EFFECTS OF GOVERNMENT SPENDING ON ECONOMIC GROWTH IN KENYA.

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D63/64904/2013

A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS IN PARTIAL FULLFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF DEGREE OF MASTERS OF SCIENCE IN FINANCE, UNIVERSITY OF NAIROBI.

OCTOBER 2014

DECLARATION

I declare that this is my original work and has not been submitted to any other institution for academic purposes.

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This Project has been submitted to me for supervision with permission from the university

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ACKNOWLEDGMENTS

First and foremost I wish to convey my sincere gratitude to my supervisor Cyrus Iraya for the guidance, support and encouragement during the course of this project. Your suggestions and corrections gave my project a course that led to it taking a professional form. I am truly grateful to all my lecturers in the department for being there during my course work and when I needed clarification on various issues concerning the Project.

DEDICATION

This Project is dedicated to my family and all those who supported in the completion of this Project writing. Thank you and God bless you abundantly.

ABSTRACT

Government spending can be defined as any expenditure made by local, regional, and national governments making up a considerable portion of the Gross National Product. Government spending can be financed by government borrowing or taxes. The expenditure is vital for the efficient running of the economy. The need for much of the government expenditure arises from the fact that some goods cannot be provided at all by a free market economy and that others may be under-provided. It is expenditure on merit goods such as health, education, police and defense, among others that accounts for a large proportion of government spending. Economic growth represents the expansion of a country's potential GDP or output. When the economy is growing positively, businesses will need to hire more people to help to cope with the increase in production and services and consequently leading to Economic growth which reflects the standard of living of a country. Although Kenya is one of the fastest growing economies in East and Central Africa, its economy still depends heavily on the agriculture sector. The Kenyan government uses a number of regulatory bodies to regulate the economic development. These bodies include; the Central Bank of Kenya and The Capital Markets Authority which are not always effective in measuring growth and formulating policies towards its development. The objective of this study was to determine the effect of government expenditure on economic growth in Kenya. The study was descriptive in nature and involved quantitative analysis of data which employed Secondary data to analyze the effect of government expenditure on economic growth in Kenya. Data for economic growth was obtained from World Bank and IMF data bank from 2007 to 2012 where by the Data for government spending on health, infrastructure, security and education was converted into calendar years since economic growth obtained were in calendar year. Granger Causality Test was used to determine whether one time series is useful in forecasting another (Enders, 1995). The VAR equations were used to perform Granger causality tests. The study findings indicated that; there is a significant influence of the government spending on education, infrastructure, health and defense. Thus it has been recommended that; Education spending should be linked to resource needs (both human and capital) both at sub-national and facility levels. The Government should emphasize infrastructure development to reduce the cost of doing business and enhance efficiency in service delivery to accelerate development. The government should be committed to improving access and equity of essential health care services by setting critical and ambitious targets for providing health services to the citizens as well that In order to achieve the national goals and objectives, provision of security to the country is critical.

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LIST OF ABBREVIATION

CCA   - Capital Consumption Allowance

CPI   - Consumer Price Index

GDP   - Gross Domestic Product

GNP   - Gross National Product

IMF   - International Monetary Fund

NFP   - Net Factor Payment

NY   - National Income

OECD - Organization for Economic Cooperation and Development

R&D   - Research and Development

VAR   - Vector Auto-Regression

WB   - World Bank

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Development in human society is a one-sided process that has remained the goals of every society (Gorodnichenko, 2010). For a long time development has been defined by growth measured by GNP or rise in per capital income. However, economic growth does not translate to economic development. Economic growth depends on productivity and investment by using obtainable resources more efficiently and investing in new resources. Success in this course creates increased incomes which then fuel demand and encourages auxiliary economic growth (Landau, 1985).

Decreasing demand may lead to unemployed resources and investment cuts. Incomes may drop further in a spiral effect. It has been argued that increase in government spending can be an effective tool to stimulate aggregate demand for a stagnant economy and to bring about crowded-in effects on private sector. On the other hand, others would agree that there are circumstances in which lower levels of government spending would enhance economic growth and other circumstances in which higher levels of government spending would be desirable (Mitchel, 2005).

1.1.1 Government Spending

Government spending can be defined as any expenditure made by local, regional, and national governments making up a considerable portion of the Gross National Product (GNP). The spending is in the form of future investments, transfer payments and acquisitions. Future investments look into the long term survival of the country and hence funds are directed toward

infrastructure development example roads, airports and railways (Landau, 1985). Other examples of future investments include technological and medical research or government-subsidized housing construction. Acquisitions mean expenditures on goods and services for individual or public consumption. It is commonly referred to as general government spending or final consumption expenditure. It may also include importation of goods, government salaries, education expenditure, military acquisitions, administrative costs and funding for defense (Mitchel, 2005). Government spending may be current in nature. Current spending on state-provided goods & services that are provided on a recurrent basis every week, month and year, such as salaries, and resources for state education and defense. The other aspect of government spending is capital spending which includes infrastructure spending such as new motorways and roads, hospitals, schools and prisons.

Government spending can be financed by government borrowing or taxes. John Maynard Keynes one of the earliest economists advocated for government deficit spending as part of the fiscal policy response to an economic contraction. According to Keynesian economics, increased government spending raises aggregate demand and escalates consumption, which in turn leads to increased production and faster recovery from recessions. Keynesian economists argue that the Great Depression was ended by government spending programs such as the New Deal and military expenditure during World War II (Keynes, 1953). Classical economists, on the other hand, posit that increased government spending aggravates an economic contraction by shifting resources from the productive private sector to the unproductive public sector (Gorodnichenko, 2010).

Government expenditure is vital for the efficient running of the economy. The need for much of the government expenditure arises from the fact that some goods cannot be provided at all by a free market economy and that others may be under-provided. It is expenditure on merit goods such as health, education, police and defense, among others that accounts for a large proportion of government spending (M' Amanja & Morrisey, 2005). Some government spending is aimed at providing a safety net for the less-well-off in society and ensuring that they are able to survive in the event that they become jobless or have insufficient income. Other government expenditure is aimed at a variety of areas that may be considered important in a developed economy - providing a transport infrastructure, supporting the work of local government and servicing any debts that may have been accumulated in the past. Other purposes of government include the reduction of the negative effects of externalities, such as pollution controls, to subsidize industries which may need financial support, and which is not available from the private sector, to inject extra spending into the macro-economy, and to help achieve increases in aggregate demand and economic activity. Such a stimulus is part of discretionary fiscal policy (Rebelo, 2011).

There are three distinct ways in which government spending can be measured. First is government consumption expenditures and gross investment. This entails measuring government expenditure on goods and services that are incorporated in the Gross Domestic Product. It includes what the government spends on its labor force and for goods and services, for example rent for government buildings and fuel for military jets. Gross investment entails what government spends on equipment, software and structures such as new schools and highways (Brunner, 1992).

Second is government current expenditures which is the total spending of a government and is usually higher than the amount indicated in the GDP. Current expenditures measures amounts spent by the government on current-period activities. This consists of current transfer payments, interest payments, subsidies and government consumption expenditures. Removes wage accruals with a reduction of disbursements. Transfer and interest payments are excluded from the calculation of GDP since they do not represent purchases, although income from interest and transfer payments can fund investment in other sectors of the economy and consumption expenditures (Gorodnichenko, 2010).

The final measurement of government spending is total government expenditures. Other than the transactions included in current expenditures, this includes gross investment and other capital-expenditures that affect future activities, such as net purchases of non-produced assets and capital transfer payments. Total expenditures however exclude consumption of fixed capital (Rebelo, 2011).

1.1.2 Economic Growth

Economic growth represents the expansion of a country's potential GDP or output. According to Palmer (2012), economic growth refers to an increase in the productive capacity of an economy as a result of which the economy is capable of producing additional quantities of goods and services. Economic growth has provided insight into why state growth at different rates over time; and this influence government in her choice of tax rates and expenditure levels that will influence the growth rates.

Economic growth is important if businesses are to grow and prosper. It translates to growth in the output of the economy as a whole. Growth in this case is measured as the change in the gross domestic product (GDP) of a country over one year. To allow for comparisons over time this figure is adjusted to allow for inflation. Over time real economic growth leads to major progresses in living standards, expanding existing markets and opening new ones. The real economic growth of one country relative to another is an important indicator of business opportunity (Wagner, 2007).

When the economy is growing positively, businesses will need to hire more people to help to cope with the increase in production and services. The increase is necessary to meet the increasing demand of the consumers. If however the economic growth is negative, businesses will have to cut costs and take measures to reduce the chances of making losses because consumers demand less goods and services (Gorodnichenko, 2010). Economic growth indicates the wealth of a nation since a country with a growing economy is a country that is getting richer. The more the country can produce in terms of goods and services, the more income it can generate for its people and the people have more money to spend, they will be able to demand for more goods and services. Due to the increase in demand, businesses will produce more which lead to even greater wealth. However, a country with a negative growth is one that is gets poorer over time. When production of goods and services fall, less and less income is generated. The lesser the income a country generates; the poorer it will be the country (Palmer, 2012).

Economic growth reflects the standard of living of a country. Positive economic growth leads to improvement in the standards of living as the people have more income to spend to improve their lifestyles (Gorodnichenko, 2010). However, the contrary happens when the economic growth

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portrays a negative trend. As the people have less income, they have less money to improve and to upkeep their standard of living with some of them even having to go for cheaper alternatives so that they can make ends meet. If a positive growth in an economy is replicated by an increase in the standard of living and a negative growth is reflected by deterioration in the standard of living, economic growth is a good indicator of the direction of the standard of living of a country.

Measuring economic growth involves quantifying the increase in welfare and to present it with numerical precision these large-scale economic and social changes(Fisher, 1993). Some of criteria used to measure economic growth include the National Income approach which is measured by either taking a country's Gross Domestic Product (GDP) or Gross National Product (GNP). To get the economic growth, the National income should then be divided by the total population to get the Per Capita Income which is per head measure of thetotal worth of all goods and services produced in an economy. This gives a suitable measure on the state of economic well-being. Per capita income is positively correlated with a broad range of alternative indicators for economic performance such as life expectancy, infant mortality, and literacy levels (Albatel, 2000).

Physical Capital Accumulation also measures economic growth. It was observed that accumulation of physical capital constitute a critical engine of economic growth. Physical capital includes roads, building machines, factories and bridges. Physical capital accumulates quickly due to high investments in turn driving up the economy's growth rate as the economy itself converges towards a steady-state growth path (M'Amanja, 2005).

