

**RELATIONSHIP BETWEEN BUDGET ABSORPTION AND ECONOMIC  
GROWTH IN KENYA**

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## **DECLARATION**

I declare that this research project is my original work and that it has not been previously presented in any other university towards the award of a degree.

Signed 

**Date:** 8 December 2021

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This research project has been submitted for examination with my approval as university supervisor.

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## **DEDICATION**

This work is dedicated to my parents who have constantly supported and encouraged my academic journey. Thank you for always pushing to aim for greater achievements.

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## **LIST OF ABBREVIATIONS**

EU	European Union
GDP	Gross Domestic Product
GNP	Gross National Product
RDT	Resource Dependence Theory
OLS	Ordinary Least Squares
VIF	Variance Inflation Factor
SPSS	Statistical Package for Social Sciences
KNBS	Kenya National Bureau of Statistics
CBK	Central Bank of Kenya
OCOB	Office of the Controller of Budget
OAG	Office of the Auditor General

## **ABSTRACT**

Budget absorption is an aspect that shows the efficiency in using public funds allocated to specific sectors and is expressed as a percentage of the total budget. As a fiscal policy tool, the government applies the budget to allocate resources to various sectors of the economy in order to among other objectives, stimulate economic growth. The purpose of this study was to ascertain the effect of budget absorption on economic growth in Kenya. Budget absorption was operationalized using the annual budget allocation, the budget absorption rate, and the revenue performance as the proxies. Economic growth was measured using the Gross Domestic Product (GDP). The study was anchored on the stewardship theory and supported by the agency theory and resource dependency theory. The study was undertaken using the descriptive research design. Secondary data on the inflation rate, the annual budgetary allocations, revenue, and expenditure reported, was obtained from reliable government sources including KNBS, CBK, the National Treasury, OCOB, and 21 national government ministry records for the 5-year period 2015/2016 to 2019/2020. The natural logarithms of the collected data were used in the analysis. Inferential (regression) analysis was used to obtain the preferred model of the study. The analysis led to two models; model 1 (uncontrolled) and model 2 (controlled using inflation). The analysis of variance of the two models established p-values greater than 0.05, which established that the models were significant.

The findings revealed a positive relationship between economic growth (expressed as the annual percentage (%) change in GDP) and annual budget allocation, budget absorption rate, and revenue performance. Increasing budgetary allocation, the budget absorption rate, and revenue performance would lead to an increase in GDP (economic growth) of a country. Among the three independent variables, revenue performance had the biggest impact. The relationship was influenced by inflation whose controlling nature indicated a reduction in economic growth, budget allocation, budget absorption rate, and revenue performance. The findings will be of value to scholars and government policy makers. The study concludes on the need to enhance revenue collection efforts vis a vis the targets as the revenue performance has a significant impact on economic growth. Additionally, the level of budget absorption was determined to have a bigger impact on the economy than the actual budget allocation. This is a call on the government and its related entities to become more efficient and deliberate in absorbing the allocated budget. The results of the study also indicated that inflation affects all the variables negatively. It is therefore imperative that the regulatory bodies take action to reduce inflation.

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background of the Study

Budget absorption is an aspect that shows the level to which a country effectively and efficiently uses the funds allocated to specific sectors (Katsarova, 2013). The existing global pandemic and the uncertain economic crisis necessitates policymakers to identify approaches for creating employment and boosting economic growth. For many developing economies, structural funds offered by donors and proper utilization of budgeted funds seem to be long sought-after panacea (Tătulescu & Pătruți, 2014). The national budget acts as an instrument to improve development programs such as augmenting economic growth, improving citizens' welfare, and pursuing sustainable development strategies. Pribadi, Kanto and Kisman (2020) argue that budget absorption is imperative in supporting effective attainment of these goals.

The study is anchored on the stewardship theory (Davis, Schoorman, & Donaldson, 1997) and backed up by agency theory (Jensen & Meckling, 1976), and resource dependency theory (Pfeffer and Salancik (1978). Stewardship theory posits that there is convergence of goals between stewards and stakeholders; in this case, government officials and citizens are stewards and stakeholders respectively. Agency theory explains the contractual relationships between principals and agents while the resource dependence theory considers institutions as open systems whose operations are contingent on the external environment. The implementation of the national government's expenditure budget is dependent on budget absorption and budgeting guides the running of institutions by facilitating the allocation of resources to unlimited demands (Wadi, Herawati & Husnan, 2017). Friyani and Hernando (2019) argue that insufficient budget absorption is one of the obstacles to economic growth.

Kenya has had budget deficits for most of the time independence and this situation can, to a large extent, be attributed to ineffective budgeting and budget absorption of allocated resources (Kipkirui, 2020). The budget deficit in the early 1990s was linked to reduction in the IMF donor funding and this has been exacerbated by the rigid tax regime (Osoro, 2016). A fixed

fiscal policy may not be effective in raising tax revenue sufficient to service national expenditure that is continually growing. Donor funding too, as Zakaria (2015) notes, influences budget absorption and spending capacity. Countries or agencies that are highly dependent on donor funding use the donor aid to fund budget deficits rather than finance their budgeted expenditures. The covid-19 pandemic and the containment measures instituted have hurt businesses leading to reduced revenue not only in Kenya but globally. Ensuring efficiency in budget absorption should be a priority for all governments to counter the negative consequences associated with budget deficits.

### **1.1.1 Budget Absorption**

Budget absorption is the portion of the allocated resources that committed to their intended purpose; to achieve pre-determined national economic and national goals. Nakitare (2018) argues that budget absorption whether at national or institutional level aids in attainment of specific goals and its significance is more pronounced in the public sector than it is in the private sector. Budget absorption is an essential driver employment, improved food security, and poverty alleviation. While the link between high budget absorption and economic growth is moot, scholars contend that low budget absorption rates lead to unattained national growth strategies. This has an implication that the usage of the disbursed funds informs the implementation of development projects. As such, it is imperative to assess the absorption capacities of public agencies as they underpin the developmental goals of an agency, department, ministry and the country as a whole.

On a global scale, the European Union (EU) cohesion policy provides a relevant portrayal of how budget absorption can influence the growth and development of counties. The policy sets aside financial resources through the EU budget to support balanced economic achievements and attractiveness for its members (Marinas & Prioteasa, 2016). In Indonesia, institutions were found to have slowed budget absorption rate during the first three quarters and then high absorption rate in the last quarter (Andriati, 2019). The effect of such activities was poor quality of work on planned projects and hindrances to economic growth.

Byamugisha and Basheka (2016) note that in Uganda, as it is the case with any other country, citizens expect improved standards of service from government and the private sector. To achieve, this, investment in both physical and technological infrastructure is imperative. The extent to which developments can be achieved is dependent on the absorption rate for budgeted funds. Owuor (2018) investigated budget absorption in county governments in Kenya and noted that there was misallocation of resources from the national governments which in turn affected the performance of vital governmental tasks such as procurement processes at county level. Budget absorption has been operationalized in the same way in multiple studies. For instance, Nakitare (2018) and Kipkirui (2020) measured budget absorption using the ratio of total expenditure to the total budget. This study adopts the same measure as a proxy for budget absorption.

