Strathmore
UNIVERSITY

Revenue allocation and expenditure in counties: The rift between recurrent and development expenditure in Public Finance Management.

Daisy Edel Ekappel – 101431

Submitted in partial fulfilment of the requirements for the Degree of Bachelor of Business Science in Financial Economics at Strathmore University

Strathmore Institute of Mathematical Science
Strathmore University
Nairobi, Kenya

February, 2021

DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the Research Project contains no material previously published or written by another person except where due reference is made in the Research Project itself.

Ekappel Daisy Edel ..... [*Name of Candidate*]

..... [*Signature*]

10/02/2021 ..... [*Date*]

This Research Project has been submitted for examination with my approval as the Supervisor.

Mdoe Idi Jackson, Ph.D ..... [*Name of Supervisor*]

..... [*Signature*]

10/02/2021 ..... [*Date*]

Strathmore Institute of Mathematical Sciences

Strathmore University

ACKNOWLEDGMENTS

First and foremost, I give praise and thanks to God Almighty for His blessings and favour upon me and for the grace and strength to start and complete this research project successfully.

I wish to express my sincere gratitude to Dr. Jackson Idi Mdoe, for his wise counsel and his academic guidance throughout the process.

I am extremely thankful to my parents for their love, prayers and sacrifices for my education. I am also deeply grateful for my friends and colleagues who have walked this journey with me until the end.

ABSTRACT

Decentralization of fiscal functions has enabled counties in Kenya to control their expenditure under the guidelines of the Public Finance Management Act. The first objective of this study is to investigate the factors that cause the rift in the distribution of revenue between recurrent and development expenditure in different counties in Kenya. The population of the first analysis in this study was all the 47 counties. The data was collected over a six year period from financial year 2013/2014 until 2018/2019. The study used a two-step system GMM estimation method to treat the Nickel Bias found in the dynamic panel data. The ratio of recurrent to development expenditure was the dependent variable which represented the rift. The findings from this study showed that revenue, personnel emoluments and the election period were determinants affecting the rift between recurrent and development expenditure. The second objective of this study is to establish the factors that make some counties fail to absorb their development budget. Data was collected from 10 randomly selected counties over the six year period. The second analysis also used a two-step GMM estimation method and the results showed that only own-source revenue had an effect on the development absorption rate.

Keywords: Recurrent expenditure, development expenditure, Development Budget absorption, Public Finance management, decentralized system.

Table of content

List of Abbreviations

A-B Arellano-Bond Test

AR Autoregressive model

COB Controller of Budget

CRA Commission on Revenue Allocation

CRF County Revenue Fund

FY Financial Year

GNP Gross National Product

GMM Generalized Method of Moments

IDP Internally Displaced Persons

PE Personal Emoluments

PFM Public Finance Management

O&M Operations and Maintenance

OLS Ordinary Least Squares

OSR Own-Source Revenue

List of Tables and Figures

CHAPTER ONE

INTRODUCTION

1.1 Background

Until the promulgation of the Constitution of Kenya on 27th August, 2010, the country was divided into 8 provinces. This changed after Article 6 of the Constitution of Kenya 2010 established 47 counties as the units of devolved government. Some of the objectives of the devolved government system are to break up the centralization of power by decentralizing state organs and enhancing the separation of powers, to ensure equitable sharing of national and local resources throughout Kenya; to promote social and economic development; to ensure equitable sharing of national and local resources throughout Kenya and; to recognize the right of communities to manage their own affairs and to further their development.

With this, the county governments became independent systems of governance that manage their own affairs. Even with the reforms that came with decentralization of powers in the new constitution, fiscal decentralization is a new framework that was adopted to allow fiscal functions and powers to be shared between the National and the County government.

With every financial year, the National Treasury allocates a portion of the money to go to the Consolidated Fund which is fund that contains the annual total revenue that is distributed to the 47 counties. The Controller of Budget (COB) approves the transfer of equitable share of revenue from the Consolidated Fund to the various County Revenue Funds (CRFs) in accordance with Article 206 (4) of the Constitution of Kenya 2010. We aim to examine the level of efficiency and effectiveness in service delivery in counties by studying the county expenditure relative to total revenue which is ideally monitoring the absorption rate of various

counties and by checking whether counties are adhering to the legislative measures and regulations on expenditure according to the PFM Act.

1.2 The legal framework anchoring counties expenditures

According to the Public Finance Management Act 2012, Section 107(5), it is stated that pursuant to section 107(5) of the ACT, the county government actual expenditure on development shall be at least thirty percent in conformity with the requirement under section 107(2)(a) of the Act. This shows that if total expenditure for a financial year is said to be 100%, then the required distribution between expenditure on development to recurring expenditure is 3:7. However, this was not the case as observed in this research.

This study sought to examine what causes the rift in the distribution of revenue between development and recurrent expenditure in different counties in Kenya. This rift measures the level of effectiveness, efficiency and accountability in the devolution government given the legislative regulations as well as examines the rate at which development is taking place in the county level given the current revenue allocation. This was measured by the absorption rates of the development expenditures in the county budgets. Lastly, it also examined whether the proportions allocated to development and recurrent expenditure are functional and economically reasonable for the County government of Kenya and gives an inference with regards to the 3:7 ratio.

1.3 Trends in public expenditure by Counties

Absorption rate refers to the percentage of the actual expenditure out of the budgeted expenditure i.e. what share of funds was actually used from what was budgeted. This share is an indicator that determines the efficiency and general performance of the counties as regards utilization of the intended funds. This shows out of the target expenditure amount, what was achieved by the county. Counties that recorded high absorption rate indicated that they performed well in their spending and were close to their target. On the other hand, counties with low absorption rates indicated performance below par in terms of utilization of

the intended expenditure. Table 1.1 presents the summary absorption rate for various counties that were randomly selected in the financial year 2017/2018.

Table 1.1 Budget absorption rates by various counties (2017/2018)

COUNTY	Recurrent Absorption Rate (%)	Development Absorption Rate (%)	Overall Absorption Rate
Baringo	99.3	36.4	74.8
Narok	97.0	58.6	84.1
Kisumu	90.3	23.6	69.8
Garissa	98.3	42.7	81.8
Meru	79.6	25.3	63.3
Trans Nzoia	67.7	54.0	63.6
Kilifi	81.5	73.1	78.6
Kiambu	91.0	66.1	85.5
Nairobi City	88.4	26.1	72.9
Turkana	91.0	46.7	74.2

Source of data: Controller of budget annual reports FY 2017/2018

The summary absorption rates presented in table 1.1 show that the absorption rate for the recurrent expenditure is relatively higher than the development expenditure. The average absorption rate for recurrent expenditure is 88.41%. On the other hand, the average absorption rate for development is 45.26% which brings the overall average to 74.86% This implied that the overall performance of the county budget was attributed to the absorption of recurrent expenditure. This was a clear indication that most counties addressed their recurrent budget needs more than the development expenditure.

The evidence that counties are not adhering to the ACT on spending the public finances is further reinforced by figure 1.1