1.1.3 Government Spending and Economic Growth

According to Keynesian view, government could reverse economic downturns by borrowing money from the private sector and then returning the money to the private sector through various spending programs (Keynes, 1953). High levels of government consumption are likely to escalate employment, profitability and investment through multiplier effects on aggregate demand. Government expenditure therefore, even of a recurrent nature, can contribute positively to economic growth. Conversely, endogenous growth models such as Barro (1990), predict that only productive government expenditures will positively affect the long run growth rate. In the neoclassical growth model of Solow (1956), productive government expenditure may affect the incentive to invest in human or physical capital, but in the long-run this affects only the equilibrium factor ratios, not the growth rate, although in general there will be transitional growth effects.

Wagner's Law of public expenditure is one of the earliest attempts that emphasize economic growth as the fundamental determinant of public sector growth(Wagner, 2007). Vedder and Gallaway (1998) argued that as government expenditures grow incessantly, the law of diminishing returns begins operating and beyond some point further increase in government expenditures contributes to economic stagnation and decline. Rostow – Musgrave model (1999:46) carried out a research on growth of public expenditure and concluded that, at the early stages of economic development, the rate of growth of public expenditure will be very high because government provides the basic infrastructural facilities and most of these projects are capital intensive, therefore, the spending of the government will increase steadily. The investment in education, health, roads, electricity, water supply are necessities that

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can launch the economy from the practitioner stage to the take off stage of economic development, making government to spend and increasing amount with time in order to develop an egalitarian society.

Further theoretical studies by Alexander (1990) applied OLS method for sample of 13 Organization for Economic Cooperation and Development (OECD) countries panel during the period ranging from 1959 to 1984. The results showed, that growth of government spending has significant negative impact on economic growth. Elsewhere, Devarajan and Vinay (1993) used panel data for 14 developed countries for a period ranging from 1970 to 1990 and applied the Ordinary least square method on 5-year moving average. They took various functional types of expenditure (health, education, transport, etc.) as explanatory variables and found that health, transport and communication have significant positive effect while education and defense have a negative impact on economic growth.

Mitchell (2005) theoretically evaluated the impact of government spending on economic performance in developed countries. He assessed the international evidence, reviewed the latest academic research, cited examples of countries that have significantly reduced government spending as a share of national output and analyzed the economic consequences of these reforms. Regardless of the methodology or model employed, he concluded that a large and growing government is not conducive to better economic performance. He further argued that reducing the size of government would lead to higher incomes and improve American's competitiveness.

Gregorious and Ghosh (2007) made use of the heterogeneous panel data to prove a theory on the impact of government expenditure on economic growth. Their results suggest that countries with

large government expenditure tend to experience higher economic growth. Olorunfemi, (2008) studied the direction and strength of the relationship between public investment and economic growth in Nigeria, using time series data from 1975 to 2004 and observed that public expenditure impacted positively on economic growth and that there was no link between gross fixed capital formation and Gross Domestic Product. He averred that from disaggregated analysis, the result reveal that only 37.1% of government expenditure is devoted to capital expenditure while 62.9% share is to current expenditure.

1.1.4 Government Spending and Economic Growth in Kenya

Although Kenya is one of the fastest growing economies in East and Central Africa, its economy still depends heavily on the agriculture sector. The sector directly contributes 24% of the Gross Domestic Product (GDP) and 27% of GDP indirectly through linkages with manufacturing, distribution and other service related sectors(Food Security Portal, 2014). Fiscal policy is a key element of Kenya's macroeconomic policy given the importance of public expenditures in financing investment and consumption activities and their role in meeting the growing need for public social services. Available statistics show that the country's Gross Domestic Product (GDP) expanded by 4.7 per cent in 2013 compared to 4.6 per cent in 2012(Kenya National Bureau of Statistics, 2014). Despite this fact, unemployment has remained high in recent years. This underlines the importance of the composition of government spending and how it could be altered to encourage private-sector-led growth and reduce unemployment (Gregorious and Ghosh, 2007).

The Kenyan government uses a number of regulatory bodies to regulate the economic development. These bodies include; the Central Bank of Kenya and The Capital Markets Authority. But many regulations however that directly affect government's spending are experienced and felt in the various financial reforms, some of which are instituted by the central bank as part of their monetary policy and others occurring as acts of the parliament. Taking the health sector for instance, in 1989 structural adjustment policies and severe government budgetary constraints led to the introduction of user fees for outpatient and inpatient care at government health facilities. Kenya has had a history of health financing policy changes since then. Recently, significant preparatory work was done on a new Social Health Insurance Law that, if accepted, would lead to universal health coverage in Kenya after a transition period (Mitchell, 2005).

One of the key features of this proposed Law is that it ensures access to health care among the poor by granting them full social health insurance membership status. Reforms in the education sector that had implications on government spending started in 2002 when the government introduced free primary education. The expenditure on education increased further with the subsequent introduction of free secondary education. The allocation to education is still set to increases as the number of enrolment in both primary and secondary schools continue to increase almost arithmetically. Further the plan to digitize primary school education will see government expenditure in the sector go even much higher in the coming years. Government expenditure on homeland security and infrastructure development will also not be spared from increase especially with the pending implementation of Vision 2030 (Olorunfemi, 2008).

1.2 Research Problem

Economic growth in the light of government spending has received considerable interest over the past decade. The process of economic growth and the sources of differences in economic performance across nations are some of the most interesting, important and challenging areas in modern social science. Governments across the globe increase fiscal expenditures markedly in order to stimulate economic growth. Proponents of government spending claim that it provides public goods that markets generally do not, such as military defense, enforcement of contracts, and police services. Fiscal expansions sometimes have contractionary effects on the economy, and fiscal contractions may result in economic expansion and tend to be implemented largely through spending, particularly on public sector wages government and transfers, with larger effects. Contractionary adjustments, on the other hand, are characterized mostly by tax increases, where the effect is likely to be smaller (Ghosh, 2007).

During the first few years of independence, Kenya achieved high economic growth of 6%, which declined to less than 4% in the subsequent decades. In the 1990s, its GDP experienced enormous inconsistency, ranging between negative figures to 4%. After the millennium, the country started producing higher growth rates which peaked in 2007 with 7%. Following the post-election violence in early 2008, the effects of the universal financial crisis on remittance and exports, reduced GDP growth to 1.7% in 2008. The economy however rebounded in 2010-11 with the growth rates higher than 5%. The 2013 economic performance was incredible as growth dips during election years due as a result of political risk and uncertainty. The economy grew to 5% in 2013. Economic growth is estimated to accelerate to 5.7% in 2014. If the positive trend

continues, Kenya is projected to be the first East African country to move from low-income status to middle-income status (Gemmell and Kneller 2001).

Mudaki & Masaviru (2012) in their study on whethet the composition of public expenditure matter to the economic growth of kenya had findings that were contradictory to their priori expectations; M' Amanja & Morrisey (2005) tried to relate economic growth to investment and foreign aid and found significant negative impact on long run growth.

Many other contextual studies have been carried out to examine various componets of economic growth. Similarly, several empirical studies have examined the relationship between government expenditure and economic growth in Kenya; however, none of these studies has explored the relationship between different categories of government expenditures and economic growth. Therefore, the main research question that the study sought to address is: what is the effect of government expenditure on economic growth in Kenya?

1.3 Research Objective

The objective of the study was to determine the effect of government expenditure on economic growth in Kenya.

1.4 Value of Study

Due to substantial policy and structural changes that have taken place in the Kenyan economy over the period 2002-2012, this study provided an empirical analysis of the impact of government expenditure on economic growth. More specifically, the impact of the various components of government expenditure on economic growth was analyzed.

This study will be important to policy makers because it will enable them to identify the impacts of government expenditure in Kenya. They will learn what kind of impact the expenditure on education, security, health and infrastructure could have on the economy. In turn, they can be able to effectively plan both medium and long term growth objectives for the country.

The researcher in the study findings has also proposed policy recommendations that can be adopted in coming up with new mechanisms and procedures of enhancing economic growth in Kenya. The study will be significant to the stakeholders in the government as it will give ways through which the government can focus its expenditure on areas that will guarantee maximum economic growth in Kenya.

Through the results of this study, the researcher aims to prove/falsify and/or add to the existing theories of the impact of government expenditure to economic growth. Furthermore, the study makes a contribution to both theoretical and empirical literature on the effect of government expenditure and reforms on economic growth, thereby paving the way for further research. This will add information on the topic in the existing bank of knowledge especially that which is stored in the University library.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews the literature on economic growth and various economic variables that affect economic growth both positively and negatively. The researcher in this chapter also reviews various theories related to the topic under study as well as the variables under study.

2.2 Theoretical Framework

This section highlights same basic theories that have been used to support the effects of public expenditure on economic growth. Such theories amongst others are:

2.2.1 The Wagner's Law of Increased Government Activities

Wagner's law is a principle named after the German economist Adolph Wagner (1835-1917).Wagner advanced his 'law of rising public expenditures' by analyzing trends in the growth of public expenditure and in the size of public sector. Wagner's law postulates that; the extension of the functions of the states leads to an increase in public expenditure on administration and regulation of the economy. He also adds that the development of modern industrial society would give rise to increasing political pressure for social progress and call for increased allowance for social consideration in the conduct of industry. According to the Wagner's law, the rise in public expenditure will be more than proportional increase in the national income (income elastic wants) and will thus result in a relative expansion of the public sector.

Generally speaking, Wagner's Law focuses on the nexus between the size of the economy and the size of the public-sector provided goods and services and postulates that the latter grows at a faster pace than the former during the process of industrialization and urbanization. This reflects the increasing expansion of government activities that complement or substitute for private activities. Specifically, Wagner attributed the growth of the public sector to higher expenditures in areas such as enforcing contracts and regulatory activities (necessitated by a higher demand for government intervention in an economy with new layers of externalities and interdependencies), income elastic "cultural and welfare" programs, and public long-term investment and infrastructure projects as well as managing and financing natural monopolies (Wagner 1835-1917).

The implication of this theory is that as progressive nations industrialize, the share of the public sector in the national economy grows continually. This necessitates an increase in State Expenditure because of the demand for social activities of the state, administrative and protective actions, and welfare functions. Socio-politically speaking, the state social functions expand over time: retirement insurance, natural disaster aid (either internal or external), environmental protection programs, among others. Economically it is marked by advancement in science and technology and consequently the increase of state assignments into science, technology and various investment projects (Wagner 1835-1917). Finally, as implied in the Wagner's theory, the state resorts to government's loans for covering contingencies and thus sum of government debt and interest grow in the form of increase in debt service expenditure. Another implication of this is that the increased division of labor would be accompanied by the development of new technological processes which would lead to the growth of monopolies in the private sector. In

Wagner's view, private sector monopolies would not adequately take into account the social needs of society as a whole and would therefore need to be replaced by public corporations. Further, if private sector companies became too large, the economy would become unstable because problems for individual companies would become problems for society as a whole. Finally, government would need to expand to provide social benefits and services which Wagner saw as not open to economic evaluation (Wagner 1835-1917).

