UNIVERSITY OF CAPE COAST

ELECTIONS BURDENS AND OUTCOMES IN SUB-SAHARAN AFRICA

BY

SEREBOUR QUAICOE

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DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this University or elsewhere.

Candidate's signature: …… Date: ……

Name: ……..

Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature…… Date: ……

Name: ……..

Co-Supervisor's Signature…… Date: ……..

Name: ……..

ABSTRACT

The study examines the burdens and outcomes that elections impose on Sub-Saharan African (SSA) countries. Conspicuously missing in the literature is the extent to which the level of development and literacy moderate the effect of election on government expenditure; and complexity of ballot paper and marginality on the proportion of invalid vote in SSA. Using macrodata from the World Bank and other sources, the study employed the System Generalised Method of Moment (GMM), Fixed Effect, Random Effect, and Hausman-Taylor (HT) models to test the hypotheses. We find statistical evidence to support the claim that level of development and literacy moderate the effect of election on government expenditure; and complexity of ballot paper and marginality on rejected ballots. The study recommends that governments of SSA countries must initiate policies that ensure strong fiscal discipline during electoral and non-electoral years. In addition, governments, candidates, political parties and other civil society organisations must intensify civic education to reduce the rate of rejected ballots in SSA.

KEYWORDS

Complexity of ballots

Election burdens

Election outcomes

Marginality

Rejected ballots

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DEDICATION

To my wife, Juliana and my children, Sandra and Dan.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ACRONYMS

DCH	Downsian Closeness Hypothesis
EC	Electoral Commission
FE	Fixed Effects
GDP	Gross Domestic Product
GMM	Generalised Method of Moment
HT	Hausman-Taylor model
IMF	International Monetary Fund
LDP	Liberal Democratic Party
NCCE	National Commission on Civic Education
NDC	National Democratic Congress
NPP	New Patriotic Party
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Squares
PBC	Political Budget Cycle
RE	Random Effects
SES	Socio-Economic Status
WDI	World Development Indicators

CHAPTER ONE

INTRODUCTION

Background to the Study

The core goal of every society, be it developed or developing, is to expand the capabilities of its citizens or create a congenial environment for the realisation of these capabilities. One of these capabilities is freedom. As Sen (2000) argues, freedom including political freedom is not just an important factor of development but it is also one of the primary outcomes of development. Contemporarily, elections have been recognised as the most preferred means through which the citizens of a country can satisfy or exercise their freedoms. Elections have taken deep root in Africa and the necessary systems and structures that support their successful conduct have been developed and implemented in many countries. Several reforms have also been carried out, all aimed at helping the citizens choose their leaders in a manner that expresses their wishes and aspirations. Evidence of these is the establishment of many independent national electoral commissions who are mandated by constitution to administer and manage free, fair and credible elections. The voting process has also been improved upon in many African countries.

In the course of last three decades, the democratic reforms conducted in many African countries have enhanced successful transition of many countries from one-party, military and autocratic rule to multiparty democracy. At the heart of the transition to democracy is the holding of periodic multiparty elections. Since the re-emergence of democratic systems in Africa in 1989, Africans have used elections as the main means of choosing

leaders to represent them at all levels (Gyampo, 2009). At the same time, Africans have also used elections to change from one government to another. Between 1990 and 1998, some 70 parliamentary elections involving at least two parties were convened in 42 out of the 48 countries (Van De Walle, 2000). In addition, there were over 60 presidential elections with more than one candidate during this time. As of 1998, 26 countries had convened second elections, usually on schedule, i.e. at the end of the constitutionally fixed term of office holders elected during the first elections (Van De Walle, 2000). Elections in Africa have become a powerful tool for accountability, democracy and ultimately human development.

According to Vergne (2009), elections prompt accountability in two ways. They provide political competition and help governance to be more efficient by alleviating the moral hazard issue or mitigating the adverse selection phenomenon. By weeding out incompetent politicians and giving those in power an incentive to put in effort, elections are believed to provide suitable incentives for an efficient governance. The accountability effect indicates that elections affect the incentives facing politicians. The anticipation of not being re-elected in the future leads elected officials not to shirk their obligations to the voters in the present (Barro, 1973; Ferejohn & Kuklinski, 1990; Manin, 1997).

Country level analyses of the relationship between political competition and economic performance suggest that politically competitive governments perform well as far as the Human Development Index (HDI) is concerned. Uncertainty over remaining in power without performance and strong political rivalry exerts some pressure on the incumbent to work towards

the development of the citizenry. The impacts of such competition are felt most in rural areas than urban areas (Dash & Mukherjee, 2013).

In this view, elections are seen as a sanctioning device that induces elected officials to act in the best interest of the people. However, one important condition that affects political accountability is the competitive electoral mechanisms and at the core of the electoral mechanism is the vote. The vote is the primary tool for citizens to make their governments accountable. If a large fraction of citizens does not express their opinions, elections would create no incentives for politicians to espouse or implement policies in the public interest. Elections thus serve to select good policies or political leaders (Rogoff, 1990).

Free, fair and competitive elections constitute an integral part of democracy and define the basis of citizenship. The consolidation of democracy requires recurring elections that allow the citizens of a country to choose representatives (Adcock, 2005). According to Geys (2006), elections perform three key functions in democracy. These are to discipline the elected officials by the threat of not being reappointed; to select competent individuals for public office; and to reflect the preference of a large spectrum of voters.

Elections do not only promote political participation for the citizens but also provide legitimacy for government. There is legitimacy effect as a government which has acquired power through winning an election has a mandate to implement its commitments and the wide recognition of this mandate reduces the ability of those opposed to these policies to block them.

While election is a reliable barometer of democratic experience of a country, the very survival of democratic government is largely influenced by

incumbent political party financing which is also known in the literature as electorally motivated expenditure cycles (Enkelmann, & Leibrecht, 2013). A common phenomenon in mostly developing countries is that governments have the motives to renew their legitimacy and mandates in periodical recurrence of elections. The electoral pressure may lead them to manipulate public policy in order to increase their chances of re-election (Vergne, 2009). Available literature suggests that the overall change in expenditure composition is higher in newly democratised countries than advanced democracies. More so, expenditure composition in election years are usually larger than in non-election years in established democracies (Enkelmann & Leibrecht, 2013).

Evidence gathered by Drazen and Eslava (2010) suggests that in their attempt to remain in office, government in the Columbian municipalities tend to increase visible expenditures on housing, health, water and energy to target voters (Enkelmann & Leibrecht, 2013). Although evidence based on a broad sample of countries is lacking, a study conducted by Stasavage (2005) shows that the need to obtain an electoral majority may have influenced African governments to spend more on education and to prioritize primary schools over universities within the education budget. The study further show that democratically elected African governments spend more on primary education, while spending on universities appears unaffected by democratisation.

Further, theoretical argument in favour of the opportunistic policy making suggests that since voters do not take into account the government's intertemporal budget constraint, opportunistic policy makers take advantage of

voters and use budget deficits to increase their chances of re-election (Chiminya & Nicolaidou, 2015). More importantly, because voters are known to overestimate the benefits of current expenditure and underestimate future tax burden, opportunistic politicians who seek to be re-elected take advantage of voters by increasing spending more than taxes in pre-election moments to please voters (Chiminya & Nicolaidou, 2015).

Narrowing the discussion further to debt serving as another policy option available to government to manipulate electoral outcomes, the only available study on India points to the fact that significant increases in expenditures on debt occurs in election years (Khemani, 2004). This study provides enough basis for close examination of the applicability of the finding in the African context. Such analysis is relevant especially given the fact that most African countries are known for accumulating debt from sources that remain a research subject.

While the existing literature provides enough basis for drawing close association between elections and increased government expenditure and reduced debt servicing, such conclusion needs to be drawn in the context of the level of development of the countries in question. This study argues that the extent of change in government expenditure and debt servicing in election years is dependent on the level of development of the country. Election periods have less effects on expenditure and debt serving in developed countries where spending on infrastructure and other development outcomes has little bearing on the outcome of the election.

In addition to the electorally motivated expenditure and debt accumulation, other two factors that define the success of election and

sustainability of democracy are the proportion of rejected ballot or invalid voting and turnout. Elections in many Africa countries have been characterised by high incidence of rejected ballots which partly undermines the consolidation of democracy and threatens peace and harmony in the continent. Relatively, the rates of rejected ballots in Africa are only comparable to Latin America. The proportion is lower in Oceania, Europe and Asia.

One of the key drivers of huge costs associated with elections in the SSA is rejected ballots. Recently, the issue has been of great concern to various governments in the sub-region. On the average, rejected ballots account for 4.5 percent of overall votes cast in Sub-Sahara Africa. While some member countries boast of rates as low as 1 to 2 percent, others have relatively high rates of 10 percent and above. For example, in the 2014 presidential election in Guinea- Bissau, rejected ballots accounted for 14.61 percent of the total votes cast (International Institute for Democracy and Electoral Assistance, 2016).

In spite of their political and socio-economic implications, invalid voting has received very little attention in the literature. This is partly due to the focus of most research on countries where this practice is negligible as well as voting behaviours that shed light on party identification and/or the allocation of political power (Power & Garand, 2007). The existing literature (McAllister & Makkai, 1993; Power & Roberts, 1995) suggest that there is a rival cluster of variables (which can be categorised based on three broad theoretical approaches: the institutional, socioeconomic, and the political-

protest or regime-level approaches) that are assumed to explain variation in invalid voting.