### **1.1.2 Economic Growth**

This is the increase in the gross output produced in an economy within a defined period. Kenya's economy has been hurt by the Covid-19 pandemic with the AfDB (2020) noting that close to 2 million people fell into poverty and over 900,000 lost jobs. These staggering figures are underpinned by fiscal deficits and revenue shortfalls due to the effects of the pandemic. Public debt formed 72% of gross domestic product (GDP) in 2020 from 61% in 2019 due to investments in infrastructure, debt repayments, and mitigation of the pandemic. Attaining economic recovery and growth warrants resolution of budgetary allocation and absorption through ensuring that public expenditures reach their intended targets.

GDP has been utilized globally to measure a country's level of economic growth and development, notion of wellbeing, and effect of economic policies (Nnadozie and Jerome, 2019). However, there is no consensus among scholars as to whether GDP is just a measure of the level of production and economic activities in a country or whether it is an indicator of growth and development. The authors infer that economic growth entails opulence and improvement in living conditions made possible through increase in GDP or gross national product (GNP). As such, economic growth can be conceptualized to be growth in total output for a country – but this has to be linked with structural transformation, improved quality of life, and overall prosperity of citizens (Stevenson & Wolfers, 2008). In this study, economic

growth will be measured by growth in GDP consistent with Liu et al. (2018) and Barro (1991) who used the same approach.

### **1.1.3 Budget Absorption and Economic Growth**

Van and Sudhipongpracha (2015) argue that government agencies use diverse fiscal instruments to attain economic growth and social stability. One of these fiscal instruments is government expenditure, a function of budget absorption. National budgeting in the U.S underwent changes as costs of healthcare and social programs expanded and deficits grew. As the economic environment changed, the budgeting strategies changed markedly and there has been immense attention on budgeting, allocation, and absorption of resources. Public budgeting is about accountability, governance, financial management, and pursuance of strategies that deliver optimal public good to the citizens. Budgeting can be conceptualized as a yard stick of what an entity or country intends to achieve using limited resources.

The budget absorption capacity is an aspect that is founded in the context of firm theory but could be extended to national public budgeting (Caragliu & Nijkamp, 2008). Absorption capacity of an agency can be perceived from both the supply and demand sides with the former focusing on the institutional system, created by agencies to manage the funds. The demand side of budgetary absorption capacity on the other hand, encompasses the beneficiaries that use the allocated funds (Zaman & Georgescu, 2009). Understanding the existing needs of the demand side and the capabilities of the supply side with respect to the budgetary absorption framework informs policies to be undertaken to attain economic growth and development.

The EU cohesion policy for instance, ensures that less economically stable states are granted funds for infrastructural development, social stability and overall well-being of the member states. Ines and Lela (2017) note that regional absorption rates of EU depend on their local economic preconditions such as educational level, institutional frameworks, and infrastructure development, and budget deficit. Glennie and Summer (2014) investigated the link between allocation of aid/donor funding and economic growth and noted that it helps in the long run, for countries to modestly grow and alleviate poverty. However, Alavuotunki and Sandström (2019) assert that there is no systematic or causal link amid aid or donor funding and economic

growth. Despite these views, limited content exists in relation to the association between budget absorption (whether funds come from donors or from government revenue) and economic growth.

The dynamic and planned budget absorption process supports the smooth regional economic and social development implying that poor budget absorption could have a negatively affect the national economy (Sudasri, 2016). Laxity in budget absorption could result in three detrimental consequences; first, ineffective fiscal policing; secondly, loss of the benefits of spending the allocated funds, since the funds would now be idle; and thirdly, delayed implementation of national projects that could reduce poverty levels. These aspects, if not properly investigated and dealt with, a nation could develop unhealthy public financial management practices that eventual lead to underdevelopment and slowed economic expansion.

#### **1.1.4 Kenya's Budgeting and Economic Growth**

The effectiveness and efficiency of a nation's public sector is imperative to the success of its developmental projects (World Bank, n.d). Proper financial management, efficient administrative/governance policies, and fair collection and usage of taxes ensure optimal delivery of services to the citizens. Kenya's public sector encompasses the central government, county governments, and development partners and public corporations. The public sector is an integral player in the delivery of services to citizens, and coupled with the recent public sector reforms, it is a lasting policy goal, not only for Kenya but many countries around the world.

Kenya has continually been undertaking reforms in the public sector to enhance efficiency and effectiveness in its governance structures and thus, reforms in the public sector.

Excellent governance and a strong institutional framework are antecedents for economic growth. Mira and Hammadache (2017) argue that the quality of leadership and development strategies positively impact economic growth. Good institutions guarantee that, inter alia, public resources are efficiently accountably utilized so that all citizens have access to desired opportunities. Kanyiga (2006) notes that some of the parameters for access to opportunities

which could in turn drive economic growth usually take regional dimensions. These geographic differences are often as a result of ethnic differences which have been, to an extent, reduced through the Constitution of Kenya 2010 that introduced devolution.

According to Article 201(b) (iii) of the Constitution, one of the core tenets of public finance management is to ensure equitable and efficient allocation of public resources to ensure. The public sector in Kenya, through its diverse institutions, is positioned to ensure economic optimization; a situation where the government (whether national or at the county level) can raise and desirably predict the allocation of the funds raised for the benefit of all citizens. The delay and stalemate on the division of revenue bill among the 47 devolved governments and the national government in 2019 led to poor implementation of projects and inefficient absorption of funds.

## **1.2 Research Problem**

Economic growth is an imperative aspect that governments around the world focus as it influences the quality of life of citizens and is an indicator of good governance (Mira & Hammadache, 2017). Budget absorption influences the growth in a country's economy as resources are committed to development projects that would in turn result in increased economic performance. When funds are misused (leading to low budget absorption rates), the consequences are far reaching, including poverty, high dependence ratio, and reduced levels of infrastructural development (Fayissa & Christian, 2013). The absorption rates for development funds have been exceptionally low over the past decade, with the World Bank (2020) reporting that absorption of donor grants averaged 70% while project loans performed dismally, at only 50% absorption capacity. Some scholars such as Kipkirui (2020) investigated the effects of budget performance on county governments in Kenya and noted that there was low county gross product due to inefficient absorption of allocated funds. Nakitare (2018) on the other hand, researched on factors that influence budget absorption among Kenyan ministries and reported that budgeting process, donor funding, staff administrative capacity, and private sector capacity positively and collectively influence the budget absorption.

The European Union provides a relatable scenario on how budget absorption is an imperative aspect for development in Kenya. The main strategies that the EU adopts to spur economic

growth among its member states is through grants awarded based on diverse financing needs. These needs necessitate the different member states to develop budgets, proposals, and work plans for which funds are granted to implement (Africa Constituency Bureau, 2016). A key factor is the budget granted to each state and its capacity to utilize the financial resources effectively and efficiently. This assertion implies that the absorption capacity of a country can only be understood in the context of a specific project as each of them has a unique set of challenges and constraints that may limit funds absorption capacity.

The first decade after Kenya's independence in 1963 portrayed GDP annual growth rate averaging 6.6% (Kosen & Muturi, 2016). The growth was attributable to public investment and incentives through industrial investments. However, growth in GDP stagnated in the early 1990s and this was sustained for subsequent decades where annual GDP growth averaged 1.5% against the population growth rate of 2.5% resulting in reduction in per capita income. The decline was partly linked to poor policy implementation and government intrusion in the private sector (Kanyinga, 2006). Given the fluctuating nature of economic growth in Kenya, there is a need to focus on how well budgeted funds are allocated and whether efficient use of these resources influences the country's overall economic growth.

