(F-statistic)	0.001115			

The results in Table 4.10 reveal an R square of 0.31, which denoted that 31percent of total variations in economic growth (GDP), could be explained by changes in PAYE. The results also indicate a positive and meaningful connection between PAYE and economic growth in Kenya ( $\beta = 1.198204$ ,  $P=0.0011$ ) at 5% level of significance. This means that a one-unit rise in PAYE leads to a 1.198204-unit increase in economic growth.

### **Model;**

$$\text{Economic growth} = -1.357117 + 1.198204 \text{ PAYE}$$

### **4.9.2 Corporation Tax and Economic Growth**

The study sought to determine the causal relationship between corporation tax and economic growth in Kenya.

**Table 4.11: Regression Results; Corporation tax and Economic Growth**

<b>Variable</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>	<b>Prob.</b>
Corporation tax	1.180804	0.316169	3.734730	0.0008
C	-1.131434	1.395041	-0.811040	0.4239
R-squared	0.324768			
Adjusted R-squared	0.301484			
F-statistic	13.94821			
Prob(F-statistic)	0.000818			

The results in Table 4.11 indicate an R square of 0.32, which denoted that 32 percent of total variations in economic growth (GDP), could be explained by changes in corporation tax. The results also indicate a positive and meaningful connection between corporation tax and economic growth in Kenya ( $\beta = 1.180804$ ,  $P=0.0008$ ) at 5% level of significance. This means that a one-unit rise in corporation tax leads to a 1.180804-unit increase in economic growth.

**Model;**

$$\text{Economic growth} = -1.131434 + 1.180804 \text{ Corporation tax}$$

**4.9.3 Value-added Tax and Economic Growth**

The study sought to determine the causal relationship between value-added tax and economic growth in Kenya.

**Table 4.12: Regression Results; VAT and Economic Growth**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
VAT	2.823958	0.778391	3.627943	0.0011
C	-9.920086	3.828935	-2.590821	0.0148
R-squared	0.312176			
Adjusted R-squared	0.288458			
F-statistic	13.16197			
Prob(F-statistic)	0.001087			

The findings in Table 4.12 reveal an R square of 0.31, which denoted that 31 percent of total variations in economic growth (GDP), could be explained by changes in VAT. The results also indicate a positive and meaningful connection between VAT and economic growth in Kenya ( $\beta = 2.823958$ ,  $P = 0.0011$ ) at 5% level of significance. This means that a one-unit rise in VAT results in a 2.823958-unit increase in GDP.

**Model;**

$$\text{Economic Growth} = -9.920086 + 2.823958 \text{ VAT}$$

**4.9.4 Excise Duty and Economic Growth**

The study sought to establish the causal relationship between excise duty and economic growth in Kenya.

**Table 4.13: Regression Results; Excise Duty and GDP**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXCISE DUTY	2.423642	0.776308	3.122010	0.0040
C	-7.283477	3.604813	-2.020487	0.0527
R-squared	0.251554			
Adjusted R-squared	0.225745			
F-statistic	9.746946			
Prob (F-statistic)	0.004047			

The findings in Table 4.13 indicate an R square of 0.25, which denoted that 25 percent of total variations in economic growth (GDP), could be explained by changes in excise duty. The results also indicate a positive and meaningful connection between excise duty and economic growth in Kenya ( $\beta = 2.423642$ ,  $P=0.0040$ ) at 5% level of significance. This means that a one-unit rise in excise duty translates in a 2.423642-unit increase in GDP.

### Model

$$\text{Economic Growth} = -7.283477 + 2.423642 \text{Excise Duty}$$

### 4.9.5 Tax Revenue and Economic Growth

The study sought to establish the combined relationship between PAYE, corporation tax, VAT, excise duty and Economic Growth in Kenya.