Power and Garand (2007) have emphasised that many of those variables that influence invalid voting also figure prominently in the related but vastly larger literature on voter turnout. This is because models of turnout and invalid voting are both concerned with the factors that influence a critical intervening variable in the models of voter efficacy. Among such variables that have been explored in the literature are margin of victory or closeness of election and population size (Lehoucq & Wall, 2004; Geys, 2006).

Voter turnout can be used to gauge the legitimacy of government. If turnout is unequal, the interest of some citizens is taken into account in policy more strongly than the interests of others. Indeed, unequal electoral participation can distort the pattern of representation necessary for democratic responsiveness, leading to real effects on policy outcomes. Voter turnout in any election is of immense relevance to the value or credibility that will be attached to its outcome. A high turnout is therefore seen as higher participation in decision making and a seal of approval or legitimacy. Emphasising the importance of voter turnout in democracy, Kuenzi and Lambright (2007) argue that because democracy in its most fundamental sense is 'rule by the people' the proportion of the citizenry expressing its preference through voting is of interest. In developing countries where democracy is still nascent, popular participation in elections plays a key role of not only getting majority leadership but also it is a process of consolidating democracy.

Voter turnout measures the outcome of an election, satisfaction of constituents, political attitudes, and partisan distribution of the vote and the

effectiveness of other democratic indicators (Young, 2004). The importance of turnout in measuring political participation and consolidation of democracy (Dahl, 1971) has served as a motivational factor for researchers to be concerned with discovering the determinants of turnout.

Turnout in Africa has remained low relative to other regions. A comparative analysis of average turnout from 1990 to 2001 (Lopez, Gratschew & Sullivan, 2002) shows that turnout in Africa was 64 percent compared to 79 percent in Oceania, 78 percent in Western Europe, 72 percent in Asia and Central and Eastern European. It was also low compared to 69 percent for Central and South America; 65 percent in North America and the Caribbean, as well as the Middle East.

In the case of Ghana's election, records show that turnouts of all elections have been consistently below 90 percent which is considered as the benchmark for classifying voter turnout as high (Alvarez, 2016). As depicted in Figure 1, turnout was lowest (50.16 %) in 1992 but highest (85.12 %) in 2004 elections. The figure further shows that from 1992 to 2016 the average turnout was 71.08 percent. The turnout was always low in years that resulted in change of power but high in the years that the incumbent government seeks second terms. Apart from 1992 where election was held in the country for the first time in the fourth republic, voter turnout was low in 2000, 2008 and 2016 elections that resulted in change of power. Given the turnout of the 2016 election, it can be inferred that during any elections that results in change of government, the voter turnout is low. What cannot be explained from the figure is the causes of such alternations in voter turnout after every eight years of election.

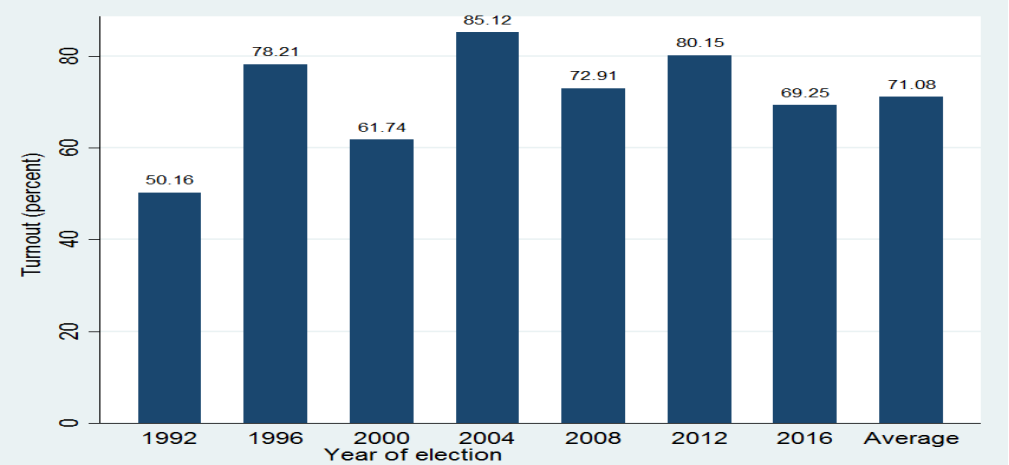

Figure 1: Turnout of presidential elections in Ghana (1992-2016)

Source: Author, 2018.

It is evident from this brief introduction that election has an inextricable relationship with some socio-economic factors including government expenditure and debt servicing. It is also characterised by low turnout and high proportion of rejected ballots in particularly developing countries and these factors are in turn, influenced by other social, economic and political factors which are discussed in subsequent chapters of this thesis.

Statement of the Problem

Elections play a significant role in deepening democracy, maintaining peace and promoting human right. They are widely considered to be the most dignified means through which leaders or representatives are appointed (Sen, 2000). It presents citizens with equal opportunity to actively participate in the choice and decision making. In both developed and developing countries, individuals and political parties are pursuing political power through the use of legal and illegal means. Chief among these means is the use of monetary or fiscal policy surprise to convince the electorates for votes. Despite their relevance in promoting human right and democracy, elections have been theoretically and empirically proven as major sources of socio-economic

burdens and outcomes usually in developing countries (Drazen & Eslava, 2010; Ehrhart, 2012).

One of such burdens is public budget cycle which usually occurs when re-election minded incumbent has the incentive to manipulate public policy instruments (fiscal and/or monetary policy) in order to increase their chances of re-election and renew their legitimacy. This partly contributes to policy volatility which impacts negatively on long term growth, fiscal sustainability and aggregate welfare (Ebeke & Ölçer, 2013).

Studies such as Block (2002), Brender and Drazen (2005), Shi and Svensson (2002), Drazen and Eslava (2010), Ehrhart (2012), Klomp and De Haan (2013), and De Haan (2014) have examined this election-business cycle nexus. These studies however focused on advanced countries who have advanced in democracy. Moreover, Enkelmann and Leibrecht (2013) who studied elections and election-related expenditures in developing countries suggest the existence of politically driven economic cycles on government current expenditures, indirect tax revenues, and budget deficits.

Instead of focusing on overall government expenditure, studies such as Katsimi and Sarantides (2012), Aregbeyen and Akpan (2013), and Enkelmann and Leibrecht (2013) have assessed the effects of elections on disaggregated components (current, capital and infrastructure) of government expenditure. Though such disaggregated analyses provide much information on the distribution of government spending and enhance the design of policies to minimise the political budget cycle, not much is known of how general elections affects specific component of government expenditure. Election may have varied impact on different aspect of government expenditure such as debt

servicing which has not been considered in the literature in spite of its implications for economy. Existing studies on the election-business cycle phenomenon did not look at the differences in the development of the various economies on the magnitude of the effects. The extent of effects of elections on government expenditure and debt servicing could also be conditioned on the level of development of the country in question, for instance, Ghana. This study thus explores the extent to which elections affect government expenditure and debt servicing given the level of development of the country in question.

Relatively, in developed countries, governments' chances of winning election are not necessarily dependent on its expenditure and thus have some degree of freedom to service their debts (Hallerberg & Von Hagen, 1997). Lindberg (2003), and Alt and Lassen (2006) reckoned that the electoral successes of governments of less developed countries are mostly tied to their spending on items that will increase their chances of re-election. They are therefore more likely to cut down debts servicing and increase spending during election periods. This will contribute to a phenomenon of cyclical debt accumulation which in the long-run might constrain government's ability to undertake development projects. The essence of paying attention to debt servicing is due to its potential implication for debt accumulation, economic sustainability and development in African countries which has become a topical issue globally (United Nations, 2016).

As indicated in the introduction, aside its political budget cycle effect, elections in developing countries are usually characterised by high proportion of rejected ballots. Extant literature on the socio-demographic, institutional

and political causes of such high rejected ballot have focused mainly on advanced countries in the Europe, the U.S., and Australia (Power & Garand, 2007). In the African context, there are limited empirical literature particularly at the country level (Gyampo, 2009). This is partly due to non-availability of reliable datasets that contain information on both election and other socioeconomic variables. This study fills this lacuna by examining the factors that affect rejected ballots in sub-Saharan Africa. In Sub-Sahara Africa, rejected ballots have serious implications for the countries. Reject ballots affect economic agents of these countries through time and cost of organizing runoffs.

In Sub-Sahara Africa, the average rate of rejected ballots is 4.5 percent. While some have rates within the range of 1 to 2 percent, others have rates above 10 percent. For example, in the 2014 presidential election in Guinea-Bissau, rejected ballots accounted for 14.61 percent of the total votes cast (International Institute for Democracy and Electoral Assistance, 2016). Available records indicate that invalid votes in Ghana's election have been: 1992–64,354 votes (3.02 %), 1996–111,108 votes (1.53%), 2000–104,214 votes (1.53%), 2004–188,123 votes (2.13%), 2008–205,438 votes (2.4%), 2012–251,720 votes (2.2%) and 2016–166,248 votes (1.45%) (Gyampo, 2009). These statistics for Ghana which has remained a leader of democracy in Africa provides enough basis for further examination of the causes and the socio-economic implications for the continent in general

In addition to the high amount of rejected ballots is low voter turnout which has been attributed to a number of political, economic and institutional causes. Though the issue of low turnout has been extensively studied in

developed countries, the literature on the factors that influence voter turnout remains greatly understudied in developing democracies. Not many studies have been done on electoral turnout in Sub-Sahara Africa in general and Ghana in particular (Reynolds, 2012). The empirical studies on Ghana have mainly focused on specified district-level or constituency-level elections. Thus, from the review of literature, no nationwide study has been done empirically to determine how factors such as government expenditure affect voter turnout in Ghana. This study is therefore motivated to estimate the effects of these factors on voter turnout of general elections in Ghana.

