

GOVERNMENT EXPENDITURES AND THE KENYAN ECONOMIC GROWTH

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DECLARATION

This research endeavour is my very own effort and hasn't been forwarded for any award at another institution.

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This research work has been forwarded for evaluation with my endorsement as the University supervisor.

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DEDICATION

I dedicate this endeavour to my spouse Ms. W. Makena and my children, Tracey, Jayden, and Eliana, whose unwavering support has motivated me throughout my MBA journey.

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OPERATIONAL DEFINITION OF TERMS

Defense and Security Expenditure	Costs incurred by governments that affect the resources they utilize when conflicts arise or are facilitated. It was measured using the Defense and security expenditure/total expenditure
Economic Growth	A rise in the total value of a nation's output of goods and services during a specific time frame. It was measured using the GDP Growth Rate
Education Expenditure	Expenses incurred on educational goods and services. It was measured using the Education expenditure/total expenditure
Government Expenditure	An outflow made by the government making up a substantial portion of Gross National Product. It was assessed by educational expenses, healthcare expenses, defense and security expenditures, and social services expenditures.
Health Expenditure	Expenditures pertaining to medical care, preventive measures, community health initiatives, health administration, and regulations. It was measured using the Health expenditure/total expenditure
Social Services Expenditure	Covers monetary rewards, direct distribution of products and services, and tax concessions for social purposes. It was measured using the Social services expenditure/total expenditure

ABBREVIATIONS AND ACRONYMS

ADF	Augmented Dickey Fuller
AIC	Akaike Information Criteria
ARDL	Autoregressive Distributed Lag
CGE-MS	Computable General Equilibrium-Micro Simulation
ECM	Error Correction Model
GDP	Gross Domestic Product
GNP	Gross National Product
HCE	Health Care Expenditure
KNBS	Kenya National Bureau of Statistics
LDCs	Less Developed Countries
MBA	Master of Business Administration
OLS	Ordinary Least Squares
SAARC	South Asian Association for Regional Cooperation
UNESCO	United Nations Educational, Scientific and Cultural Organization
WHO	World Health Organization
VAR	Vector Autoregressive
VIF	Variance Inflation Factor
WDI	World Development Indicators

ABSTRACT

The economic growth of a nation is key to that economy as it contributes significantly to the development and well-being of that economy. These benefits are dependent on many factors including government expenditures that need to be addressed through the management of the country's fiscal policies. Ideally, a country's economic growth is anticipated to enhance lifestyles by providing education, healthcare access, infrastructure, housing, quality food availability, improved roads, and similar amenities. However, this is not always the case. The economic growth of Kenya has recently attracted attention due to widespread volatility in its growth and inability to hit its Vision 2030 target growth of 10% despite huge investment in expenditure by the government. Therefore, the intent of this research is to ascertain the effect of government expenditure on economic growth in Kenya. In particular, the research ascertained the effect of education expenditure, health expenditure, defense and security expenditure, and social services expenditure on the economic growth of Kenya. The research was underpinned on the public finance theory, the theory of maximum social advantage, endogenous economic growth, and Peacock and Wiseman Theory. The causal-effect research approach was utilized in the research. The target audience was Kenya as a country with twenty five observations from 2000 to 2024 which is the unit of analysis. Secondary data was gathered with the aid of documentary guides and data sheets from the World Bank and KNBS. STATA software version 14 was used. Diagnostic tests (Auto correlation, multicollinearity, heteroscedasticity, normality, Co-integration, and unit root test) will be carried out before data analysis. VAR time series regression model was adopted. Descriptive statistics involving the use of frequencies, mean and standard deviation, and, inferential statistics was adopted in data analysis; and displayed in frequency distribution tables, charts, and graphs. The research's results indicate that education expenditure, health expenditure and Defense and security expenditure substantially influenced Kenya's economic growth with p-values of 0.000, 0.000 and 0.005 respectively. On the other hand services expenditure insignificantly influences economic growth in Kenya with p-value of 0.125. The research recommend that Kenya government should invest in education that provide its citizen with the necessary skills to be utilized in the labour market that will foster economic growth. Additionally, the research recommends that the government should invest in the health program (SHA and UHC) for its citizen that will provide a population health to the masses which will eventually lead to high productivity and hence economic growth. Finally, the research recommends the Kenyan government to secure the country using both physical and technological means that will enhance peace for the country men and women to concentrate to work leading to economic growth

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Inclusive and sustainable economic growth has been a concern for policymakers for decades, and the efficacy of government expenditure in accelerating this growth has been a subject of discussion. Government expenditure has been widely employed as a fiscal policy tool by several nations, however its impact on economic growth remains uncertain. The correlation between governmental expenditures and economic expansion, documented over several decades, still applies today and continues to stimulate discourse amongst policymakers and researchers (Ibrahim, 2019).

Generally, researchers concur that public sector expenditure is substantial and a primary mechanism via which economic growth can be substantially impacted (Adu, Marbuah & Mensah, 2013). Consequently, public expenditure is the most dependable approach for public authorities to address the collective requirements of residents. Public expenditure encompasses government expenditures derived from tax income and other sources (Mallick, Das & Pradhan, 2016). These expenditures concentrate largely on the government to provide stability and facilitate rapid economic growth (Antwi, Mills & Zhao, 2013). Moreover, it serves as a financial instrument that retains and utilizes all gathered money effectively for the nation's advantage. The government primarily allocates funds across many sectors of the economy, including roads, infrastructure, capital investment, and pensions. Owusu-Nantwi and Erickson (2016) contend that public expenditure constitutes both the initiation and conclusion of government income collecting.

Globally, economic growth patterns demonstrate significant variation across different regions and development contexts. U.S. Bureau of Economic Analysis (2024) reported that the United States

maintains moderate but stable growth rates averaging 2.5% annually, while the Bank of Japan (2024) reports modest but consistent economic expansion of 1.8%. The European Central Bank (2023) data shows diverse growth trajectories - Greece has recovered from negative growth to achieve 2.2% expansion through structural reforms and improved productivity, while Italy maintains 1.4% growth through industrial innovation and export competitiveness.

China's National Bureau of Statistics (2024) reports robust growth rates averaging 5.2%, driven by manufacturing prowess and technological advancement. The Reserve Bank of India (2024) indicates strong growth momentum at 6.8%, supported by infrastructure investments and digital transformation. The Bank of Korea (2023) reports successful growth of 2.6% through technological innovation and export-oriented industrialization, while Bank Negara Malaysia (2024) data shows a steady 4.8% expansion through diversified industrial policies.

Brazil's Central Bank (2024) and the Bank of Mexico (2024) report moderate growth rates of 3.2% and 2.8% respectively, driven by commodity exports and manufacturing. The National Bank of Poland (2023) reports steady expansion at 3.6% through industrial modernization, while the Czech National Bank (2023) demonstrates 3.2% growth through manufacturing and exports. The Saudi Central Bank and UAE Central Bank (2024) report significant economic expansion at 4.9% and 5.3% respectively, achieved through economic diversification and infrastructure development.

Regionally. African economies demonstrate diverse growth trajectories shaped by development imperatives, resource dependencies, and institutional capacities. According to the African Development Bank (2023), the continent's overall growth remained resilient but uneven across regions, with aggregate economic indicators reflecting varying institutional capacities (Kemoe & Lartey, 2022; Devarajan et al., 2021). The IMF's Regional Economic Outlook (2023) indicates that while economies like South Africa and Botswana maintain robust expansion, others like Ghana

and Zimbabwe face significant growth constraints. South Africa's growth trajectory reflects its industrialized economic base (Brou & Bouoiyour, 2023), while Nigeria's expansion patterns demonstrate the challenges of resource-dependent growth (Okon et al., 2020; Adegbe et al., 2022). North African economies, particularly Morocco, Egypt, and Tunisia, show distinct growth patterns, highlighting the role of structural reforms in sustaining economic expansion (Nagou et al., 2021; Oppong et al., 2023).

East African economies within the EAC framework, particularly Tanzania, Uganda, and Rwanda, demonstrate relatively robust growth trajectories, as documented in World Bank (2023) assessments and analyzed by Devarajan et al. (2021) and Oppong et al. (2023). The IMF's Regional Economic Outlook (2023) highlights the region's strong growth fundamentals, while studies by Kemoe & Lartey (2022) and Wang et al. (2022) examine how institutional frameworks and development partnerships influence economic expansion.

Locally, The Kenya National Bureau of Statistics (2024) reports that the nation has implemented substantial political and economic reforms, resulting in unrelenting economic growth, social progress, and political steadiness over the past decade. Nevertheless, its principal developmental obstacles are inequalities, destitution, young joblessness, accountability and disclosure, climate change, persistent inadequate private sector investment, and the economy's vulnerability to internal and external shocks. Moreover, Kenya's substantial expansion prior to the COVID-19 epidemic was predominantly fueled by the public sector, leading to debt risks that have intensified due to constricting global funding circumstances.

Kenya's economic growth for the past two decades has been robust. The economy had widespread growth, averaging 4.8% year from 2015 to 2024, falling below the Vision 2030 target of 10% annual growth. Economic Survey (2024) indicates that even though the economic outlook is

broadly positive, it is subject to elevated uncertainty. The inability to meet fiscal consolidation objectives may intensify Kenya's financial vulnerabilities, particularly owing to substantial debt service commitments. Climate challenges may reinitiate inflationary pressures and food insecurity, impacting growth. Subpar development in industrialized nations may hinder the continuous recovery of tourism, trade, and remittances. Increased commodity prices would exacerbate financial conditions, deteriorate external balances, and influence inflation.