The concepts of governance and decentralization cannot be underestimated when investigating how funds allocation and revenue generation as factors influencing budget absorption influence economic growth. Von and Grote (2002) argue that when absorbing structural funds, it is rational to presume both a positive and negative effect from political and economic decentralization (the case of devolution in Kenya). On the positive side, decentralized polities have their own revenue generation mechanisms and institutional structures to effectively absorb funds. However, the negative side is that horizontal coordination across sub-national agencies and entities and vertical coordination with the national government could result in delays in the absorption of funds (Tosun, 2014).

There is limited literature on budget absorption and how it influences economic growth especially from a Kenyan context. There is a need to conduct research as concepts such as budget allocation, revenue collected, and the absorption rate could inform fiscal policy

formulation. The study aimed at expanding literature and sparking debate on budget absorption so that governments can effectively and efficiently use of resources especially on infrastructural development, institutional reforms, and promotion of foreign direct investment. The study used a quantitative research approach aimed at answering the research question, “what is the effect of budget absorption on economic growth in Kenya?”

### **1.3 Research Objectives**

The broad objective of the research was to ascertain the effect of budget absorption on economic growth in Kenya. The specific objectives were:

- i) To investigate the link between annual budget allocation and economic growth.
- ii) To determine the link between budget absorption rate and economic growth.
- iii) To establish the connection between revenue performance and economic growth.

### **1.4 Value of the Study**

This study is vital to the government, especially the national treasury, as it will inform on the implications of annual budget allocation, revenue performance, and budget absorption capacity on economic growth. This information will help the policymakers on decisions to undertake, factors to consider, and predict with near certainty the absorption rates for different government and/or donor funded projects. The study enables policymakers put in place water-tight strategies regarding public finance management at national and devolved unit levels.

The findings promote accountability among national leaders on usage of funds and compliance with the Public Finance Management Act, 2012. Besides that, the study is valuable to future scholars by contributing to the continually changing field of academia and act as an empirical basis for research on budget allocation, absorption rates, and revenue performance of different county/national governments around the world and how they influence economic growth.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

A budget acts as a plan that aids in implementation of public services provided by the state to its citizens. In most cases, the budget is not fully absorbed implying that there is idle money that could have been utilized to fund strategic government activities. Although existing literature discusses budget absorption, the link between budget absorption and economic growth is unclear. This chapter discusses the theories underpinning the study, determinants of budget absorption, examination of empirical research, the conceptual framework, and chapter summary are presented too.

#### **2.2 Theoretical Review**

Budget absorption encompasses allocation of funds based on projected expenditure for a specific project with multifaceted effects to the citizens. This assertion means that there are multiple stakeholders involved; right from revenue generation, allocation of the resources, and finally using those resources to achieve diverse end-goals. The following theories are appropriate in explaining the interrelationships between these aspects: stewardship theory, resource dependence theory, and agency theory.

##### **2.2.1 Stewardship Theory**

The stewardship theory was proposed by Davis, Schoorman, and Donaldson (1997) where they argued that human beings are innately inspired to work for other people or for various entities to achieve goals set for them. The proponents suggest that people are collective-minded and pro-organizational rather than selfish and thus, work to attain organizational, group, or societal goals. When budgeting, the government uses resources entrusted to them by the citizens; in such cases, the government officials are stewards or managers of the public resources owned collectively by the citizens, who are the principals in this case.

This theory is critiqued on the inability to ascertain intrinsic motivation of a steward. The government officials responsible for implementation of the budgets could be influenced by

external factors such as cultural differences and power distance as they interact with peers which cannot be cogently determined (Chrisman, 2019). Another major drawback of this theory is the assumption that stewards will align their interests with those of the principals. In government entities, this is not always the case as there are other external factors, including political ones, that influence how interests are aligned.

The relevance of this theory is anchored on the notion that stewards (government officials) and the principals (citizens) have goal congruence. This assertion means that stewards manage the resources of the principals by acting responsibly and aligning their goals with an aim of attaining positive growth and development, in this case, economic growth (Nakitare, 2018). Stewardship ensures that the budgeted funds are efficiently and effectively utilized to accomplish strategic goals.

### **2.2.2 Resource Dependence Theory**

The resource dependence theory (RDT) was initiated by Pfeffer and Salancik (1978) where they characterized a firm as an open system relying on exigencies in the external environment. The success of the organization is affected by its ability to gather and utilize resources from the external environment. For one to understand an organization, they need to understand the context or the ecology within which the said organization operates.

While the RDT is relevant in explaining the interdependencies, the theory has a limitation as the external environment cannot be wholly controlled. Thus, the efforts by stakeholders tasked with utilization of public resources do not have power over issues such as conflicts, natural calamities, and cultural orientations of the different communities where the budgeted funds need to be absorbed. Too much dependency of the organization on the environment creates uncertainty thus exposing the implementers of the budget to the risk of external control (Hillman, Withers & Collins, 2009).

Despite the above criticism, the RDT is relevant to this study as it seeks to expound how the government (the organization) obtains and uses resources obtained in the external environment. The dependence on the private sector, citizens, donors, and other development

agencies to finance government operations and influence key government interventions justifies the relevance of RDT to this study.

### **2.2.3 Agency Theory**

Jensen and Meckling (1976) proposed the agency theory in which they explain the contractual link amid principals and agents. The principals give the authority to the agents to work for and on their behalf. In the context of budget allocation and absorption, the citizens could be conceptualized as the principal while the various government ministries, agencies, and departments to which the resources are entrusted to implement projects, are agents. The agency theory is founded on multiple principles: goal conflict, self-interest, and bounded rationality, among others. These principles imply that agents and principals may have conflicting goals, self-interested, and thus make sub-optimal decisions that may not benefit all the stakeholders.

The agency theory is critiqued for its narrow application. The theory is only relevant in cases where there is goal incongruence or where the motives of the agents and principals conflict. However, this is not usually the case as there could be instances where the agent works in perfect compliance with what the principal wants (Arthurs & Busenitz, 2003). The agency theory cannot enable the citizens, for instance, to identify the inflection point at which those charged with the implementation of the budget alter their interests and goals to be self-serving rather than focusing on effectively and efficiently utilizing the resources to benefit all citizens. Despite the criticism, the agency theory's relevance to this study is premised on understanding the relationship between the citizens (principal) and the government (the agent). The theory is critical in understanding how the agent uses the resources (budget) provided by the principal to achieve specific outcomes.

### **2.3 Determinants of Economic Growth**

There are multiple factors that determine economic growth: physical resources, human capital, fiscal and monetary policies, and advancements in technology, among other variables. The aim of this study was to examine the impact of budget absorption on economic growth. Factors used to measure budget absorption included budget absorption rate, budget allocation, and revenue performance.

### **2.3.1 Budget Allocation**

Budget allocation involves a series of activities of budgeting, control, accounting, monitoring, and evaluation which influence resources utilization and income distribution (Osore, 2019). A robust budget allocation framework is imperative in accomplishing strategic government objectives. Given its significance, there is a need for pragmatic steps to accommodate diverse players to manage relationships, improve outcomes, and institute internal controls that will ensure attainment of the pre-determined budgetary goals (Wolde-Rufael, 2008). These assertions imply that aspects of good governance, accountability, and public financial management capacity become center-stage in ensuring that the allocated resources are effectively used.