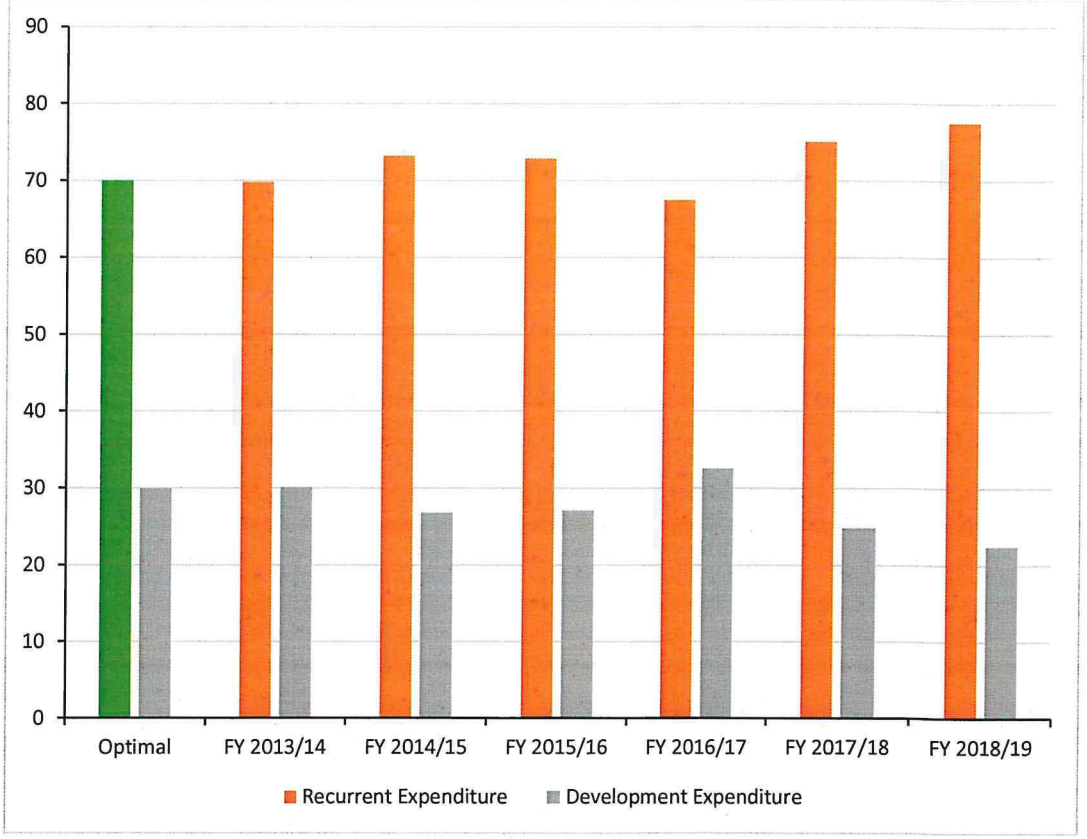

Figure 1.1 Nairobi County, Comparison between ideal and actual county recurrent and development expenditure ratios

Source data: Controller of budget annual reports for Nairobi County from the year 2013/2014 to 2018/2019

Figure 1.1 shows that for Nairobi County, there has been a deviation from the optimal 3:7 ratio for expenditure. In comparison to the ideal scenario, we can observe that the recurrent expenditure has been exceeding the 70% making the development expenditure less than the required 30%

This indicated that the county has not been following the Public Finance Management Act regulations in the spending of public finances.

1.4 Problem Statement

From the enactment of devolution in Kenya, the decentralized government system envisioned a government that promoted democracy and accountability in the exercise of power. Among the objectives of devolution, as provided in constitution, was the desire to enhance people's self-governance and enable communities to manage their own affairs. Consequently, counties were intended to oversee public revenue allocation and distribution within their jurisdiction. This satiated the desire of citizens who wanted access to public services closer to them and development within their localities.

To support these objectives and the obligation on county governments, the Public Finance Management Act was established and a regulation was placed on the management of public funds. This regulation was put in place to ensure that counties are not only meeting their recurring costs but also ensuring that devolved governments are factoring in revenue for development. The regulation was a legislative and control measure for counties to use as a guideline for allocating funds in their annual budgets. This was a required measure especially if counties were to be fiscally accountable and responsible with public revenue.

However, from our observation of trends in the past years since the onset of devolution, counties have not been following this regulation by exceeding the set limits for recurrent expenditure. Counties have been recording high absorption rates for recurrent expenditure. On the other hand, development expenditure has performed poorly in most counties. This shows that there is bias in the allocation of funds as well as a gap in the budgeting process. This study aimed to establish the determinants that cause the rift between recurrent expenditure and development expenditure. Consequently, the literature gap that this study intends to fill is to address issues of public expenditure at a decentralized level that can be used as a guide for public finance management in devolved government systems.

1.5 Research questions

In general, this study sought to establish what hinders counties from attaining the 30 per cent 70 per cent ratio in their development and recurrent expenditures respectively. Specifically, the study sought to answer the following questions:

i) What causes the rift in the distribution of revenue between development and recurrent expenditure in different counties in Kenya?

ii) Why do some counties fail to effectively absorb their development budget?

iii) What causes the county government to have a bias when it comes to spending public funds?

1.6 Research objective

The general objective of this study was to establish what hinders counties from attaining the optimal 30 per cent 70 per cent ratio in their development and recurrent expenditures respectively. The specific objectives are to:

i) To establish the factors that cause the rift in the distribution of revenue between recurrent and development expenditure in different counties in Kenya.

ii) To establish the factors that make some counties fail to absorb their development budget.

iii) To determine whether there is a bias in the spending of public funds and to establish the cause of this bias.

1.7 Significance of the study

The significance of this study is to show the importance of Public Finance Management in the devolved government system. This will aid devolved governments that may be lacking in capacity such as; adequate funds, tools, personnel or the knowledge of proper budget execution. Eventually, this translates into their expenditure priorities and the performance of fiscal responsibilities.

This study is also important to show the National government the need to work in collaboration with the devolved government to ensure that the regulations are met in order to avoid mismanagement of public funds.

The National Treasury and the Controller of budget will benefit from this study by observing the budgeting patterns in counties and observing the rift between recurrent and development expenditure.

The public and county residents also need to be aware of how funds are being managed. County Administration need to be answerable to its citizens as well as ensure that development and growth is taking place in their counties and the local government is indeed delivering services.

1.8 Scope and organization of the study

This study is organized into five chapters.

The first chapter of the study looks into the background of the study, the legal framework, trends in public expenditure and the problem statement. It also contains the research questions, research objective and the significance of the study. The second chapter contains the Literature Review i.e. the theoretical, empirical and an overview of the literature. The third chapter entails the methodology approach towards examining the determinants of the rift between the two categories of expenditure in counties. It contains the research design, the data type used, data collection as well as analysis of the data. This study mainly focuses on the public expenditure of counties in Kenya and covers years from the beginning of devolution up to the year 2019 i.e. FY 2013/2014 to FY 2018/2019.

The fourth chapter presents the analysis and the findings from the study. All the empirical tests that were performed and their results are presented in this chapter.

The fifth chapter contains the summary of the study, the conclusion and the policy implication of this study. It further adds any contribution that this study has brought to the field as well as suggests any further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents literature review related to public expenditure. Section 2.2 entails the theoretical literature review, section 2.3 discusses the empirical literature review and section 2.4 summarizes the chapter with an overview of the literature.

2.2 The Theoretical Literature Review

Various theories have been used to explain public expenditure. This theories include the Principle of Maximum Social Advantage, the Peacock Wiseman hypothesis and the Wagnerian approach , Public Choice Theory and Agency Theory. This section discusses these theories discusses these theories.

2.2.1 Principle of Maximum Social Advantage

In 1922, British economist, Hugh Dalton introduced the 'Principle of Maximum Social Advantage'. This principle forms its basis on the assumptions that all public expenditures result in benefits and all taxes lead to costs, the only component of public revenue is taxes, the government has a balanced budget (no deficit or surplus budget) and public expenditure and taxes are subject to diminishing marginal social benefit and increasing marginal social cost respectively. It states that economic welfare is reached when public expenditure and taxation is done up to that point where the marginal social benefits and the marginal social costs are equal. According to the theory, there is an optimal mix between efforts to raise revenue and the benefits from these revenues. Therefore, benefits such as development and recurrent expenditure are determined by the amount of revenue raised by the public entity. This theory informed this study by making the ratio of the development and recurrent expenditure a function of the revenues raised by the government as shown in equation 2.1.

$$R = f\,(\,revenues\,) \qquad (2.1)$$

2.2.2 Peacock-Wiseman Hypothesis

The study of growth of public expenditure was advanced by Peacock and Jack Wiseman in 1967. It was developed through the study of public expenditure in Great Britain between the period 1890 to 1955. This hypothesis explains how the patterns of public expenditure are not a smooth or continuous trend but rather the changes occur in steps. Peacock and Wiseman (1967) explained the theory using the assumption that decision about public expenditure is political and can be influenced, political choices about the use of resources are different from those made through the market system, and that citizens can have an opinion about the desirable level of public expenditure. Based on these assumptions, the theory explains three concepts: displacement effect, inspection effect and concentration effect. An assumption in this hypothesis is a certain tolerable level of taxation which acts as a limitation for the government. In times of social upheaval, there would be a sudden increase in public expenditure which distorts the gradual upward trend. Therefore, this pushes the government to raise taxation levels. This is known as the displacement effect. There is also the inspection effect which arises from the awareness of people and observation of the emerging problems during the period of upheaval. The government no longer has a taxation constraint and it expands its expenditure to address these conditions. However, because the perception of the ideal taxation level does not return to the original, the government is able to finance the expanded expenditure. The two effects cause short-term spikes in public expenditure within a rising long-term trend (Peacock and Wiseman, 1961). According to this theory, social disturbances and taxation level plays a role in the decision to increase public expenditure. This theory attempted to demonstrate how government expenditure in various counties in Kenya may have taken an upward drift thus affecting the required ratio of expenditure. This can be observed during times Kenya has experienced shocks like resettlement of IDPs, natural disasters, famine, election years i.e. 2012,