2.2.2 Musgrave Theory of Public Expenditure Growth

This theory was propounded by Musgrave as he found changes in the income elasticity of demand for public services in three ranges of per capita income. He posits that at low levels of per capita income, demand for public services tends to be very low, this is so because according to him such income is devoted to satisfying primary needs and that when per capita income starts to rise above these levels of low income, the demand for services supplied by the public sector such as health, education and transport starts to rise, thereby forcing government to increase expenditure on them. He observes that at the high levels of per capita income, typical of developed economics, the rate of public sector growth tends to fall as the more basic wants are being satisfied(Musgrave, 1969).

Musgrave and Musgrave (1989) opined that as progressive nations industrialize, the share of the public sector in national economy grows continually. The theory states that there is a functional relationship between the growth of an economy and the growth of the government activities; so that the government sector grows faster than the economy (Musgrave, 1969). Thus, all kinds of government, irrespective of their level of intentions (Peaceful or war), and size,

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indicate the same tendency of increasing public expenditure. In other words, Wagner's law states that, as per capita income of an economy grows, the relative size of public expenditure grows; the relative size of public expenditure grows along with it. As the economy grows, there will be increase in the number of urban centers, with the associated social vices such as; crime, which require the intervention of the government, to reduce such activities to the bearest minimum. Large urban centers also require internal security, to maintain law and order. These interventions by the government have cost, leading to increase in public expenditure in the economy.

This theory implies that growth in government capital outlay can translate into positive economic growth as well bring about growth in recurrent government spending. However, growth in government recurrent expenditure does not bring about significant growth in the economy. This also implies that the causal effect of economic growth on government capital spending is more significant when compared with government recurrent expenditure.

2.2.3 The Keynesian Theory

Of all economists who discussed the relation between public expenditures and economic growth, Keynes was among the most noted with his apparently contrasting viewpoint on this relation. Keynes regards public expenditures as an exogenous factor which can be utilized as a policy instruments promote economic growth. From the Keynesian thought, public expenditure can contribute positively to economic growth. Hence, an increase in the government consumption is likely to lead to an increase in employment, profitability and investment through multiplier effects on aggregate demand. As a result, government

expenditure augments the aggregate demand, which provokes an increased output depending on expenditure multipliers (Keynes, 1930).

According to Keynes, (1930) the economy is subject to fluctuations, and supply and demand could well balance out at an equilibrium that did not deliver full employment. The solution to this conundrum was seemingly simple: Replace the missing private investment with public investment, financed by deliberate deficits. The government would borrow money to spend on such things as public works; and that deficit spending, in turn, would create jobs and increase purchasing power. Striving to balance the government's budget during a slump would make things worse, not better. In order to make his argument, Keynes deployed arrange of new tools— standardized national income accounting (which led to the basic concept of gross national product), the concept of aggregate demand, and the multiplier (people receiving government money for public-works jobs will spend money, which will create new jobs). Keynes's analysis laid the basis for the field of macroeconomics, which treats the economy as a whole and focuses on government's use of fiscal policy—spending, deficits, and tax. These tools could be used to manage aggregate demand and thus ensure full employment. As a corollary, the government would cut back its spending during times of recovery and expansion (Knack and Keefer, 1995).

The implication of the Keynesian theory is that the government should take a bigger role in the economy since it is the one that has the ability to intervene and manage market failures effectively. He deemed government intervention to be superior to that of the market place. In many economies in both developing and developed countries, Keynesian theory has laid the intellectual foundations for a managed and welfare oriented form of capitalism. The widespread absorption of the Keynesian message has in large measure been responsible for the generally

high levels of employment achieved by most developed countries and for a significant reorientation in attitudes toward the role of the state in economic life (Knack and Keefer, 1995).

2.3 Determinants of Economic Growth

Investment is one of the most fundamental determinants of economic growth identified by both neoclassical and endogenous growth models (Barro & Martin 1992). However, in the neoclassical model investment has impact on the transitional period, while the endogenous growth models argue for more permanent effects. The importance attached to investment by these theories has led to an enormous amount of empirical studies examining the relationship between investment and economic growth (Lensink and Morrissey, 2006)

Human capital is also a main source of growth in several endogenous growth models as well as one of the key extensions of the neoclassical growth model. Since the term 'human capital' refers principally to workers' acquisition of skills and know-how through education and training, the majority of studies have measured the quality of human capital using proxies related to education (e.g. school-enrolment rates, tests of mathematics and scientific skills, etc.). A large number of studies has found evidence suggesting that educated population is key determinant of economic growth. Innovation and Research & Development R&D activities can play a major role in economic progress increasing productivity and growth. This is due to increasing use of technology that enables introduction of new and superior products and processes. This role has been stressed by various endogenous growth models, and the strong relation between innovation/R&D and economic growth has been empirically affirmed by many studies (Hermes and Lensink, 2000).

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Economic policies and macroeconomic have also great potential as determinants of economic performance since they can set the framework within which economic growth takes place. Economic policies can influence several aspects of an economy through investment in human capital and infrastructure, improvement of political and legal institutions and so on. Macroeconomic conditions are regarded as necessary but not sufficient conditions for economic growth (Fischer, 1993). In general, a stable macroeconomic environment may favor growth, especially, through reduction of uncertainty, whereas macroeconomic instability may have a negative impact on growth through its effects on productivity and investment. Several macroeconomic factors that have been identified to impact development include but are not limited to; inflation, fiscal policy, budget deficits and tax burdens(Fischer, 1993).

Openness to trade has been used extensively in the economic growth literature as a major determinant of growth performance. There are sound theoretical reasons for believing that there is a strong and positive link between openness and growth. Openness affects economic growth through several channels such as exploitation of comparative advantage, technology transfer and diffusion of knowledge, increasing scale economies and exposure to competition. Openness is usually measured by the ratio of exports to GDP. Economies that are more open to trade and capital flows have higher GDP per capita and grew faster (Borensztein*et al*, 1998).

Foreign Direct Investment (FDI) playes a crucial role of internationalizing economic activity and it is a primary source of technology transfer and economic growth. This major role is stressed in several models of endogenous growth theory. The empirical literature examining the impact of FDI on growth has provided more-or-less consistent findings affirming a significant positive link between the two (Borensztein*et al*, 1998).

Institutional framework is another factor that influences economic growth. Rodrik (2000) highlights five key institutions (property rights, regulatory institutions, institutions for macroeconomic stabilization, institutions for social insurance and institutions of conflict management), which not only exert direct influence on economic growth, but also affect other determinants of growth such as the physical and human capital, investment, technical changes and the economic growth processes. It is on these grounds that Easterly (2001) argued that none of the traditional factors would have any impact on economic performance if there had not been developed a stable and trustworthy institutional environment. The most frequently used measures of the quality of institutions in the empirical literature include government repudiation of contracts, risk of expropriation, corruption, property rights, the rule of law and bureaucratic quality (Knack and Keefer, 1995).

There also exist a relationship between political factors and economic growth. Lipset (1959) examined how economic development affects the political regime and established that political instability would increase uncertainty, discouraging investment and eventually hindering economic growth. The degree of democracy is also associated with economic growth, though the relation is much more complex, since democracy may both retard and enhance economic growth depending on the various channels that it passes through (Alesina*et al*, 1994).

In the recent years a number of researchers have made an effort to measure the quality of the political environment using variables such as political instability, political and civil freedom, and political regimes. Brunetti (1997) distinguishes five categories of relevant political variables: democracy, government stability, political violence, political volatility and subjective perception of politics.

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Trusting economies are expected to have stronger incentives to innovate, to accumulate physical capital and to exhibit richer human resources, all of which are conductive to economic growth (Knack and Keefer, 1997). Ethnic diversity, in turn, may have a negative impact on growth by reducing trust, increasing polarization and promoting the adoption of policies that have neutral or even negative effects in terms of growth (Easterly and Levine, 1997). Several other social-cultural factors have been examined in the literature, such as ethnic composition and fragmentation, language, religion, beliefs, attitudes and social/ethnic conflicts, but their relation to economic growth seems to be indirect and unclear. For instance cultural diversity may have a negative impact on growth due to emergence of social uncertainty or even of social conflicts, or a positive effect since it may give rise to a pluralistic environment where cooperation can flourish.

Geographical factors including absolute values of latitude, distances from the equator, proportion of land within 100km of the coast, average temperatures and average rainfall, soil quality and disease ecology are known to have impact on the growth rate of an economy (Hall and Jones, 1999). Armstrong and Read (2004) affirms that natural resources, climate, topography and 'landlockedness' have a direct impact on economic growth affecting (agricultural) productivity, economic structure, transport costs and competitiveness.

Many demographic aspects have been related to economic progress. Of those examined, population growth, population density, migration and age distribution, seem to play the major role in economic growth (Kelley and Schimdt, 2000). High population growth, for example, could have a negative impact on economic growth influencing the dependency ratio, investment and saving behavior and quality of human capital. The composition of the population has also

important implications for growth. A large working-age population is deemed to be conductive to growth, whereas population with many young and elderly dependents is seen as impediment. Population density, in turn, may be positively linked with economic growth as a result of increased specialization, knowledge diffusion and so on. Migration would affect growth potential of both the sending and receiving countries.

2.4 Empirical Literature

Various studies have been carried out to establish the relationship between economic growth and government expenditure. Different researchers have used different explanatory variables to establish this relationship.

Chude and Chude (2013) carried out a study with the objective of finding out the impact of government expenditure on economic growth in Nigeria using Error Correction Model (ECM). The study used Ex-post facto research design and applied time series econometrics technique to examine the long and short run effects of public expenditure on economic growth in Nigeria. The results indicated that total expenditure education is highly and statistically significant and have positive relationship on economic growth in Nigeria in the long run. The result had an important implication in terms of policy and budget implementation in Nigerian context (Chude and Chude 2013). This led the researcher to conclude that economic growth is clearly impacted by factors both exogenous and endogenous to the public expenditure in Nigeria. They recommended that there is need for government to reduce its budgetary allocation to recurrent expenditure on education and place more emphasis on the capital expenditures so as to accelerate economic growth of Nigeria and

that Government should direct its expenditure towards the productive sectors like education as it would reduce the cost of doing business as well as raise the standard living of poor ones in the country.