Although the issue of low voter turn is not peculiar to Ghana alone, one of the main reasons for focusing on Ghana is non-availability of data on election and socio-economic characteristics of people at the district level for other Africa countries. The objective of this study is to consider individual, household and community level characteristics of voters that influence voter turnout. However, microdata that would permit effective analysis of this nature is very scarce in other African countries. This is as a result of the fact that elections and socio-economic surveys are not mostly conducted at the same time making it very difficult to obtain election and socio-economic variables in the same data set across years.

Objectives of the Study

The main objective of the study was to determine socioeconomic burdens and outcomes that general elections impose on African economies and electorates. In specifics, the study sought to:

1. Assess the moderating role of level of development (represented by GDP per capita) to the relationship between government expenditure and

electoral periods on one hand, and electoral periods and government debt servicing on the other hand.

2. Examine the effects of complexity of ballot paper and marginality on invalid vote conditioned on the level of development, and literacy of the population of the country in question.
3. Examine the effects of closeness of election (marginality) and population size of a district on voter turnout in Ghana.

Hypotheses

In line with the objectives, the following research hypotheses are tested:

1. H_0: The effect of election on government expenditure and debt servicing in Sub-Saharan Africa is significantly dependent on the level of development of the country in question.

   H_1: The effect of election on government expenditure and debt servicing in Sub-Saharan Africa is not dependent on the level of development of the country in question.
2. H_0: The effects of complexity of ballot paper and marginality on invalid vote are not dependent on the level of development and the level of literacy of the population of the country in question.

   H_1: The effects of complexity of ballot paper and marginality on invalid vote are dependent on the level of development and the level of literacy of the population of the country in question.
3. H_0: Closeness of election (marginality) and population size of a district have no significant effects on voter turnout in Ghana.

   H_1: Closeness of election (marginality) and population size of a district have significant effects on voter turnout in Ghana.

Significance of the Study

The relevance of this study lies in the fact that it draws the attention of government and citizens of sub-Saharan Africa in general and Ghana in particular to the potential social, economic and political burden that election can impose. It principally stresses the need to pay more attention to the contribution of election to debt accumulation in developing countries due to low debt servicing in election years. It also throws more light on the reaction of electorates to closeness of election (margin of victory) and economic inequality to election manifested in the form of the proportion of invalid vote and voter turnout. The findings of this thesis will play important role in shaping the fiscal policies of governments in sub-Saharan Africa in ensuring sustainable debt level especially during election seasons.

While there exist several studies (both quantitative and qualitative) on how election affects government expenditure in both developed and developing countries, none of them has focused on the extent to which the level of development influences the effect of election or electoral season on government expenditure and debt servicing in sub-Saharan African countries. Similarly, literature on the extent to which the level of development of a country, and the level of literacy of the population affect the proportion of invalid votes in Sub-Saharan Africa is yet not seen. What distinguishes this study from the extant studies is that it conditions the extent of association between marginality and invalid vote in Sub-Saharan Africa on the level of literacy of the population. It finally provides evidence of the effects of closeness of election (marginality), the level of education and population size on voter turnout in the Ghana context.

Delimitation of the Study

This study covers all Sub-Saharan Africa countries. However, data availability and reliability are major factors that drive the selection of the countries included in the final analysis. For instance, objectives one and two cover the whole of Sub-Saharan Africa. However, some countries were left out of the final analysis because of unavailability and inconsistencies identified in the available data. This led to a final sample size of forty-three (43) African countries covering the period 1985-2015 for the objective one and for objective two covering thirty-eight (38) countries from 1992 to 2012. With respect to objective three, the study focusses on Ghana alone due data availability. Data was available for the years 2000 and 2010.

Similar to the reasons for the inclusion and exclusion of countries in the analysis, availability and reliability of data as well as theoretical justifications largely influenced the inclusion of variables in the analysis of each objective. For instance, variables included in the empirical analyses of objective one are government expenditure and government debt servicing (dependent variables), lag of government expenditure, election year, Gross Domestic Product per capita, Gross Domestic Product growth rate, and inflation rate. Others are unemployment rate, system of governance and electoral system.

As far as objective two is concerned, the variables included in the analysis are proportion of rejected ballot or invalid votes (dependent variable), complexity of ballot papers, margin of votes, voter turnout, Gross Domestic Product per capita, Gross Domestic Growth rate, unemployment, proportion of urban population, electoral experience (measured as the uninterrupted number

of times that a country has held election), and literacy rate of the population. Out of the 54 African countries, data on the variables included in the analysis was available for 43 countries across. With respect to objective three, data on election in Ghana were only available at the district level. The study therefore concentrated on variables such as proportion of female, first time voters, population sixty years and above. The rest of the variables are marginality, population size, and proportion of the population who have degree and above qualifications, proportion of the population who are married, and proportion of Akans relative to the total population. It is also important to indicate that only quantitative method is used and that no qualitative method should be expected.

Limitations of the Study

As a characteristic of every research, it is acknowledged that this study did have some limitations. Each empirical objective presents its own limitations that have to be discussed for future studies to take note and endeavour to address them. It is however important to make it clear that those limitations in no way render the findings of this study invalid or compromise the quality of this thesis. The following were the issues that the study could not address due to data constraints:

In objective one, the study focused on only forty-three of the forty-six Sub-Saharan African countries due to unreliable nature of the data on those countries that were left out. In instances where some data were available, there were a lot of missing observations for some of the years. In addition, expenditure on elections by individuals and political parties may affect the outcome of elections. However, in the SSA sub-region, private expenditure on

elections is difficult to come by meaning that expenditure considered in the study was purely public expenditure.

As far as objective two is concerned, there were some missing observations for the election and socioeconomic variables. This led to considerable reduction in the number of countries that should have been included in the analysis.

The study could not capture the effect of development of institutions such as the National Commission on Civic Education (NCCE), civil society organisations and improvement in the quantity and quality of the media who play instrumental role in shaping the quality of elections and consolidation of democracy in Africa.

With regard to objective three (complexity of ballot paper, marginality and invalid votes), there was a challenge of obtaining data on economic variables at the district level for the years 2004 and 2008. This necessitated that the analysis be restricted to only 2000 and 2010 where data on economic variables could be extracted from the population census to allow for the building of the two-year panel. Nonetheless, this did not affect the reliability of the estimates and conclusions drawn. It should also be noted that marginality is only captured as the difference between the winner and the runner-up of an election. This is by far a perception measure as the actual difference between these two candidates is only known as the election has been help.

Another limitation of objective three is that there was no census data in 2012. As a result, an attempt was made to generate projections of the variables included in the analysis. However, there was no population growth figures at

the district level to be used as the basis for the projection. It was therefore relatively better to use the 2010 census data as a proxy in order to minimize the margin of error. Though using 2012 census data would have been ideal, using the 2010 data as a proxy does not discount the efficiency of the estimates since the general population growth between 2010 and 2012 was not all that large.

Organisation of the Study

The rest of the thesis is organized into seven chapters and sub-chapters that comprehensively address the outlined hypotheses. Chapter two presents detailed review of the history of elections in Africa. The chapter is divided into sub-sections on general overview on the genesis of election from global perspective, elections before the era of independence in developing countries, post-independence electoral experience of developing countries, single and multi-party elections, parliamentary and presidential elections in Africa.

Chapter three presents the theories that underpin the concepts of voting and its determinants as well as the empirical literature. In this chapter, the rational choice theory and minimax regret model are explained in detail and identifiable studies that have explored the application of these theories to empirical data are discussed.

Chapter four discusses the theoretical methodologies and empirical estimation techniques employed in addressing the hypotheses. In this section, emphasis is laid on the Political Budget Cycle Model, and Rational Choice Model as the main theories that underpin the empirical analyses. The chapter also presents detailed explanation of the sources of the data used and the process involved in building the data for the empirical analyses. It also

discusses how the various variables included in the analyses are measured and their *a priori* expectations.

Chapter five presents and discusses the results of the empirical analysis of the hypothesis on the relationships between election or electoral season and government expenditure, as well as elections and debt servicing in Sub-Saharan Africa. Chapter six discusses the results and conclusion of the analyses of the hypotheses on complexity of ballot papers and rejected ballots, as well as margin and proportion of rejected ballot in Sub-Saharan Africa.

Chapter seven looks at the findings of the empirical analyses of the third and final hypothesis on closeness of election (marginality)-voter turnout nexus, and the relationship between population size of a district and voter turnout in Ghana. In analysing these hypotheses, the findings are constantly juxtaposed with the findings of the existing empirical literature.

Chapter eight summarises, concludes and prescribes policy recommendations based on the findings of the results obtained from the analyses of all the hypotheses to guide policy formulation towards reasonable debt levels maintenance during election periods, and the means of minimizing rejected ballots and improving voter turnout in Sub-Saharan Africa. Following the limitations of the study (discussed in chapter one), areas for future research are also recommended in Chapter eight.