2017 and the upscaling of government structures within the counties. However, one of the inadequacies of this theory was that it ignored the fact that the upward displacement in public expenditure could be financed by alternative sources of revenue such as donor funds or external borrowing and this may not affect the ratio of recurrent and development expenditure.

$$R = f\,(\,revenues, social\ disturbance\,) \qquad (2.2)$$

2.2.3 Wagner's Organic State Theory

Wagner's organic state theory is known as the law of increasing state spending and was developed by the German economist Adolph Wagner in 1883. Wagner (1890) states that a causal and effect relationship existed between the growth of economy and relative growth of public sector. It is governed by the assumption of rising per capital incomes, technological and institutional changes, a democratically governed state as well as high income elasticities of demand (Black et al. 1999: 87-88). The theory is widely known as the Wagner's Law and it states that as per capita income and output in an economy grows, the relative size of the public sector will grow as well as represented by the percentage of public expenditure to gross national product (GNP). This theory informs the present study on the effect of growth of the public sector on the public expenditure. The assumption of technological and industrial changes further shows how the ratio is affected positively. This can be measured by the Total Factor productivity which measures the contribution of technological changes to economic growth. However, this theory was majorly instrumental in evaluating the relationship between economic growth and public sector which was not the focus of this study. Therefore, total factor productivity could not be borrowed for this study.

2.2.4 Public Choice Theory

An early precursor of modern public choice theory was the work of Swedish economist Knut Wicksell (1896). The theory was later developed by James Buchanan and Gordon Tullock in 1962 in an attempt to explain how public

decisions are made. It involves the interaction of the voting public, the politicians, the government and political action committees and also analyses the political and policy processes. This examines direct democracies, how well they reflect the preferences of their members into collective action as well as the complications that arise during decision making. Government failure occurs when the representatives do not act in the interests of the population but might be more interested in their own preservation. Niskanen (1971) developed a model of the budget-maximizing bureaucrat. According to the budget-maximizing model, rational bureaucrats will always seek to increase their department budgets in order to increase their own power, which in turn can contribute strongly to the state growth and possibly reduce social efficiency. Niskanen model is based on two fundamental assumptions: bureaucrats maximize the size of their budgets and the other that bureaucrats are simple monopolists who can impose their preferences on their administration. The model is a model of budgetary behaviour and decision making and is built on the assumption of self-interest. It brought to attention budget maximization that should in turn be a factor affecting the revenue allocation hereby adjusting the ratio.

$$\boldsymbol{R = f\,(\,revenues, social\ disturbances, budget\ size\,)} \qquad (2.3)$$

2.2.5 Agency Theory

Jensen and Meckling (1976) proposed the Agency Theory and defines agency relationship as a contract between one party (principal) who appoints another party to provide services in agreement with the interest of the principal which includes delegating some of the decision-making authority to the agent (Ghulam, 2012). According to Lane (2003), modern democracy is based on a series of principal-agent relationships. In context, the agency problem that arises in county governments is where the decision-makers tend to maximize their personal interest at the expense of public interest because it has the advantage of information asymmetry. With the county government being the agent and the

citizens/taxpayers being the principal, the residents of counties in Kenya entrust the local governments responsible with not only proper allocation of revenue but also accountable public expenditures. There was a gap identified by the poor budget absorption of development expenditure in comparison to recurrent expenditure which indicated aspects of poor governance and prioritization of the recurrent budget.

$$R = f\,(\,\boldsymbol{revenues, social\ disturbances, budget\ size, governance}\,) \quad (2.3)$$

2.3 Empirical Literature Review

Aregbeyen & Akpan (2013) used annual time series data for the period between 1960-2010 to examine the long-term determinants of government expenditure in Nigeria. The study used the Ordinary Least Square (OLS) technique by modelling public expenditure on a vector of the relevant explanatory variables that were particular to Nigeria. It decomposed the total government expenditure into recurrent and development. Further, the components were disaggregated into eight components. A baseline model was specified for minimization of multicollinearity which later was extended to include other variables of interest. The baseline variables included Total Revenue, Aid inflow, Real Income per capita, Total Population, Degree of Openness and Debt Service. The demographic variables were also included as well as Urbanization. Then lastly, the study included some institutional/political variables such as the corruption index and some dummy variables for incidences that appeared countable times in the period of study i.e. regime dummy, election dummy. The study established that total revenue positively impacted the government expenditure. There was an increment of 70% and 38% in development expenditure and recurrent expenditure respectively when compared to previous years. This confirms that the major determinant of long- term government expenditure is revenue. Another observation from the study was that a large urban population size would result in high recurrent expenditure. The influence of election showed strong evidence

that during an election period, the recurrent expenditure would cause a significant increase in recurrent expenditure. The limitation in this study was that there were some additional elements specific to the Nigerian economy that could have contributed to the increase in government expenditure. This, therefore, may not have been entirely applicable in the Kenyan economy. This study also focused mostly on the public expenditure of the Nigeria as a whole and not expenditure in any decentralized form of government.

$$R = f\,(\,\boldsymbol{revenues, social\ disturbances, budget\ size, governance, total\ population, debt, election\ regime, urbanization}\,) \quad (2.4)$$

Akanbi (2014) performed a study on the determinants and trends of government expenditure in Nigeria. The study analyzed the patterns and the determinants of public expenditure with reference to development expenditure and recurrent expenditure. Using the Johansen estimation technique, a model with time-series data from time period 1974 to 2012 was estimated. From the results, the study inferred that collectively, development and recurrent expenditure were resistant to shocks in total government expenditure. However, recurrent expenditure on its own was found to be significantly affected by shocks in government revenue. Development expenditure was found to be affected by poor governance more than recurrent expenditure. In earlier studies, public choice model was used to analyze the relationship between overall government spending and either military or education. However, this study supported the present research because it disaggregated development and recurrent expenditure from total public expenditure. Hence, determining the ratios of development and recurrent expenditures in this study was modelled as a government optimization problem.

$$R = f\,(\,\boldsymbol{revenues, social\ disturbances, budget\ size, governance, total\ population, debt, election\ regime, urbanization, labour\ force\ participation}\,) \quad (2.5)$$

Erlina & Muda (2017) conducted a study on the analysis of the influencing factors of budget absorption. The study evaluated the effect of budget surplus, budgeting time and local own-source revenue on the budget absorption in the Municipal Government in North Sumatera (Erlina &Muda, 2017). The data used in the study were the combination between time-series and cross-sectional data i.e. pooled data. All of the 33 municipalities in North Sumatera were examined in the period of observation of 2011-2014. The data analysis model used in the research was the multiple linear regression. The results of this research showed that, concurrently, all three variables had an impact on budget absorption. This study is quite similar to the present study as it focuses on the decentralized form of government as . The 33 municipalities can easily be a representation of the 47 counties in Kenya. However, the limitation of the study was that it had a short length of observation which was only 4 years. It also had a small area of observation which was only constrained to North Sumatera Province. By increasing the length of observation and increasing the sample used in the research, the research would have more distinctive results.

$$\boldsymbol{Development\ Absorption\ rate} = \boldsymbol{f\ (budget\ time, budget\ surplus, own\ source\ revenue\ )} \quad (2.2)$$

2.4 Overview of the Literature Review.

It was evident that most of the empirical literature focused on determinants of public expenditure and the effects at the state level. This is due to limited literature examining public expenditure at a decentralized level. The empirical studies also dealt with time series data with periods ranging from as low as 4 years to as high as 50 years, studying the patterns and the long-term determinants of government spending. Some of the variables used in the empirical literature were specifically suited for the country's economy which is predominantly

Nigeria. Therefore, the gap that this study aimed to fill is to address issues of public expenditure at a decentralized level that can be used as a guide for public finance management in devolved government systems.