1.1.1 Economic Growth in Kenya

Economic growth signifies an enhancement in a nation's economic status and serves as an indicator of developmental success (Abdillah, et al, 2020). Acemoglu (2012) characterizes economic growth as the augmentation of economic progress, with a primary focus on technology diffusion. Economic growth is characterized as an augmentation in the productive capacity of an economy (Palmer, 2012). The outcome enables the economy to generate numerous extra quantities of products and services (Palmer, 2012). It can also be characterized as a rise in GDP from one period to another (Weil, 2013). It also enhances productivity per capita over a specified time frame (Seater & Yenokyan, 2019). Economic growth is characterized as a surge in real GDP, GNP per capita, or national output assessed at constant prices, as stated by Weil (2013).

Economic growth is characterized as an augmentation in the total worth of products and services generated within a country during a specified time scope (Wahyunadi, 2019). The extent of activity development in economic sectors within an economy can be assessed through economic growth (Lisandri, et al., 2017). Economic growth can be quantified utilizing GDP and Gross National Product (GNP) (Badan Pusat Statistik, 2020). Lisi and Pugno (2015) assessed economic growth by GDP. Ventelou and Nowell (2015) assessed economic growth by GDP and GNP. Manyeki and Kotosz (2017) quantified economic growth as the percentage change in GDP between two distinct

periods. The present study utilized GDP as a measure of growth, contrasting two distinct periods as illustrated in table 1.1 below.

GDP represents the market worth of all products and services produced within a specified timeframe, accounting for total output. The GDP is regarded as a suitable instrument for assessing the structure, level, and rate of a nation's economy over a specified timeframe (Badan Pusat Statistik, 2020). Consequently, numerous scholars employ the idea of GDP to assess and relate economies across nations.

Table 1.1: Trend of Kenya’s Economic Growth

Years	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Growth rate	3.80%	5.02%	4.97%	4.21%	3.84%	5.65%	5.22%	-0.27%	7.59%	4.85%	5.4%

Source: World Bank (2025)

Table 1.1 demonstrates that Kenya’s GDP growth has been volatile from 2013 to 2023. For instance, in 2013 it was 3.80% before increasing to 5.02% in 2014. In 2015 it declined to 4.97% and then again to 4.21% in 2016 declining further to 3.84% in 2017. It rose to 5.65% in 2018 and then declined to 5.22% in 2019 before a sharp decline to -0.27% in 2020. In 2021 it increased to 7.59% before again declining to 4.85% in 2022 and then increasing to 5.4% in 2023. This signifies that despite robust macroeconomic management efforts, Kenya continues to have economic difficulties in achieving the Vision 2030 target of 10% growth, hence justifying the necessity of this research.

1.1.2 Government Expenditures

Government expenditure constitutes an outflow by the central government, regional, and municipal authorities, representing a significant component of GNP (Cvetanovic, Filipovi, Nikolic & Belovic, 2015). Rebeiro and Lima (2019) define government expenditure as the costs borne by

a government for its own sustenance, societal welfare, economic stability, and support to other nations. All economies depend on public spending since it determines the size and rate of economic expansion of the economy.

Government expenditure is an essential tool utilized in the development process. It fulfills an essential duty in the operational of any economy during practically all phases of growth and development. Modern emerging and industrialized countries employ public expenditure to advance revenue supply, direct resource allocation in specific sectors, and influence the structure of national income (Assi et al., 2019; Vtyurina, 2020; World Bank, 2008). In emerging nations, the variety in government expenditure patterns is anticipated to provide stable, stimulate economic growth, and increase employment possibilities (World Bank, 2015). The progression of public expenditure stems from the perceived inadequacy of market economies to effectively and fairly distribute economic resources for social and infrastructure development (Okoye et al., 2019). The letdown generates demands in welfare economics, resulting in the enlargement of the government sector and an increase in public expenditure (Owusu et al, 2016). Government expenditure is typically categorized into two types: capital expenditure and recurring expenditure. Current expenditure include expenses related to salaries, wages, labor, and consumables, whereas capital expenditure encompasses investments in hospitals, schools, roads, and other expenditures that foster a country's growth and development (Akanbi et al., 2019). This analysis concentrated on expenses related to health, education, defense and security, and social services. The primary government expenditures directly associated with human development, which is the principal catalyst for economic growth, account for 67% of overall government spending (Economic Survey, 2024).

Education expenditure pertains to the financial outlay on educational goods and services, including teaching personnel, school infrastructure, textbooks, and instructional materials, as well as ancillary educational goods and services such as support services, general administration, and related activities (UNESCO, 2023). Education is a crucial instrument that can enhance a nation's competitiveness (Rambeli, et al, 2016). Consequently, the government must ensure universal access to education, as it serves as a potent instrument for alleviating poverty, fostering economic growth, empowering individuals, augmenting personal income and fostering a modest environment (Ahmad, et al, 2010). Education expenditure was quantified by the total amount allocated to education in the country during a specified time relative to the nation's overall spending.

Health expenditure encompasses all financial outlays for medical care, preventive, preferment, recovery, community health initiatives, health administration and regulations, and capital investment, primarily aimed at enhancing health (WHO, 2024). The WHO asserts that the government is pivotal in enhancing citizens' quality of life through an effective health system, as health significantly influences economic development and the overall well-being of a population. A healthy population can thus lead to enhanced production and increased income, thereby improving economic performance (Wang et al., 2015). Furthermore, for a nation to attain equitable growth and economic advancement, the enhancement of human capital and health improvement initiatives is essential (Chai et al., 2008). Nevertheless, there has been little focus on examining the correlation between government health care expenditure and economic growth, particularly in emerging nations (Ahmad et al., 2016). Health expenditure was quantified by the total amount allocated to health inside the country during a specified time relative to the nation's overall spending.

Defense and security expenditure alludes to government spending that affects resource allocation, specifically if it incites or enables wars (Dunne, 2014). It can also refer to the amounts paid by a national government during the fiscal year to fulfill the requirements of its military forces, those of Allies, or the Alliance (NATO, 2022). This is due to the fact that defense and security expenditures have the potential to stimulate economic growth. Defense and security expenditure was measured through the summation of amount spent on defense and security expenditure in the country at any given period against the country's total expenditure.

Social services expenditure includes monetary compensation, direct provision of products and services, and tax incentives for social objectives. Profits may be directed towards low-income households, seniors, those with disabilities, the ill, the unemployed, or youth. For a programme to be deemed "social," it must entail either the redistribution of resources amongst households or mandatory participation. Social protection comprises policies and activities aimed at lessening poverty and mitigating vulnerability within a nation. This is achieved by fostering efficient labor markets, reducing persons' exposure to risks, and augmenting their ability to safeguard against perils and income loss (Édes et al., 2012). Kenya is an emerging economy aspiring to achieve developed status in the future; hence, governmental investment in social services is essential for economic advancement. These services represent a governmental investment or capital allocation for the execution of economic development initiatives. This is due to its potential to elevate social standing and hence foster economic growth (Abdullah *et al.*, 2010). Social services expenditure was measured through the summation of amount spent on social services expenditure in the country at any given period against the country's total expenditure.

1.2 Statement of the Problem

The economic growth of a country is crucial to its overall development, due to its substantial contribution to enhancing the well-being and prosperity of its economy. These major benefits are dependent on many factors including government expenditures that need to be addressed through the management of the country's fiscal policies.

Statistical evidence exhibit that Kenya's GDP growth has been volatile from 2013 to 2023. For instance, in 2013 the economic growth was 3.80% before increasing to 5.02% in 2014. In 2015 it declined to 4.97% and then again to 4.21% in 2016 declining further to 3.84% in 2017. It rose to 5.65% in 2018 and then declined to 5.22% in 2019 before a sharp decline to -0.27% in 2020. In 2021 it increased to 7.59% before again declining to 4.85% in 2022 and finally increasing to 5.4% in 2023. This signifies that despite robust macroeconomic management measures, Kenya continues to have economic hurdles in achieving the Vision 2030 target of 10% growth, hence justifying the necessity of this research.

Existing empirical researches on the bearing of public spending on economic expansion suggests that the topic need further discourse, as the findings are inconclusive and differ across regions. For instance, Uzuner, Bekun and Akadiri (2017) used Johansen Cointegration method in Turkey to determine an intermediate correlation amid government expenditure and economic performance concerning Wagner's theory. The study discovered that GDP and government spending are stochastically related. This research was conducted in an economy heavily reliant on natural resources (oil) as opposed to Kenya's economy thus, creating a contextual gap.

In the USA, Dudzeviciute, Simelyte, and Liucvaitiene (2018) concluded that in some instances, minimized government spending would improve economic development while other circumstances demand increased financing. This research concentrated on advanced economies

with varying economic conditions, in contrast to Kenya. Concerning the EU nations, Magazzino, Giolli, and Mele (2015) examined the long-term and short-run relationships between government expenditure and economic growth. Prolonged investigation indicated that the link was unstable and deteriorated over extended periods. Although the study incorporates a significant temporal element, its geographical context renders it impractical for implementation in African countries, particularly Kenya. It is due to this, that this research, sought the effects of government expenditures on Kenya's economic growth.

1.3 Study Objective

This research was dictated by hereunder objectives

1.3.1 General Objective

To evaluate the effect of government expenditures on Kenyan economic growth.

1.3.2 Specific objectives

- i) To establish the effect of education expenditure on Kenyan economic growth.
- ii) To determine the effect of health expenditure on Kenyan economic growth.
- iii) To evaluate the effect of defense and security expenditure on Kenyan economic growth.
- iv) To ascertain the effect of social services expenditure on Kenyan economic growth.

1.4 Research Hypotheses

H_{01} Education expenditure has no significant effect on Kenyan economic growth.

H_{02} Health expenditure has no significant effect on Kenyan economic growth.

H_{03} Defense and security expenditure has no significant effect on Kenyan economic growth.