Ramon, Vinod and Yan (2010) studied the effect of fiscal policies on the quality of growth. Results from their studies pointed out that government spending on public goods is strongly associated with faster economic growth as well as with greater poverty reduction. In other words, more spending on public goods is linked to accelerate economic growth and reduced poverty. In contrast, government expenditures on private goods and on subsidies to firms that distort markets, as opposed to public goods, are associated with weaker economic growth and greater structural inequality. According to them however, many other dimensions of quality of economic growth can be considered including the nature of health outcomes, level and variability of education, macroeconomic fluctuation and volatility of growth (Olopade and Olepade, 2010).

Olopade, and Olepade (2010) studied how fiscal and monetary policies influence economic growth and development. The essence of their study was to determine the components of government expenditure that enhance growth and development, identify those that do not and recommend those that should be cut or reduce to the barest minimum. The study employs an analytic framework based on economic models, statistical methods encompassing trends analysis and simple regression. They find no significant relationship between most of the components of expenditure and economic growth.

Ocran (2009) examined the effect of fiscal policy variables on economic growth in South Africa by considering fiscal policy variables such as capital formation, tax expenditure and government consumption expenditure as well as budget deficit. The study covered the period 1990 to 2004.

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Quarterly data was used in the estimation with the aid of vector regressive modeling technique and impulse response functions. The outcome of the study indicated that government consumption expenditure has a significant positive effect on economic growth. Gross fixed capital formation from government also has a positive impact on output growth but the size of the impact is less than that attained by consumption expenditure (Ocran, 2009). Tax receipts also have a positive effect on output growth. However, the size of the deficit seems to have no significant impact on growth outcomes. The policy lesson that can be distilled from the findings is that a continued sensible use of consumption and investment expenditure as policy tools can speed up growth as compared to a reduction in the size of government (Gregorious and Ghosh 2007).

Olorunfemi (2008) studied the direction and strength of the relationship between public investment and economic growth in Nigeria, using time series data from 1975 to 2004 and observed that public expenditure impacted positively on economic growth and that there was no link between gross fixed capital formation and Gross Domestic Product. He averred that from disaggregated analysis, the result reveal that only 37.1% of government expenditure is devoted to capital expenditure while 62.9% share is to current expenditure. Gregorious and Ghosh (2007) made use of the heterogeneous panel data to study the impact of government expenditure on economic growth. Their results suggest that countries with large government expenditure tend to experience higher economic growth.

Mitchell (2005) evaluated the impact of government spending on economic performance in developed countries. He assessed the international evidence, reviewed the latest academic research, cited examples of countries that have significantly reduced government spending as a

share of national output and analyzed the economic consequences of these reforms. Regardless of the methodology or model employed, he concluded that a large and growing government is not conducive to better economic performance. He further argued that reducing the size of government would lead to higher incomes and improve American's competitiveness.

Gemmell and Kneller (2001) provide empirical evidence on the impact of fiscal policy on long-run growth for European economy. Their study required that at least two of the taxation/expenditure/deficit effects must be examined simultaneously and they employ panel and time series econometric techniques, including dealing with the endogeineity of fiscal policy. Their results indicate that while some public investment spending impacts positively on economic growth, consumption and social security spending have zero or negative growth effects.

Devarajan and Vinay (1993) used panel data for 14 developed countries for a period ranging from 1970 to 1990 and applied the Ordinary least square method on 5-year moving average. They took various functional types of expenditure (health, education, transport, etc.) as explanatory variables and found that health, transport and communication have significant positive effect while education and defense have a negative impact on economic growth.

Alexander (1990) applied OLS method for sample of 13 Organization for Economic Cooperation and Development (OECD) countries panel during the period ranging from 1959 to 1984. The results show, among others, that growth of government spending has significant negative impact on economic growth.

2.5 Summary of Literature Review

The first part of the literature review highlighted basic theories that have been used to support the effects of government expenditure on economic growth. The researcher discussed three theories; the Keynesian theory, Wagner's theory of increasing state activities, and Musgrave theory of public expenditure growth. From these theories have different views of the effect o government spending on economic growth. According to Keynesian view, government could reverse economic downturns by borrowing money from the private sector and then returning the money to the private sector through various spending programs. High levels of government consumption are likely to increase employment, profitability and investment via multiplier effects on aggregate demand. Thus, government expenditure, even of a recurrent nature, can contribute positively to economic growth. Wagner's theory on the other hand emphasizes that increase in public demand leads to more that proportional increase I national income. Musgrave theory on the other hand observes that at the high levels of per capita income, typical of developed economics, the rate of public sector growth tends to fall as the more basic wants are being satisfied.

From the empirical literature review, various findings have also contradicted each other. Some of them relate economic growth increase to government expenditure while other attribute negative economic growth to government expenditure as well. It is worth noting that the differences in the outcome of these findings could be as a result of the different exploratory variables used in different combinations and different contexts. But what remai9ns for sure is that government expenditure has a great impact on the economic development of a country.

As revealed from the literature reviewed, different exploratory variables lead to different outcomes in the study of economic growth and public expenditure. All these studies were done in different African contexts. However, none of those reviewed was based on Kenyan context as most of similar studies done in Kenya are not documented and therefore not traceable. These studies hardly gave policy recommendations and implications. A study on economic growth and expenditure becomes even more useful when the researcher provides policy recommendations at the end of the study.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter describes the methodology that was used in undertaking the study. The section covers the research design and research methodology used to test the variables. In particular, the target population, the type of data collected, data collection instrument, data collection procedure, pilot test, validity and reliability of the instrument, and the data analysis and presentation are discussed.

3.2 Research Design

Descriptive studies are usually the best methods for collecting information that will demonstrate relationships and describe the world as it exists. These types of studies are often done before an experiment to know what specific things to manipulate and include in an experiment. Elahi & Dehdashti, (2011) suggest that descriptive studies can answer questions such as "what is" or "what was." Experiments can typically answer "why" or "how." The focus of this study was to establish the relationships between variables of interest and not the causal effects. It is important to note that just because variables are related, does not necessarily mean that one directly causes the other. This study was descriptive in nature and involved quantitative analysis of data.

3.3 Data Collection Techniques

Secondary data was used in this study to analyze the effect of government expenditure on economic growth in Kenya. Arasa (2008) describes secondary data as information that has already been collected for another purpose other than the current purpose of another researcher;

he further explains that the data however should be of relevance and utility for the current research. The researcher collected time series data of the expenditures on health, education, security and infrastructure in Kenya from 2002 to 2012. This type of data was obtained from government publications as well as publications of international organizations such as World Bank and International Monetary Fund.

3.3.1 Data for GDP Growth Rate

Data for economic growth was obtained from World Bank and IMF data bank from 2007 to 2012 which was chosen by the researcher since they indicate the era of new government with new policies on government expenditure; furthermore, apart from being a more recent year, it was a year during which many changes were experienced in the Kenyan economy (Kosimbei, 2009). All the data obtained were cleaned and all the nominal data converted to real data for easy of analysis using STATA. The time-series data for average GDP was converted from nominal values to its real values by dividing nominal values with the GDP deflator using 2002 as the base year. The deflator was chosen because it is the most comprehensive price index for GDP and it also marked the beginning of the new government error at that time (Branson, 1989 and Wawire, 2006). The research converted nominal average GDP to real average GDP since the nominal values do not reflect the exact changes in production and the changes in income caused by inflation that causes prices to rise when the quantities fall.

Data for government spending on health, infrastructure, security and education was converted into calendar years since economic growth obtained were in calendar year. Where necessary, some adjustments were done to convert time-series data from fiscal years to manageable

calendar years by taking simple averages in each variable. Finally, data on nominal spending was converted from their nominal values to their real values by dividing nominal values with the consumer price index (CPI) using 2002 as a base year in every variable since 2002 is the start period for the data. The study used CPI because it falls on the expenditure side of the GDP equation and it is also more of a cost-of-living index (Wawire, 2006).

3.4 Data Analysis Techniques

The study addresses four objectives. The first objective is to investigate the effect of government expenditure on education; the second is to establish the effect of government expenditure on infrastructure; to find out the effect of government expenditure on health while the last objective is to determine the effect of government expenditure on defense that has been achieved using Johansens (1988) cointegration, Granger causality tests, regression analysis and Vector Autoregression model method.

3.4.1 Analytical Model

Granger Causality Test was used to determine whether one time series is useful in forecasting another (Enders, 1995). The VAR equations were used to perform Granger causality tests. The use of cointegration technique allows the study to capture the equilibrium relationship between non-stationary series within a stationary model, following Adam (1998), and Johnston and Dinardo (1997); it also helped to avoid both spurious and inconsistent regression problems, which would occur with the regression of non-stationary data series. It also permits the combination of the long-run and short-run information in the same model and overcame the problems of losing information that could have occurred from attempts to address non-stationary

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series through differencing (Adam, 1998). Cointegration technique made it possible to capture the information of non-stationary series without sacrificing the statistical validity of the estimated equation (Stock and Watson, 1988). Two main tests for cointegration, namely Johansen cointegration test which is best in testing a one time series model that were conducted either with trace or with eigen value where the inferences might be a little bit different if either of the methods is used. However, these tests for cointegration assumed that the cointegrating vector is constant during the period of 2002 -2012. In reality, it is possible that the long-run relationship between the underlying variables change (shifts in the cointegrating vector can occur). The reason for this might be technological progress, economic crises, changes in the people's preferences and behavior accordingly; policy or regime alteration, and organizational or institutional developments that might have taken place during the two presidential regimes of 2002-2007 and 2007-2012 which is the researcher's period of study. Finally, the regression equations used in this study are as indicated below:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \mathbb{\epsilon}$$

$Y = $ GDP

$X_1 = $ Education

$X_2 = $ Infrastructure

$X_3 = $ Health

$X_4 = $ Defense

$\beta_0 - $ Constant

β$_1$ - coefficient for Education

β$_2$- coefficient for Infrastructure

β$_3$- coefficient for Health

β$_4$- coefficient for Defense

€ - Standard Error

3.4.2 Measurements of Variables

GDP–arriving at the nominal GDP, the researcher used Income Approach to GDP which is calculated by adding up the factors of incomes to the factors of production in the society. These include; National Income (NY) + Indirect Business Taxes (IBT) + Capital Consumption Allowance and Depreciation (CCA) + Net Factor Payments to the rest of the world (NFP) that brings both Nominal GDP and Real GDP to be used in this case. Nominal GDP measures the value of output during a given year using the prices prevailing during that year. Over time, the general level of prices tends to rise due to inflation (but may also fall, due to deflation), leading to an increase (or decrease) in nominal GDP even if the volume of goods and services produced is unchanged. Real GDP measures the value of output in two or more different years by valuing the goods and services adjusted for inflation where both the nominal values were obtained from the World Bank Data Base while Real GDP was calculated by dividing nominal values with the GDP deflator obtained from the World Bank Data Bank.