The theories relevant to this study were all except the Wagner's Organic state theory which addressed the causal and effect relationship existing between the growth of economy and the relative growth of public sector. This deviated from the focus of the study. The variables of interest from the theoretical literature include Revenues, Taxation, Social disturbances and Governance index. From the empirical literature, the variables of interest include Total Revenue, Real Income per capita (GDP), Total Population, Debt, Labour Force participation rate, Corruption index and Urbanization. Also some dummy variables for incidences that appeared countable times in the period of study i.e. election dummy. The first objective of this study was to establish the determinants that hinder the optimal ratio of the two expenditures at the decentralized level. Therefore, the literature review contained some of the possible factors affecting the optimal ratio. The second objective was to determine the factors that cause poor development absorption in some counties. The empirical literature also contained a few possible factors that may affect optimal development absorption.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter specifies the methodology used to establish the factors that cause the rift between ratio of development expenditure and recurrent expenditure. Section 3.2 entails the research design, section 3.3 contains the theoretical framework and empirical model anchoring the study. Section 3.4 consists of population and sampling while section 3.5 outlines data sources and variables. Section 3.6 outlines the data analysis i.e. analytic techniques used in the study.

3.2 Research design

This study used a non-experimental approach as it aimed to establish the determinants that hinder the optimal ratio of recurrent and development expenditure. It also sought to establish the factors causing the poor absorption of the development expenditure. The study used quantitative and qualitative panel data for the period FY 2013/2014 to FY 2018/19.

3.3 Theoretical framework

The theoretical framework that the study was anchored by concepts borrowed from the Principle of Maximum Social advantage, Peacock Wiseman hypothesis and Public choice theory. In the Principle of Maximum Social advantage, the ratio of development and recurrent expenditure is a function of revenues. Peacock-Wiseman hypothesis introduced the short-term effects on public expenditure caused by social upheavals. Niskanen model presented the budget-maximizing bureaucrat which also add the budget size as a factor that may distort the ratio.

$$Ratio = f\ (revenues, budget\ size, social\ disturbances) \qquad (3.1)$$

This framework informed our study in analysing the factors that hinder the optimal mix of recurrent and development expenditure thus distorting the ratio, R.

3.4 Empirical framework

The empirical framework by Akanbi, O. A. (2014) determining the ratio of development and recurrent expenditures was modelled as a government optimization problem. The empirical study was developed using the welfare function of the government;

$$W = f\ (P, D, R, Z) \tag{3.2}$$

where

P = private consumption;

D = development expenditure;

R= recurrent expenditure; and

Z = state variables (e.g. GDP per capita, government revenue, population, urbanization index, governance index).

From the study, the state variables affected the choice of the level of development expenditure and recurrent expenditure. Overall government expenditure is represented by the following equation:

$$G = D + R \tag{3.3}$$

The revenue from private investment was abstracted thus the budget constraint is limited to the available sources in the economy:

$$G = Y - P \tag{3.4}$$

Where Y represents the gross domestic product (GDP)

A Cobb-Douglas specification is assumed for equation 3.2, omitting the presence of state variables. Thus the welfare function becomes:

$$W = P^{\alpha} D^{\beta} R^{\gamma} \tag{3.5}$$

The optimal ratio of G, D and R that maximizes equation 3.5

$$\mathrm{D} = \frac{\beta}{\beta + \gamma} \qquad \text{And} \qquad \mathrm{R} = \frac{\gamma}{\beta + \gamma} \tag{3.6}$$

The econometric model was specified using the natural logarithms of the variables. The state variables specified in the model included the real per capita GDP, total population, government revenue, debt, governance index, labour force participation rate and urbanization ratio. These variables are presumed to affect the parameters of the two categories of government expenditure, similar to the approach followed by previous studies of Heller, Peter & Diamond (1990), Hewitt & Van Rijckeghem (1995), Mauro (1998) and Davoodi et.al (2001).

From the theoretical framework, the ratio is a function of revenues, social disturbances and budget size. There are also extraneous variables developing from the reviewed empirical literature which are significant in evaluating the determinants of this ratio. These variables include GDP per capita, population, debt, labour force participation rate, urbanization index and governance index. However, the study aimed to be prudent about the choice of variables to be included in the model for the purpose of relevance in a decentralized system as compared to aggregate variables.

There are only a few variables that could be carried forward to the study. For variables selected from the theoretical literature, revenue and social disturbances were the only pertinent variables of interest. The social disturbance took the form of election periods that happened after the beginning of devolution. The years 2016, 2017 and 2018 are the pre-election year, election year and post-election year respectively. For variables selected from the empirical literature, debt and labour force participation became the variables of interest. Pending bills is the form of debt that was appropriate for the study. On the other hand, labour force participation in only available at an aggregate level. Therefore, personnel emoluments as a measure of wage was the closest metric for expenditure on the county labour force wages.

Therefore, the econometric models used were specified using the natural logarithms of the variables. The main empirical model is as shown:

$$ln\, R_{it} = \alpha + \gamma_1 ln\, R_{it-1} + \gamma_2 ln\, R_{it-2} + \beta_1 ln\, rev_{it} + \beta_2\, ln\, ypc_t + \beta_3\, ln\, pe_{it} + \beta_4\, ln\, pbills_{it} + \beta_5\, elect_{it} + \varepsilon_{it} \quad (3.7)$$

Where

R_{it} = the ratio of recurrent to development expenditure of county i at time t

R_{it-1}= the ratio of recurrent to development expenditure of county i at time t-1

R_{it-2}= the ratio of recurrent to development expenditure of county i at time t-2

rev_{it} = the revenue collected of county i at time t

gcp_{it} = the gross county product of the county i at time t

pe_{it} = the personnel emoluments of county i at time t

$pbills_{it}$= the pending bills of county i at time t

$elect_{it}$ = the election dummy variable of county i at time t

ε_{it} = the error term county i at time t

t = time in years

The second aim of the study was to establish the factors causing the poor absorption of development budget. From the empirical literature, own-source revenue and budget surplus were the most appropriate variables. The second empirical model is as shown below:

$$DAbsrate_{it} = \alpha + \gamma_1 DAbsrate_{it-1} + \gamma_2 DevAbsrate_{it-2} + \beta_1 ln\, osr_{it} + \beta_2\, ln\, surplus_{it} + \varepsilon_{it} \quad (3.8)$$

$DAbsrate_{it}$ = the development absorption rate for county i at time t

$DAbsrate_{it-1}$= the development absorption rate for county i at time t-1

$DAbsrate_{it-2}$= the development absorption rate for county i at time t-2

osr_{it} = the own-source revenue of county i at time t

$surplus_{it}$ = the budget surplus of county i at time t

ε_{it} = the error term county i at time t

t = time in years

3.4.1 Definition and measurement of variables

Variable Name	Definition	Measurement
Revenue	The money received by the government from taxes and non- taxes to facilitate the funding of government expenditures.	Kenya Shillings
Gross County Product	The monetary value of all final goods and services produced within a county in a given period, usually annually.	It is a parameter for development/welfare measured in Kenyan Shillings.
Personnel Emoluments	The wages, benefits or other benefit received as compensation for holding an office or employment	Kenya Shillings
Debt (Pending Bills)	This is a payment for services rendered that has begun, but is not complete.	Kenya Shillings
Absorption rate	The rate at which the activities that have been planned in the budget have been realized and achieved	Percentage
Budget surplus	The positive budget balance that occurs when the government bring in more from taxation than it spends.	Kenya shillings
Own-source Revenue	These are sources of revenue that are at the disposal of local government through taxation.	Kenya Shillings

Table 3. 1 Variables and their respective definitions and measurements.

3.5 Population and Sampling

The first analysis for the first objective for this study used data from the 47 counties of Kenya. This analysis dealt with the total population instead of a sample. This is because these counties are a representation of the devolved government and for the purposes of achieving complete and holistic results, all of them were included. It was ideal that the diversity in geographical location, county revenue, budget amount and size to be well represented in the analysis. It is to be noted that this list of the 47 counties (population) was arranged in alphabetical order such as is done in the COB reports. The second analysis for the second objective was performed on a sample of 10 randomly selected counties that had recorded poor development absorption rates.

3.6 Data Collection and Sources

The data used in this study is the combination between time-series and cross-sectional data or also known as panel data. In addition, because the data had a small T and a large N, the data became a dynamic panel type.