H_{04} Social services expenditure has no significant effect on Kenyan economic growth.

1.5 Significance of the study

The conclusion of the research will help the government to lay in place measures, policies, and strategies that enhance economic growth through government spending. The research findings are necessary for investors' particularly foreign direct investors to assist them in understanding the contribution of their investment to the development of the nation. These would enable them to make more informed decisions in terms of investment. The study will also contribute as a source of knowledge and value addition. Future researchers can use this research to make more advancements and iron out limitations in their future findings. This research can also be a reference source for further studies related to this research area. This study adds value to scholars, academicians, and Finance theory in general.

1.6 Scope of the Study

This research concentrated on Kenya as a sector of a unit of analysis. This research focused primarily on economic growth as measured by GDP growth rate as attributed to government expenditures (health expenditure, education expenditure, defense and security expenditure, and social services expenditure) as content scope. The research adopted a causal-effect research approach where the time series regression model was adopted for a span of 25 years from 2000 to 2024.

1.7 Limitations of the Study

The researcher is at risk of getting different reports from many sources that pose a threat to authenticity. To address this, the research only used data from World Bank reports and KNBS which are credible sources. The other constraint might emanate from the extraction of data from World Bank reports and KNBS which is toiling. This was mitigated by employing two research assistants to help with the extraction of the required data.

1.8 Organization of the Study

The initial chapter introduces the research study by covering the research's background, research problem, research objectives, research hypothesis, the scope of the research, restrictions of the research, and relevance of the re. The second chapter covers a literature pertaining government expenditures variables and economic growth in Kenya. Chapter three details the research's methodology. Additionally, there is the sampling design, study populace, data gathering instruments, analysis, and diagnostics tests of the research. Chapter three entails the data analysis, interpretation and discussion and lastly, chapter five covers the data summary, conclusion and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section presents the hypothetical framework of the study; this highlights various theories by scholars that underpin the subject of economic growth. Furthermore, the section also covers the empirical review; this section reviews literature about government expenditures and economic growth. The section also has a conceptual framework that uses figures to illustrate the research's variables.

2.2 Theoretical Review

The research was underpinned by Public Finance Theory, Maximum Social Advantage Theory, Endogenous Growth Theory and Peacock and Wiseman Theory. They provide evidence from various scholars and researchers on government expenditures and economic growth in Kenya.

2.2.1 Public Finance Theory

This theory was hypothesized by Musgrave (1959) and it states that government expenditure should be devoted to achieving full employment of resources through the fiscal policy using tax management and redistribution through ability-based taxation and in kind through the provision of goods and services to increase aggregate demand and economic efficiency to achieve politically acceptable distribution of income. David Hyman characterizes public finance as the branch of economics that examines governmental activities and the various methods of funding government expenditures (Hyman, 2019).

Obioma and Ozughalu (2021) advanced public finance theory by developing fiscal synchronization hypothesis. This is based on the belief that public revenue and expenditure is jointly related and therefore is characterized by contemporary feedback between public revenue

and public expenditure. Therefore, the domain of public finance is deemed tripartite, encompassing the government's influence on the efficient utilization of resources, the distribution of income amongst citizens, and the stabilization of the economy. This theory is pertinent to the research as it underpins the government expenditure variable on service delivery.

2.2.2 Theory of Maximum Social Advantage

This Theory was introduced by Dalton in the 1920s. It proposes that the cap on government spending should be established to achieve 'maximum social advantage.' The total spending funded by revenue should align with the constraints of public expenditure. As public expenditure rises, its marginal social benefit diminishes, akin to a demand curve; concurrently, as taxation escalates, its marginal social sacrifice increases, resembling a supply curve (Hyman, 2019). Pigou (1942), who believed that taxes are collected and expenditures made for the benefit of the governed, referred to it as 'maximum aggregate welfare.' Taxation should be implemented in such a manner that the marginal sacrifice of each citizen is uniform, and expenditures should be allocated so that the marginal benefit from each expenditure line is equivalent. The notion of Maximum Social Advantage should be regulated by diminishing marginal utility and equi-marginal utility, with specific adjustments. The primary objection of the principle is the quantifiability of psychic variables in addition to interpersonal comparison. This theory is applicable to our study as it supports the variable of government expenditure on social services.

2.2.3 Endogenous Growth Theory

Theory was hypothesized by Paul Romer (1986) and Robert Lucas (1988) as an extension of the traditional neoclassical growth model introduced by Solow (1956). In contrast to exogenous growth models, which ascribe long-term economic growth to external forces like technological advancement, the Endogenous Growth Theory contends that economic growth is principally

driven by domestic factors within an economy, particularly investments in human capital, knowledge, innovation, and technology. Lucas (1988) emphasized the role of human capital accumulation, arguing that continuous investment in education and skill development enhances labor productivity, leading to sustained economic expansion. The theory suggests that government policies, incentives, and institutional frameworks play a critical role in shaping long-term expansion by influencing the rate of innovation, capital accumulation, and productivity enhancements.

The Endogenous growth theory has been widely influential but also faces strengths and criticisms in economic literature. One of its main strengths is that it offers a more comprehensive explanation of long-term economic growth than exogenous models by identifying specific mechanisms—such as human capital and innovation—that drive productivity improvements (Romer, 1990). Additionally, the theory has strong empirical support, with studies showing that countries investing heavily in R&D, education, and infrastructure tend to experience higher growth rates than those relying solely on natural resources or physical capital accumulation (Aghion & Howitt, 2018; Barro & Sala-i-Martin, 2015). Furthermore, it provides a policy-oriented framework, allowing governments to design interventions that enhance innovation and knowledge spillovers, leading to sustainable development (Jones, 2015). However, the theory has also been criticized for its assumptions. First, it relies on the assumption of perfect competition, whereas real-world markets often exhibit monopolistic behavior and barriers to entry that limit knowledge diffusion (Helpman, 2014). Second, the theory assumes constant or increasing returns to knowledge accumulation, but in reality, diminishing returns may exist in R&D investments, making continuous innovation difficult to sustain (Jones, 2019). Third, critics argue that the theory overemphasizes the role of human capital and innovation, while neglecting the impact of other structural factors such as

institutions, trade policies, and macroeconomic stability (Acemoglu, 2019). Lastly, some scholars contend that the theory lacks clear empirical measurement tools, making it difficult to precisely quantify the contribution of endogenous factors to overall growth (Temple, 2019). Despite these limitations, the Endogenous Growth Theory remains a valuable framework for comprehending the role of human capital, technology, and innovation in long-term economic expansion. This theory is appropriate to the research as it underpins the economic growth variable.

2.2.4 Peacock and Wiseman Theory

The theory was proposed by Peacock and Wiseman (1961). It explains the expansion of public expenditure, suggesting that government spending increases during crises and rarely returns to previous levels, leading to long-term expenditure growth. Peacock and Wiseman (1979) analyze the literature about the expansion of governmental expenditure. The hypothesis posits that public expenditure doesn't escalate in a gradual and uniform manner, but rather in abrupt increments or a stepwise method. They prioritize the temporal pattern of public expenditure trends over the pursuit of a substantive positive theory of public sector expansion. It exhibited the displacement effect, whereby tax rates are elevated during wartime to augment revenues, hence supporting the escalation in defense expenditures.

The trajectory of growth may vary among different branches of government yet will invariably encompass traditional services, including defense, law enforcement, and the establishment of new functions linked to the education expansion, healthcare services, and structural economic changes (Adil et al., 2017; Forte & Magazzino, 2018; Magazzino et al., 2015). Peacock and Wiseman's approach emphasizes elucidating the transient nature of PE increase, rather than assessing the outright quantity of that value. It examines the variability of public expenditure based on certain

behavioral concepts. This theory is applicable to this research as it supports the defense and security variable.

2.3 Empirical Review

2.3.1 Education Expenditure and Economic Growth

Rahman and Anis (2023) studied the connection between public spending on education and economic growth and the extent of this connection. The research utilized panel data randomly selected from 63 nations across each continent, covering the period from 1981 to 2010. This research also encompassed additional variables influencing economic growth, such as the inflation rate, joblessness rate, foreign direct investment, total exports, and capital realization. The research demonstrated a substantial favorable association between public expenditure on education and economic advancement. This research was done in Asia and adopted a panel regression model thus creating both the contextual and methodological gaps that the current research aimed to fill.

Suwardaru *et al.* (2021) researched the connection between public expenses in educational sectors and Indonesian economic expansion. This was after the Indonesian government opted to spend 20% of its total budget on education. The researchers analyzed data from 1988-2018, employing the Cobb-Douglas production function for measurements, and identified a positive correlation in the long term and an adverse correlation in the shortterm approximation. This study was done in Indonesia and adopted Cobb-Douglas production function thus creating both the contextual and methodological gaps that the current research aimed to fill.

Sefa, Mehmet, and Siew (2017) undertook a hierarchical meta-regression analysis utilizing a sample of 237 estimates derived from 29 initial analyses to explore the correlation between economic expansion and public spending on education. The impact of public education spending

on growth is beneficial for industrialized nations. Conversely, if the indicators relates to less developed nations (LDCs), they identified a statistically negligible correlation. This study was done in Malaysia and adopted hierarchical meta-regression analysis thus creating both the contextual and methodological gaps that the current research intended to fill.

Dounala *et al.* (2015) investigated how government expenditure on education impacted economic growth in Cameroon. They utilized data spanning from 1980 until 2012. A substantial association was identified, as the results were both favorable and statistically substantial. This study was done in Cameroon and cannot be generalized thus creating a contextual gap that the current research intended to address.