Government Expenditure on Education -Consists of all capital and current expenditure made by the central government for pre-primary through tertiary education. It was measured as the total expenditure on education (current and capital).

Government Expenditure on Infrastructure –It is the government expenditure on capital overheads. It was measured as development expenditure on transportation, communication, electricity and waterways.

Government Expenditure on Health- It consists of all expenditure made by the central government for hospitals, clinics, and public health affairs and services for medical, dental and paramedical practitioners; for medication, medical equipment and appliances; for applied research and experimental development. It was measured as the total health expenditure (current and capital) by the government.

Government Expenditure on Defense - This is the total government expenditure on administration, supervision and operation of military defense affairs and forces: land sea, air and space defense force; administration, operation and support of civil defense forces. It was measured as the total defense expenditure (current and capital) on the aforementioned areas of defense.

CHAPTER FOUR: DATA ANALYSIS AND PRESENTATION

4.1 Introduction

The chapter presents the analysis part of the study. The analysis is based on the research objectives where each objective is tackled according to the analysis techniques designed in the methodology.

4.2 Summary of the Government Expenditure and GDP for the Period 2002-2012

Table 4.1 presents the descriptive analysis results of the variables of the study. The data collected on the country's economic growth (Measured in GDP) and the Government expenditure on education, infrastructure, health and defense was analyzed to give the mean values for the entire period under study as well as their standard deviations.

Table 4.1 Descriptive Analysis of the Study Variables

	Mean	Std. Deviation
GDP	2.5727	1.59943
Expenditure on Education	5.5421	.32824
Expenditure on Infrastructure	19.9455	.80668
Expenditure on Health	1.8412	.09483
Expenditure on Defense	1.6615	.18873

From the table, the mean GDP for the period is 2.5727 with a standard deviation of 1.59943. This illustrates that, a significant variation in the individual GDP for the years studied was recorded as the standard deviation is above 1 thus the values varied significantly from the mean

GDP value for the years 2002 to 2012. The government expenditure on education, infrastructure, health and defense from the table can be summarized by the mean values obtained since these values gives some standard deviation values which are all less than 1 indicating that the values for the years did not vary significantly from the mean values obtained. Thus, based on this, expenditure on education for the period has a mean of 5.5421, expenditure on infrastructure has a mean of 19.9455, health expenditure has a mean of 1.8412 and that of government expenditure on defense has a mean of 1.6615 summarizing the expenditure on various sectors for the period 2002-2012.

4.2.1 Effect of Government Expenditure on Education on Economic Growth
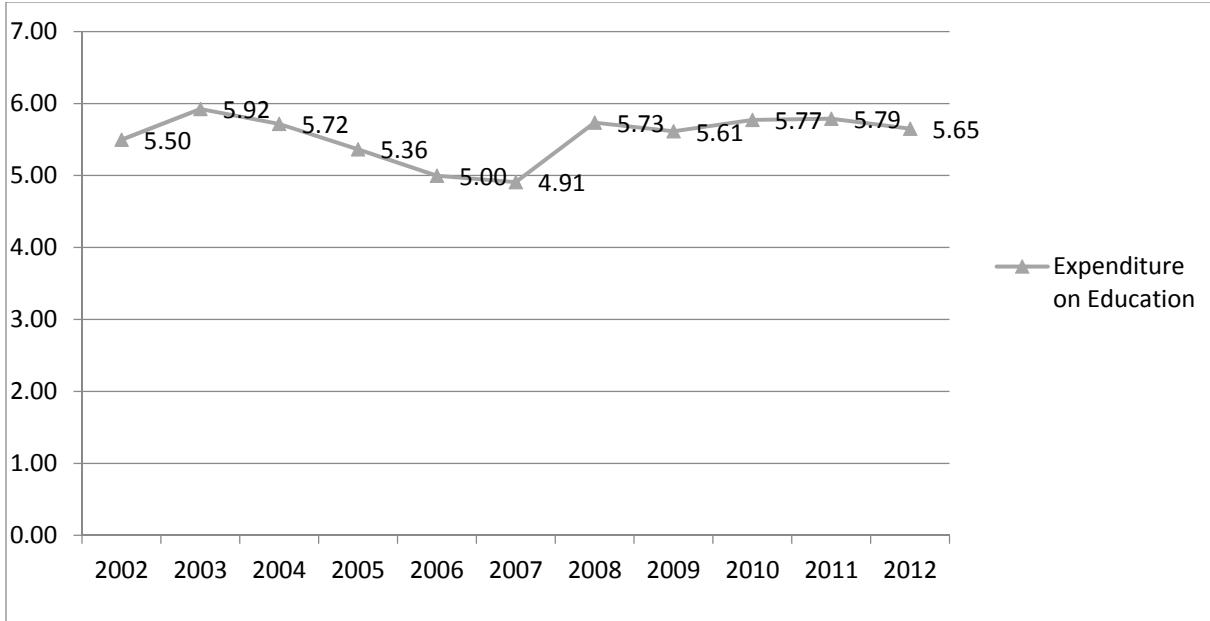
Figure 4.1 Effect of Government Expenditure on Education on Economic Growth

From the figure, Government expenditure on education improved the economic growth initially for from 2002 to 2003 before lessening it for the next five years up to 2006. There was some increase in 2007 which stagnated up to the end of the period (2012). However, the Government expenditure on

education varied between 4.9 and 5.92 as the percentage it contributed to the economic development over the years.

4.2.2 Effect of Government Expenditure on Infrastructure on Economic Growth
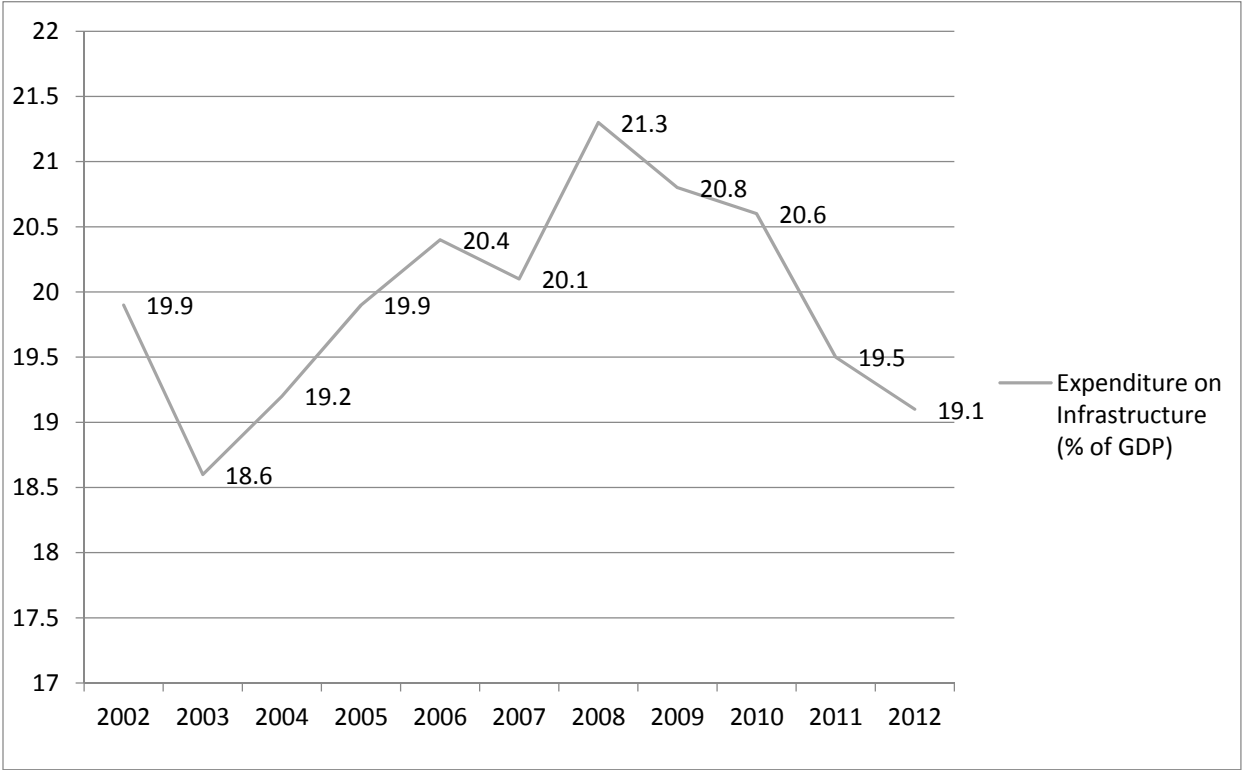
Figure 4.2 Effect of Government Expenditure on Infrastructure on Economic Growth

The Government expenditure on infrastructure has a significant influence on the economic growth as the figure indicates. This has a throng contribution ranging from 18.6 to 21.3 over the period. This however has significant fluctuations which also influence economic growth significantly as the trend decreases from 2002 to 2003 after which it increased steadily to 2008 then back dropped to the final year (2012).

4.2.3 Effect of Government Expenditure on Health on Economic Growth

Key: ——————: Growth in GDP   ——————: Trend line

Figure 4.3 Effect of Government Expenditure on Health on Economic Growth

The figure illustrates that, the GDP trend increased steadily over the years studied with small fluctuations which were as a result of the fluctuations in the government expenditure on Health. At the lowest contribution margin in the expenditure on education to economic growth (1.651), the growth in the economy also fell from 1.9 to 1.5. However, the Government expenditure on Health had a falling trend in its percentage contribution to the economic growth over the years as the figure indicates; 1.943 in 2002 to 1.83 in 2012.

Generally, it is clear that the changes (fluctuations) in the GDP (economic growth) are as a result of the fluctuations in Government investments in health where increasing this expenditure raises economic growth and vice versa.