Data Sources

The type of data was secondary data apart from any dummies created. The data was for the time period from when data on county governments was available. This is from the FY 2013/2014 to FY 2018/2019, a duration of 6 years. The data was sourced from the Controller of Budget reports which compile the yearly diagnostics and reports of each county's financial performance. It was also sourced from the Exchequer Releases. Other sources included Economic Surveys, Economic reports and Statistical Abstracts as need dictated.

3.7 Data Analysis

The first objective of this study was to establish what hinders counties from attaining the optimal 30 per cent 70 per cent ratio in their development and recurrent expenditures respectively. This objective was achieved by examining the model in equation 3.7 . This determined the variables that have a significant effect on the ratio and the direction and magnitude of this effect.

The second objective of this study was to establish the factors that make counties fail to absorb their development budget. To achieve this objective, the study focused on the absorption rate of development budget. To determine the factors, the study examined the model in equation 3.8

3.8 Diagnostic and estimation

Part of panel data has the time series aspect and consequently, the study conducted a test for stationarity to avoid estimating and getting spurious results. Therefore, the study employed a Fisher type unit-root test based on the augmented dick fuller test in order to check for stationarity and determine the order of integration. However since $t < 20$, stationarity issues were less likely to appear.

The two other diagnostic checks for the dynamic panel data are the Sargan/Hansen test of overidentification of restrictions (test for checking the valid exogeneity of the instruments) and the test for autocorrelation of the residuals in the differenced equations. The Arellano-Bond test for autocorrelation is performed using the AR test for autocorrelation of the residuals.

There were also some post-estimation tests involved in the study such as the Wald chi-squared test as well as the Hansen test for overidentification of residuals.

CHAPTER FOUR

EMPIRICAL ANALYSIS

This section presents the analysis and the findings from the study.

4.1 Descriptive Statistics

This section discusses the measures of central tendency of the data used for analysis. It will inform whether the data has outliers and missing observations. The statistics are summarized in table 4.1.

Table 4. 1 Summary statistics of the variables for objective 1 in the study

VARIABLES	Unit of measure	(1) N	(2) Mean	(3) SD	(4) Min	(5) Max
Ratio of recurrent to development	Fraction	282	3.193	3.374	0.319	40.10
Revenue	KES Mn	282	7,405	3,815	1,761	26,330
Gross County Product	KES Mn	282	132.080	195.461	10.237	1,618
Pending bills	KES Mn	282	913.3	3,902	0	64,800
Personnel Emoluments	KES Mn	282	2,638	1,949	305.5	14,840
Election dummy		282	0.5	0.501	0	1
Number of Counties		47	47	47	47	47

Table 4.1 shows the summary statistics of the variables used to determine the rift between recurrent and development expenditure. These statistics are an aggregate representation of the counties from the year 2013 to 2018. The dependent variable which is the ratio between recurrent and development expenditure, had an average of 3.193 and a standard deviation of 3.374. Over the 6 year period of study, the ratio had gone as low as 0.319 to as high 40.10. This large disparity showed how the ratio of recurrent to development had recorded unusual outliers such as 40.10 times the development expenditure and 0.319 times the development expenditure. The mean reported that on average, the recurrent

expenditure was three times the development expenditure. County revenue has a mean of KES 7.405 billion with a standard deviation of KES 3.815 billion. Over the 6 year period, the revenue has ranged between KES 1.761 billion and KES 26.33 billion. This showed that revenue varied from county to county depending on it size, resources available and the allocation received from the Consolidated Fund.

Table 4.1 shows the Gross county product had a mean of KES 132.080 million and a standard deviation of KES 195.461. The minimum and maximum of the gross county product was KES 10.237 million and KES 1.618 billion, respectively. The pending bills recorded a standard deviation of KES 3.902 billion and a mean of KES 913.3 million. It showed a range between 0 and KES 64.8 billion showing that for some years, there were no pending bills. Further, the data summarized in Table 4.1 displays that the personnel emoluments had an average of KES 2.638 billion over the years of study. The standard deviation was KES 1.949 billion and it had a spread from KES 305.5 million and KES 14.84 billion. The final variable elect which is a dummy variable ranged from 0 and 1. It showed 1 for the years that were around the election period and 0 for the years outside the election period.

Table 4. 2 Summary statistics of the variables for objective 2 in the study.

VARIABLES	Units of measure	(1) N	(2) Mean	(3) SD	(4) Min	(5) Max
Development absorption rate	Percentage	60	0.530	0.199	0.0400	0.954
Own Source Revenue	KES Mn	60	1959	3568	82	15900
Budget Surplus	KES Mn	60	592.2	719.5	0	3600
Number of counties		10	10	10	10	10

Table 4.2 shows the summary statistics of the variables used to establish the factors that make some counties fail to absorb their development budget. These statistics were drawn from a sample of 10 randomly selected counties from the year 2013 to 2018. The dependent variable is the development absorption rate whose measurement was in percentage. The mean absorption rate for development expenditure in the sample was 53% and had a standard deviation of 19.9% The maximum and minimum rates observed were as high as 95.4% and as low as 4%. This showed that they were extremes in terms of the rates. Table 4.2 shows that own source revenue had a mean of KES 1.959 billion and a standard deviation of KES 3.568 billion. The local revenues from this sample of counties ranged from as low as KES 82 million to as high KES 15.9 billion. The last variable which is budget surplus had an average of KES 592.2 billion and a standard deviation of KES 719.5 billion. The minimum and maximum budget surplus were 0 and KES 3.6 billion respectively.

4.2 Pre-estimation Diagnostic checks

4.2.1 Unit Root test

A unit root test checks for the presence of unit root in time series aspect of the data set. Unit root or otherwise non-stationarity in the data for any variable of study may lead to spurious results because the results obtained from it will possess a non-constant mean and variance. Subsequently, the test used is the Fisher's test by Maddala and Wu (1999) and Choi (2001) which was the most appropriate unit root test for an unbalanced panel data set. When the alternative hypothesis allows for a mixture of stationary and nonstationary series in the data, the Fisher test is the best because it has the highest power in distinguishing the null and the alternative compared to its counterparts i.e. the Levin, Lin and Chu Test (2002) and the Im, Pesaran and Shin Test (1997, 2003). The unit roots results of the Fisher's test are reported results in the table 4.1. They indicate that all the

variables were stationary except from the gross county product. After differencing or being integrated to order one I(1), the variable became stationary.

Table 4. 3 Fisher's test result for unit root for the first objective.

Variable	Without drift term or trend	Number Of lags	Critical values at 95% confidence level	p-value
Ratio of recurrent to development	"	0	Inverse chi-squared 424.9631 Inverse normal -10.6494 Inverse logit -15.4312 Modified inv. chi-squared 24.1380	0.0000 0.0000 0.0000 0.0000
Revenue	"	0	Inverse chi-squared 249.2459 Inverse normal -3.8419 Inverse logit -6.2652 Modified inv. chi-squared 11.3225	0.0000 0.0001 0.0000 0.0000
Gross County Product	"	1	Inverse chi-squared 789.3808 Inverse normal -11.6846 Inverse logit -27.6335 Modified inv. chi-squared 50.7159	 0.0000 0.0000 0.0000 0.0000
Debt (Pending Bills)	"	0	Inverse chi-squared 756.2552 Inverse normal -13.4533 Inverse logit - 29.7918 Modified inv. chi-squared 48.9695	0.0000 0.0000 0.0000 0.0000
Personnel Emoluments	"	0	Inverse chi-squared 560.9294 Inverse normal -9.6470 Inverse logit -19.3305 Modified inv. chi-squared 34.0543	0.0000 0.0000 0.0000 0.0000

Table 4. 4 Fisher's test result for unit root for the second objective

Variable	Without drift term or trend	Number Of lags	Critical values at 95% confidence level	p-value
Development absorption rate	"	0	Inverse chi-squared 249.2459 Inverse normal -3.8419 Inverse logit -6.2652 Modified inv. chi-squared 11.3225	0.0000 0.0001 0.0000 0.0000
Own Source Revenue	"	0	Inverse chi-squared 756.2552 Inverse normal -13.4533 Inverse logit - 29.7918 Modified inv. chi-squared 48.9695	0.0000 0.0000 0.0000 0.0000
Budget Surplus	"	0	Inverse chi-squared 560.9294 Inverse normal -9.6470 Inverse logit -19.3305 Modified inv. chi-squared 34.0543	0.0000 0.0000 0.0000 0.0000

In the second analysis, the preferred method of testing unit root was the Fisher's test as well. This is because the Levin-Lin-Chiu test required strongly balanced data and the budget surplus data was unbalanced. Table 4.4 shows that all variables were stationary.