Odior (2014) researched the connection of public expenses with Poverty and education in the context of Nigeria. He devised a model called the Dynamic Recursive CGE-MS model, which integrated these connections and demonstrated their effects on the Nigerian economy from 2004 to 2015. This study was done in Nigeria and adopted the Dynamic Recursive CGE-MS model thus creating both the contextual and methodological gaps that the current research aimed to address.

Odit, Dookhan, and Fauzel (2010) researched the influence of educational investment on economic expansion in Mauritius, demonstrating that human capital significantly boosts productivity and hence elevates potential output levels. This research analyzed the effects of educational investment in Mauritius from 1990 to 2006 utilizing the Cobb-Douglas production function. Cointegration tests performed during the research substantiated the assertion that public support for educational achievement is a vital determinant of economic development enhancement. Increased access to advanced education, facilitated by adequate public funding, enhances productivity. Consequently, the average degree of education is seen as a direct variable influencing total factor production. The

study indicates that the buildup of human capital is vital for progress and the adoption of new technologies. This study was done in Indonesia and adopted Cobb-Douglas production function thus creating both the contextual and methodological gaps that the current research aimed to address.

2.3.2 Health Expenditure and Economic Growth

Yuxiao Chunhai and Qizhe (2022) employ a non-parametric additive model to ascertain the influence of government health spending on economic development and regional disparities in Asia. The outcomes suggest that the ratio of government health expenditure to GDP is beneficial to economic development, whereas its effect in the eastern and central regions is detrimental. The research suggests that the government enhance the share of health expenditure in GDP, enhance investment in fixed assets, boost exports in the eastern region, and persist with the western support program. This study was conducted in Asia and employed a non-parametric additive model, so establishing both contextual and methodological gaps that this research aimed to address.

Odhiambo (2021) researched the connection between health expenditure and economic expansion in sub-Saharan Africa. The research investigates the causal association between health expenditure and economic expansion utilizing panel data from SSA nations from 2008 to 2017. The research employed a panel model and discovered that, where public spending serves as a proxy, a clear unidirectional connection from health expenditure to economic growth is evident in low-income countries, whereas no such causality is observed in middle-income nations. This study was done in sub-Saharan African countries and adopted a panel model thus creating both the contextual and methodological gaps that the current research intended to address.

Viju and Wullianallur (2020) research the correlation between public health expenditure and economic expansion throughout the US. The research employed visual analytics to gather economic and health data from the Bureau of Economic Analysis and the Bureau of Labor Statistics for the period 2003–2014. The outcomes demonstrate a robust favorable link between healthcare expenditure and the economic variables of income, GDP, and labor productivity. Healthcare expenditure exhibits an adverse connection with multi-factor productivity, while demonstrating a favourable connection with labor productivity measures, personal expenditure, and GDP. The research indicates that an escalation in healthcare spending correlates positively with economic performance. The consequences of policy indicate that the well-being of citizens contributes to a more robust economy. Consequently, prudent investment in diverse healthcare sectors would enhance income, GDP, and productivity, while mitigating poverty. This study was done in the United States and adopted visual analytics thus creating both the contextual and methodological gaps that the current study aimed to fill.

Ye and Zhang (2018), in their analysis of the correlation between healthcare expenditure and economic growth across 15 OECD nations and five prominent emerging economies, discovered an unintended linear or non-linear causality from economic growth to healthcare spending. This research was done among OECD nations which cannot be generalized here thus creating a contextual gap that the current research sought to fill.

Khan et al. (2016) studied the correlation amongst health care spending and economic growth in certain South Asian Association for Regional Cooperation nations from 1995 to 2012, revealing a unidirectional causality from per capita GDP to health care expenditure in these nations in the short term. This study was done among South Asian countries which cannot be generalized here thus creating contextual gap that the current research intended to address.

2.3.3 Defense and Security Expenditure and Economic Growth

Amana, Aigbedion, and Zubair (2020) evaluated the influence of governmental security expenditure on economic growth in Nigeria from 1986 to 2018. The research utilized longitudinal data and employed econometric tools for testing and estimate. The ADF test was utilized to assess stationarity, whilst OLS and the ECM procedures were utilized to evaluate the influence of government security expenditure on prosperity in Nigeria. Additionally, a Granger causality test was conducted to ascertain the causal relationships amongst the economic variables. Results from the research indicate that the data were stationary at several levels, and the calculated impact demonstrates that government security expenditure significantly influences economic expansion in Nigeria. Consequently, the report advises that the government establish a framework to ensure that all expenditures on security in Nigeria are accounted for in relation to the prosperity of the nation. Whereas this research was done in Nigeria incorporating recurrent expenditure, the current research was done in Kenya and will only focus on capital expenditure, thus there were both contextual and conceptual gaps.

Muhammad (2020) undertook an empirical analysis of the effect of military expenditure on economic growth for a panel of 35 non-OECD nations from 1988 to 2019. A multivariate regression model utilizing the enhanced production function is employed to fulfill the study's purpose. The panel ARDL/pooled mean group (PMG) method is utilized, alongside robust least squares and fixed-effect estimators to ensure the reliability of the outcomes. The research identified a distinct adverse impact of military expenditure on economic growth. The empirical outcomes of this research suggest that policymakers must restructure the military budget to promote economic growth and enhance social welfare. Whereas this research was done in non-

OECD countries that are developed unlike Kenya, the current research was done in Kenya and will utilize a time series econometric model, thus there were both contextual and methodological gaps.

Apansile and Okunlola (2014) studied the effects of military expenditure on economic output in Nigeria over both short and long-term periods. Furthermore, it assessed if military expenditure constitutes an economically non-contributive activity by employing the ARDL bounds testing method for co-integration. The results demonstrated that military expenditure adversely and significantly impacts output in the near term, whereas it positively and significantly influences output. The research suggests that the administration need to diminish its defense expenditures and focus more on human capital development, as military spending yields no short-term output benefits. Whereas this research was done in Nigeria, the current research was done in Kenya, thus there was a contextual gap.

Oriavwote and Eshenake (2013) examined the bearing of defense spending on of economic growth in Nigeria. Analysis of data from 1980 to 2010 demonstrates that defense expenditure adversely affects economic growth. Expenditure on internal security significantly contributed to achieving the targeted Nigerian economic growth. The low elasticity signifies that the results were below anticipated levels of consequence. The variance decomposition results demonstrated that fluctuations in defense expenditures did not substantially account for the variations in Nigeria's economic growth. Whereas this study was done in Nigeria, the current study was done in Kenya, thus there was a contextual gap.

Enimola and Akoko (2011) studied the correlation between economic development and defense expenditure in Nigeria from 1977 to 2006. The Granger causality test results demonstrates a unidirectional connection from economic development to defense expenditure. This analysis

demonstrates that, for Nigeria, a policy of augmenting the defense budget to foster economic development may be unsuitable; yet, reallocating those monies to an alternative governmental program could be beneficial. This study was conducted in Nigeria, while the present research took place in Kenya, revealing a contextual gap.

2.3.4 Social Services Expenditure and Economic Growth

Cooray and Num (2024) analyzed the correlation between public social expenditure and economic growth. The research analyzed panel data from 132 established and emerging European countries between 2008 and 2019, revealing substantial and complimentary correlations amongst the variables through fixed effects, system GMM, and instrumental variable estimation. All three elements of public social expenditure—social security benefits, educational expenditures, and healthcare expenditure—exert a substantial and favorable influence on later economic expansion. To foster inclusive growth, governments must proactively formulate and execute social expenditure policies. These should, however, be supplemented by simultaneous measures to enhance the quality of public institutions, which significantly influences the link between social spending and growth. Whereas this study was done in Europe, the current study was done in Kenya, thus there were both methodological and contextual gaps.

Okezies and Asoluka (2017) analyzed overall government expenditure on community and social services and its bearing on Nigerian economic growth, utilizing longitudinal data from 1961 to 2013, sourced from the Nigerian Central Bank yearly report and Statement of Account. The ECM results demonstrate that total expenditures on social and community services is not statistically noteworthy but exhibits a strong association with economic growth in Nigeria over the long term. Conversely, in the short term, total expenditure on social and community services is extremely statistically significant and consequently correlates with economic growth in Nigeria. The authors

assert that economic growth correlates favourably with overall expenditure on social and community services, recommending a boost in allocation for these sectors and emphasizing the necessity for effective resource management and utilization. Whereas this study was done in Nigeria, the current study was done in Kenya, thus there was a contextual gap.

Owino (2017) studied the impact of public expenditure in the social sector on economic expansion in Kenya. The ARDL modeling framework was employed to differentiate the economic growth impacts of public spending in the social sector. The study examined expenditures in three sectors pertinent to human capital development: education, health, and social security. The findings indicated that education exerted beneficial short and long-term impacts on real GDP per capita. Conversely, health and social security expenditures seemed to inhibit economic growth. In response to these findings, the study advocates for enhanced investment in education. Moreover, public spending in the health and social security sectors should be directed towards profitable initiatives. Whereas this study was done in Kenya, there existed both methodological and period scope that the current study was coming to address.

2.4 Summary of Empirical Review

Many research have been done out this area of government expenditure and economic growth and there have been mixed findings, some revealing significant association others revealing insignificant relationship. Some have positive correlation others have negative correlation. Therefore, this section tries to summarize the studies and identifying the research gaps found from these previous studies that the current study sought to fill.