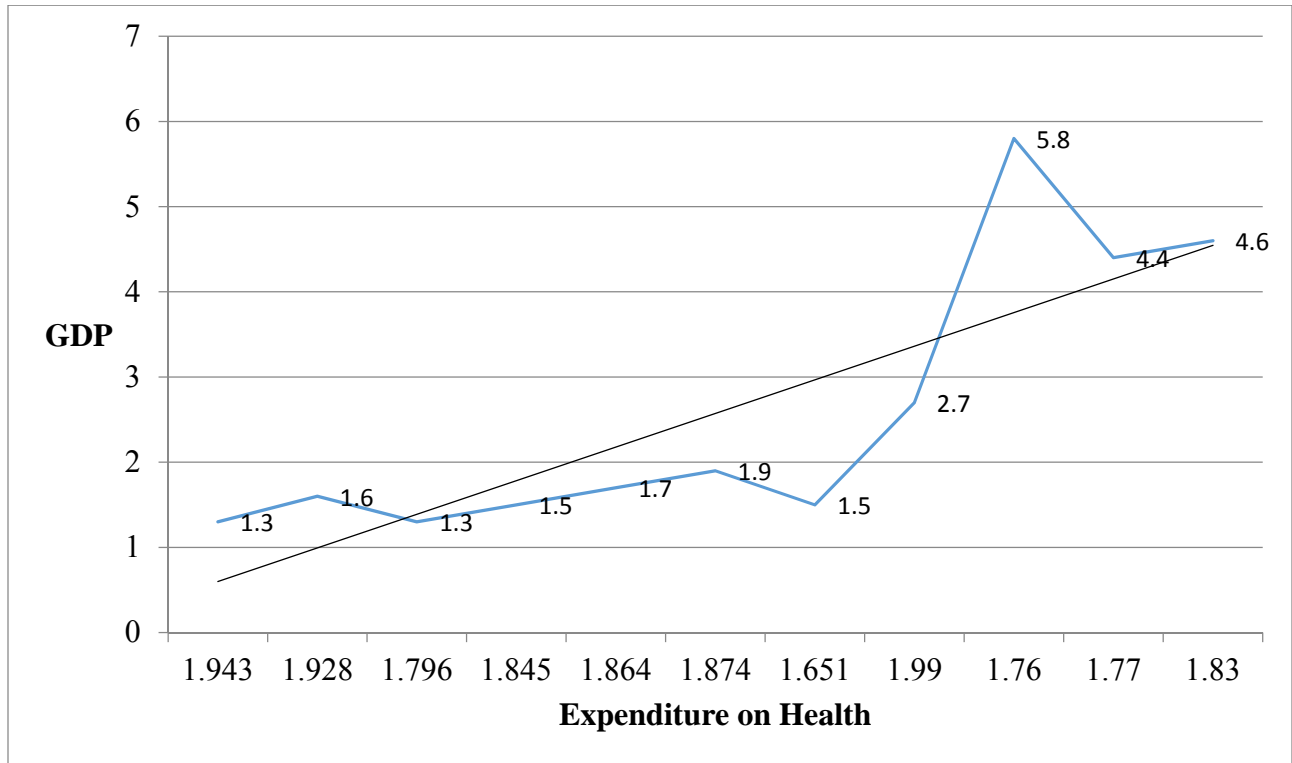**4.2.4 Effect of Government Expenditure on Defense on Economic Growth**
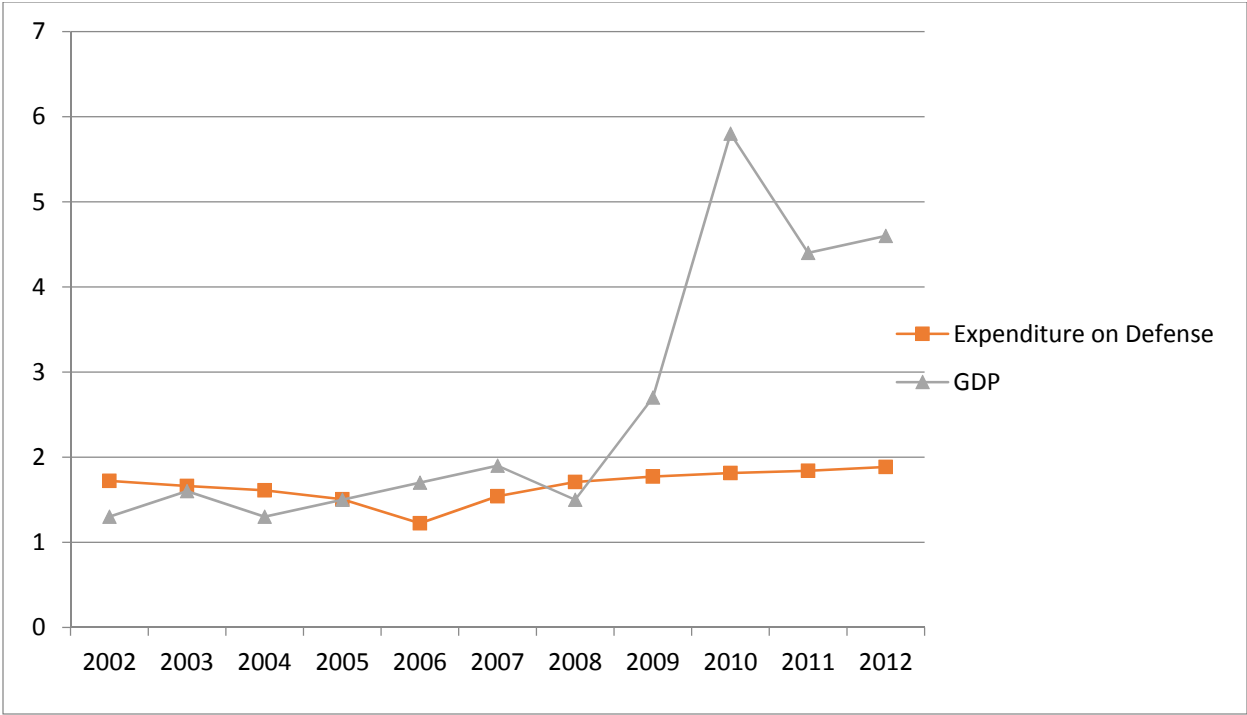
Figure 4.4: Effect of Government Expenditure on Defense on Economic Growth

The government expenditure on defense generally has a stagnating trend over the period on its contribution to the economic growth (GDP) as the table indicates. However, there was a steady decrease in this contribution in 2006 before it obtained some recovery up to 2008. After 2008, the contribution factor had a small increase which is negligible up to 2012. There is no direct contribution to growth as the trends in the figure illustrates that despite the stagnating contribution of the Government expenditure on defense, the development in the economy undergoes significant fluctuations.

4.3 Correlation Analysis

To understand the association between the variables, the study conducted a correlation analysis which was also tested for the significance at 5% level with a 2-tailed test. The pearson correlation coefficient was used to test the strength of the association. The results are therefore presented in table 4.2 below;

Table 4.2 Correlation between the Study Variables

		Economic Growth
Economic Growth	Pearson Correlation	1
	Sig. (2-tailed)	
Expenditure on Education	Pearson Correlation	.872[*]
	Sig. (2-tailed)	.010
Expenditure on Infrastructure	Pearson Correlation	.959[*]
	Sig. (2-tailed)	.001
Expenditure on Defense	Pearson Correlation	.938[*]
	Sig. (2-tailed)	.016
Expenditure on Health	Pearson Correlation	.822[*]
	Sig. (2-tailed)	.023

The correlation table gives the associations between the study variables. The strength of the association is based on the Pearson correlation scale where values between 0.0- 0.3 indicate a no correlation state, 0.31-0.5 weak correlation, 0.51 – 0.7 a moderate correlation and a correlation value in the interval 0.71-1 indicates the presence of a strong correlation between the variables. From the table, economic growth has a significant strong correlation with all the independent

variables. The government expenditure on education, expenditure on defense, expenditure on health and expenditure on infrastructure are positively and strongly correlated to the economic growth margin which were indicated by the Pearson correlation coefficient values .872 (.010), .959 (.001), .938 (.016) and .822 (.023) respectively. Testing at 5% significance level, the association was found to be statistically significant as their significance values were all values less than 0.025 which is the critical value at 5% level with a 2-tailed test beyond which the results are statistically insignificant and vice versa.

4.4 Model Test

To effectively evaluate the effect of Government expenditure on Economic growth, the data was analyzed to determine the statistical properties of the time series variables used in the estimation. The essence is to determine whether these variables are stationary or not. This is because macroeconomic data often appear to posses' stochastic trend that can be removed by differencing the variables.

4.4.1 Test of Stationarity

In the analysis, the Augmented Dickey Fuller was employed to test the order of integration of the variables. The unit root test results are presented in table 4.3;

Table 4.3 Unit Root Test

Variable	Levels	1st Difference	2nd Difference	Level of Integration
Growth			-	I(1)
Defense	-2.718392			I(1)
Education	4.685601	-5.676368	-	I(1)
Health	5.898435	-3.939831	-	I(1)
Transport/Infrastructure	-0.516187	-4.329392	-	I(1)

Critical Values: 1% -2.614029, 5% -1.947816, 10% -1.612492

From the table, it is obvious that all the variables are either stationary; I(0) or integrated of order 1; I(1). The findings show that all the variables are stationary after their first differencing. Their cointegration status is investigated first using the Engle- Granger cointegration test and it is found that their linear combination is stationary. The cointegration test following the approach of Johansen and Juselius (1990) two likelihood ratio test statistics were utilized to determine the number of cointegrating equation in the model under the assumption of no deterministic trend in the data. The result of the maximum Eigen value and trace test indicate that there is a single cointegrating equation in the model as the test rejected the null hypothesis of no cointegrating equation and accepted that of at least 1 cointegrating equation as in table 4.2 below;

Table 4.4: Cointegration Test

Rank	Eigen Value	Likelihood Ratio	5% Critical value	1% Critical value	Hypothetized no of CE(s)
R=0	0.766340	132.0296	109.99	119.80	None*
R=1	0.599442	79.68958	82.49	90.45	At most 1
R=2	0.441516	46.79120	59.46	66.52	At most 2
R=3	0.296772	25.79120	39.89	45.58	At most 3
R=4	0.202897	13.11656	24.31	29.75	At most 4
R=5	0.110358	4.952794	12.53	16.31	At most 5
R=6	0.020430	0.743085	3.84	6.51	At most 6

4.4.2 Granger causality Tests

The Granger causality test was conducted within the context of statistical hypothesis test for determining whether the independent variables' series are useful in forecasting the dependent variable (economic growth).

Table 4.5 Pairwise Granger Causality Tests between Economic Growth, Education, Infrastructure, Defense and Health.