CHAPTER TWO

HISTORY OF ELECTIONS IN AFRICA

Introduction

This chapter reviews the history of elections in Africa taking into consideration the type of election (presidential versus parliamentary), system of democracy (single-party versus multi-party) and era of election (pre-independence versus post-independence). The chapter is structured into different sections beginning with general overview of the genesis of election from the global perspective to country-specific experience. In addition to brief statistics on country-level elections, the chapter ends with a section on electoral experience in some African countries in recent years and modifications introduced into the electoral process.

Overview

It is a human practice that anytime a group of people is identified, leaders are chosen to direct the affairs of the said group. Choosing individuals to hold offices has been a process with humankind for ages. Elections were used in ancient Greece and ancient Rome to select rulers such as Holy Roman Emperor and the Pope. The origin of elections in the contemporary world lie in the gradual emergence of representative government in Europe and North America beginning in the 17th century (Ratcliffe, 2013). At that time, the holistic notion of representation characteristic of the Middle Ages was transformed into a more individualistic conception, and that made the individual the critical unit to be counted. For example, the British Parliament was no longer seen as representing estates, corporations and vested interest but was rather perceived as standing for actual human beings. The movement

abolishing the so-called "rotten boroughs" electoral districts of small population controlled by single person or family that culminated in Reform Act of 1832 (One of three major Reform Bills in the 19th Century in Britain that expanded the size of the electorate) was a direct consequence of this individualistic conception of representation.

Once governments were believed to derive their powers from the consent of the governed and expected to seek that consent regularly, it remained to decide precisely who was to be included among the governed whose consent was necessary. It must be noted that advocates of full democracy favoured the establishment of universal adult suffrage. Across western Europe and North America, adult male suffrage was ensured almost everywhere by 1920, though woman suffrage was not established until later (1928 in Britain, 1944 in France, 1949 in Belgium, and 1971 in Switzerland).

Electoral experience on the part of Africans was largely absent during the colonial period (Wiseman, 1990). The few notable exceptions tended to be found in francophone Africa, where the ideology of cultural assimilation occasionally permitted African electoral participation. However, Africa is not different to elections since it has been with us for a very long time. For example, French colonial settlements in four Senegalese communes were allowed to vote for a deputy in the French National Assembly after 1848 (Cowen & Laakso, 1997). Also, Ellis (2000) pointed that Nigeria's journey with elections can be traced to the 1923 and that introduction of election principles occasioned by Clifford Constitution of 1922 allowed election of desired persons into the legislative council.

Again, elections evolved in Ghana in early colonial days with the 1925 election into the legislative council days proceeded by the inauguration of the Guggisberg constitution of 1925. These attest to the fact that elections have been an integral part of African politics since political independence. Between 1950 and 1998 alone, Africa had witnessed 18 elections to constitutional assemblies, 186 presidential elections and 311 parliamentary elections. In addition, there were 115 referenda (Ellis, 2000).

Elections before Independence

It must be noted that, though electoral experience was largely absent, the idea of voting was not completely foreign to pre-colonial Africa. In some traditional societies, leaders were chosen by elections in as much as a choice was made between several individuals through a process of consultations. It should be remembered however, that the range of choice and degree of participation in these selection processes were in general very limited (Hayward, 1987).

Competitively oriented systems with the direct participation of the complete adult population were exceptional. When these occurred, it was usually in the form of a decision at local level which could be made a face – to – face meeting, such systems cannot simply be called up to the status of national and regional states and elections with direct mass participation.

Although these electoral system involvements are often viewed as basis for domestic culture, they do not represent a pool of political experience which is relevant for a national electoral policy. In fact, it was only in the final years of colonialism following World War II that African electoral participation became more widespread as the French and British attempted to

mollify emerging nationalist movements (Nohlen, Krennerich & Thibaut 1999; Ellis 2000). The British began establishing fledgling parliamentary systems that would eventually form the basis for independence. An authoritative order by the French (Ordinance of 1945) also established electoral colleges by which the French colonies could elect representatives to the Constituent Assemblies. This was followed by the introduction of universal suffrage and a high degree of internal autonomy in francophone Africa in the Loi Cadre of 1956. The French ultimately hoped to maintain their influence in Africa by establishing a French dominated federal community.

The first African election based on universal suffrage and unrestricted party formation were held in the late 1950s just before the formal date of independence for most countries (Cowen & Laakso, 1997). Similar electoral reforms to those instituted by the French and British occurred much later in the Belgian and Portuguese colonies. It is clear to see that the colonists only brought democracy to Africa as they left (Adejumobi, 2000). It must be noted that the colonial authorities not only imported the concept of national elections with associated electoral legislation and organisation, they were also involved directly or indirectly in the formation of political parties.

Although elections had taken place previously in some colonial areas like Botswana, Switzerland, South Africa and Liberia; it was only after the Second World War that the French and British colonies went through political development which ultimately led them into independence. According to Steinberger, Vogel and Landfried (1978), it was through these post developments that electoral processes and the right to vote became widely distributed. The colonial powers gave way to the participatory demands of the

local elites, which then in turn used the elections to mobilize support against colonial rule. As far as the colonial powers were concerned, the elections after Second World War set the pace of emancipation from the colonial rule. In addition to this, the elections were as in the case of the French colonies, part of a policy of assimilation under which the French overseas territories even gained representation in the Republic's Parliament for a short period. Towards the end of the colonial era, elections became a constitutional tool used to lead colonies into independence, and/or to pre- structure the post-colonial development of the new African states in the interest of the old colonial powers.

According to Ellis (2000), it would be erroneous to interpret national elections after the event as the expression of 'colonial generosity' by benevolent colonial rulers. They were much more a result of political struggle. The demand for elections and an extension of the right to vote was closely tied to demands for participation, self-determination and independence of the African States, and proved to be one of the most effective weapons available to anti-colonial movements in and outside Africa. It was only in the context of growing opposition to colonial rule at home and abroad that the French and British governments introduced the general right to vote in the 1950s and 1960s. With few exceptions (e.g. Uganda), the universal suffrage came into use in each country's last parliamentary election before independence (Ellis, 2000).

Elections after Independence

As the majority of the African states attained independence at the end of the 1950s and in 1960s, most of them were equipped with liberal-

democratic constitutions which, to a greater or lesser extent, reflected the essentials of the constitutional systems used by former colonial powers. The imported constitutions were either soon withdrawn, fundamentally modified by the new rulers or simply ignored. This development was strongly reflected in the electoral arena.

Collier (1982) opined that the first governments of most states were as a result of the last multiparty elections held before independence. To Collier (1982), the basis for competitive electoral policies of most of these states were however ignored or removed by law. That is, the new rulers of these countries no longer saw elections as a powerful tool for political emancipation to be used against colonial masters or a resource which could be used by rival factions among the indigenous elite especially the younger activist who wished to replace the old ones. Instead elections were used to secure the power of the new elites. Competition was not in the interest of the new elites and was visibly understood to be a threat to political stability, development and national unity. With the exception of Botswana, Gambia and Mauritius, almost all African states introduced one party system of elections in the short or medium term. Against this background, it can be concluded that elections after independence was not completely distributed in the populace but rather was used by the few elites to assert hegemonial claims.

Single Party State Elections

The introduction of single party system grew out of the extension of governing party's dictatorship, marginalization of opposition parties, the co-optation of opposition leaders and the constitutional abolition of multi-party

systems as well as the banning of opposition parties in some African countries (Wanyande, 2000).

It was only in Tanzania that the governing regime was able to achieve a transition to a one-party system through the ballot box. Kenneth Kaunda, in Zambia attempted to follow the Tanzanian example without success. It was not possible to completely politically neutralize the opposition in the election held under the first Zambian Republic (1964-1972), and the governing regime finally resorted to a constitutional introduction of the one-party system, the banning of the opposition parties and the co-optation offers to opposition leaders.

With few exceptions (e.g. Tanzania and Zambia), the transition to one party regimes was not even proceeded by any intra party discussion process. Often the change was justified using the argument of African 'one party democracy' which had been developed and given substance by national leaders like Julius K. Nyerere (Tanzania), Kwame Nkrumah (Ghana) or Sekou Toure (Guinea). This notion was supported at the time by scholars who thought that dictatorships were necessary to generate development and that 'political participation must be held down, at least temporarily, in order to promote economic development' (Galenson, 1959; De Schweinitz Jr., 1959; Huntington & Nelson, 1976). Galenson (1959), De Schweinitz Jr. (1959), and Huntington and Nelson (1976) argued that the monopoly of power had been historically legitimised by the struggle for independence and that the one-party system was appropriate to the African political culture as well as being necessary for national unity, political stability and in order to reach socioeconomic development goals.

The most obvious is that there was little alternation among parties and government during the authoritarian period. In fact, there was no alternation in national government in Africa until the electoral victory of the Mauritian socialists in 1982 and 1983. The lack of real choice often led to low electoral participation and turnout in elections during this period (Cohen, 1983; Adejumobi, 2000). More significantly, the absence of formal competition was often used to justify military coups. For example, the 1966 army coup in Ghana was justified on the grounds that the army and police had used the only means available for removing a dictator, only undemocratic methods could be used in the pursuit of the ultimate goal of democracy.

In reality, the one-party system chopped limited success in national integration (Wanyande, 2000). Although it contributed to the preservation of the nations, it was never able to drive socio-economic development or build up effective state structure. Self-interest, nepotism and corruption soon left their marks on African states.