4.2.2 Test for Autocorrelation and Overidentification

After testing for unit root, the two other diagnostic checks for a dynamic panel data were the Sargan/Hansen test of overidentification of restrictions (test for checking the valid exogeneity of the instruments) and the test for autocorrelation of the residuals in the differenced equations. The Arellano-Bond test for autocorrelation is performed using the AR test for autocorrelation of the residuals. By design, the differenced residuals should only have First order serial

correlation and not second order properties. The test results for the data displays an AR(1) behaviour for the differenced results. The p-value of the test statistic for AR(1) was 0.001 which shows zero autocorrelation in the first differenced residuals Using the Sargan test for overidentifying restrictions, the results were strong evidence that the overidentifying restrictions were valid. However, the Hansen test as the more robust test proved that the model was weakened by many instruments and the overidentifying restrictions were not validly exogenous.

4.2.3 Choice of Optimal lags

To get the optimal lag, three lags were compared using the System GMM estimation to check for the satisfaction of the assumptions on autocorrelation. For an optimal lag, the assumption of presence of first-order serial correlation and absence of second-order serial correlation had to be satisfied. The study also checked for the highest significant lag of the independent variable for optimality. Four and five lags could not be used as it exceeded the number of time periods and most variables were dropped due to collinearity. The first lag of the dependent variable was introduced then the second and third lag were included. The results in table 4.5 show the introduction of the first lag to the third lags of the ratio of recurrent to development expenditure. Table 4.5 further shows the p-values of Arellano and Bond test of autocorrelation in first and second differences. For the AR(1) model, the null hypothesis that the error term has no first order and second order serial correlation is rejected under a 5% level of significance. Thus, a model with one lag is not the optimal choice. For the AR(2), the null hypothesis is rejected for first-order serial correlation but is not rejected for the second-order serial correlation. For AR(3), no results were obtained for the first and second differences. It also drops the election dummy variable due to collinearity and therefore, three lags is not a feasible lag choice. The number of optimal lags were two lags because the results from three lags were inconsistent. The lag selection for annual data is normally one or two especially for data with a small T.

Table 4. 5 Determination of Optimal Lags of the Ratio of recurrent to development

VARIABLES	(1) AR	(2) AR	(3) AR
1st lag of Ratio of recurrent to development	0.150***	0.344***	0.0130
	(0.0517)	(0.0943)	(0.131)
2nd lag of Ratio of recurrent to development		-0.228***	-0.151**
		(0.0557)	(0.0759)
3rd lag of Ratio of recurrent to development			-0.326***
			(0.0492)
4th lag of Ratio of recurrent to development			
Revenue	-1.359***	-1.737***	-1.467**
	(0.248)	(0.306)	(0.586)
Gross County Product	0.0919	0.293	0.636*
	(0.163)	(0.188)	(0.362)
Pending Bills	0.0405	0.0355	0.0547
	(0.0296)	(0.0403)	(0.0393)
Personnel Emoluments	0.972***	0.701***	0.382
	(0.215)	(0.248)	(0.285)
Election Dummy	0.295***	0.123**	
	(0.0450)	(0.0494)	
Constant	8.509	20.89**	17.98
	(5.674)	(8.135)	(12.62)
Observations	217	173	130
Number of County	47	47	47
A-B test for AR(1) in first differences	0.007	0.004	-
A-B test for AR(2) in first differences	0.045	0.247	-

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.3 Empirical Results

This section presents the study findings thematically based on the objectives.

4.3.1 The Rift between recurrent and development expenditure in counties.

The data type of this study is a dynamic panel because it uses a partial adjustment based approach. This kind of model contains one or more lagged dependent variables. With a partial adjustment process, the coefficient on the lagged dependent variable measures the speed of adjustment. It can also remove any autocorrelation present. A dynamic panel is exposed to Nickel Bias which may bring inconsistent results as the cross-sections are not fixed but increasing with the time periods remaining fixed. For this reason, the choice of estimation could not be the within transformation or any OLS estimator since the inclusion of additional regressors does not eliminate the bias. It also makes every transformation endogenous despite its time placement.

Comparing the Instrumental Variables (IV) estimation and the Generalized Method (GMM), the preferable method of estimation is the latter. The moment conditions in a GMM estimation are overidentified which is better because it has more instruments but not too many. The Arellano Bond (1991) estimator eliminates the Nickel bias as well as corrects for the endogeneity. In the estimation of the relationship between the ratio and the selected factors, the first estimation was a one-step GMM and a one-step System GMM as shown in table 4.6.

Table 4. 6 One-step Differenced GMM and System GMM estimation

VARIABLES	(1) One-step Difference GMM	(2) One-step System GMM
1st lag of Ratio of recurrent to development	0.0408	0.282**
	(0.186)	(0.121)
2nd lag of Ratio of recurrent to development	-0.228***	-0.224***
	(0.0661)	(0.0718)
Revenue	-1.812***	-1.990***
	(0.483)	(0.494)
Gross County Product	1.071**	0.333
	(0.475)	(0.340)
Pending Bills	0.0493	0.0534
	(0.0461)	(0.0491)
Personnel Emoluments	0.668	0.688*
	(0.429)	(0.413)
Election Dummy		0.144
		(0.131)
Constant	14.45	26.14**
	(10.64)	(10.58)
Observations	124	173
Number of Counties	45	47
A-B test for AR(1) in first differences	0.008	0.019
A-B test for AR(2) in first differences	0.136	0.182
Sargan Test of overidentification	0.009	0.427
Wald chi2	0.000	0.000

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Using the one-step Differenced GMM, all the variables gave statistically insignificant results except from the second lag of the ratio, revenue and GCP which p-values 0.002, 0.000 and 0.046 respectively . Adding more lags did not make a difference. Removing a lag made personnel emoluments, the elect dummy and revenue to be statistically significant with p-values 0.021, 0.027 and 0.000 respectively. This results were not statistically sufficient to use in order to refer

the relationship between the explanatory variables and the dependent variable. It can be observed that the dummy variable is omitted in the difference GMM because the estimation cannot difference dummy variables and therefore, it does away with it altogether. This also reduces the number of observations.

Using the one-step System GMM, all the variables gave statistically insignificant results except from the second lag of the ratio, revenue and the constant term. Adding more lags did not make a difference in the results. Removing a lag made variables be statistically significant except from GCP and pending bills.

The one-step estimation of GMM assumes that the residuals are homoscedastic. However, a two-step estimation seeks to correct for any heteroskedasticity in the errors and cross-correlation between error terms. This made it a more favourable method of estimation. The optimal lag selection was two lags due to the inconsistency of results that arose from using other lags.

Using two-step Differenced GMM, the results of the test were inconsistent and only three variables were statistically significant. Also for the difference GMM estimations, the number of counties and number of observations were reduced to 45 and 124 respectively. This is because differencing caused some of the observations to be omitted. The two-step System GMM gave the more consistent and more significant results out of the other estimators. The coefficients of the variables are summarized in table 4.7 below. The results show that the relationship between the dependent variable, ratio of recurrent to development and the explanatory variables varied. The number of instruments that generated were 19.

Table 4. 7 The effect of variables on the ratio of recurrent to development.

VARIABLES	(3) Two-step Difference GMM	(4) Two-step System GMM
1st lag of Ratio of recurrent to development	-0.0968	0.344***
	(0.204)	(0.0943)
2nd lag of Ratio of recurrent to development	-0.286***	-0.228***
	(0.0675)	(0.0557)
Revenue	-1.401***	-1.737***
	(0.326)	(0.306)
Gross County Product	1.426***	0.293
	(0.518)	(0.188)
Pending Bills	0.0612	0.0355
	(0.0412)	(0.0403)
Personnel Emoluments	0.709**	0.701***
	(0.289)	(0.248)
Election Dummy	-0.151	0.123**
	(0.107)	(0.0494)
Constant	0.129	20.89**
	(11.36)	(8.135)
Observations	124	173
Number of Counties	45	47
A-B test for AR(1) in first differences	0.761	0.004
A-B test for AR(2) in first differences	0.965	0.247
Hansen Test of overidentification	-	0.994
Wald chi2	-	0.000

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

According to table 4.7, the second lag of the ratio and the revenue have a negative relationship with the ratio with coefficients -0.2278 and -1.737. This can mean that a 10 percent increase in the revenue causes a corresponding 17.37 percent decrease in the ratio. Further findings are that the first lag of the ratio has a positive effect on the ratio. The ratio in the previous year affected the ratio today by increasing it by 0.344 percent. However, the effects of the ratio from two years back were dissolved and were no longer impacting the currently. In fact, it reduced the impact of the ratio by 0.228 percent. An increase in the revenue

caused the ratio between to recurrent and development ratio to reduce. This showed that when the revenue supply was increased, more revenue was allocated to development expenditure making the ratio to decrease. Table 4.7 also showed that the personnel emoluments and election variables were significant and had a positive effect on the dependent variable. A 10 percent increase in personnel emoluments caused a seven percent increase in the ratio.