**Table 4.14: Regression Results; Tax Revenue and Economic Growth**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PAYE	21.81471	10.17697	2.143537	0.0416
CORP	22.50137	10.04555	2.239935	0.0339
VATTAX	0.976615	2.892132	0.337680	0.7383
EXCDUTY	-1.686383	2.590851	-0.650899	0.5208
C	6.741053	7.820081	0.862018	0.3966
R-squared	0.458588			
Adjusted R-squared	0.375294			
F-statistic	5.505646			
Prob(F-statistic)	0.002391			

The results in Table 4.14 reveal an R square of 0.458, which denoted that 46 percent of total variations in economic growth (GDP), could be explained by changes in tax revenue. Further, the results indicate a positive and meaningful connection between PAYE ( $\beta=21.81471$ ,  $P=0.0416$ ), Corporation tax ( $\beta=22.50137$ ,  $P=0.0339$ ) and economic growth in Kenya. Nonetheless, there was no statistically significant relationship between value-added tax ( $P=0.7383 >0.05$ ), excise duty ( $P=0.3966 >0.05$ ) and economic growth.

### **Joint Model;**

$$\text{Economic Growth} = 6.741053 + 21.81471 \text{ PAYE} + 22.50137 \text{ Corporation Tax}$$

### **4.10 Hypotheses testing using Granger Causality Results**

Granger causality determines the causal relationship between the dependent and independent variables. Granger (1969) notes that the null hypothesis for Granger causality is that there is no causal relationship between the dependent and independent variables, or that all coefficients of lagging variables are zero. If the ranked p-value is greater than the 5 percent confidence level, the null hypothesis is accepted and, conversely, if the ranked p-value is less than the 5 percent confidence level, the null hypothesis is rejected and a causal relationship is concluded. Table 4.15 shows the results.

**Table 4.15: Granger Causality Results**

<b>Null Hypothesis:</b>	<b>Obs</b>	<b>F-Statistic</b>	<b>Prob.</b>
PAYE does not Granger Cause GDP	30	5.17750	0.0310
GDP does not Granger Cause PAYE		0.60506	0.8962
CORP does not Granger Cause GDP	30	5.32383	0.0289
GDP does not Granger Cause CORP		0.90935	0.3487
Value-added tax does not Granger Cause GDP	30	8.16438	0.0081
GDP does not Granger Cause VAT		0.64932	0.4274
Excise duty does not Granger cause GDP	30	7.43597	0.0111
GDP does not Granger Cause EXCDUTY		0.64346	0.4295

Based on the findings in Table 4.15, there is a granger causality running from PAYE to GDP ( $P=0.031<0.05$ ); however, there is no granger causality running from GDP to PAYE ( $P=0.8962>0.05$ ). The first hypothesis (H01) that there is no bi-directional relationship between PAYE and economic growth was therefore accepted. This implies that there was no bi-directional relationship between PAYE and economic growth.

Results indicate that there is a granger causality running from corporation tax to GDP ( $P=0.0289<0.05$ ); however, there is no granger causality running from GDP to corporation tax ( $P=0.3487>0.05$ ). The second hypothesis (H02) that there is no bi-directional relationship between corporation tax and economic growth was therefore accepted. This implies that there was no bi-directional relationship between corporation tax and economic growth.

The findings further reveal that there is a granger causality running from value-added tax to GDP ( $P=0.0081<0.05$ ); however, there is no granger causality running from GDP to value-added tax ( $P=0.4274>0.05$ ). The second hypothesis (H03) that there is no bi-directional relationship between value-added tax and economic growth was therefore accepted. This implied that there was no bi-directional relationship between value-added tax and economic growth.

In addition, the findings shows that there is a granger causality running from excise duty tax to GDP ( $P=0.0111<0.05$ ); however, there is no granger causality running from GDP to excise duty tax ( $P=0.4295>0.05$ ). The third hypothesis (H04) that there is no bi-directional relationship between excise duty tax and economic growth was therefore accepted. This implied that there was no bi-directional relationship between excise duty tax and economic growth.

#### **4.11 Discussion of the key Findings**

The first objective of the study was to establish the causal relationship between PAYE and economic growth in Kenya. The results showed that PAYE independently and when combined with other variables had a positive and significant relationship with economic growth. However, an increase in PAYE of one unit will lead to an increase in economic growth of 1.198204 units. Combined with other variables, an increase per unit of PAYE will increase economic growth by 21.81471 units. The findings of this study corroborate those of Helms (1985), who found that tax increases at the state and municipal levels promote economic growth when tax funds are used to fund public service improvements rather than transfers.