Null Hypothesis	F-Stat	Critical F value at 1%	Critical F value at 5%	Critical F value at 10%	Decision
Government expenditure on Education Does not Granger cause GDP growth	3.06**	3.29(6,43)	2.33(6,43)	1.92(6,43)	Rejected at 5%
GDP growth Does not Granger cause Government expenditure on Education	6.18***	3.29(6,43)	2.33(6,43)	1.92(6,43)	Rejected at 1%
Government Expenditure on Infrastructure Does not Granger cause GDP growth	5.38***	3.29(6,43)	2.33(6,43)	1.92(6,43)	Rejected at 1%
GDP growth Does not Granger cause Government Expenditure on Infrastructure	3.97***	3.29(6,43)	2.33(6,43)	1.92(6,43)	Rejected at 1%
Government Expenditure on Health Does not Granger cause GDP growth	0.88	2.80(10,39)	2.07(10,39)	1.76(10,39)	Not rejected
GDP growth Does not Granger cause Government Expenditure on Health	2.26**	2.80(10,39)	2.07(9,40)	1.76(9,40)	Rejected at 5%
GDP growth Does not Granger cause Government Expenditure on Defense	2.71**	2.80(10,39)	2.07(10,39)	1.76(10,39)	Rejected at 5%.
Government Expenditure on Defense Does not Granger cause GDP growth	1.53	2.80(10,39)	2.07(10,39)	1.76(10,39)	Not rejected

The symbols ***, ** and * indicate the rejection of the null hypothesis that one series does not

Granger cause another at 1%, 5% and 10% level of significance respectively. Values in brackets

are lower and upper degrees of freedom (df) respectively. For all Models, DW statistic ranged between 1.81 and 2.24

The findings revealed that there exists a strong bidirectional causal links between Government expenditure on education and economic growth. The null hypotheses that Government expenditure on education does not Granger cause economic growth and vice versa have been rejected at 5% and 1% level of significance respectively based on the model.

A significant improvement in the result was obtained in relation to the causal link between Government expenditure on Infrastructure and GDP growth. The findings reveals that there is a strong two way causal relationship between Government investment on infrastructure and economic growth (GDP) as opposed to a weak, one way causal link that runs from GDP to Government infrastructure investment. This implies that an increased Government investment in infrastructure generates more Income through the actual construction, operation and maintenance.

Other important results from the model are that, there is a strong bidirectional causal link between economic growth and Government expenditure on Health, and that, there is a strong unidirectional causal link between Government expenditure on defense and economic growth. In the first case, economic growth is seen as a driver of the growth in Government Expenditure on health and vice versa, while in the second, economic growth is seen as a driver of the growth in Government Expenditure on defense.

4.5 Regression Analysis

To answer to the regression model proposed in the methodology, regression analysis was conducted to establish the relationship between the dependent and the predictor variables. The regression analysis results are as presented in tables 4.6, 4.7 and 4.8 which gives the model summary, ANOVA coefficient and the regression coefficients respectively.

4.5.1 Model Summary

The summary of the regression model is as presented in table 4.6 below. It gives the coefficient of determination (R square) which measures the influence of the independent variables to the dependent variable as well as the adjusted R square which measures the reliability of the results.

Table 4.6 Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.910ᵃ	.930	.922	.4621

a. Predictors: (Constant), Expenditure on education, expenditure on defense, expenditure on health, expenditure on infrastructure

The findings in the table shows that, holding other factors constant, the independent variables in this study would explain 93% of the variability in economic growth as given by the coefficient of determination value (0.930). Thus, based on this, other determinants of economic growth accounts for 7% of its variability. The table also indicates that, the results are 92.2% reliable as the adjusted R square illustrates and therefore significant results were obtained.

4.5.2 Analysis of Variance

To test the significance of the model developed, analysis of variance was employed in this study. This gives the reliability of the model in presenting the relation in which the predictor variables influences economic growth. Table 4.7 gives the results for the ANOVA statistics.

Table 4.7 Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.152	1	8.152	3.970	.001[a]
	Residual	2.732	6	2.053		
	Total	8.425	7			

a. Predictors: (Constant), Expenditure on education, expenditure on defense, expenditure on health, expenditure on infrastructure

b. Dependent Variable: Economic growth

From the table, the significance value is .001 which is less than 0.025 (the critical value at 5% level). Therefore this confirms that the model is statistically significant in predicting economic growth as determined by the independent variables of the study. The F critical at 5% level of significance is 3.23. Since F calculated is greater than the F critical (value = 3.970), this shows that the overall model was significant.

4.5.3 Model Coefficients

The model relating the dependent and the independent variables of the study is developed with the use of the regression model coefficients presented in table 4.8 below.

Table 4.8: The Regression Coefficients

Variable	Coefficient	Std error	t-value
GDP(-1)	0.728192	0.21876	3.28763
Education	-2.830284	1.92975	-1.46666
Transport/Infrastructure	2.533206	1.19775	2.11497
Health	2.558210	1.29099	1.98159
Defense	1.038570	0.73651	1.41013

The result of the Ordinary Least Square (OLS) shows that the previous growth value (GDP) has significant positive impact on current growth. Expenditure on infrastructure also has positive and significant impact on growth of the country. Expenditure on defense is positively related with economic growth, though not at a significant level.

However, expenditure on education has negative but no significant impact on the growth of the economy. This implies that expenditure on education does not improve human capital in the country. This may not be unconnected with the mass unemployment and the brain drain of the youth in the country. Expenditure on health and infrastructure are positive and significantly related with growth.

Based on these findings, the regression model therefore becomes;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \text{\euro}$$

$$Y = 0.728192 - 2.830284 X_1 + 2.533206 X_2 + 2.558210 X_3 + 1.038570 X_4$$

4.6 Discussion of the Findings

The study results indicated that there is a strong and positive correlation between the study variables. This therefore indicates that, the government expenditure on; education, defense, health and infrastructure are positively and strongly associated with economic growth. Thus, a positive change (increase) in these expenditures will result to positive impacts on economic performance and its development.

The findings also illustrated that, holding other factors constant; the government expenditure on the four aspects (economic sectors) which are the independent variables in this study would explain 93% of the variability in economic growth. This indicates that, other factors that are not studied in this study, (determinants of economic growth) account for 7% of its variability.

From the regression analysis, the result of the shows that, expenditure on infrastructure, defense and health has positive and significant impact on economic growth. However, expenditure on education has negative but no significant impact on the growth of the economy. This indicates that expenditure on education does not improve human capital in the country. This may not be unconnected with the mass unemployment and the brain drain of the youth in the country. Expenditure on health, defense and infrastructure are positive and significantly related with growth since these are direct investments which facilitate economic activities directly.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the study findings, conclusions and the recommendations made based on the results. It also presents the areas for further research as pointed out during the study.

5.2 Summary of the Findings

The main objective of this paper has been to explore the relationship between government spending and economic growth in Kenya, which is measured as the growth rate of real GDP. While, focusing on seven government spending categories; namely, education, infrastructure, health and defense. The study then conducted the Granger causality test between GDP growth rate and the various components of government expenditure. Bidirectional causality between categories of government expenditure and economic growth was detected.

The findings indicated that all the variables (Government expenditure on: education, infrastructure, Health and Defense) are stationary after their first differencing. Investigating their cointegration status through the Engle- Granger cointegration test, the study found out that the variables' linear combination is stationary. The cointegration test following the approach of Johansen and Juselius (1990) two likelihood ratio test statistics were utilized to determine the number of cointegrating equation in the model under the assumption of no deterministic trend in the data.

The findings of the maximum Eigen value and trace test indicated that there is a single cointegrating equation in the model as the test rejected the null hypothesis of no cointegrating equation and accepted that of at least 1 cointegrating equation. The levels of investment, savings and efficiency (measured by the incremental capital output ratio in these sectors) are key determinants of the achievable rates of economic growth.

The findings revealed that there exists a strong bidirectional causal links between Government expenditure on education and economic growth. A significant improvement in the result was obtained in relation to the causal link between Government expenditure on Infrastructure and GDP growth. The findings reveal that there is a strong two way causal relationship between Government investment on infrastructure and economic growth (GDP). The findings also illustrated that there is a strong bidirectional causal link between economic growth and Government expenditure on Health, and that, there is a strong unidirectional causal link between Government expenditure on defense and economic growth.

Conducting the Ordinary Least Square, the results indicated that the Government expenditure on infrastructure has a positive and significant impact on growth of the Economy. Infrastructural development is key to attracting investment in the country. As pointed out in Vision 2030, the trade sector in Kenya is characterized by inefficiencies along the supply chain from producer to consumer and from importer to the final buyer. This is largely due to the poor state of roads, drainage and water supply, inadequate power supply, poor transportation and communication system, handling and storage facilities and wastage and waste disposal systems. In addition, there are limited and poorly-designed markets and lack of housing facilities with enough loading bays and parking spaces.

Expenditure on education was found to have a negative but no significant impact on the growth of the economy. This implies that expenditure on education does not directly improve human capital in the country which may be due to the mass unemployment and the brain drain of the youth in the country. The education sector plays a key role in providing the required knowledge, skills and attitudes necessary for the growth and competitiveness of the country. Education sector programmes such as free primary education and free day secondary education have been geared towards improving efficiency in the core service delivery of providing accessible, equitable and quality education and training in the country. The outcome of this will, however, depend on how the country will exploit such an opportunity.

Expenditure on health is positive and significantly related with growth. Government budget allocations to the health sector have significantly increased over the years. The increase in government allocation to the sector shows its commitment towards preventive and promotive health as well as its commitment and efforts to reduce the burden of preventable diseases. The review has also shown that the initiatives by the government have positive results in the economic development of the country. The sector however continues to experience severe human resource shortage; a cut in budget allocation may impact negatively on the sector's competence to deliver services. The sector's objective is to fully implement the planned activities with the allocated funds.

Inadequate budget allocation and the deteriorating economic conditions in the country seriously affect implementation of projects and other operations of the sector. Kenya has a low average of doctors and nurses populations, compared to the WHO recommended minimum staffing levels of 36 and 356 doctors and nurses, respectively, per 100,000 populations. The annual recruitment

within the Ministry of Health has not drastically changed the numbers because of the high attrition especially in the public sector, as well as performance management issues, unequal distribution of staff, and diminishing productivity among the health work force.

Also, the findings indicated that Expenditure on defense is positively related with economic growth, though not at a significant level. The country has in the recent past witnessed renewed interest backed by strong political will to address challenges facing the piece of the citizens. These measures are essential due to threats posed to the nation both by internal and external individuals/groups which are as well a threat to the economic development of the nation. The natural resources as well as the mineral discoveries in the country places high demand of the ownership interests to individuals. Uncontrolled, these may prose inter-communal wars which negatively impacts the economical stability of the nation. This as well necessitates deployment of security agencies to various regions in the country which may be targets for the attackers.