Table 2. 1: Summary of Empirical Review and Research Gaps

Author(s)	Titles	Findings	Study gaps	Aim of the current research
Cooray and Num (2024)	To ascertain the correlation between	The research revealed that all three	The study was done in	The current study was done

	public social spending and economic expansion.	elements of public social expenditure exert a substantial and favorable influence on eventual GDP.	Europe utilizing panel data model,	in Kenya, thus there was both methodological and contextual gaps.
Rahman and Anis (2023)	To ascertain the connection amongst public spending on education and economic growth	The research demonstrated a substantial positive association amongst governmental expenditure on educational and economic advancement.	This study was done in Asia and adopted panel regression model	Current study was seeking to fill both the contextual and methodological gaps that the
Yuxiao Chunhai and Qizhe (2022)	Studied the influence of governmental health expenditure on economic advancement and disparities in regional development.	Findings suggest that the ratio of government health expenditure to GDP, both nationally and in the western areas, positively influences economic development.	This study was done in western regions and adopted a non-parametric additive model	Current study was seeking to fill contextual and methodological gaps.
Odhiambo (2021)	To ascertain the effect of Health spending on economic expansion in SSA.	The research discovered that health spending positively influences economic growth in emerging economies, nevertheless no causal connection was identified in middle-income ones.	This research was done in SSA countries and adopted a panel ECM-based Granger-causality model	Current research sought to fill both the contextual and methodological gaps.
Suwandaru <i>et al.</i> (2021)	To ascertain the correlation between public expenditure in the educational sector and Indonesian GDP expansion.	Identified a strong association in the long-term and an adverse correlation in the short-term estimation.	This study was done in Indonesia and adopted Cobb-Douglas production function	Current research aimed to fill both the contextual and methodological gaps that the
Amana, Aigbedion	To evaluate the influence of governmental security	Demonstrate that government security expenditures	Contextual and	The current research was

and Zubair (2020)	spending on Nigerian GDP growth	significantly influences Nigerian GDP growth.	conceptual gaps	done in Kenya and will only focus on capital expenditure,
Muhammad (2020)	To assess the influence of military expenditure on revenue growth for a cohort of 35 non-OECD nations	The research identified a distinct adverse impact of military expenditure on GDP growth.	Contextual and methodological gaps.	The current study was done in Kenya and will utilize time series econometric model.
Viju and Wullianallur (2020)	To ascertain the correlation between public health expenditure and economic performance throughout the US.	Results suggest a significant link between healthcare expenditure and economic expansion.	This study was done in United States and adopted visual analytics	Current research aimed to fill both the contextual and methodological gaps that the
Okezies and Asoluka (2017)	To assess the influence of all government spending on social and community services and its impact on Nigerian economic expansion.	The findings suggest that total expenditures on social and community services is not economically substantial, however it exhibits a favorable correlation with Nigerian economic growth over the longterm.	There was a contextual gap.	The current research was undertaken in Kenya.
Sefa, Mehmet and Siew (2017)	Analyzed the correlation between economic growth and governmental investment in education.	The impact of government education expenditures on expansion is favorable in industrialized nations.	This study was done in Malaysia and adopted hierarchical meta-regression analysis	Current research intended to fill the contextual and methodological gaps that the

Source: Researcher (2025)

2.5 Conceptual Framework

The conceptual framework depicts the connection between government expenditure and economic growth, which represent the independent and dependent variables respectively. Education expenditure, health expenditure, defense and security expenditure and social services expenditure were the explanatory variables whereas the economic growth was the output variable being measured using GDP growth rate.

Independent Variable

Government Expenditures

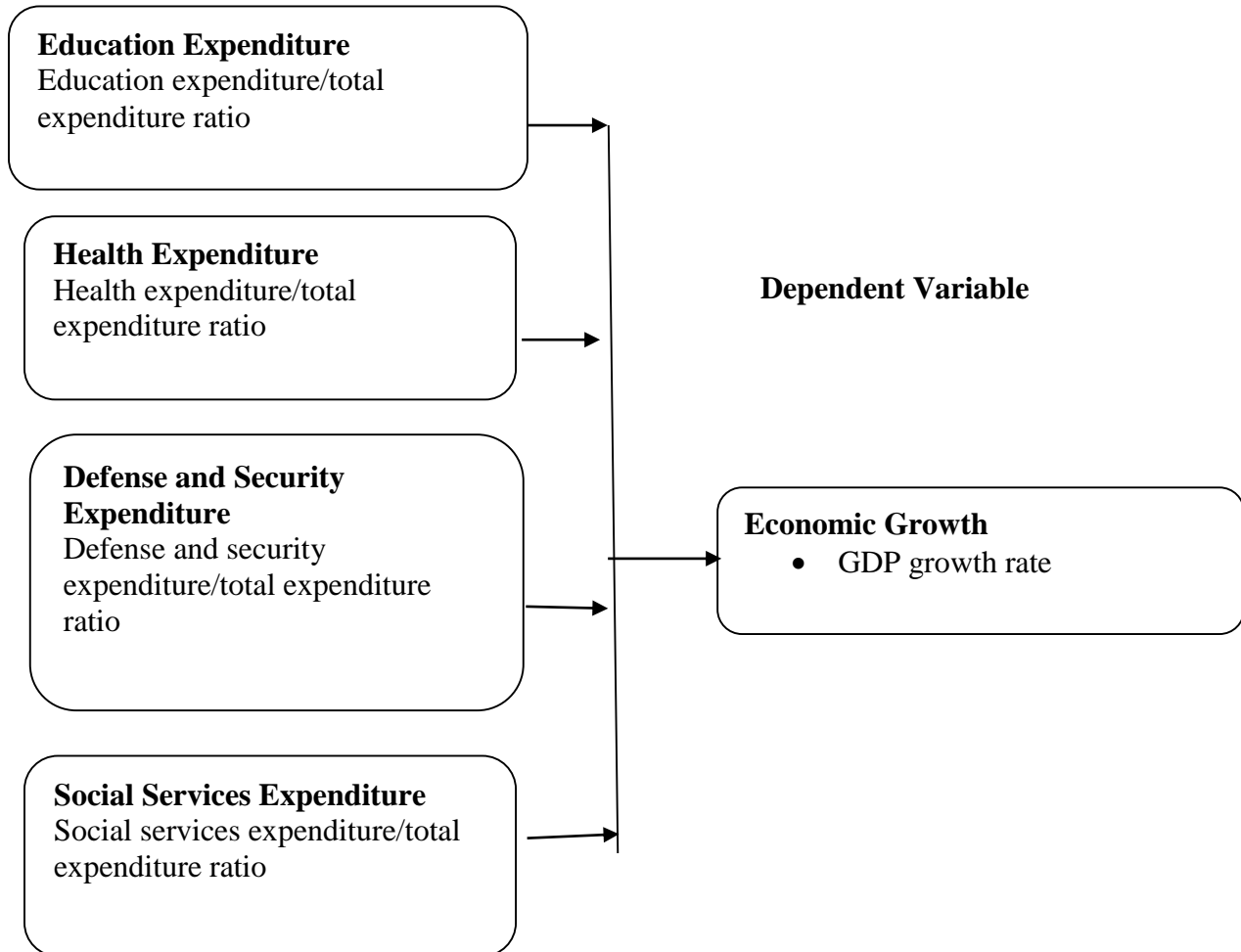


Fig. 2.1 Conceptual framework

Source: Researcher (2025)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The section looks at the following areas; the research design, the intended populace, data gathering tool and data gathering procedure, operationalization, and measurement of the research variables. In addition, the section discussed the data analysis and presentation, which included the empirical model specification and diagnostic test, and finally, the ethical factors that was taken into consideration during the research.

3.2 Research Design

Cooper & Schindler (2014) posit that research design is the plan for the gathering, quantifying, and analyzing the data. In concordance with this definition, Dimitrova (2014) summarizes the research design as a method of gathering and processing data. In this instance, the researcher adopted a causal research approach. This conclusive review is utilized to establish a causal association between two or more variables, largely to identify the source of the observed behavior. It, nonetheless, permits the researcher to select which alterations in an independent variable correlate to modifications in the dependent variable. To ensure precision, it is presumed that other variables remain unchanged. It can assist in determining the exact link between two variables.

3.3 Target Population

Saunders, Lewis, and Thornhill (2016) posit that population pertains to the complete set of items concerning which the researcher intends to draw inferences. In this research the researcher focused on the Kenyan economy as the unit of analysis with 25 years observations.

3.4 Sampling Design

The research utilized data observations for 25 years leading to 25 data point observations. Being a small sample the study adopted a census sample design where all data point observations were under scrutiny.

3.5 Data Collection Instruments

The research adopted published secondary data from the World Bank and KNBS. Secondary data is a vital source of information in any study as it provides a source of facts that is easily available, more accurate, and verifiable. These sources are permanent, and the researcher can counter-check them anytime. The secondary data was collected using the data extraction form. This form collected information on the annual amount spent on education, spent on health, the on defense and security, the annual amount spent on social services, and the annual GDP growth rate. The data, which was longitudinal, was obtained for a period of 25 years, from 2000 to 2024.

3.6 Data Collection Process

Before collecting data, Kenyatta University approved and authorized the researcher to collect data necessary for the study. Further, authorization was sought from the NACOSTI. Once license was granted, Secondary data was extracted from annual reports from the World Bank and KNBS from the year 2000 to 2024 with the help of a secondary data gathering sheet.

3.7 Operationalization and Measurement of Study Variables

This segment covers operational terms of the study variables used and their types, operationalization, measurements, and the scale of measurement.