The second objective of the study was to determine the causal relationship between corporation tax and economic growth in Kenya. The results showed that corporate tax, either independently or in combination with other variables, had a positive and significant relationship with economic growth. However, an increase in corporate tax by one unit will have an impact on increasing economic growth by 1.1808 units. Combined with other variables, the increase in fixed tax will increase economic growth by 22.50137 units. The findings corroborated Baranová and Jancková's (2012) finding that corporate taxes had a considerable impact on long-term economic growth. Corporate taxes, according to Onakoya and Afintinni (2016), have a favorable impact on Nigeria's economic growth.

The third objective of the study was to establish the causal relationship between value-added tax and economic growth in Kenya. The results showed that independent VAT has a positive and significant relationship with economic growth. The increase in VAT per unit will lead to an increase in economic growth of 2.823958 units. However, when combined with other variables, VAT does not have a significant

relationship with Kenya's economic growth. The findings of this study contradict Abiola and Asiweh's (2012) conclusion that diversification of income sources is critical for economic progress.

The fourth objective of the study was to establish the causal relationship between excise duty and economic growth in Kenya. The results show that apart from this, excise duty has a positive and significant relationship with economic growth. The increase in excise duty per unit will lead to an increase in economic growth of 2.423642 units. However, when combined with other variables, excise tax does not have a significant correlation with Kenya's economic growth. The study's findings contradict Moyi and Muriithi's (2003) assertion that tax reform has a favorable impact on the entire tax structure and individual tax manipulation.



## CHAPTER FIVE

### SUMMARY, RECOMMENDATIONS AND CONCLUSIONS

#### 5.1 Introduction

This chapter summarizes the findings, conclusions and recommendations based on the established causal relationship between tax revenue and economic growth in Kenya. This is done in accordance with the objectives of the study. It also includes suggestions for further research to fill the gaps identified in this study.

#### 5.2 Summary of Findings

This section provides a summary of the findings from the analysis according to the research objectives.

##### 5.2.1 PAYE and Economic Growth

The first objective of the study was to establish the causal relationship between PAYE and economic growth in Kenya. The descriptive findings revealed that on average, Kenya collects Ksh 117, 424.1 million as PAYE annually. PAYE showed a positive and substantial association with Kenyan economic development ( $\beta=1.198204$ ,  $P=0.0011$ ), according to the research. PAYE and economic growth also demonstrated a positive and significant association ( $\beta=21.81471$ ,  $P=0.0416$ ) when they were coupled with other variables. The null hypothesis of no bidirectional association between PAYE and economic growth in Kenya was accepted based on the granger causality results.

##### 5.2.2 Corporation Tax and Economic Growth

The second objective of the study was to establish the causal relationship between corporation tax and economic growth in Kenya. The descriptive findings revealed that on average, Kenya collects Ksh 95, 888.19 million as corporation tax annually.

Corporation tax showed a positive and substantial link with economic growth in Kenya ( $=1.180804$ ,  $P=0.0008$ ), according to the data. Corporation tax and economic development also had a positive and significant association when combined with additional variables ( $=22.50137$ ,  $P=0.0339$ ). The null hypothesis that there was no bi-directional relationship between corporate tax and economic growth in Kenya was accepted based on the granger causality results.

### **5.2.3 Value added tax and Economic Growth**

The third objective of the study was to establish the causal relationship between value-added tax and economic growth in Kenya. The descriptive findings revealed that on average, Kenya collects Ksh 130, 768 million as VAT annually. VAT has an independent positive and substantial association with economic development in Kenya ( $=2.823958$ ,  $P=0.0011$ ), according to the data. When paired with other variables, however, there was no significant association between value-added tax and economic growth ( $P=0.7383$ ). The null hypothesis that there was no bi-directional relationship between value-added tax and economic growth in Kenya was accepted based on the granger causality results.

### **5.2.4 Excise Duty and Economic Growth**

The fourth objective of the study was to establish the causal relationship between excise duty and economic growth in Kenya. The descriptive findings revealed that on average, Kenya collects Ksh 66, 118.3 million as excise duty annually. Additionally, excise duty exhibited a positive and significant link with economic growth in Kenya ( $=2.423642$ ,  $P=0.0040$ ), according to the research. When paired with other variables, however, there was no significant association between excise duty and economic development ( $P=0.5208$ ). The null hypothesis that there was no bi-directional

relationship between excise duty and economic growth in Kenya was accepted based on the granger causality results.