When the budgeted funds are effectively allocated, service delivery, development of infrastructure, and institutional reforms are achieved. These developments are antecedents to improved business environment that can be optimized to increase economic growth. However, in case the budgeted funds are not allocated to their planned sectors, attainment of economic growth becomes elusive. Wagner (2007) contends that there is a direct connection amid budget allocation and economic growth. However, if the allocated funds are meant to fund recurrent expenditure rather than development programs, it becomes difficult to achieve economic growth (Cannon & Ali, 2018).

### **2.3.2 Budget Absorption Rate**

According to the Institute of Economic Affairs (2016), absorption rate is the portion of actual expenditure from the budgeted expenditure. Budget absorption rate is the capacity of an organization to productively utilize its allocated resources (Katsarova, 2013). Funds allocated to government ministries, departments, and agencies determine the execution of yearly work plans and development projects. While investigating the effect of European Union structural funds absorption rate on short-term economic growth, Albuлесcu and Goyeau (2013) note that the main factors that influence absorption rate include the applicants' ability to write proposals for projects to be funded, the whole system implementing and monitoring the projects, and

institutional and corruption problems. These findings spur interest on how absorption rate could influence economic growth in Kenya's public sector.

### **2.3.3 Revenue Performance**

Government revenue relates to the funds received from external sources, net of repayments and other adjusting items, proceeds from debt and intragovernmental transfers (Ahmed, 2010). The funds received from accounting funds, agency, private and trust funds within a given fiscal period for the government in question. Revenue performance influences economic growth as taxes that discourage investments in physical and human capital could be damaging to the economy. The government can invest in infrastructure and institute legal or regulatory frameworks that encourage private sector investment; for instance, technological innovation, which could facilitate economic growth (Ayres and Warr, 2006).

One of the general hypotheses that most scholars agree is that developing economies have to continually mobilize resources to enhance economic growth (Wilford & Wilford, 1978). While developed nations provide donor funding, they cannot be relied on to drive and influence the development process. This assertion implies that mobilization of resources requires implementation of an effective tax and fiscal policy. This government revenue is important as it facilitates budgeting and expenditure, which if efficiently absorbed, could maximize social and economic welfare. As such, fiscal policy that aligns government revenue and expenditure is an imperative facet that promotes sustained expansion in output, income, investments, and employment - core determinants of economic prosperity (Ahmed, 2010).

### **2.4 Empirical Studies**

Kosen and Muturi (2016) researched on the effect of sectorial government expenditures on economic growth of Kenya between 1970 and 2011. OLS regression analysis was used and it was noted that expenditure on agriculture and education had a substantial effect on fiscal expansion. Expenditure on the rest of the key economic sectors showed positive but insignificant link with economic growth. The findings in this study are vital as they can guide policy formulation on what strategic projects that government needs to focus on. The limitation

of this study is that it does not focus on the absorption rates of the resources allocated to each of the selected economic sectors.

Babatunde et al. (2017) explored the link between taxation revenue and economic growth in 16 selected African for the period 2004 to 2013. Panel data analysis was used where data derived from secondary sources was analyzed using the ordinary least squares (OLS), fixed effects model specification method. The authors noted a significant positive link amid tax income and economic prosperity in Africa. This follows that taxation is an integral fiscal tool that promotes economic growth and that governments need to continually revise their policies to respond to the changing global business environment, changes in exchange rates, devaluation of currency, pandemics, and rising oil prices. This research was well conducted as it entailed multi-phase estimation tests to ensure robustness of the findings though the sampling method used is not explicitly stated and why the 16 selected countries were chosen.

Egbunike, Emudainohwo, and Gunardi (2018) conducted a cross-national research to examine link between tax income and economic between Ghana and Nigeria for the year 2000 to 2016. It was noted that there was a positive and significant association between gross tax income and economic growth in the two countries. The authors used a long study period (17 years) necessitating the use of panel data analysis and the findings from the study are considered accurate and reliable. However, the study uses gross tax revenue regardless of the levels of tax revenue absorption in the two chosen countries. The study lays a solid foundation for subsequent studies on the connection between tax and economic policy and makes suggestions for improving fiscal policy formulation.

Nakitare (2018) studied budget absorption in Kenya's public sector. The period was 2011/12 to 2015/16 and data was collected from 21 ministries. Both primary (semi-structured questionnaires) and secondary data were used where a cross-sectional study design was used, and regression analysis adopted to learn the connection between the predictor and dependent variables. The author noted that the budgeting process, staff capacity, private sector capacity, and donor funding have positive and significant influence on budget absorption among Kenyan

ministries. The study was well conducted though the study period was short so this could impede the reliability of the findings.

While investigating the effect of budget allocations on economic sectors in Indonesia's Sulawesi Province, Geo, Ariani, and Abapihi (2020) found out that determining specific proportions to be allocated to diverse sectors result to increased GDP. The scholars use a case study approach and regression analysis to analyze 16 economic sectors over the period 2010 to 2018. The study contends that through identifying high impact rather than low impact sectors to allocate funds. The study has a clear model, but it is very simplistic as the coefficients of the regression model are considered as the proportions that the government can use to allocate funds to the chosen economic sectors. There is no empirical and theoretical backing for these assertions implying that there is a need to conduct more research in this area.

Mohamed (2019) analyzed the budget performance of county governments in Kenya for the fiscal years 2013/14 to 2016/17. The determinants of budget performance considered included revenue performance, expenditure, and absorption rates. A correlational descriptive research design was adopted, and it was noted that low amounts of expenditure were used for development and that counties had different budget absorption rates with some utilizing the resources effectively for their intended goals while others lacked the capacity to utilize the resources. The study does not explicitly state the number of counties that had the highest or lowest absorption rates and expenditure performance but forms an important foundation for studies on budget absorption among county governments in Kenya.

Albassam and Camarero (2020) evaluated adeptness of government spending using data from 71 countries over a period ranging from 1996 to 2017. The objective was to set up a model that helps governments effectively allocate resources to meet the objectives of addressing unemployment and spurring economic growth and sustainable development. The study adopted the partial least squares to analyze the relationship between six factors and government expenditure. The results showed that economic complexity is the strongest predictor, followed by human development, unemployment rate, government effectiveness, and economic growth. National debt was not a significant determinant for the allocation government expenditure.

This model is an imperative basis for improving research on government expenditure, absorption rates, and how they collectively influence economic growth.

## 2.5 Conceptual Framework

The proposed study incorporates stewardship, agency, and resource dependency theories to describe the link between budget absorption and economic growth. The stewardship and agency theories imply contractual relationships where agents/stewards work on behalf of the principals; the same way government officials in different ministries, agencies, and departments are entrusted with government resources to spend on behalf of the citizens. Besides, the resource dependence theory posits that these institutions rely on others for support and the contingent factors in the environment; political, cultural, and institutional policies also influence the efficiency in resources utilization. The figure below shows the relationships among the study variables.