Table 3. 1: Operationalization of Variables

Variable	Category	Operationalization	Measurements	Scale
Education Expenditure	Independent	Expenditure on educational goods and services	Education expenditure/total expenditure ratio	Ratio
Health Expenditure	Independent	Expenditures on medical care, prevention, community health initiatives, health administration and regulation, and capital formation primarily aimed at enhancing health.	Health expenditure/total expenditure ratio	Ratio
Defense and security expenditure	Independent	Government expenditure that affects the resources it consumes when it incites or enables disputes.	Defense and security expenditure/total expenditure ratio	Ratio
Social services expenditure	Independent	Includes monetary advantages, direct provision of products and services, and tax incentives for social objectives.	Social services expenditure/total expenditure ratio	Ratio
Economic Growth	Dependent	An augmentation in the total value of products and services produced in a country over a specified timeframe.	GDP Growth Rate	Ratio

Source: Researcher (2025)

3.8 Data Analysis and Presentation

After gathering the data, the researcher cleaned and coded that data before carrying out the analysis. Analysis was done with the help of STATA software version 14 where descriptive statistics and inferential statistics was done. Descriptive statistics concentrated on means and standard deviations of study variables whereas inferential statistics focused on correlational analysis as well as regression analysis. The analyzed data was exhibited in tables, and graphs. The time series regression model was built based on a research by Olabisi and Funlayo (2012). The model is specified as follows

$$Y_t = \lambda_0 + \lambda_1 X_{1t-1} + \lambda_2 X_{2t-1} + \lambda_3 X_{3t-1} + \lambda_4 X_{4t-1} + \varepsilon$$

Whereby Y =Economic Growth

X_1 =Education expenditure

X_2 =Health expenditure

X_3 =Defense and security expenditure

X_4 =Social services expenditure

$\lambda_1, \lambda_2, \lambda_3$ and λ_4 =Coefficient of the components of government expenditure

ϵ is the error term.

λ_0 = Intercept of the regression line

t =time period (2000-2024)

3.9 Diagnostic Tests

The research was dictated by the following diagnostic tests to test for the violation of regression analysis before the actual data analysis.

3.9.1 Multicollinearity test

Multicollinearity denotes the existence of significant correlation amongst independent variables within a multiple regression model. This test is used to detect and quantify the degree of multicollinearity in a dataset. It also assesses whether the independent factors in a regression model are correlated to a degree that could cause issues with the interpretation of the model. This study adopted the VIF command to identify the multicollinearity test in the regression model. According to the rule of thumb, a variable whose VIF values >10 will call for more investigations (Kothari, 2017).

3.9.2 Normality Test

The normality test compares this set of results against a set of results that are normally distributed and have a constant mean and standard deviation (Shiva, 2012). The assumption of "sample

distribution is normal" is the null hypothesis. The distribution is not normal if the test is significant. The researcher employed the Jarque-Bera test to check normality where p values smaller than 0.05 suggests that the data set is abnormally distributed, and Probabilities higher than 0.05 suggest the set is normally distributed.

3.9.3 Heteroscedasticity Test

According to Jameson (2014), Heteroscedasticity refers to any data that does not have homoscedastic characteristics. Its data that has unequal variability across the set of second independent variables it predicts. In regression, the error term reflects the extent to which a point diverges from the regression line, and the idea is that the error term should be constant or simply homoscedastic (Frost, 2021). This research used the Breusch-Pagan model as proposed by Breusch and Pagan (1979) who recommended this test for heteroscedasticity. The equation form is $\chi^2 = n \cdot R^2 \cdot k$, in this case, n is the sample size in a potential linear regression, R^2 is the coefficient of determination, and k is the number of predictor variables. Instead of the sample size, the degrees of freedom are determined by independent variables. This test's interpretation is a significant result that indicates the existence of heteroscedasticity (Clark, 2018).

3.9.4 Autocorrelation Test

It's where the similarity between observations is a function of time lags between them (Misund, 2018). The Durbin-Watson test is a widely used method for autocorrelation (Jeong & Chung, 2021). This study adopted the Durbin-Watson test to investigate autocorrelation. The Durbin-Watson statistic always falls between the numbers 0 and 4. Metrics of the value of 2 show no autocorrelation detected in the data set. Metrics of more than 0 but less than 2 confirm Positive autocorrelation and finally, metrics greater than 2 but less than 4 reveal the presence of negative autocorrelation (Kenton, 2018).

3.9.5 Stationarity Test

This is a test of verification of whether the data studied is stationary or not (Schaffer, 2020). The Kwiatkowski-Philips-Schmidt test considers the null hypothesis H_0 for a stationary series, is one method for testing stationery. Other techniques include unit root tests like the Dickey-Fuller test and its enhanced form, the augmented Dickey-Fuller. (Stillman, 2011). The test used the unit root approach, where if the stochastic component of the probability distribution has a unit root, it is non-stationary. Under this null hypothesis, the stochastic component does not follow a normal distribution or t-distribution. The alternate hypothesis is if the stochastic component misses a unit root, then the data is stationary (Harsha, 2019). As proposed by Stillman (2011), this study evaluated stationarity using the Phillips-Perron test.

3.9.6 ARDL Bounds' Co-integration test

The cointegration test was done to confirm presence of long term association between different time series data (Amanda, 2020). The tests are employed to determine the sensitivity of variables to the same average over a specific period. The research utilized the boundaries testing technique developed by Pesaran and Shin (2001) to assess cointegration, given the inclusion of integrated variables in the data. The ARDL bounds test methodology for co-integration has been shown to outperform conventional co-integration techniques. The method is applicable to variables that are either $I(1)$ or $I(0)$, or a mix thereof, and it produces unbiased estimates with effective t-statistics, even in the existence of endogenous regressors (Harris & Sollis 2003). The null hypothesis is rejected if the F statistic is higher than the critical value at one percent significance level.

3.9.7 Lag Selection

Before running the cointegration test, the appropriate latency for the model was determined. The ARDL approach and Akaike Information Criterion (AIC) was utilized to ascertain the ideal lag

length and select the best model. Lütkepohl (2006) asserts that the optimal lag order for each regressor, as determined by the AIC, outperforms other options.

3.10 Ethical Considerations

Ethics are the standards or norms for conduct that discriminate between what is wrong and what is right. They assist in determining the difference between unacceptable and acceptable behaviors (Kothari, 2017). To guarantee adherence to the ethical requirements of the research, authorization to perform the research was obtained from the relevant authorities. An introduction letter was also obtained from the University. License was sought from the NACOSTI. Piracy and confidentiality of data information was adhered to as well as seeking consents from the relevant parties before obtaining data.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This section includes objective testing, VAR time series regression analysis, descriptive statistics, Pearson correlation and outcomes of diagnostic tests. It details how the relationships between the variables are interconnected.

4.2 Descriptive Statistics

This emphasizes the most significant elements of the utilized data with the focus on the means, standard deviation and the range between the distributions. The descriptive statistics outputs analysis are displayed in Table 4.1.

Table 4. 1: Descriptive Statistics

Variable.	Obs	Mean	Std. Dev.	Min	Max
GDP Rate	25	4.648	1.798638	-.3	7.6
Education Expenditure	25	27.818	7.187539	17.37	40.31
Health Expenditure	25	8.806	3.411167	1.5	12.42
Defense and Security Expenditure	25	.9916	.4844643	.42	1.81
Social service Expenditure	25	10.6284	2.888797	4.81	14.28

Source: Study Data (2025)

The GDP rate mean is 4.648, the std. dev. is 1.798638, and the range of values is -0.3-7.6, as per the results. This suggests that the GDP growth rate demonstrates both uniformity and equilibrium throughout the study period, with an annual average growth of 4.65%. The Education Expenditure had an average of 27.818 and a std. dev. of 7.187539. The minimum recorded was 17.37, whereas the maximum was 40.31. This implies an approximate 27.82% of Education Expenditure contribution over the total public expenditure over time. The Health Expenditure exhibited a

somewhat variable average of 8.806 and a std. dev. of 3.411167, with a minimum of 1.5 and a maximum of 1.81. This implies an average contribution of 8.81% over the total public expenditure over time.

Defense and Security Expenditure demonstrated an average of 0.9916 and a std. dev. of 0.4844643, with a low of 0.42 and a high of 1.81. This implies steadily increasing portion of Defense and Security Expenditure a low contribution of Defense and Security Expenditure over the total expenditure at 1%. The Social service Expenditure a score of 10.6284 and a std. dev. of 2.888797. This bottommost value was 4.81, whereas the uppermost figure was 14.28. This implies the contribution of Social service Expenditure with an approximate 10.6% of total public expenditure that was rising over time.

4.3 Correlation Analysis

The correlation matrix among the variables displayed the strength of their relationship with their significance findings as portrayed in Table 4.2.

Table 4.2 Correlation Analysis

	GDP Rate	Education Expenditure	Health Expenditure	Defense and Security Expenditure	Social services Expenditure
GDP Rate	1.0000				
	25				
Education Expenditure	0.1982	1.0000			
	25	25			
	0.0421				
Health Expenditure	0.3953	0.8643*	1.0000		
	25	25	25		

	0.0005	0.0000			
Defense and Security Expenditure	-0.1702	-0.5885*	-0.4278*	1.0000	
	25	25	25	25	
	0.0159	0.0020	0.0329		
Social services Expenditure	0.1998	-0.6008*	-0.3070	0.7601*	1.0000
	25	25	25	25	25
	0.3382	0.0015	0.1355	0.0000	

Source: (Study data, 2025)

The Pearson correlation coefficient reflecting a link between education expenditure and economic growth in Kenya was robust, favorable, and statistically significant at 0.0421 ($p < 0.05$). These outcomes agree with those by Suwandaru *et al.* (2021) who established a favourable correlation in the long run.

The correlation amongst health spending and economic expansion was moderate and beneficial, illustrated by a Pearson coefficient of 0.3953 and a significance level of 0.0005 ($p < 0.05$). These results are compatible with Viju and Wullianallur (2020) who found an escalation in healthcare spending correlating positively with economic performance.

The Pearson correlation coefficient between defense and security expenditure and economic growth was -0.1702, with a weak negative insignificance level of 0.0159 ($p < 0.05$). This finding agree with those by Apansile and Okunlola (2014) who found that military expenditure adversely and significantly impacts output in the near term, whereas it positively and significantly influences output in the long term..