Surfacing of Multi-Party Elections in Africa

In as much as political leaders opted for single party states, the remarkable few who retained multi-party systems after independence had situations where either election results which threatened the continuous stay in office of ruling parties were nullified (Lesotho 1970) or military coup prevented change of government (Sierra Leone in 1967).

Multiple parties competed in the early elections following independence and voters often had a considerable range of choices. For example, Wiseman (1990) states that there were 130 different parties in Somalia at one stage following decolonization in 1960. It is more remarkable

that some states maintained multi-party elections system (Botswana, Mauritius, Gambia up to 1994) and that some countries temporarily returned to multi-party systems after military coups or periods of one-party rule: Ghana (1969, 1983), Upper Volta (1970, 1978), Senegal (1978), Uganda (1980), Central African Republic (1981) and Sudan (1986).

It is perceived that it is very difficult to establish competitive multi-party systems in Africa. Until the 1990s only Botswana, Gambia, Mauritius and later Senegal held multi-party elections over longer periods. Otherwise, multi-party elections led at best to the creation of civil governments which as in the independence era, were not followed by subsequent multi-party elections. Military coup ensured that these did not take place. With this in mind, the question of the reintroduction and abolition of multi-party elections in states like Ghana, Nigeria, Sudan, Uganda, Upper Volta and CAR is best discussed with reference to the political role of the military.

Those leading military coups in Africa often assumed power with the promise that they would be taking the reins of power only provisionally to guide the country through a political or economic crisis.

Multi-party Elections in the 1990s

Although post-colonial development was shaped for long periods by autocratic, personality-led one-party systems and military regimes, 1989 saw the beginning of comprehensive face of democratic reforms. Multi-party systems were formally introduced in the majority of Africans states and multi-party elections took place with notable regularity. The fact that several parties were (once again) represented at the elections did not however necessarily mean that the elections were free and fair and thus actually competitive. The

question as to whether the elections were free and fair or at least acceptable was frequently the subject of heated debate (Elklit & Svenson, 1996). It must be remembered that the technical and logistical problems of the multi-party elections in the 1990s were tremendous. In addition, the political playing field generally had not yet been levelled. The rules for the electoral process were usually a subject for negotiation between the incumbent rulers and their political opposition. This was often under the influence or pressure of international players.

In view of the organisation and political shortcomings which characterised most African elections, it was necessary to examine each election individually in order to ascertain whether an irregularity were the results of the systematic action and whether the will of the voter had been significantly distorted. The results of many elections were disputed. Countries with such cases are Ghana, Kenya, Rwanda, Burundi, and Cote D'Ivoire. Consequently, the international electoral observation which had begun with the large-scale employment of electoral observers and monitors in the founding elections in Namibia (1989) became very important. The United Nations' role in Namibia was not only that of observer, but of supervisor, and the organisation later took on a similar task in Angola (1992). Eritrea (Referendum 1993), Mozambique and South Africa (both 1994).

Alongside the UN, a whole series of other international organisations like the European Union, IFES, DANIDA, Commonwealth, ECOWAS, Africa Union, and USAID and national governments and non-governmental organisations sent electoral observation teams into Africa. On occasions, they also provided electoral assistance. In addition to these international groups,

national teams of observers were also active. In some cases (Zambia 1996), these teams delivered a damning verdict on the elections, even though political players, usually the losing sides, are of the opinion that these observer groups are mostly concerned about the cosmetics of the elections.

If we set aside those states which have not yet held elections in the 1990s (Democratic Republic of Congo, Eritrea, Rwanda, and Somalia), the materials available (Table 1) suggest the following preliminary groupings:

1. States which have held competitive elections for some time now. These include Mauritius (since 1967), Botswana (since 1969) and, with reservations, Senegal (since 1978), Gambia must be excluded from this group following the military coup of 1994.
2. States which have held exclusively competitive elections since their democratic opening in the 1990s. These include Namibia (1989, 1994), Cape Verde (1991, 1996), São Tomé and Principe (1991, 1996), Benin (1991, 1996), Seychelles (1993, 1998), As well as, with reservations, Madagascar (1992, 1996), Mali (1992, 1997) and Lesotho (1993, 1998). All these states have already completed more than one electoral period since (democratisation in the Republic of South Africa, Malawi and Mozambique (1994).
3. States which held competitive founding elections as part of the democratisation wave in 1990s, but which have not experienced competitive second elections. This group includes Angola (founding elections 1992), Congo (Brazzaville) (1992), Burundi (1993), Guinea – Bissau (1994) and Sierra Leone (1996). In these countries, the process of democratisation was interrupted before the end of the first electoral

period. Two countries represent special cases: Zambia (1991, 1996) held second elections which cannot be considered fair and free. In Niger a competitive presidential election (1993) and two competitive parliamentary elections (1993, 1995) were followed by a military coup and subsequent semi-competitive presidential and parliamentary elections under non-democratic conditions (1996).

4. States whose first multi-party elections after democratisation were not up to the usual standards assume for competitive elections, but whose second elections were considered free and fair. Members of these groups are Ghana and the Comoros. Although the 1992 presidential election in Ghana was disputed and the parliamentary elections of 1993 was a subject of a boycott, the Ghanaian elections of 1996 can certainly be termed competitive. A tendency of improving electoral standards can also be stated with regards to the second presidential elections in Comoros.
5. States which in the 1990s have held only semi-competitive elections-in other words, elections which are not rich democratic standards: Algeria, Burkina Faso, Cameroon, Chad, Cote D'Ivoire, Djibouti, Equatorial Guinea, Ethiopia, Gabon, Guinea, Kenya, Mauritania, Nigeria, Tanzania, Togo and Tunisia. Morocco (since 1962), Egypt (since 1976) and Zambia (since 1980) are also basically members of these group.
6. States whose elections-at least officially-were not the scene of inter-party competition. This heterogeneous category includes the no-party

elections in Uganda (most recently in 1996), Swaziland (1993, 1998) and Sudan (1996).

(These facts reflect elections covered between early 1990s and late 1990s).

Before 1989, changes of the government through elections were a rare exception in Africa. Electoral victory of the ruling party was a foregone conclusion, *de facto* or *de jure*. In fact, the only change of government to occur via electoral process was that in Mauritius in 1982. Interestingly, most of the multi-party elections held in the 1990s was also won by incumbent parties and presidential candidates. This can partly be attributed to the fact that, in most countries in Africa, the electoral playing field is not yet technically or politically levelled enough for genuinely free and fair elections. Semi-competitive multi-party elections are rather difficult for the opposition to win. (Ghana 1992, 1996 elections are examples of this system where an opposition party until 2000 overtook a post 1990 incumbent party). The structure of the party system in each country exerts a further influence: In many African countries, there are political parties which, because of their historical, ethnic or regional base enjoy a built-in majority.

The notorious weakness of (often divided) opposition is another factor. This makes it even more significant that so many of the founding elections held since 1989 have led to a change of regime: in Cape Verde, São Tomé and Principe, Benin, Zambia, Mali, Congo (Brazzaville), Madagascar, Niger, Lesotho, Burundi, the CAR, the Republic of South Africa and Sierra Leone. Namibia (1989) is a special case as the country actually became independent only in 1990. Although only a few second elections led to an opposition victory (Benin, Madagascar), it can be stated that competitive elections have

established themselves in the 1990s as an alternative to undemocratic methods of obtaining and holding political power.

The establishment of competitive elections in some African states like the DR Congo, Central African Republic, and Sudan have obviously not led to a complete restructuring of the forms of winning and maintaining power on the continent. Firstly, the risk of coup d'état is still a real one (although it has become more difficult in the current international environment to putsch one's way to enduring power in Africa). Secondly, most of the elections cannot be said to have attained democratic standards. Thirdly, even where competitive elections have taken place, the elected rulers are not shy to use authoritarian methods to remain in power. Frederick Chiluba's government in Zambia is a much example. From a sociological point of view, and with a few prominent exceptions (e.g. South Africa), competitive elections in Africa have only just begun to dissolve the social restrictions controlling access to power. Even under competitive conditions, political power remains mostly in the same grasp of relatively small group of people, who not infrequently enjoy personal, economic, social and/ or ethnic connections. It must therefore be assumed that in some countries, even under a democratic system, the political elites and counter-elite will remain small in exclusive bodies, relatively well screened against access from 'below'.

Nonetheless, the fact that elections in Africa can lead to a change in government of all remains one of the most significant innovations since the start of 1990s. Moreover, there is a growing sense among political elites and masses alike that competitive elections are only legitimate way to choose national leaders (Van De Walle, 2000). Notably, with the exception of Angola

(1992), Burundi (1993), Mali (1997) and recently Lesotho (1998), the results of most competitive multiparty elections have been accepted by the losers. In contrast semi-competitive multi-party elections have often been disputed by the loser as in the cases of Kenya, DR Congo, Central African Republic and Cote D'Ivoire. Frequently, some opposition parties have refused to contest elections of this type, complaining that the electoral conditions were not free or fair enough. Other parties decided to take part in rather than sacrifice all their political influence, taking the risk of becoming part of a democratic façade hung in front of a basically authoritarian regime by incumbents. In return, they hoped to be able to extend the political opening process and push for a regime democratisation.