4.3.2 The factors affecting the development absorption in some counties.

In the second analysis for this study, the two-step System GMM method estimation was still maintained due to a small T and a large N. This method of estimation dealt with the Nickel Bias present in dynamic panels. Table 4.8 below shows the regression results of the model.

Table 4. 8 The effect of variables on the development absorption.

VARIABLES	two-step Difference GMM	two-step System GMM
1st lag of development absorption rate	-0.432***	0.1201
	(0.161)	(0.217)
2st lag of development absorption rate	-0.228***	-0.142***
	(0.0517)	(0.0364)
Budget surplus	-0.0270*	-0.0136
	(0.0150)	(0.0135)
Own Source Revenue	0.0361	0.197*
	(0.100)	(0.098)
Constant	-1.105	-2.986**
	(2.083)	(3.615)
Observations	27	36
Number of Counties	9	9
A-B test for AR(1) in first differences	0.082	0.013
A-B test for AR(2) in first differences	0.759	0.094
Hansen Test of overidentification	1.000	1.000

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

From the results, the only variable that possessed significant p-values was own source revenue. The p-value was 0.045 and the co-efficient of the variable is 0.1972. This showed a positive effect on the development absorption rate. An increase of the county local revenue by 10 percent resulted in a 1.972 percent increase in the development budget absorption.

4.4 Post-estimation tests and results

Table 4.7 indicates the first post-estimation test results. The Wald Chi-squared p-value of zero showed that at least one of the regression coefficients of the explanatory variables in the model was not equal to zero. The Arellano-Bond test for autocorrelation checks for serial correlation in the residuals in the differenced equations. By design, the first-order autocorrelation AR(1) is expected because of the lagged dependent variable. However, the hypothesis of the second-order autocorrelation AR(2) which is the absence of autocorrelation in the residuals, should not be rejected. Otherwise, the estimates are inconsistent. In table 4.7, the two-step System GMM shows that the p-values of the AR(1) and AR(2) are 0.004 and 0.247 respectively under a 5% significance level. This means that first-order autocorrelation was present but it did not imply inconsistency. It also meant that the null hypothesis of the second-order autocorrelation was not rejected, implying absence of the autocorrelation in residuals and consistency in estimates. The Hansen test for overidentifying residuals is the more robust test and more plausible in this case as the estimation used is a two-step System GMM. The null hypothesis is that all overidentifying restrictions are jointly valid/the instruments are jointly exogenous. Table 4.7 shows that the p-value of 0.994 was more than the significance level of 0.05. This means that we failed to reject the null hypothesis, implying that the overidentifying restrictions are jointly valid.

Table 4.8 shows the second post-estimation tests results. the Wald Chi-squared p-value of 0.0176 shows that at least one of the regression coefficients of the explanatory variables in the model was not equal to zero. Results in Table 4.8

show that the two-step System GMM produced the p-values of the AR(1) and AR(2) as 0.013 and 0.094 respectively under a 5% significance level. Since it is expected that we reject the null hypothesis, this means that first-order autocorrelation was present but it did not imply inconsistency. It also meant that the null hypothesis of the second-order autocorrelation was not rejected, implying absence of the autocorrelation in residuals and consistency in estimates. Under The Hansen test for overidentifying, the null hypothesis is that all overidentifying restrictions are jointly valid/the instruments are jointly exogenous. Table 4.8 shows that the p-value of 1.000 was more than the significance level of 0.05. This means that we failed to reject the null hypothesis, implying that the overidentifying restrictions are jointly valid.

4.5 Objective Check

4.5.1 Determinants of the rift in the distribution of revenue between development and recurrent expenditure

The first objective was to establish the factors causing the rift between recurrent and development expenditures, This ratio which was the dependent variable, represents the rift. The coefficients of interest was the revenue, personnel emoluments and the election dummy. Their coefficients were -1.737, 0.701 and 0.123 respectively. All the factors were significant except from pending bills and gross county product which had p-values 0.378 and 0.119 respectively using a 0.05 significance level. This means that the calculated t-statistic was lower than the tabulated t-statistic at 5% level of significance and we failed to reject the null hypothesis. The results showed that the ratio two years prior, the ratio in the previous year, the revenue collected, the personnel emoluments and the election period had a significant effect on the ratio between recurrent and development expenditure. The ratio in the previous year has a positive effect while the ratio two years prior had a negative effect. This means that the ratio in the previous year affected the ratio today by increasing it by 0.344 percent. The effects caused by the rift in the last year were carried forward to the rift today. However, the

effects of the rift two years back were dissolved, no longer impacting the ratio currently. In fact, it reduced the impact of the ratio by 0.228 percent. This could mean that it would two years for the effects of the rift today to be eliminated. This may could be done through monitoring and evaluation as well as investigating and curbing the determinants of the rift today.

Revenue collected had an inverse relationship with the rift between the two expenditures. A 10 percent increase in the revenue causes a 1.737 decrease in the rift between recurrent and development expenditure. Therefore, the higher the revenue collected, the narrower the rift. Increased revenue supply gave more room for it to be allocated in the development budget. This narrowed the gap between the recurrent expenditure and development expenditure. However, the lower the revenue collected, the larger the drift. This showed that the county government budget may have prioritized the recurrent expenditure in the cases where revenue received was low.

Personnel emolument has a positive relationship with the rift between the two expenditures. With an increase in the staff numbers or salary increment, the rift increased because more budget money was spent to ensure salaries are paid. It was also noted that there were election periods which were the years 2016, 2017 and 2018 which are pre-election, election year and post-election respectively. These years had a positive effect on the rift and this was because most county governments used a lot of revenue for campaigns, election facilities and the paying of salaries election personnel before the close of government. These effects spilled over into the year after election.

4.5.1 Determinants of poor absorption of the development budget

The second objective of the study was to investigate the factors that make some counties fail to absorb their development budget. Table 4.7 shows that the coefficients of interest were budget surplus and own-source revenue.

The coefficient of own-source revenue was 0.1972 with a corresponding p-value of 0.045. This means that the calculated t-statistic is greater than the tabulated t-

statistic at 5% level of significance. Therefore, the coefficient is significant at 5% level of significance. The magnitude of 0.1972 shows that a 10 percent increase in own-source revenue caused a 1.972 percent increase in the absorption of the development budget. This showed that own source revenue had a positive relationship with the absorption rate of development budget. This goes to say that the counties which yielded higher own-source revenue performed better in absorbing their development budget compared to those with lower OSR.

The results for the first objective of this study are consistent with some of the theories covered in Chapter Two. The Peacock-Wiseman Theory explains how the patterns of public expenditure are not a smooth or continuous trend but rather the changes occur in steps. This is seen especially in how the first and second lags of the ratio interact with the ratio today. Moreover, according to the theory, social disturbances play a critical role in the decision to increase public expenditure. In accordance to this theory, the research results demonstrate how government expenditure in counties took an upward drift during election years thus affected the required ratio of expenditure.

The Principle of Maximum Social Advantage suggested that there is an optimal mix between efforts to raise revenue and the benefits from these revenues. Therefore, benefits such as development and recurrent expenditure are determined by the amount of revenue raised by the county. The findings reveal that revenue is the factor that affects the rift between the two expenditures/benefits by the largest degree. For the rift to be reduced, the amount of revenue raised needs to be increased.

For the second objective that dealt with budget absorption, the results do not have enough information to infer from the theories discussed earlier in Chapter Two. The theories discussed included the Public Choice Theory as well as the Agency theory which incorporate unmeasured factors such as budgetary behaviour, decision making and aspects of governance within the County Government.