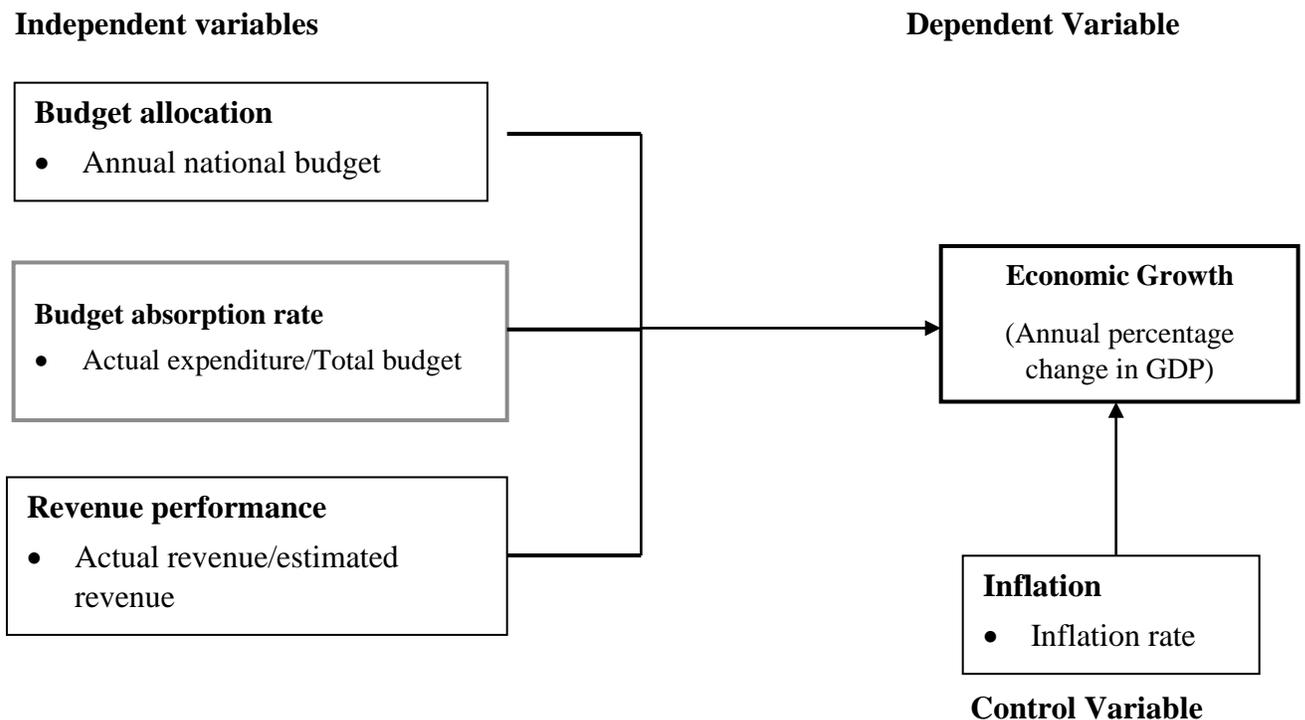


Figure 2. 1: Conceptual Model.

## **2.6 Summary of Literature Review**

Research on the impact of budget absorption on economic growth has had mixed findings. For instance, Babatunde, Ibukun, and Oyeyemi (2017) and Geo, Ariani, and Abapihi (2020) found out that determining specific proportions of resources to be allocated to different sectors influenced economic growth. Some studies such as Mohamed (2019) and Nakitare (2018) investigated budgeting at county levels and factors that influence budget absorption in Kenya respectively. There is limited research on the connection between budget absorption and economic growth in Kenya - a gap that this study intends to fill. The present focuses on how budget absorption influences economic growth within the context of Kenyan national ministries.

The theoretical and empirical reviews conducted in the preceding sections of this paper are important guides and framework for making the conclusions from this study concrete and reliable. The three theories and literature from around the world on the concepts of budgeting, government expenditure, resources allocation and budget absorption determinants are vital in reaching solid conclusions on the association amid budget absorption and economic growth in Kenya. There is no conclusive finding on the link amid budget absorption and economic progression in Kenya and the study fills this gap by focusing on budget absorption rate, revenue performance, and budget allocation (as proxies for budget absorption) and how they are related to economic growth, measured by the percentage change in GDP.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter highlights the research design, the population of the study, data collection and analysis approaches, and diagnostic tests. Besides, the description of how validity and reliability of the data were tested is presented in this section.

#### **3.2 Research Design**

The research used a descriptive research design. Cooper and Schinlder (2003) state that a descriptive design focuses on describing a phenomenon. The descriptive research design is preferred as the findings could be generalized to a larger population. Descriptive approaches depict an exact perspective of people, events, or situations through observation and interpretation approaches (Mugenda & Mugenda, 2003). This design is selected because the objective was to provide a clear picture of the relationship between budget absorption and economic growth in Kenya.

#### **3.3 Population of the Study**

The study targeted all the 21 ministries in Kenya as shown on Appendix I. Given that the population size is relatively small, a census was used to collect information from all the ministries. Mugenda and Mugenda (2003) argue that population sizes for study units fewer than 100 should adopt a census approach to increase accuracy and reliability of then findings.

#### **3.4 Data Collection**

The study used secondary data from Kenya National Bureau of Statistics (KNBS), Central Bank of Kenya (CBK), and the National Treasury, office of the controller of budget (OCOB), and ministry records. The use of secondary data from the mentioned sources is preferred as the information from them is reliable and accurate to enable the researcher to determine the link amid research variables. Data on total budget, expenditure allocations to different sectors, and gross domestic product was collected for the fiscal periods between 2015/16 and 2019/20.

### **3.5 Diagnostic Tests**

Diagnostic tests are performed to ascertain the validity and reliability of the findings. The following tests were conducted: normality, multicollinearity, and heteroscedasticity.

#### **3.5.1 Normality Test**

This is an initial step when one intends to use regression analysis to ascertain the relationships between variables. Data that is not normally distributed could distort the significance levels of the analysis leading to biased results (Nakitare, 2018). In this study, the normality plot and Shapiro Wilk tests were used to ascertain normality of the data collected. If data was not normally distributed, it was checked for outliers, standardized, or transformed to be standard before analysis.

#### **3.5.2 Multicollinearity Test**

When two or more independent variables are linearly related, the relationship between them and the dependent variable could weaken and thus make the findings unreliable. To detect this, the variance inflation factor (VIF) test was used; values between 1-10 indicate no presence of multicollinearity and values below 1 or greater than 10 portray some degree of collinearity. To control this, independent variables that show multicollinearity were standardized or dropped to make the findings reliable.

#### **3.5.3 Heteroscedasticity**

Data that is not homoscedastic inflates the standard errors (the variance is different across the data spectrum observed) leading to changes of committing type II errors (failing to reject a false hypothesis). To test for the presence of heteroscedasticity, a scatter plot of the residual against the predicted values was done. Standardization or transformation was used to cure heteroscedasticity, if any.

#### **3.5.4 Model Fitting**

Regression analysis for time series data is preceded by an analysis as to whether to use the random or fixed effect model. The aim of the analysis is to determine whether the regression model meets all the requirements of classical linear regression model.

### 3.6 Operationalization and Measurement of Variables

The independent variable, budget absorption was operationalized using three distinct determinants namely: budget allocation, budget absorption rate, and revenue performance. To measure each of these determinants the following formulae was used:

Budget allocation = Actual total national budget for period, t.

Budget absorption rate = Actual expenditure/ Total budget for period, t. This formula is similar to what Nakitare (2018) and Kipkirui (2020) used as a proxy for measuring budget absorption.

Revenue performance = Actual revenue/ estimated revenue for period, t.

The dependent variable, economic growth, was operationalized and measured by the annual percentage growth in total gross domestic product. This approach was selected consistent with Liu et al. (2018) and Barro (1991) who measured economic growth using the same approach.

### 3.7 Data Analysis

Data that was collected over the five fiscal year period was coded and analyzed using the statistical package for social sciences (SPSS) version 23. Descriptive statistics be used to show the relationship between budget absorption predictor variables and economic growth (annual percentage change in GDP).