5.3 Conclusions

The study based on the findings presented above concludes that; since the GDP value is affected by a great deal of factors, such as prices, disasters, and the economic crisis and so on, the prediction of GDP per capita is very complicated. Therefore, the simple time series models are not always enough to offer an accurate prediction of GDP per capita. However, for short-term forecasting, the results of time series models could be used as preliminary predictions, which can be used for the regional government to draw up economics plans and policies.

GDP growth rates in the recent past have below the 10 percent level due to both domestic and external factors. Counties/regions with highest poverty levels in Kenya lack access to a wide range of resources. In particular, they have very poor infrastructure and, therefore, have limited access to facilities such as schools, health centres and markets.

Total government expenditure and net lending as a share of GDP has increased in the last ten years. The current public spending programme is expected to ensure continuity in resource allocation based on prioritized programmes consistent with Vision 2030 and the Medium Term Plan to accelerate growth, poverty reduction and employment creation. In the last three years, public spending priorities have been in social programmes (mainly education) and infrastructure.

In Kenya, there has been significant progress in a number of areas, notably for initial and basic education, but tertiary enrolment remains low. Indeed, in terms of literacy rates and access to primary education, the country has seen dramatic improvements over the past decade. This improvement in literacy rates is largely due to the population's increased access to education. However, these improvements do not necessarily bring about economic growth which is due to increased unemployment rates as well as due to poor wages and enumeration allowances offered to graduates.

Also, there is weak balance between quality and quantity of schooling especially to the poor in the country. There is a high level of wastage across levels and unsatisfactory development. Despite the free primary and day secondary education schooling, the education burden on households is high. The rising cost of schooling on the part of households has negatively impacted on household demand for schooling. Therefore, the extent to which the Government

shields households from the direct and indirect costs of schooling determines the extent of access to schooling in the different regions of the country.

The study confirms that there is a strong causal relationship between Government investment on infrastructure and economic growth. This implies that an increased Government investment in infrastructure generates more Income through the actual construction, operation and maintenance. Well networked and efficient infrastructure is essential for inter country market integration, lowering unit costs of production and transactions, facilitating the flow of materials and information, reducing inequalities and poverty and enhancing economic capacity. It is also expected to generate employment directly through the actual construction, operation and maintenance requirements but also through indirect multiplier effects across the economy.

There is a strong bidirectional causal link between economic growth and Government expenditure on Health. Good health is a prerequisite for enhanced economic growth and poverty reduction and a precursor to the realization of Kenya Vision 2030's social pillar goal. In view of the low investment in infrastructure, most public health facilities in Kenya are old and dilapidated. Given the increases in population and demand for services, these facilities do not conform to the current infrastructure norms and standards. Poor working conditions coupled with brain drain are a major challenge affecting service delivery capacity in the health sector. These shortages of human resources have a negative impact on the economic development of the nation. Reproductive health is also influenced by the capacity of the health system to provide access to comprehensive, quality reproductive health information and services as a basic human right to all.

The government expenditure on defense generally has a stagnating trend on its contribution to the economic growth. However, there is no direct contribution to growth despite the stagnating contribution of the Government expenditure on defense. Tourism in Kenya relies on the country's natural attractions, including wildlife in its native habitat, as well as fine beaches and other coastal ecosystem assets. These attractions are also the target of the terror groups who are out to demolish the economy of the country. This therefore necessitates the government to employ more security personnel to safeguard these sites and ensuring suitable environment for the tourists.

Although military expenditure may affect growth through different mechanisms, economic growth may be causally prior to defense spending. For instance, with a high growth rates in Kenya may necessitate to strengthen against foreign or domestic threats by increased defense spending. Much of the growth of military spending is usually based on the need to maintain national security. The neoclassical approach sees the state as a rational actor which balances the opportunity costs and security benefits of military spending in order to maximize a well defined national interest reflected in a societal social welfare function.

Military expenditure can then be treated as a pure public good and the economic effects of military expenditure are determined by its opportunity cost, with a clear trade-off between civil and military spending.

5.4 Recommendations

The study makes policy contributions through recommendations it composes from the findings and conclusions made in this chapter. These include;

Macroeconomic stability should remain top policy precedence for the government. Kenya is facing potential risks originating from internal and external imbalances. Moreover, Kenya's economic growth remains vulnerable to external shocks, especially developments in the global economy, regional stability and security, and weather-related supply shocks.

High educational attainment, high literacy levels and high levels of human capital are likely to improve the business environment. Possessing such characteristics facilitates the emergence of a highly skilled labor base that is attractive to business. To ensure effective and productive education, clear expenditure roles for counties and the national government should be developed and appropriate resources mobilized. Education spending should also be linked to resource needs (both human and capital) both at sub-national and facility levels. If opportunities for job creation are realized, more jobs will be created for the available working age population, and the demographic bonus would result in higher productivity, savings and economic growth.

The Government should emphasize infrastructure development to reduce the cost of doing business and enhance efficiency in service delivery to accelerate development. Businesses, lawmakers, heads of Counties and policy experts all have different solutions to the Kenya's infrastructure needs, but they all boil down to the idea that Kenya needs a little bit of everything.

Competitiveness and sustainability questions must interrogate how to stimulate investments in key infrastructure for enhanced service delivery and equitable access.

Inequalities in access to health and education can exacerbate poverty and lead to greater marginalization within society, reinforcing a vicious circle than dampens development prospects. Due to these challenges, the provisions for health as a basic human right will require fundamental transformation to signify change in the health sector with major implications for the human resources for health. Healthy individuals increase their value in the labor market. To accumulate the human capital necessary for sustainable economic growth, therefore, Government has to invest in, among other areas, education and health.

The government should also be committed to improving access and equity of essential health care services by setting critical and ambitious targets for providing health services to the citizens. This is through investments in health and in implementation of planned investments. The Private and mission health facilities and public hospitals are important sources of health services for the non-poor, while health centres in rural areas and urban slums are the primary health care providers for majority of the patients from poor households. Therefore, improvement in rural and basic urban health facilities would be more beneficial to the poor.

Several policy implications can be derived from understanding directions and magnitude of causality between military expenditures and economic growth. The trends in military expenditures are becoming more diverse. Investing on defense is a core prerequisite for the country to be stable for business and economic activities to take place. In order to achieve the national goals and objectives, provision of security to the country is critical. Availability of

secure business environment attracts both local and foreign investors in the market which directly contributes to economic growth through tax provision.

5.5 Limitations of the Study

The study, though successfully achieved its objectives experienced several drawbacks which acted as limitations to its successful completion. These include the following;

The data used was secondary in nature which was not purposely collected for the current study and therefore it was not easy to access the data from the planned sources which led to untimely research.

The use of secondary data also which is prone to personal biasness limited the study since the data cannot be adequately reliable due to these personal errors and biasness.

The literature informing the study was limited with little evidence on local perspective. This therefore affected the review of the trends in the variables studied over the years.

It was not economical for the researcher to search for data online which was not readily available thus being time and financial resources consuming.

The study also had limited focus on Kenyan government due to availability of time and data to which could have also been expensive in studying a considerably larger region to include other countries in the same economic group and evaluate their different economical situations.

5.6 Suggestion for Further Studies

The current study has shed light on the four major sectors in the economy which influence the development in the country. However, other sectors, including; agricultural, environment and natural resources play a role in the performance of the nation and therefore should also be examined to evaluate the current contributions and changes they offer to the growth.

Also, the country's Legal framework for the economical activities (business operations) should be examined to evaluate the effect of the agencies' policies formulated under the new Government structure to the economic development.

The researcher also recommends further research on the effects of government spending on social economic development of the country which should also look at the economic integration aspect in different regions of the country.

Future research would also be done on the factors influencing different sectoral expenditure and their consequential results to the economy, economic growth and livelihoods of the citizens.

The researcher as well suggests for a review of the government spending and the effectiveness of the projects invested on to investigate their relevance towards human capital development as well as economic growth of the country.

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Data for the Components of Government Expenditure and GDP (2002-2012)

Quarter/Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
GDP 1	4.8	-0.5	6.9	2	6	7	1.1	6.4	4.8	5.1	3.5
2	-1.2	0.8	5	7.4	6.2	8.3	2.2	2	4.6	4.1	4.6
3	-2.5	6.9	3.2	7.4	7.5	6.3	2.5	1.9	6	4	4.7
4	1.2	5.5	4.8	5.8	6.9	6.4	0.3	0.8	7.2	4.8	5.1
Annual	0.5	2.9	5.1	5.9	6.3	7	1.5	2.7	5.8	4.4	4.6
Expenditure on Education											
1	4.87	5.11	4.89	5.03	5.1	5.53	5.57	5.33	5.55	5.65	5.29
2	5.36	4.99	5.73	5.52	4.73	4.93	5.38	5.11	5.9	5.88	5.91
3	5.56	5.62	5.54	4.99	5.94	5.18	5.21	5.84	5.17	5.71	4.88
4	5.72	6.3	5.67	5.63	5.17	4.67	5.92	5.45	5.06	5.22	5.63
Expenditure on Infrastructure											
1	17.3	20.1	19.6	18.8	19.6	19.9	20.2	19.8	18.9	20.1	19.2
2	16.9	19.3	19.2	19.9	20.4	20.1	21.3	20.8	20.6	19.5	19.1
3	20.2	17.7	18.7	20.1	20.1	20.4	19.7	19.9	20.2	18.6	19.4
4	21.3	17.2	19	19.5	19.8	19.6	20.9	21.2	19.9	19.2	19

Quarter/Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Expenditure on Health											
1	1.88	1.9	1.81	1.82	1.9	1.88	1.71	1.94	1.72	1.69	1.72
2	1.93	1.95	1.79	1.78	1.81	1.79	1.82	1.87	1.77	1.82	1.85
3	1.94	1.93	1.80	1.85	1.86	1.87	1.65	1.99	1.76	1.77	1.83
4	1.97	1.82	1.9	1.91	1.92	1.9	1.72	1.9	1.91	1.66	1.92
Expenditure on Defense											
1	1.81	1.78	1.72	1.46	1.14	1.61	1.66	1.69	1.75	1.88	1.79
2	1.72	1.66	1.61	1.51	1.22	1.54	1.71	1.77	1.81	1.84	1.88
3	1.68	1.91	1.62	1.49	1.26	1.52	1.77	1.68	1.79	1.83	1.81
4	1.85	1.76	1.59	1.61	1.19	1.62	1.8	1.83	1.9	1.78	1.77