The current research on public expenditure and previous studies should be different considering that this research was conducted at a decentralized level, dealing with regions instead of the country aggregate. The data used in this study was a dynamic panel data while the empirical studies were time series data. Some of the variables that were used in this study differed from the empirical as they were county specific variables such as Gross County Product. Most of the empirical studies in Chapter Two were dealing with public expenditure in relation to the economic growth of the respective country. There is limited literature that supports this line of study. This goes further to support the literature gap that this study seeks to fill concerning the study of public expenditure in decentralized governments.

The paper by Erlina &Muda (2017) that evaluated the effect of some factors on the budget absorption in the Municipal Government had contrasting results with the current study. The conclusion from the paper showed that budget surplus, budgeting time and local own-source revenue concurrently had a significant effect on the budget absorption in the Municipal Government in North Sumatera. The results from the current study indicate that only own-source revenue has a significant and positive effect on the development budget absorption. The discrepancy may have risen from the fact that the paper deals with the total budget absorption and not a specific budget absorption such as development. It may also have arisen from the previous study using the entire population data as compared to a sample.

CHAPTER FIVE

SUMMARY, CONCLUSION AND POLICY IMPLICATIONS

5.1 Summary

The first objective of this study was to establish the factors that cause the rift in the distribution of revenue between recurrent and development expenditure in different counties in Kenya. To attain the objective of the study, panel data for financial years 2013/2014 until 2018/2019 was collected for the various economic variables of counties. Drawing from the Literature in Chapter two, there were a number of variables which were possible determinants of this rift. Considering data availability, the only factors involved in this study were Revenue, Gross County Product, pending bills(debt) and personnel emoluments. The time period was six years and the number of individuals investigated was the total population of 47 counties. With a large N and a small T, the data is exposed to Nickel Bias. Therefore, it was treated like a dynamic panel. Unit root tests were conducted to test for the stationarity of the data. All the variables were already stationary except from the gross county product which was integrated of order one to become stationary. The data was also tested for autocorrelation and overidentification of residuals. The optimal choice of lags was two lags. The data was estimated using a two-step System GMM which gave the results that answered the first research question.

In theory and legally, there should be an optimal mix between recurrent expenditure and development expenditure. For counties in Kenya, the Public Finance Management Act states that the required distribution between expenditure on development to recurring expenditure is 3:7. Therefore, for a balanced budget, the various factors affecting county expenditure should be kept in check to ensure optimum county performance.

The ratio of recurrent to development expenditure was the dependent variable which represented the rift. From the collected data, the study found that revenue

has a negative effect on the rift between the two expenditures. The ratio in the previous year has a positive effect while the ratio two years prior has a negative effect. Personnel emolument has a positive effect on the rift between the two expenditures. In addition, the election periods have a positive effect on the rift.

The second objective was to establish the factors that make some counties fail to absorb their development budget. A sample of 10 counties was used to extract the data. Drawing from the empirical literature in Chapter two, there were only two available variables which were possible factors causing the poor absorption. The dependent variable was the development absorption rate while the explanatory variables were own-source revenue and budget surplus. The results were also estimated using a two-step System GMM. The empirical results showed that only own-source revenue had a significant and positive effect on the absorption rate of the development budget.

5.2 Conclusion

The first objective of this study was to establish the factors that cause the rift in the distribution of revenue between recurrent and development expenditure in different counties in Kenya. The findings from the study stated that revenue, personnel emoluments and the election period are factors that caused a rift in the distribution between recurrent and development expenditure in different counties in Kenya. The study findings from the first objective led to three conclusions.

Firstly, the study concludes that when there is adequate revenue received by counties, the rift between recurrent and development expenditure is narrowed.

Secondly, based on the finding that personnel emoluments increases the rift, the study concludes that if counties minimize expenditure on personnel emoluments, the rift between recurrent and development is reduced.

Thirdly, the study concludes that during an election period (a year to election, during election and a year after election) the rift between recurrent and development expenditure in counties broadens.

The second objective was to establish the factors that make some counties fail to absorb their development budget. The findings from the study state that only one factor affects the absorption rate of development budget.

The conclusion made by this study is that counties which yield higher own source revenue perform better in absorbing their development budget compared to those with lower own-source revenue.

5.3 Policy Implications

With regards to revenue, the percent share of revenue allocated to counties has varied over the years from the required 15% to 21% to 23% and is currently at 30%. The equitable share of Consolidated Fund raised nationally is known to be the main source of revenue for counties in Kenya. Firstly, to reduce the rift between the recurrent and development expenditure, the policies in place should allow for county revenue to be increased directly through the equitable share. However, due to the autonomy of the equitable share, counties can choose to improve their ability to increase internal revenue. This can be done through increasing internal tax effort, applying for more conditional grants or generate more from own-source revenue.

Secondly, the percentage of personnel emoluments spent in the recurrent expenditure should be monitored and regulated. This may also require county governments to maintain their staff at a controlled number. This is possible if the county governments only hire personnel when necessary. It can also be controlled by adjusting the amount of work and task given to the current personnel. This will decrease the demand for additional personnel.

Thirdly, the election periods should be closely monitored and regulated to inhibit the excessive pressure put on the recurrent budget that withholds from the development budget. Instead of the misappropriation of funds towards the end of a term, county government officials should find a way of dealing with the eminent threat of not being re-elected. Pension schemes can be set up for

governors to mitigate the risk of losing their source of income after losing a political seat.

Lastly, the national government should incentivize the raising of own-source revenue as it gives the counties the capacity to develop the county even when the revenue allocated is not adequate. When counties have their own money before the Commission on Revenue Allocation (CRA) disburses the revenue, they can begin a project until the government does. This will ensure that the county development plans are not hindered by time delays in revenue allocation or shortages from the expected budget.

5.4 Contribution to the world of knowledge

This research has brought to light the deficiency in research concerning public expenditure in decentralized systems. From the empirical literature, it is evident that previous studies are mostly focused on the effect of public expenditure on an aggregate economy and economic growth. What the world of knowledge will gain from this study is the ability to address issues of public expenditure at a decentralized level and use it as a guide for public finance management in devolved government systems. This research has also recognized the implications that revenue in its forms and quantities has on the level of spending and the priorities in a devolved unit.

5.5 Suggestions for further research

Further research should be conducted in Public Finance Management specifically within decentralized systems. The laws and policies of Public Finance may vary depending on the country and the government system. This study only covers Public Finance in the Kenyan devolved system with regard to the legislative requirements of the Constitution of Kenya. Hence, studies should be done in Public Finance for different decentralized government systems within Sub-Saharan Africa. The research should also investigate how Public Finance Management in these systems vary from region to region.

List of References

Akanbi, O. A. (2014). Government expenditure in Nigeria: Determinants and trends. *Mediterranean Journal of Social Sciences*, 5(27 P1), 98.

Allen T. Peacock and Jack Wiseman (1961), The growth of public Expenditure in the United Kingdom, National Bureau of Economic Research, Princeton.

Aregbeyen, O. O., & Akpan, U. F. (2013). Long-term determinants of government expenditure: A disaggregated analysis for Nigeria. *Journal of Studies in Social Sciences*, 5(1).

Bird R.M. (1970), "Growth of Government Spending in Canada", Canadian Tax Foundation, Toronto, p.4.

Chu, K. Y., Gupta, S., Clements, B., Hewitt, D., Lugaresi, S., Schiff, J., & Schwantz, G. (1995). Unproductive public expenditures. IMF Pamphlet Series, (48), 1-45.

Erlina, A. S., & Muda, I. (2017). The Analysis of the Influencing Factors of Budget Absorption. *International Journal of Economic Research*, 14(12), 287-300.

Ghulam, Rhumy. (2012), Agency Theory in the public sector in Indonesia. Retrieved on March 6, 2016

Halper, Louise A. (1993) "Parables of Exchange: Foundations of Public Choice Theory and the Market Formalism of James Buchanan," *Cornell Journal of Law and Public Policy*: Vol. 2: Iss. 2, Article 1.

Lane, Jan-Erik. (2003), Management and public organization: The principal-agent framework. Working paper. University of Geneva and the National University of Singapore.

Latifah, Nurul P. (2010), Is There an Opportunistic Behavior in the Application of Theory Agency in the Public Sector. *Journal of economic focus*.5(2).14-25.