### **5.3 Conclusion**

From the findings, the study concluded that independently and when combined with other variables, PAYE had a positive and significant relationship with economic growth in Kenya. The implication is that increasing the value of PAYE collection will boost economic growth greatly. The study also found that corporation tax had a positive and significant link with economic growth in Kenya, both on its own and when paired with other variables. The implication is that increasing the value of company tax collection will boost economic growth significantly.

The study also concluded that value-added tax has a favorable and significant association with Kenyan economic growth on its own. As a result, an increase in the value of VAT will greatly boost Kenya's economic growth. Finally, the research found that excise duty had a positive and significant link with Kenyan economic growth on its own. This means that increasing the value of excise duty will have a major impact on Kenya's economic growth.

### **5.4 Recommendations**

According to the data, PAYE and Corporate tax have a favorable and significant link with Kenyan economic growth thus the government should utilize this positive causation that exists to efficiently use the taxes collected from income tax to spur growth which will consequently expand per capita income hence the disposable income which drives consumption and spending which drives consumption taxes such as excise and VAT. According to the report, Kenya's government should tighten its income policy in order to get all qualified tax payers (individuals and companies) into

the bracket that will increase revenue collection through income taxes. The study also recommends that the government of Kenya should make adjustments to value-added tax and excise duty related policies, to ensure that there is adequate collection of taxes from these channels which has high potential to raise more taxes due to ease of collection, non-evadable nature of indirect taxes since the tax is included in the product/service price, equitable and broad-based nature which attracts wider tax base for consumers of taxable goods and services equitably.

#### **5.4.1 Effect of PAYE tax on economic growth in Kenya**

In objective one, the study established that independently and when combined with other variables PAYE had a positive and significant relationship with economic growth in Kenya. The study recommendation is that the government of Kenya should strengthen income tax policy, which is likely to increase revenue collection through income taxation. Efforts should be made to widen the tax base by ensuring all eligible taxpayers within the income bracket are targeted and brought to tax bracket due to the positive and significant impact on Kenya's economic growth.

#### **5.4.2 Effect of Corporation tax on economic growth in Kenya**

In objective two, the study established that independently and when combined with other variables Corporation tax had a positive and significant relationship with economic growth in Kenya. The study recommendation is that the government of Kenya should strengthen corporation tax policy since it has a positive effect on Kenya's economic growth to drive the countries productivity.

#### **5.4.3 Effect of VAT on economic growth in Kenya**

In objective two, the study established that independently, VAT had a positive and significant relationship with economic growth in Kenya. The study recommendation

is that the government of Kenya should streamline value-added tax related policy, to ensure that there is adequate collection of taxes through this channel by ensuring all qualifying businesses and enterprises making/supplying taxable supplies whose taxable value is Kes 5 million or more in any period of 12 months are registered. Further, more snap-checks and audits needs to be conducted to ensure compliance by registered enterprises to avoid possible leakages through falsification of records and under-declaration of transactions which could deny the government taxes.

#### **5.4.4 Effect of excise duty on economic growth in Kenya**

In objective three, the study established that independently, excise duty had a positive and significant relationship with economic growth in Kenya. The study recommendation is that the government of Kenya should make adjustments to excise duty related policy, to ensure that there is adequate collection of taxes through this channel. Further, adequate control-checks should be incorporated ensure all entities dealing with manufacture, importation and supply of excisable goods are brought to the tax bracket to avoid income leakages. The government through the tax authority should also ensure all eligible entities have pre-installed systems such as excisable goods management system (EGMS) to facilitate tracking of stamps and excisable goods for authentication and validation process of applicable taxes. This will help the government to maximize on excise duty collection and minimize tax evasion by unscrupulous traders trying to minimize their tax burden illegally.

#### **5.5 Areas for Further Studies**

The goal of the study was to determine the link between tax revenue and economic growth in Kenya. The focus was on PAYE, corporation tax, excise duty and value-added tax, which account for 46% of changes in economic growth. Future studies should consider other tax revenue and non-tax components such as import duty rental

tax, grants/ donations to determine their effect with economic growth. Further, future studies should also do comparative study on the between tax revenue and economic growth between the East African States.