#### 3.7.1 Analytical Model

This analytical model presents the link between the independent variable (budget absorption) that is proxied by budget allocation, budget absorption rate, and revenue performance and the dependent variable, economic growth, that is measured by annual percentage change in GDP.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where;

$Y$  = Annual percentage change in GDP

$\beta_0$  – Constant

$\beta_1$ -  $\beta_3$  – Regression Coefficients

$X_1$  – Actual total national Budget at period, t.

$X_2$  – Actual expenditure/ Total budget for period, t.

$X_3$  – Actual revenue/ estimated revenue for period, t.

$\varepsilon$  – Error term

### **3.7.2 Test of Significance**

The study used a significance level of 95%. The results were considered statistically significant at the 0.05 confidence level. Inferential statistics informed the determination of the accuracy of the model in forecasting the association amid budget absorption and economic growth in Kenya's public sector. The regression analysis portrays the values of R and adjusted R-squared which portrayed the extent of correlation among the study variables and the extent to which the dependent variable is influenced by the independent variables respectively. The analysis of variance (ANOVA) was also conducted to explain the strength of the regression model and to explain the dependent variable's changes.

## CHAPTER FOUR

### DATA ANALYSIS, RESULTS, AND DISCUSSION

#### 4.1 Introduction

This chapter presents results from analysis of collected data including assumption tests, and an interpretation of obtained findings.

#### 4.2 Descriptive Statistics

*Table 1: Descriptive Statistics*

**Table 4.1: Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
GDPgrowth_In	105	2.64	3.69	2.9696	.12108	.454	.913	-1.169	2.000
AbsorptionRate_In	105	5.19	4.45	4.5181	.02569	-.315	.913	-2.210	2.000
RevPerformance_In	105	2.47	4.19	2.9491	.12155	-.612	.913	.004	2.000
Inflation_In	105	2.69	2.99	2.9720	.00991	.861	.913	.379	2.000
BudgetAllocation_In	105	2.85	3.20	2.9864	.00872	.413	.913	-1.854	2.000
Valid N (listwise)	105								

Source: Research Findings

The table above presents descriptive statistics for growth in GDP, inflation rate, absorption rate, and revenue performance for data collected from 2015/16 to 2019/20 financial years from the 21 ministries. The minimum and maximum values, as well as the standard deviation figures indicate the data range and variation from mean value with the highest deviation being under revenue performance and lowest on budget allocation. The variables - budget allocation, growth in GDP, inflation rate, absorption rate, and revenue performance were obtained in trillion shillings and thus, natural logarithm figures of the collected data were calculated for use in analysis. The descriptive statistics for these variables, as presented in the table above, were also calculated from their respective natural logarithms.

### 4.3 Inferential (Regression) Analysis

Regression analysis was conducted to obtain the preferred model of the study. However, various tests were conducted as prerequisites of evaluating the variables suitability in the development of a linear model. the following subsection presents analysis findings from these assumption tests.

#### 4.3.1 Assumptions testing

**Linearity:** Linearity tests help in establishing the presence of autocorrelation, multicollinearity, linear relationship, and multivariate normality between the dependent variable and each of the independent variable. Multicollinearity is a serious problem when conducting regression analysis as it shows how two or more predictor variables are correlated. By having predictor variables with high levels of collinearity, the variables in question could be considered redundant as they would be measuring the same aspect (in most cases the analytical tool automatically drops them from the regression model). In this study the variance inflation factor (VIF) was used. The rule of the thumb is that  $VIF > 10$  indicates high multicollinearity and warrants further investigation of the selected predictor variables. From the table below, VIF values are less than 10 implying that there was no significant multicollinearity amid the research variables investigated in this research.

*Table 2: Test for Multicollinearity*

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Inflation_In	.855	1.170
2	(Constant)		
	Inflation_In	.060	6.762
	AbsorptionRate_In	.586	1.708
	BudgetAllocation_In	.046	2.757
	RevPerformance_In	.642	1.559

Source: Research Findings

**Heteroscedasticity:** Heteroscedasticity is an imperative aspect in regression analysis especially for data collected over time. Heteroscedasticity implies that the variance of error terms of the variables under consideration is not constant over time. This condition has to be met for the regression results to be reliable; to avoid making type II errors or failing to reject a false null hypothesis. In this study, a scatter plot of the regression residuals was used in which it was concluded that the data met the heteroscedasticity condition.

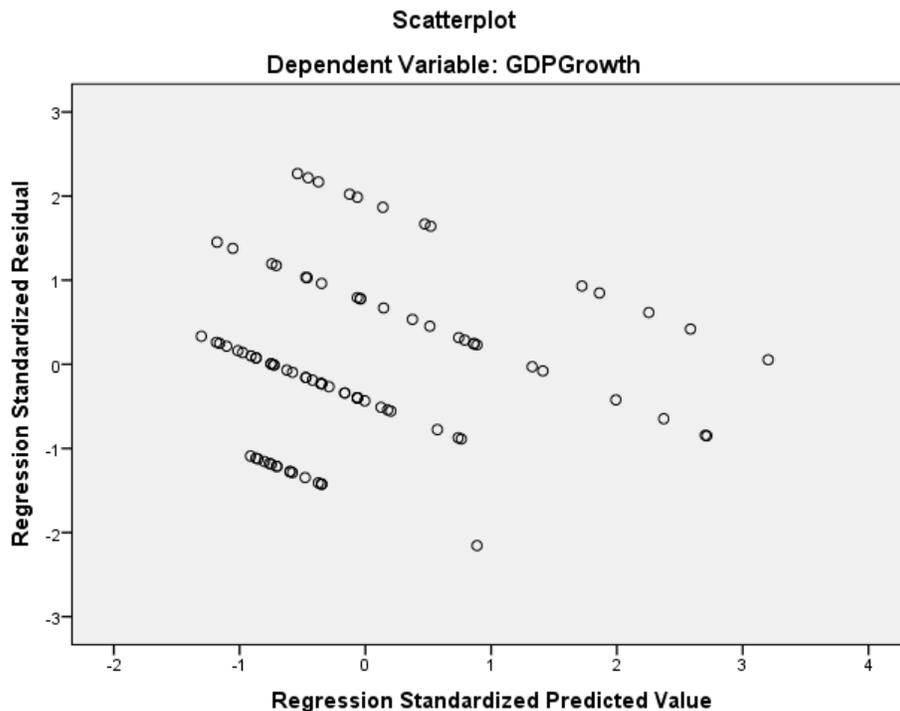


Figure 2: Dependent variable and independent variables scatter plot

Source: Research Findings

**Normality:** Normality tests as done using a standardized residual P-P plot helps in assessing whether a set of variables is normally distributed. A Normal plot of GDP growth as a standardized residual of the linear model with the independent variables shows that the model is normal and linear. The normal P-P plot below shows that the data passes the normality and linearity tests since error terms are within the normal line and that insignificant deviations exists from the line.