The system of competitive elections tends to enhance not only the legitimacy of the government, but also on the opposition – although the deeply rooted culture of intolerance towards opposition in Africa is by no means a thing of the past. For decades, under the one-party system, the opposition was reviled as the essence of division, feuding and enmity. Nonetheless, it is now the case that political opposition parties compete for political power and are usually represented in parliament. This is a major qualitative innovation, even if electoral competition in Africa's political and cultural context has more to do with personalities than programmes. And although competitive elections may politicise the existing ethnic identities and or sharpen political conflicts (Burundi and Angola and most recently Togo), they can also teach much about dealing with political opponents in a democratic way. This is especially true when elections are combined with voter education campaigns and the main political players keep to basic democratic rules.

Parliamentary Election Systems in Africa

In the process of struggling for independence in Africa, the basic institutional features of the new independent countries' politics were largely conditioned, if not determined by their colonial background. The regime adopted by African countries on independence was primarily parliamentary in former British colonies and presidential or mixed in the colonies of other countries. Many of the former French colonies have adopted the mixed system that has characterised the French Fifth Republic since 1958. The only country to have a democratic parliamentary regime that was not a former British colony is Cape Verde. Many of the parliamentary regimes in Anglophone countries became presidential during the authoritarian period of single-party rule. By the 1990s, presidential regimes had come to dominate African democracies (Southall, 1999; Wanyande, 2000); the only democratic African countries that were parliamentary as of 2000 were Mauritius and Cape Verde. The predominance of presidentialism raises concerns about the survivability of Africa's democratic regimes given the strong empirical evidence that parliamentary systems survive longer than presidential ones (Linz, 1990, Mainwaring, 1993; Stepan & Skach, 1993; Cheibub, 2002).

Important political institutions had been implemented already in the areas where a gradual expansion of internal self-determination had taken place in the pre-independence era. This was especially true for the parliamentary electoral systems. In the British as well as in the French party of Africa, territorial legislatures and direct elections under conditions of universal suffrage had been introduced by the colonial powers.

In all countries arising from the British Empire (with the exception of the Seychelles, where the independence was achieved only in 1976) the plurality system and single-member district was a key element of the polity after independence. A modification of the British system was introduced in some countries insofar as it provided for a certain number of nominated Members of Parliament in addition to the elected members. Besides, in some countries parliamentary elections on the basis of individual candidacies were held not in single-member districts but in multi-member districts", e.g., in Swaziland (from 1967 to 1972) and Mauritius (continuously since independence). Note, however, that in Mauritius the plurality system was introduced against the advice of the British administration whose representatives would have preferred a PR system because of the ethnic structure of the country.

At the time when universal suffrage and territorial legislative elections were introduced in the French colonies in Africa by the *Loi Cadre* in 1956 the National Assembly elections of the Fourth Republic were held under an absolute majority system in multi-member districts with closed and blocked party lists; only in the Paris region was a PR system applied. In the African colonies generally, a plurality system in multi-member districts with closed and blocked party lists was introduced. In a considerable member of cases the last territorial legislature elected before the final achievement of independence became the first regular national parliament of the new country and the first post-independence elections were already held under the conditions of a *de facto* single-party regime. The strong majoritarian effects of the electoral system contributed to the tendency in some countries where the parties or

alliances leading the independence process turned out as dominant or even hegemonic in multi-party elections (Scarrow, 1996).

Presidential Election Systems in Africa

Most African countries with constitutional form of government through competitive elections has a presidential or a semi-presidential system of government. The predominance of presidentialism in Africa, usually with constitutional powerful presidents whose political position often is additionally strengthened by lack of a well-represented opposition, again is closely related to the circumstances under which the countries became independent or developed in the early phase of their post-colonial history (e.g. Kenyatta in Kenya, Julius Nyerere in Tanzania, Kenneth Kaunda in Zambia, Kwame Nkrumah in Ghana) set the stage for the creation of a politically strong Head of State and impeded the establishment of effective checks and balances.

In the Anglophone countries the shift from the inherited Westminster system to a presidential form of government often complemented the emancipation from colonial remnants of colonialism and the adoption of a republican constitution which unified the functions of the Chief of Government and the Head of State. Most francophone countries started independence with a constitution built after the model of the French Fifth Republic which foresaw the co-existence of a directly elected President and a Prime Minister responsible to the National Parliament. However, in practice and often as well in constitutional form the President quickly assumed full political power. In the course of political development in the post-independence era presidentialism was a constant feature in phases of

democratic and non-democratic (single-party or military authoritarian) government.

In recent transitions toward a process of civil government based on the division of power and periodical competitive elections the constitutional choice between presidential, semi-presidential and parliamentary systems of government generally has not been a relevant issue in Africa, notwithstanding intense debate on this subject with regard to other world regions like Latin America and Eastern Europe (Nohlen & Fernandez, 1991; Linz & Valenzuela, 1994; Thibaut, 1996; Mainwarning & Shugart, 1997; Taras, 1997; Nohlen & Baeza, 1998). Today, parliamentary systems strictly speaking can only be found in Ethiopia, Botswana, Lesotho and Mauritius. In South Africa the president, who unifies the functions of both Head of State and Government is elected by the Parliament but cannot be removed by it on political grounds. In all other countries of the region with a constitutional form of government the president is directly elected. In contrast to Central and Eastern Europe, there are only very few cases of a directly elected but constitutionally weak President in Africa (Cape Verde, Sao Tome and Principe).

Direct presidential elections have been a common feature of African politics since the 1960s. However, until the early 1990s presidential elections in most countries were organized as plebiscites (usually a direct vote of all the members of an electorate) which allowed voters at best to say ‘Yes’ or ‘No’ to a single official candidate. Under the political conditions of the one-party state no electoral competition at all as allowed to take place with regard to the question of who should hold the highest political office of the nation, unlike in parliamentary elections where semi competitive elements (in the form of

primaries at the local level or through the presentation of several officially admitted candidates) were accepted in some countries.

Against this historical background the holding of competitive presidential elections has been an outstanding event in the opening of authoritarian political regimes and one-party systems since the late 1980s. In comparison to multi-party parliamentary elections presidential elections gained importance by the fact that they were directly linked to the question of whether the institutional transition of political system would be accompanied by a substantial transfer of power from the former authoritarian ruler (who ran for re-election in most cases) to a representative of the opposition. In many countries the first multi-candidate presidential elections since independence were held in this context. Table 1 below presents dates presidential, parliamentary and referenda were held in African countries.

Table 1: Dates of Presidential, Parliamentary and Referenda held in African Countries

Country	Presidential election	Parliamentary election	Referendum
Algeria	1963, 1976, 1979, 1984, 1988, 1995	1964, 1977, 1982, 1987, 1991, 1997	1962, 1963, 1976(June), 1976 (Sep), 1986, 1988, 1989, 1996
Angola	1992	1973, 1980, 1986, 1992, 2008, 2012	
Benin	1968(May), 1968(Jul), 1970, 1991, 1996, 2001, 2006, 2011, 2016	1925, 1928, 1930, 1934, 1946-47, 1952, 1957, 1959, 1960, 1964, 1979, 1984, 1989, 1991, 1995, 1999, 2003, 2007, 2011, 2015	1945, 1946(May), 1946(Oct), 1958, 1964, 1968, 1990
Botswana	1921, 1924, 1927, 1930, 1933, 1936, 1939, 1942, 1945, 1948, 1951, 1954, 1957, 1961, 1965, 1969, 1974, 1979, 1984, 1989, 1994, 1999, 2004, 2009, 2014	(Local Elections) 1974, 1979, 1984, 1989, 1994, 1999, 2004, 2009	1987, 1997, 2001
Burkina Faso	1965, 1978, 1991, 1998, 2005, 2010, 2015	1946-47, 1948, 1952, 1957, 1959, 1965, 1970, 1978, 1992, 1997, 2002, 2007, 2012, 2015	1945, 1946, 1958, 1959, 1970, 1977, 1991
Burundi	1984, 1993, 2005, 2010, 2015	1954, 1957, 1961, 1965, 1982, 1993, 2005, 2010, 2015	1981, 1991, 1992, 2005
Cameroon	1965, 1970, 1975, 1980, 1984, 1988, 1992, 1997, 2004, 2011	1964, 1970, 1973, 1978, 1983, 1988, 1992, 1997, 2002, 2007, 2013	1945, 1946(May), 1946(Oct), 1958, 1960(French), 1961(British), 1972
Cape Verde	1991, 1996, 2001, 2006, 2011, 2016	1973, 1975, 1980, 1985, 1991, 1995, 2001, 2006, 2011, 2016	
Central African Republic(CAR)	1964, 1981, 1992, 1993, 1999, 2005, 2011, 2015-16	1946, 1952, 1957, 1959, 1964, 1987, 1992, 1993, 1998, 2005, 2011, 2016	1945, 1946(May), 1946(Oct), 1958, 1981, 1986, 1994, 2004, 2015
Chad	1969, 1996, 2001, 2006, 2011, 2016	1946-47, 1952, 1957, 1959, 1962, 1963, 1969, 1990, 1997, 2002, 2011, 2017	1945, 1946(May), 1946(Oct), 1958, 1989, 1996, 2005