The linkage amongst social services and economic development had a Pearson coefficient of 0.1998 and an insignificance level of 0.3382 ($p > 0.05$). This outcome aligns with the analysis of Cooray and Num (2024) who analyzed the correlation between public social expenditure and

economic expansion revealed substantial and complimentary correlations amongst the variables via fixed effects, system GMM, and instrumental variable estimation.

4.4 Diagnostic Test Results

The diagnostic tests were conducted prior to regression analysis to confirm for any violation of the assumptions of the regression analysis. The experiments included the tests for multicollinearity, normality, heteroscedasticity, autocorrelation, optimal lag selection, and stationarity.

4.4.1 Multicollinearity test

It was executed by instituting the VIF, where VIFs below 4 was considered to have no multicollinearity. Any other result meant there is substantially linear relationship involving more than one explanatory factor. Table 4.3 displays the outcomes.

Table 4.3 Multicollinearity Test

Variable	VIF	1/VIF
Education Expenditure	2.37	0.421941
Health Expenditure	3.77	0.265252
Social services Expenditure	2.33	0.429185
Defense and Security Expenditure	1.85	0.540541
Mean VIF	2.58	

Source: Study Data (2025)

The output above provides evidence that all the VIFs were less than 4, verifying the absence of multicollinearity issues.

4.4.2 Normality Test

The alternative hypothesis says that the data are uniformly distributed, in contrast to the null hypothesis, which claims otherwise (Green, 2008). If the P<value is 0.05, the data are not normal, and if the P-value is >0.05, the data are normal. The Jarque-Bera test was used in this inquiry. Table 4.4 exhibits the normality tests' results;

Table 4.4 Normality Test

	Skewness/Kurtosis tests for Normality -----joint -----				
Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
GDP rate	25	0.0043	0.0124	11.37	0.1034
Education Expenditure	25	0.8548	0.0838	3.37	0.1855
Health Expenditure	25	0.0154	0.5081	5.90	0.0523
Defense and Security Expenditure	25	0.2892	0.0805	4.33	0.1146
Social service Expenditure	25	0.0821	0.9786	3.37	0.1855

Source: Study Data (2025)

The results demonstrate that the statistics set was normally spread since the table above shows that P-values >0.05.

4.4.3 Test for Heteroscedasticity

Through a diverse array of explanatory variables, it attempts to ascertain whether the volatility of the variables was not equal. This was done utilizing the Breush-Pagan/Cook-Weisberg test.

Table 4.5 Test for Heteroscedasticity.

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of gdprate
chi2(1) = 1.11
Prob > chi2 = 0.2916

Source: Research Data (2025)

The alternative proposition asserts heteroscedasticity, while the null hypothesis asserts homoscedasticity through a variety of explanatory variables. When the p-value is 0.05 or below, heteroscedasticity is present; when >0.05, homoscedasticity is present. The research failed to reject the null hypothesis and come to the conclusion that homoscedasticity existed.

4.4.4 Autocorrelation Test

The autocorrelation test sought to identify the correlations between error items over time. The test was conducted utilizing Durbin-Watson method, wherein an absence of serial correlation is shown by a DW value not notably distinct from 2. A zero-autocorrelation hypothesis was tested, requiring that the predicted value exceeds the lesser critical value (DL), as displayed in table 4.6.

Table 4.6 Durbin Watson Test

Durbin-Watson d-statistic	(4, 25)	=	2.899227
---------------------------	---------	---	----------

Source: Study Data (2025)

From table 4.6 above, Durbin Watson Value (DW) is 2.899227 which not notably distinct from 2. Thus, the lags of the data utilized in this investigation did not present a difficulty with serial correlation.

4.4.5 Lag Selection Results

The proper latency for the model was chosen before running the cointegration test. To choose the ideal lag, the researcher used the Hannan-Quinn Criteria, the Schwarz Information Criteria, and the Akaike Information Criteria (AIC). According to table 4.7, the vector autoregressive lag selection is as stated.

Table 4.7 Lag Order Results

Selection-order criteria								
Sample: 2004 - 2024								Number of obs = 21
Lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	-42.0596				5.2242	4.48186	4.53584	4.73056
1	-37.556	9.0071	1	0.003	3.76847	4.14819	4.21296	4.44662
2	-32.0705	10.971	1	0.001	2.48334	3.721	3.79656	4.06917

3	-26.6164	10.908	1	0.001	1.64767	3.2968	3.38316	3.69471
4	3.02254	59.278*	1	0.000	.109761*	.569282*	.666434*	1.01693*
Endogenous: GDP Rate								
Exogenous: expenditure on education, health, defense and security, social services _cons								

Source: Study Data (2025)

All information criteria (FPE, AIC, HQIC and SBIC) determined that lag 4 was the best suitable lag for the model based on the data in table 4.7. Because every criteria chooses lag four, the study accepts it.

4.4.6 Stationarity Test

As displayed in table 4.8, the unit root test of the Phillips-Perron test was done with the null hypothesis of 'data was not stable and there was unit root'.

Table 4.8 Phillips-Perron test

Phillips-Perron test for unit	root Number of obs = 24			
	Newey-West lags = 4			
	----- Interpolated Dickey-Fuller -----			
	Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value
Z(rho)	-29.817	-22.500	-17.900	-15.600
Z(t)	-9.351	-4.380	-3.600	-3.240
MacKinnon approximate p-value for Z(t) = 0.0000				

Source: Study Data (2025)

The hypothesis of presence of unit root is rejected and it is resolved that the data was static, making it a good fit for regression models for the reason that the estimated test statistic is lower than the critical value (-9.351 < -3.600) and the variation was statistically relevant ($p=0.0000 < 0.05$) at a 95% confidence range). In this case cointegration is not applicable.

4.5 Time Series Regression Analysis

The time series data was identified as steady, classified as $I(0)$, without requiring differencing, as illustrated in Table 4.8. Consequently, in these cases, the data may be analyzed utilizing either the OLS or VAR model (Shrestha & Bhatta, 2018). Moreover, as all variables were stationary at $I(0)$, cointegration is not required for this. The results of this investigation, utilizing a VAR time series regression grounded in an empirical model, are displayed in Table 4.9.

Table 4.9 Regression Coefficients

Vector Auto-Regression																																																							
Sample: 2004 - 2024				No. of obs = 21																																																			
Log likelihood = 3.022543				AIC = .5692816																																																			
FPE = .1097613				HQIC = .6664336																																																			
Det (Sigma_ml) = .0439045				SBIC = 1.016934																																																			
Equation	Parms	RMSE	R-sq	chi2	P>chi2																																																		
GDP Rate	9	.277187	0.9878	1703.023	0.0000																																																		
<table border="1"> <thead> <tr> <th>GDP Rate</th> <th>Coef.</th> <th>Std. Err.</th> <th>z</th> <th>P>z</th> <th colspan="2">[95% Conf. Interval]</th> </tr> </thead> <tbody> <tr> <td colspan="7">GDP Rate</td> </tr> <tr> <td colspan="7">GDP Rate</td> </tr> <tr> <td>L1.</td> <td>-2.110081</td> <td>.0566928</td> <td>-37.22</td> <td>0.000</td> <td>-2.221197</td> <td>-1.998966</td> </tr> <tr> <td>L2.</td> <td>-2.548392</td> <td>.0855927</td> <td>-29.77</td> <td>0.000</td> <td>-2.71615</td> <td>-2.380633</td> </tr> <tr> <td>L3.</td> <td>-3.167697</td> <td>.1324995</td> <td>-23.91</td> <td>0.000</td> <td>-3.427391</td> <td>-2.908002</td> </tr> <tr> <td>L4.</td> <td>-1.038123</td> <td>.0569499</td> <td>-18.23</td> <td>0.000</td> <td>-1.149743</td> <td>-.9265034</td> </tr> </tbody> </table>							GDP Rate	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]		GDP Rate							GDP Rate							L1.	-2.110081	.0566928	-37.22	0.000	-2.221197	-1.998966	L2.	-2.548392	.0855927	-29.77	0.000	-2.71615	-2.380633	L3.	-3.167697	.1324995	-23.91	0.000	-3.427391	-2.908002	L4.	-1.038123	.0569499	-18.23	0.000	-1.149743	-.9265034
GDP Rate	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]																																																		
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L4.	-1.038123	.0569499	-18.23	0.000	-1.149743	-.9265034																																																	
Education	-.6316874	.038546	-16.39	0.000	-.7072362	-.5561386																																																	
Health	.2280869	.042838	5.32	0.000	.1441259	.3120479																																																	
Defense & Sec.	.6475271	.231057	2.80	0.005	.1946637	1.10039																																																	
Social Services	.0724528	.0471921	1.54	0.125	-.0200419	.1649476																																																	
_cons	60.43171	2.430205	24.87	0.000	55.6686	65.19483																																																	

Source: Researcher (2025)

The equation obtained was:

$$\text{GDP Rate}_t = 60.43171 - 0.6316874EE_t + 0.2280869HE_t + 0.6475271DSE_t + 0.07245287SSE_t$$

The outcomes suggest that the explanatory variables in the model accounted for 98.78% of the variability in economic growth, as demonstrated by the R Square value of 0.9878 reflecting the simultaneous effects of the independent variables. Thus, 1.22% of the economic growth outcome was unexplained by the model's variables, suggesting the influence of external influences not considered in the study. The p-value of 0.0000, <0.05, exhibits that this finding is statistically significant. When the predictive factors were disregarded, economic growth grew by 60.43171. The growth is significant, as demonstrated by the p-value of 0.000.