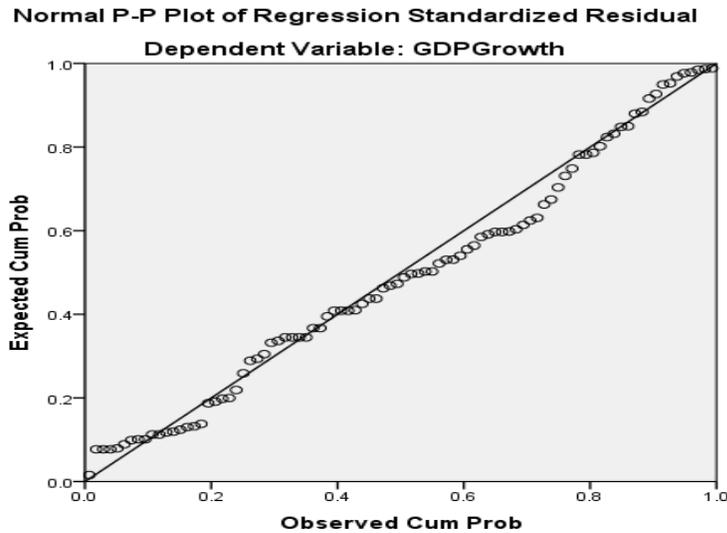


Figure 3: Normal P-P scatter graph of Regression standardized residual

Source: Research Findings

Besides the normal p-p plot, the Shapiro-Wilk test, Kolmogorov-Smirnov test, and graphical analysis (histogram) were used to evaluate the normality of the linear model between the dependent variable and the independent variables. The table below shows results from Shapiro-Wilk and Kolmogorov-Smirnov tests of normality. From the table, the respective p-values for each variable is greater than 0.05 which justifies rejection of the null hypothesis and conclusion that the data is normally distributed.

Table 3: Tests of Normality

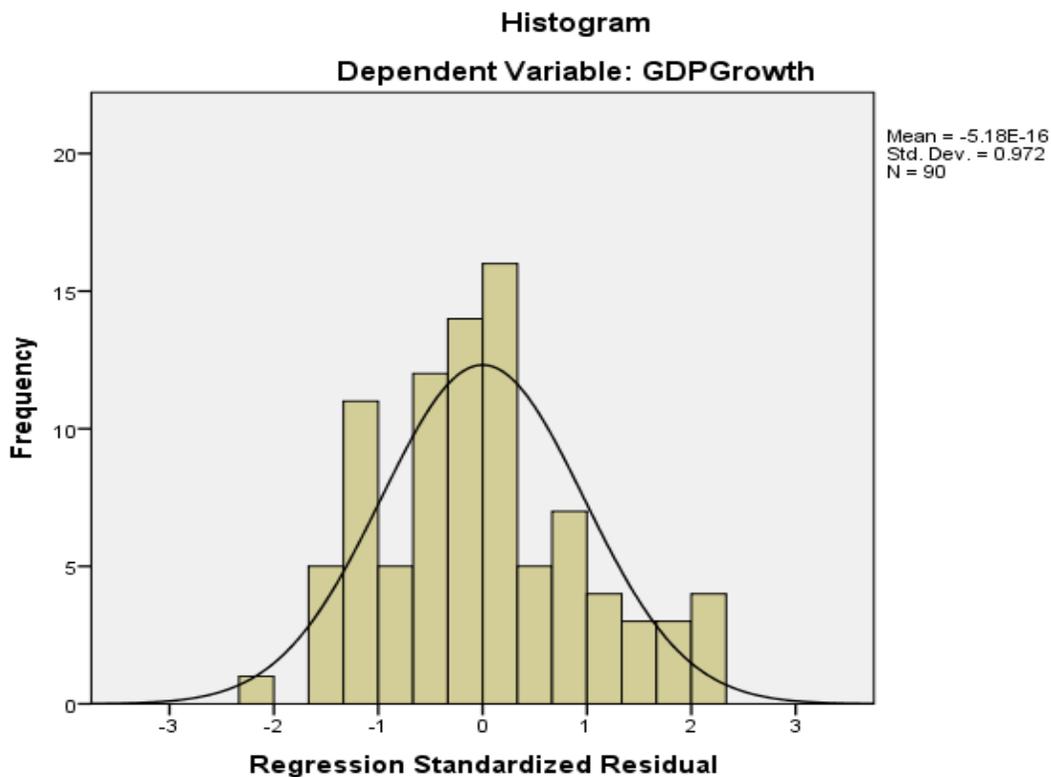
Tests of Normality						
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
GDPgrowth_In	.167	105	.200 <sup>*</sup>	.957	105	.745
AbsorptionRate_In	.213	105	.200 <sup>*</sup>	.902	105	.572
RevPerformance_In	.256	105	.200 <sup>*</sup>	.962	105	.574
Inflation_In	.211	105	.200 <sup>*</sup>	.967	105	.677
BudgetAllocation_In	.189	105	.200 <sup>*</sup>	.956	105	.963

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Source: Research Findings

A graphical analysis of the data through development of a histogram helps in determining how the data is normally distributed from its measures of central tendency (mean and median). The data's histogram, as illustrated in the figure below, indicates that the data is normally distributed with the normal line having a bell-shape.



*Figure 4: Histogram*

Source: Research Findings

#### **4.3.2 Test of Coefficient**

Having satisfied the assumptions for regression analysis for each set of the dependent variable and independent variables, a hierarchical regression analysis was conducted to determine the control effect of inflation rate as illustrated in the results below.

Table 4: Models Summaries

Model Summary <sup>c</sup>									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.338 <sup>a</sup>	.114	.080	74.39727	.114	3.351	3	102	.043
2	.936 <sup>b</sup>	.877	.858	29.19117	.763	58.153	4	101	.000

a. Predictors: (Constant), RevPerformance\_In, AbsorptionRate\_In, BudgetAllocation\_In

b. Predictors: (Constant), Inflation\_In, RevPerformance\_In, AbsorptionRate\_In, BudgetAllocation\_In

c. Dependent Variable: GDPgrowth\_In

Source: Research Findings

The table above indicates the significance of models 1 and 2 as well as their R and R-Square values. Model one (with inflation as the independent variable) has an R of 0.338 which is a weak relationship between the GDP Growth and Inflation. Additionally, only 8% variation in the dependent variable is explained by the model as indicated by the 0.08 R-Square value. Nevertheless, the model is statistically significant with a p-value of 0.043. Model 2 uses inflation, revenue performance, absorption rate, and budget allocation as independent variables. The model is significant with a p-value of 0.000 and an R coefficient of 0.936. additionally, from the R-square of 0.877, 87.7% of the variability in the dependent variable is explained by the model.

Table 5: ANOVA Results

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	99.37	3	99.370	3.351	.043 <sup>b</sup>
	Residual	1187.604	102	49.484		
	Total	1286.974	105			
2	Regression	187.124	4	46.74	47.7	.000 <sup>c</sup>
	Residual	149.858	101	7.136		
	Total	336.982	105			

a. Dependent Variable: GDPgrowth\_In

b. Predictors: (Constant), RevPerformance\_In, AbsorptionRate\_In, BudgetAllocation\_In

c. Predictors: (Constant), Inflation\_In, RevPerformance\_In, AbsorptionRate\_In, BudgetAllocation\_In

Source: Research Findings

The table above shows analysis of variance results of the two regression model. The results show how the response and explanatory variables' variables is illustrated by their respective linear models. The obtained p-values (less than 0.05) shows that the variableness in the two models is significant.