Table 1 continued

Country	Presidential election	Parliamentary election	Referendum
Comoros	1978, 1984, 1990, 1996, 2012, 2006, 2010, 2016	1946, 1952, 1957, 1959, 1970, 1972, 1978, 1982, 1987, 1992, 1993, 1996, 2004, 2009, 2015	1958, 1974, 1977, 1978, 1989, 1992, 1996, 2001, 2009
Congo (Brazzaville)	1961, 1992(June), 1992 (Aug), 2002, 2009, 2016	1959, 1963, 1973, 1979, 1984, 1989, 1992(June), 1992(Aug), 1993(May), 1993(June), 2002, 2007, 2012, 2017	1945, 1946, 1951, 1956, 1973, 1979, 1992, 2002, 2015
Democratic Republic of Congo	1970, 1977, 1984, 2006, 2011, 2017	1960, 1965, 1970, 1975, 1977, 1982, 1987, 2006, 2011	1964, 1967, 1973, 2005
Djibouti	1981, 1987, 1993, 1999, 2005, 2011, 2016	1946, 1950, 1952, 1955, 1957, 1958, 1973, 1977, 1982, 1987, 1992, 1997, 2003, 2008, 2013	1945, 1946(May), 1946(Oct), 1958, 1967, 1977, 1992
Egypt	1956, 1958, 1965, 1970, 1981, 1987, 1993, 1999, 2005, 2012, 2014	1883, 1889, 1895, 1901, 1907, 1913, 1923-24, 1925, 1926, 1929, 1936, 1942, 1945, 1950, 1957, 1964, 1969, 1971, 1976, 1979, 1984, 1987, 1990, 1995, 2000, 2005, 2010, 2011-12, 2015	1956, 1958, 1968, 1971, 1974, 1977, 1978, 1979, 1980, 1981, 1987, 1990, 2005, 2007, 2011, 2012, 2014
Equatorial Guinea	1968, 1973, 1989, 1996, 2002, 2009, 2016	1960, 1964, 1968, 1983, 1988, 1993, 1999, 2004, 2008, 2013	1963, 1968, 1973, 1982, 1991, 2011
Eritrea	1952, 1956	1997, 2004	1993
Ethiopia	1957, 1961, 1965, 1969, 1973, 1987, 1994, 1995, 2000, 2005, 2010, 2015	(Local Elections) 2008, 2013	1987
Gabon	1961, 1967, 1973, 1979, 1986, 1993, 2005, 2009, 2016	1946-47, 1952, 1957, 1961, 1964, 1967, 1973, 1980, 1985, 1990, 1996, 2001, 2006, 2011	1945, 1946(May), 1946(Oct), 1958, 1995
Gambia	1982, 1987, 1992, 1996, 2001, 2006, 2011, 2016	1947, 1951, 1954, 1960, 1962, 1966, 1972, 1977, 1982, 1987, 1992, 1997, 2002, 2007, 2012	1965, 1970, 1996
Ghana	1960, 1979, 1992, 1996, 2000, 2004, 2008, 2012, 2016	1925, 1939, 1946, 1951, 1954, 1956, 1965, 1969, 1979, 1992, 2000, 2004, 2008, 2012, 2016	1956, 1960, 1964, 1978, 1992
Guinea	1961, 1968, 1974, 1982, 1993, 1998, 2003, 2010, 2015	1925, 1946-1947, 1952, 1957, 1963, 1968, 1974, 1980, 1995, 2002, 2013	1945, 1946(May), 1946(Oct), 1958, 1990, 2001
Guinea Bissau	1994, 1999-2000, 2005, 2009, 2012, 2014	1969, 1972, 1973, 1976-77, 1984, 1989, 1994, 1999, 2004, 2008, 2014	
Ivory Coast	1960, 1965, 1970, 1975, 1980, 1985, 1990, 1995, 2000, 2010, 2015	1925, 1946-47, 1952, 1957, 1959, 1960, 1965, 1970, 1975, 1980, 1985, 1990, 1995, 2000-01, 2011	1945, 1946(May), 1946(Oct), 1958, 2000, 2016

Table 1 continued

Country	Presidential election	Parliamentary election	Referendum
Kenya	1992, 1997, 2002, 2007, 2013, 2017(Aug)	1920, 1924, 1927, 1927, 1931, 1934, 1938, 1944, 1948, 1944, 1948, 1952, 1956, 1957, 1961, 1963, 1966, 1969, 1974, 1979, 1983, 1988, 1992, 1997, 2002, 2007, 2013, 2017	2005, 2010
Lesotho	1960, 1965, 1970, 1985, 1993, 1998, 2002, 2007, 2012, 2015		
Liberia	1847, 1849, 1851, 1953, 1855, 1857, 1859, 1861, 1863, 1865, 1867, 1869, 1871, 1873, 1875, 1877, 1879, 1881, 1883, 1887, 1891, 1893, 1897, 1899, 1901, 1903, 1905, 1907, 1911, 1915, 1919, 1923, 1927, 1931, 1939, 1943, 1951, 1955, 1959, 1963, 1967, 1971, 1975, 1985, 1997, 2005, 2011	1847, 1849, 1851, 1953, 1855, 1857, 1859, 1861, 1863, 1865, 1867, 1869, 1871, 1873, 1875, 1877, 1879, 1881, 1883, 1887, 1891, 1893, 1897, 1899, 1901, 1903, 1905, 1907, 1911, 1915, 1919, 1923, 1927, 1931, 1935, 1939, 1943, 1951, 1955, 1959, 1963, 1967, 1971, 1975, 1985, 1997, 2005, 2011, 2014	1946, 1947, 1949, 1961, 1969, 1970, 1907, 1927, 1935, 1943, 1945, 1946, 1949, 1955, 1972, 1975, 1984, 2011
Libya	1952, 1956, 1960, 1964, 1965, 2012, 2014(Feb), 2014(Jun)	Local Elections 2012, 2014	1971
Madagascar	1965, 1972, 1982, 1989, 1992-1993, 1996, 2001, 2006, 2013	1945, 1947, 1952, 1957, 1960, 1965, 1970, 1977, 1983, 1989, 1993, 1998, 2002, 2007, 2013	1958, 1972, 1975, 1992, 1995, 2007, 2010
Malawi	1994, 1999, 2004, 2009, 2014	1956, 1961, 1964, 1971, 1976, 1978, 1983, 1987, 1992, 1994, 1999, 2004, 2009, 2014	1993
Mali	1972, 1985, 2002		1958, 1974, 1992, 1997
Mauritius	1961, 1966, 1971, 1976, 1992, 1997, 2003, 2007, 2009, 2014	1946, 1952, 1957, 1959, 1965, 1971, 1975, 1976, 1992, 1996, 2001, 2006, 2013	1945, 1946(May), 1946(Oct), 1958, 1991, 2006
Mauritania	1961, 1966, 1971, 1976, 1992, 1997, 2003, 2007, 2009, 2014	1946, 1952, 1957, 1959, 1965, 1971, 1975, 1976, 1992, 1996, 2001, 2006, 2013	1945, 1946, 1958, 2006
Morocco	1947, 1951, 1956, 1963, 1970, 1977, 1984, 1993, 1997, 2002, 2007, 2011, 2016		1962, 1970, 1972, 1980(23 May), 1980(30 May), 1984, 1989, 1992, 1995, 2011
Mozambique	1994, 1999, 2004, 2009, 2014	1973, 1977, 1986, 1994, 1999, 2004, 2009, 2014	
Namibia	1994, 1999, 2004, 2009, 2014	1926, 1929, 1934, 1940, 1945, 1950, 1955, 1961, 1965, 1970, 1974, 1978, 1989, 1994, 1999, 2004, 2009, 2014	1946, 1977

Table 1 continued

Country	Presidential election	Parliamentary election	Referendum
Niger	1965, 1970, 1989, 1993, 1996, 1999, 2004, 2011, 2016	1958, 1965, 1970, 1989, 1993, 1995, 1996, 1999, 2004, 2009, 2016	1945, 1946, 1958, 1987, 1989, 1992, 1996, 1999, 2009, 2010
Nigeria	1979, 1983, 1993, 1999, 2003, 2007, 2011, 2015	1923, 1928, 1933, 1938, 1943, 1947, 1954, 1959, 1964, 1979, 1983, 1992, 1998, 1999, 2003, 2007, 2011, 2015	1959, 1961
Rwanda	1965, 1969, 1978, 1983, 1988, 2003, 2010	1954, 1957, 1961, 1965, 1969, 1981, 1983, 2003, 2008, 2013	1961, 1978, 2003, 2015
Sao Tome and Principe	1991, 1996, 2001, 2006, 2011, 2016	1973, 1975, 1980, 1985, 1991, 1994, 1998, 2002, 2006, 2010, 2014	1990
Senegal	1963, 1968, 1973, 1978, 1983, 1993, 2000, 2007, 2012	1879, 1881, 1883, 1887, 1889, 1891, 1893, 1898, 1901, 1903, 1905, 1907, 1909, 1911, 1913, 1915, 1917, 1919, 1920, 1924, 1928, 1934, 1946, 1952, 1957, 1959, 1960, 1965, 1973, 1978, 1983, 1988, 1993, 1998, 2001, 2007, 2012, 2017	1945, 1946, 1958, 1963, 1970, 2001, 2016
Seychelles	1979, 1984, 1989, 1993, 1998, 2001, 2006, 2011, 2015	1948, 1951, 1953, 1957, 1960, 1963, 1967, 1970, 1974, 1979, 1983, 1987, 1992, 1993, 1998, 2002, 2007, 2011, 2016	1982, 1993
Sierra Leone	1985, 1996, 2002, 2007, 2012	1924, 1929, 1934, 1939, 1943, 1951, 1957, 1962, 1967, 1973, 1977, 1982, 1986, 1996, 2002, 2007, 2012	1978, 1991
Somalia	1986	1964, 1969, 1979, 1984, 2016	1961, 1979
South Africa	1910, 1915, 1920, 1921, 1924, 1929, 1933, 1938, 1943, 1948, 1953, 1958, 1961, 1966, 1970, 1974, 1977, 1981, 1984, 1987, 1989, 1994, 1999, 2009	(Municipal Elections) 1956-96, 2000, 2006, 2011, 2016	1960, 1983, 1992
South Sudan	2010	1973, 1980, 2010	2011
Sudan	1971, 1977, 1983, 1996, 2000, 2010, 2015	1948, 1953, 1958, 1965, 1968, 1974, 1978, 1980, 1981-82, 1986, 1996, 2000, 2010, 2015	1998-2016(Darfur)
Swaziland	(General Elections) 1921, 1923, 1926, 1928, 1932, 1935, 1938, 1949, 1952, 1956, 1961, 1964, 1967, 1972, 1978, 1983, 1987, 1993, 1998, 2003, 2008, 2013		1984