The findings suggest that a unit rise in education expenditure could culminate in a 0.6316874 decline in economic growth. A p-value of 0.000 being less than 0.05 demonstrates that the result is statistically significant. So, null hypothesis one was rejected. This finding agree with the findings by Rahman and Anis (2023) who studied the link between public spending on education and economic expansion and the extent of this connection utilizing panel data randomly selection from 63 nations across each continent, covering the period from 1981 to 2010 and found a substantial favorable association amongst public spending on education and economic advancement. It contradict the findings by Sefa, Mehmet, and Siew (2017) who undertook a hierarchical meta-regression analysis utilizing a sample of 237 estimates derived from 29 initial analyses to explore the correlation amongst economic expansion and government spending on education and found that the impact of government education spending on growth is statistically negligible correlation.

Additionally, the statistics suggests the unit rise in health expenditure would equate to a 0.2280869 improvement in economic expansion. A p-value of 0.000, being less than 0.05, exhibited both favorability and statistical significance. Hence, null hypothesis two was rejected. This finding are

in line with the findings by Viju and Wullianallur (2020) who researched on the correlation between public health expenditure and economic expansion throughout the US employing visual analytics to gather economic and health data from the Bureau of Economic Analysis and the Bureau of Labor Statistics for the period 2003–2014 and found a robust favorable link amongst healthcare spending and the economic variables of income, GDP, and labor productivity. It further agrees with the findings by Yuxiao Chunhai and Qizhe (2022) who employed a non-parametric additive model to ascertain the influence of government health spending on economic development and regional disparities in Asia and found that the ratio of government health expenditure to GDP is beneficial to economic development.

Equally, the findings advocate that a unit growth in defense and security expenditure would equate to a 0.6475271 boost in economic expansion. A p-value of $0.005 < 0.05$, signifies both favorability and statistical significance. Consequently, the third null hypothesis was rejected. This result is in congruence with those by Amana, Aigbedion, and Zubair (2020) who evaluated the influence of governmental security expenditure on economic growth in Nigeria from 1986 to 2018 utilizing longitudinal data and employing econometric tools for testing and found that the data were stationary at several levels, and the calculated impact demonstrates that government security expenditure significantly influences economic expansion in Nigeria. It also agrees with the findings by Apansile and Okunlola (2014) on the impact of military expenditure on economic output in Nigeria over both short and long-term periods and suggested that military expenditure favorably and significantly influences output in the long term.

Besides, the statistics suggest that a singular increase in social services expenditure resulted in a 0.07245287 improvement in economic expansion. A p-value of $0.125 > 0.05$, it exhibited both unfavorability and statistical insignificance. Consequently, the fourth hypothesis was not rejected.

This results in congruent with those by Cooray and Num (2024) who analyzed the correlation between public social expenditure and economic growth utilizing panel data from 132 established and emerging European countries between 2008 and 2019 and revealing substantial and complimentary correlations amongst the variables via fixed effects, system GMM, and instrumental variable estimation. On the other hand, it contradicts the findings by Okezies and Asoluka (2017) who analyzed overall government expenditure on community and social services and its impact on Nigerian economic growth, utilizing time series data from 1961 to 2013, sourced from the Nigerian Central Bank yearly report and Statement of Account and found that total expenditures on social and community services is not statistically noteworthy but exhibits a strong association with economic growth in Nigeria over the long term.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section offers a summarized discoveries, a recap of the research and recommendations founded on the research outcomes. The discoveries which aimed to institute the influence of public expenditure on the Kenyan economic growth addressed the research study's particular goals.

5.2 Summary

This section gives a summary of the study's findings. Determining how government expenditure impacted the economic growth in Kenya was the main objective. The government expenditure was especially evaluated in relation to expenditure on education, health, defense and security and social services. Descriptive statistics, the Pearson product moment correlation coefficient, and Vector Autoregression time series analysis were also utilized to evaluate the data. The key findings are listed below.

5.2.1 Education Expenditure and Economic Growth

The main purpose was to ascertain the link between education expenditure and economic growth.

The results demonstrate a weak connection between education expenditure and economic growth.

A statistically substantial link exists between education expenditure and economic expansion, as seen by the link data ($r=0.1982$, $p\text{-value}=0.0421$). The regression analysis validated the first hypothesis by signifying a considerable and beneficial connection amongst education expenditure and economic growth ($p\text{-value}=0.000$).

5. 2. 2 Health Expenditure and Economic Growth

The second goal was to ascertain the correlation amongst health spending and economic expansion. The results demonstrate a moderate correlation amongst health expenditure and economic growth. A statistically substantial correlation exists amongst health expenditure and economic growth, which is confirmed by the statistics ($r=0.3953$, $p\text{-value}=0.0005$). The regression analysis validated the second hypothesis by signifying a favorable and substantial link between health expenditure and economic growth ($p\text{-value}=0.000$).

5. 2. 3 Defense and Security Expenditure and Economic Growth

The third objective evaluated the impact of defense and security expenditure on economic growth. The results suggest an inverse correlation between defense and security expenditure and economic growth. Correlation research demonstrated a weak link ($r=-0.1702$, $p\text{-value}=0.0159$) amongst defense and security expenditure and economic growth, which was statistically significant. The third hypothesis was validated by the regression analysis, which suggested a favorable and statistically significant association amongst defense and security expenditure and economic growth ($p\text{-value}=0.005$).

5. 2. 4 Social Services Expenditure and Economic Growth

The ultimate objective researched the impact of social services expenditure on economic growth in Kenya. The results suggest a significant direct relationship between social services expenditure and economic development. A statistically significant link exists between social services expenditure and economic growth, as seen by the data ($r=-0.1988$, $p\text{-value}=0.3382$). The VAR regression analysis invalidated the fourth hypothesis by signifying an insignificant and positive association amongst social services expenditure and economic growth ($p\text{-value}=0.125$).

5.3 Conclusion

The research's results indicate that education expenditure substantially influenced Kenya's economic growth. This research indicates that education expenditure will influence economic growth; therefore, addressing the education expenditure component will enhance economic growth in Kenya. The productivity of an economy expands with the growth in the number of educated staffs, as skilled individuals execute activities more efficiently. An economy is more valued when equitable educational and employment opportunities are accessible across gender, color, age, and ethnicities. The research findings indicate that health expenditure considerably influences economic growth in Kenya. Consequently, health cost strongly influences economic growth; thus, cutting health expenditure will promote economic development. Health systems significantly enhance population health and exert both direct and indirect influences that favorably contribute to national economic goals. These encompass macroeconomic growth, employment, poverty alleviation initiatives, and societal welfare.

The research's results demonstrate that Defense and security expenditure significantly impacts economic growth in Kenya. Consequently, Defense and security expenditure significantly influences economic growth; therefore, enhancing the degree of Defense and security expenditure will foster economic growth. Defense spending acts as an economic stimulus, generating employment through government contracts and supporting ancillary industries. These sectors, such as manufacturing and technology, often thrive due to sustained military investments, fostering economic resilience and industry development. Moreover, defense expenditure serves as a catalyst for technological innovation. Historical and contemporary examples demonstrate how military research often leads to breakthroughs benefiting both national security and civilian industries. This dual impact amplifies the overall economic contribution of defense budgets.

Finally, the research's outcomes demonstrate that social services expenditure insignificantly influences economic growth in Kenya. The expenditure on social services has a little impact on economic growth; so, addressing it would not improve economic growth. Public expenditure is vital for establishing the fundamental underpinnings necessary for economic development and societal flourishing, including sectors such as education, healthcare, violence prevention, and social protection.

5.4 Recommendations

The research found that education expenditure significantly improves economic growth in Kenya. Consequently, this research proposes that Kenya government should invest in education that provide its citizen with the necessary skills to be utilized in the labour market that will foster economic growth.

Additionally, the research found that health expenditure has a positive influence on the economic growth. The research recommends that the government should invest in the health program (SHA) for its citizen that will provide a population health to the masses which will eventually lead to high productivity and hence economic growth.

Finally, the research found that defense and security has a considerable bearing on economic growth in Kenya. This article advises the Kenyan government to secure the country using both physical and technological means that will enhance peace for the country men and women to concentrate to work leading to economic growth

5.5 Suggestions for Further Studies

The research assessed the impact of government expenditure on Kenya's economic growth. Nonetheless, about 98.78% of the variation in economic development can be ascribed to

government expenditure, resulting approximately 1.22% unexplained. Consequently, further inquiry is required to ascertain the additional variables affecting economic growth.

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APPENDICES

APPENDIX I: DATA EXTRACTION FORM

Years	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Education Expenditure											
Health Expenditure											
Defense & Security Expenditure											
Social Services Expenditure											
Total Expenditure											
GDP Growth Rate											

APPENDIX II: LETTER OF AUTHORIZATION



**KENYATTA UNIVERSITY
GRADUATE SCHOOL**

E-mail: dean-graduate@ku.ac.ke

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P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Our Ref: D53/MSA/PT/20910/2012

DATE: 9th July, 2025

Director General,
National Commission for Science, Technology
and Innovation
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

**RE: RESEARCH AUTHORIZATION FOR JONATHAN MWENDA MAGIRI – REG.
NO. D53/MSA/PT/20910/2012**

I write to introduce **Jonathan Mwenda Magiri** who is a Postgraduate Student of this University. The student is registered for MBA degree programme in the **Department of Accounting and Finance**.

Jonathan intends to conduct research for a MBA Project Proposal entitled, “**Government Expenditure and the Kenyan Economic Growth.**”

Any assistance given will be highly appreciated.

Yours faithfully,


PROF. ELIUD NJAGI
EXECUTIVE DEAN, GRADUATE SCHOOL

SR/mo

APPENDIX III: RESEARCH PERMIT



REPUBLIC OF KENYA

Ref No: 271648



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Date of Issue: 30/July/2025

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