Table 6: Hierarchical regression coefficients

		Coefficients <sup>a</sup>		Standardized		
		Unstandardized Coefficients		Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	-116.222	90.591		-1.283	.422
	BudgetAllocation_In, X1	3.450	3.222	.684	1.071	.478
	AbsorptionRate_In, X2	5.904	18.891	.193	.313	.007
	RevPerformance_In, X3	17.421	11.310	.895	1.540	.006
2	(Constant)	133.468	.000		1.441	.156
	BudgetAllocation_In, X1	-2.829	.000	-.561	-.122	.904
	AbsorptionRate_In, X2	-30.741	.000	-1.003	13.566	.000
	Revenue Performance, X3	-12.997	.000	-.668	2.207	.032
	Inflation_In	-1.141	.000	-2.005	-.983	.020

a. Dependent Variable: GDPgrowth\_In

Source: Research Findings

From this result, the analytical model evaluated in this study is explained by the linear equation;

$$GDP\ Growth = -116.222 + 3.450 * Total\ Budget + 5.904 * Budget\ Absorption\ rate + 17.421 * Revenue\ Performance + 0.7439$$

As a controlling variable, inflation has a reducing (negative) effect on both the dependent variable and each of the independent variables in the model as illustrated in hierarchy two in the results above.

#### 4.4 Interpretation and Discussion of Findings

The present study aimed at developing an analytical model that illustrates the link between the independent variable (budget absorption) as proxied by budget allocation, budget absorption rate, and revenue performance and the dependent variable, economic growth. Through the

model, the research expected to establish the link between annual budget allocation and economic growth; budget absorption rate and economic growth; and revenue performance and economic growth as highlighted in research objectives.

From the findings above, there exists positive relationship between economic growth and annual budget allocation, budget absorption rate, and revenue performance. This is because each of the variables have a positive linear coefficient in the model which indicates that an increase in each variable result in increased economic growth. Among these three independent variables, revenue performance has the greatest impact with a coefficient of 17.421. High levels of budget allocation, absorption and revenue performance, increases the amount of finances in circulation in the economy, and consequently, the available resources for economic growth. As a result, such conditions are expected to steer positive economic growth through increased GDP values. This relationship, as explained by Economic Affairs (2016), agrees with the findings obtained in this research.

Inclusion of inflation in the model leads to reduction of independent variables coefficients to negative values. As a result, the controlling nature of inflation is reduction of economic growth, budget allocation, budget absorption rate, and revenue performance. With increased inflation, there is limited ability by government to steer resource utilization for increased gross domestic product (Babatunde, Ibukun and Oyeyemi, 2017). In this regard, it is expected that increase in inflation would lead to decreased economic growth, revenue performance, and budget allocation as more resources will be used in reconciliation of inflation aftermath (Mohamed, 2019). This relationship explains the negative control nature of inflation rate on this study's model.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION, AND RECOMMENDATION**

#### **5.1 Introduction**

The present chapter provides a summary of the study's findings as well as conclusion inferred from the results. Additionally, the chapter reviews factors that limited the optimal achievement of the objectives and further uses them to establish recommendations and suggestions for future studies.

#### **5.2 Summary**

The current research sought at establishing how economic growth is impacted by budget allocation, revenue performance, and budget absorption as well as how these explanatory variables are influenced or controlled by inflation. Data used in the study was obtained from government databases through the central bank, and the controller of budget for the duration 2015/16 to 2019/20. As much as the study sought to provide theoretical and academic development on economic growth factors and indicators, the findings are equally significant for utilization by government ministries for policy development, budgetary allocation for improved economic growth by GDP.

#### **5.3 Conclusion**

Economic growth can be explained using the factors of budget allocation, budget adoption, and revenue performance as justified from the obtained results. Nevertheless, some aspects can be concluded from the nature of the model obtained from analysis of collected data. From the findings, it can be inferred that the country's revenue performance levels contribute most significantly towards its economic growth compared to budget allocation and adoption. The study, therefore, concludes that economic growth is more influenced by how well the country utilizes its revenue and finances allocated through budgets than how much is allocated or absorption levels. This implies that efficiency in finances management is critical towards improvements in economic growth. In addition to this, budget absorption rate has greater bearing on economic growth than budget allocation.

Consequently, good budgetary absorption levels have an imperative contribution towards economic growth irrespective of budget allocation figures. Consequently, it can be concluded that achievement of good economic growth can be achieved through enhancement of good revenue performance and budget absorption levels. Inflation lowers the purchasing power of a country's currency. As such, it is expected to limit its ability to achieve significant levels of economic growth. This relationship was evident from the results obtained. The regression models indicate that increase in inflation impacts both economic growth as well as revenue performance, budget allocation, and absorption. With high inflation levels, the economic growth is limited due to increased cost of commodities. Additionally, finances that would have otherwise been used to steer economic growth are used to cushion the nation from the impacts of inflation.

#### **5.4 Limitation of the Study**

National data from 2015/16 to 2019/20 financial years was used during the study. The narrow scope of the data used could have contributed to inability maximal reliability and validity of the results obtained. The data may not be an accurate presentation of budget allocation and revenue performance due the duration limitation and the variation in performance in the quarters of a financial year.

#### **5.5 Recommendation for Policy and Practice**

Based on findings obtained, this study would like to make following recommendations on economic growth through revenue performance, budget allocation, and budget absorption. While having sufficient finances would help in economic growth, the study recommends enhancement of budget absorption rates instead. With more finances without control of absorption and performance, these would lead to inflation. In addition to this, the study recommends that budgetary allocation authorities and budget controller to necessitate on revenue performance growth as the factors contributes most significantly towards economic growth. Finally, maintaining a balance on factors that can contribute to increasing levels of inflation would help in improving economic growth as the former leads to decrease in economic growth.

## **5.6 Suggestions for Further Research**

From the set of limitations identified herein, the present study suggests future researchers to consider the evaluation of budget allocation and revenue performance from the different departments or counties within the country to have a wider perspective on how these independent variables affect economic growth. In addition to this, collecting quarterly data would help in providing more reliable results for inferential analysis.

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## **Appendix I: Ministries in Kenya**

1. Ministry of Interior and Co-ordination of National Government
2. Ministry of Defense
3. The National Treasury and Planning
4. Ministry of Foreign Affairs
5. Ministry of Industry, Trade & Co-operatives
6. Ministry of Health
7. Ministry of Agriculture, Livestock, Fisheries and Irrigation
8. Ministry of Transport, Infrastructure, Housing, Urban Development and Public Works
9. Ministry of Devolution and the ASALS
10. Ministry of Information, Communication and Technology (ICT)
11. Ministry of Sports, Culture and Heritage
12. Ministry of Education
13. Ministry of East African Community (EAC) and Regional Development
14. Ministry of Labor and Social Protection

15. Ministry of Tourism and Wildlife
16. Ministry of Environment and Forestry
17. Ministry of Water and Sanitation
18. Ministry of Lands and Physical Planning
19. Ministry of Energy
20. Ministry of Petroleum and Mining
21. Ministry of Public Service, Youth and Gender

**Appendix II: Data Collection Form**

<b>QUESTIONS</b>	<b>VARIABLE</b>	<b>Source: Financial reports (KNBS, OCOB, OAG and CBK)</b>	<b>2015/16</b>	<b>2016/17</b>	<b>2017/18</b>	<b>2018/19</b>	<b>2019/20</b>
<b>A</b>	<b>INDEPENDENT VARIABLES</b>						
1.	Actual expenditure	OCOB, KNBS					
2.	Total budget	OCOB, KNBS					
3.	Actual Revenue	OAG, KNBS					
4	Estimated Revenue	OAG, OCOB					
<b>B</b>	<b>DEPENDENT VARIABLE</b>						
5	Annual % growth in GDP	KNBS					