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## APPENDICES

## Appendix I: Raw data

Period	Gdp (%)	PAYE (Ksh. M)	Corporation Tax (Ksh. M)	Value Added Tax (Ksh. M)	Excise duty (Ksh. M)
1989	4.6903488	359.49	239.66	12807	2987.2
1990	4.192051	427.848	285.232	15321.4	3703.2
1991	1.4383468	510.834	340.556	18555.4	6809.2
1992	-0.799494	553.176	368.784	22142.8	8367
1993	0.3531973	746.256	497.504	28365.8	11018
1994	2.6327845	1103.016	735.344	24478.8	19332.2
1995	4.4062165	1305.174	870.116	28403.8	22611.8
1996	4.1468393	144247.2	96164.8	29850	23687.2
1997	0.4749019	1451.25	967.5	34468.2	28381.6
1998	3.2902137	1704.156	1136.104	39,204.76	28,733.16
1999	2.3053886	1577.703	1051.802	40,944.19	28,493.06
2000	0.5996954	32057.358	21371.572	50,220.92	28,317.99
2001	3.7799065	33517.17	22344.78	50,871.68	32,076.93
2002	0.5468595	40046.568	26697.712	56,135.25	44,042.89
2003	2.9324755	42517.2	28344.8	58,853.37	40,085.26
2004	5.1042998	47266.2	31510.8	75,995.66	44,151.22
2005	5.9066661	60,484.93	54,144.13	77,732.00	54,077.00
2006	6.4724943	69,575.00	61,144.00	90,777.50	62,245.00
2007	6.8507298	79,427.00	72,340.00	111,822.50	65,551.00
2008	0.2322827	110,164.81	89,989.69	126,854.07	69,872.12
2009	3.3069398	121,524.51	97,972.33	141,970.70	74,112.08
2010	8.4056992	144,267.92	127,995.95	171,970.70	80,566.54
2011	6.1082637	176,922.26	153,015.78	177,880.75	80,287.24
2012	4.5632091	215,999.44	187,638.31	231,854.76	91,910.07
2013	5.8786806	196,460.85	170,327.05	232,630.32	102,029.10
2014	5.3571256	325,508.45	267,397.56	292,774.06	122,170.42
2015	5.7185071	313,355.51	247,406.13	289,213.47	140,212.41
2016	5.8789493	337,661.39	287,388.99	339,033.92	165,473.91
2017	4.8056965	350,630.83	289,962.42	356,855.92	167,777.13
2018	6.3184507	393,361.50	292,027.82	413,186.11	196,588.32
2019	5.365749	395,411.48	340,856.54	412,629.14	203,996.27

## Appendix II: Letter from KESRA



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14<sup>th</sup> October, 2020

TO WHOM IT MAY CONCERN

**RE: REQUEST FOR RESEARCH PERMIT:**  
**FRANCIS KAMAU KIMANI - REG. NO. MU/KESRA/0173/2016**

This is to confirm that the above named is a student at Kenya School of Revenue Administration (KESRA) Nairobi Campus pursuing Masters in Tax & Customs Administration.

The named student is undertaking Research on **“THE CAUSAL RELATIONSHIP BETWEEN TAX REVENUE AND ECONOMIC GROWTH IN KENYA.”**

The purpose of this letter is to request your good office to assist the above student with the information to enable him work on his project.

Thank you.

**Dr. Marion Nekesa PHD,**  
**Head Academic Research**  
**KESRA**



**P. O. Box 48240 – 00100, Nairobi**

**Email: [kesratraining@kra.go.ke](mailto:kesratraining@kra.go.ke)**

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Appendix III: NACOSTI Permit

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**RESEARCH LICENSE**



**This is to Certify that Mr. Francis Kamau Kimani of Moi University, has been licensed to conduct research in Nairobi on the topic: THE CAUSAL RELATIONSHIP BETWEEN TAX REVENUE AND ECONOMIC GROWTH IN KENYA for the period ending : 22/October/2021.**

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## Appendix IV: Plagiarism Report

### EFFECT OF NEW TECHNOLOGY ADOPTION ON LOGISTICS PERFORMANCE OF TRANSPORT OPERATORS AT INLAND CONTAINER DEPOT NAIROBI

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