Table 1 continued

Country	Presidential election	Parliamentary election	Referendum
Tanzania	1965, 1970, 1975, 1980, 1985, 1990, 1995, 2000, 2005, 2010, 2015	1965, 1970, 1975, 1980, 1985, 1990, 1995, 2000, 2010, 2015	2010, 2015
Togo	1961, 1963, 1979, 1986, 1993, 1998, 2003, 2005, 2010, 2015	1946, 1951, 1952, 1955, 1958, 1961, 1963, 1979, 1985, 1990, 1994, 1999, 2002, 2007, 2013	1945, 1946(May), 1946(Oct), 1956, 1958, 1961, 1963, 1972, 1979, 1992
Tunisia	1959, 1964, 1969, 1974, 1989, 1994, 1999, 2004, 2009, 2011, 2014	1956, 1959, 1964, 1969, 1974, 1979, 1981, 1986, 1989, 1994, 1999, 2004, 2009, 2011, 2014	1945, 1946(May), 1946(Oct), 2002
Uganda	1996, 2001, 2006, 2011, 2016	1958, 1961, 1962, 1980, 1989, 1994, 1996, 2001, 2006, 2011, 2016	2000, 2005
Zambia	1968, 1973, 1978, 1983, 1983, 1988, 1991, 1996, 2001, 2006, 2008, 2011, 2015, 2016	1918, 1920, 922, 1926, 1929, 1932, 1935, 1938, 1941, 1944, 1948, 1954, 1959, 1962, 1964, 1968, 1973, 1978, 1983, 1988, 1991, 1996, 2001, 2006, 2011, 2016	1922, 1969, 2016
Zimbabwe	1990, 1996, 2002, 2008, 2013	1899, 1902, 1905, 1908, 1911, 1914, 1920, 1924, 1928, 1933, 1934, 1939, 1946, 1948, 1954, 1958, 1962, 1965, 1970, 1974, 1977, 1979, 1980, 1985, 1990, 1995, 2000, 2005, 2008, 2013	1922, 1934, 1953, 1961, 1964, 1969, 1979, 2000, 2013

Source: Wikimedia, 2017.

Elections in New Generational Africa

The longest surviving democracy in Africa (Mauritius) is parliamentary may perhaps be no coincidence. Multi-party regimes and electoral systems are mostly under rooted in African countries and the vast majority of African presidents are elected using absolute majority rule. In other words, a candidate must win over 50% of the popular vote to become president. If no candidate overcomes this threshold, then there is a runoff between the two candidates who received the most votes in the first round. In many cases, a second round has not been necessary with one candidate winning an overwhelming majority. A qualified majority system was used in

the 1996 presidential elections in Sierra Leone. In these elections a candidate had to win 55% of the vote in order to be elected in the first round (Nohlen, Krennerich & Thibaut, 1999). The only democratic presidential elections that employed plurality rule between 1946 and 2000 occurred in the Congo (1961), Malawi (1994, 1999), Nigeria (1979, 1999) and Zambia (1996). Most states that had used plurality rule to elect presidents during the authoritarian period adopted absolute majority rule following their transition to democracy.

Why did African countries choose the electoral institutions that they did? Clearly, the answer relates to the colonial heritage of each country. However, this answer is only somewhat informative. After all, electoral rules typically represent negotiated settlements between conflicting parties over institutional design (Kaminski, 2002). Mozaffar (1998) argues that Anglophone countries employed plurality rule for the multi-party elections of the 1990s because of the institutional incentive structure that had developed under colonial rule and that continued to exist during the authoritarian period of single-party rule.

In recent times, mostly after the 1990s, election in Africa has been a work in progress. It has evolved and improved on so many fronts. The multi-party system has gained audience among member states. The involvement of regional and international bodies in elections is of the norm. Almost in all African countries a well-established constitutional and independent election management body has been put in place.

It is also a fact that in recent elections in Africa (Ghana 2012, Nigeria 2015) the media, civil societies and election observers had played key roles in ensuring 'free and fair' elections. The involvement of technology is a

testimony to the history of elections in Africa. The days of few elites taking the sovereignty of the populace for granted are over as evident in pre – independence and early post-independence era. Elections in recent times have been more participatory and electorates understand the election processes. This is in no way disputing the fact that there are still peculiar problems confronting African states with respect to elections, nonetheless, it has been a long journey of electoral systems going under reforms and election institutions strengthening in all aspects.

Chapter Summary

The chapter set out to review the history of elections in Africa. The focus of the chapter was on type of election, system of democracy, and era of elections of the various countries in Sub-Sahara Africa.

CHAPTER THREE

LITERATURE REVIEW

Introduction

This chapter presents the review of related literature on the impact of elections on fiscal policies, the determinants of voter turnout and the factors affecting rejected ballots. The review is divided into two parts. The first part considers the theoretical literature that comprises the theoretical developments of the political budget cycle and the theories on voter turnout and rejected ballots.

The review commences with the political budget cycle theory through the rational choice theory to the minimax regret theory. This is followed by the discussion of the factors affecting both voter turnout and rejected ballots. The second part reviews the empirical literature on the political budget cycle, voter turnout and rejected ballots. In line with the two objectives relating to the political budget cycle, the review of the empirical literature is done on both government expenditure and debt servicing since these are the dependent variables. This part also discusses the previous studies on voter turnout and rejected ballots. The chapter ends with a brief conclusion on the main findings of the various studies.

Definition of Concepts

Election Burden: There are a lot of consequences of organising elections in the SSA sub-region. These consequences ranges from civil unrest to cost of conducting elections. However, the study focused on the monetary cost of organising elections to the understudied SSA countries. Precisely, the

cost to the countries considered were government expenditure and debt accumulation.

Election Outcome: In this study, election outcomes considered were in threefold. Specifically, the following outcomes: debt accumulation, voter turnout, and rejected ballots were looked at.

Review of the Theoretical Literature

This section reviews the theories that underpin the empirical analysis beginning with the political budget cycle theory through the rational choice theory to the minimax regret theory.

Political Budget Cycle Theory

The political budget cycle is the periodic fluctuation in the fiscal policies, which is induced by the cyclicality of elections (Shi & Svensson, 2002). In democratic systems, once every few years, political agents face elections. For the incumbent governments, these elections determine whether they remain in office or not (Klien, 2014). The people's representatives in democratic system have to renew their legitimacy in the periodical reoccurrence of elections (Vergne, 2009). The electoral pressures may lead politicians to manipulate fiscal policies in order to increase their chances of re-election. The political budget cycle stresses the incumbent government intention to secure re-election by maximizing his/her expected vote share at the next election (Nordhaus, 1975). It is assumed that the electorate are backward looking and evaluate the government on the basis of its past track record. This implies that governments regardless of ideological orientation, adopt expansionary fiscal policies in the previous years in their terms, in order to stimulate the economy (Potrafke, 2012).

The political budget cycle theory has developed in stages. The first stage in the development of the PBC theory is the traditional budget cycle theory developed by Nordhaus (1975). The traditional budget cycle theory is also termed as the opportunistic PBC theory. This theory posits that politicians' primary goal is to maximize their probability of retaining political office. Hence, with the aim of improving their re-election chances, incumbents attempt to stimulate the economy, implementing overly expansive macroeconomic policies before an election. After an election, these policies produce unemployment, high budget deficits, high inflation and low economic growth. Opportunistic PBC theory thus anticipates wide fluctuations in economic growth, unemployment and inflation around elections.

Traditional PBC theory characterises politicians as identical and opportunistic, meaning that their only preference is to remain in power. Voters are characterised as myopic and naïve (for example, as having adaptive expectations and thus voting retrospectively) and prone to vote for incumbents when times are good prior to the election (Block, 2002). Traditional PBC theory predicts that monetary and fiscal policies will be expansionary prior to elections and contractionary after elections. In addition, opportunistic PBC theory predicts inflation may decrease prior to elections but will increase after elections.

Within this first phase of the literature, Hibbs (1977) propounded a competing school of thought, which instead advocated a partisan model of political business cycles. Hibbs (1977) criticised the assumption in earlier models that politicians were purely opportunistic and that their only preference was to remain in power. According to his partisan model, political parties

represent competing constituencies and ideologies, and when in office, follow policies that are favourable to their supporting groups. For example, right wing parties traditionally emphasise low inflation, while left wing parties traditionally prefer low unemployment. Presuming a standard short-run, Phillips curve trade-off between inflation and unemployment, the Hibbs model predicts that right-wing governments will lower inflation rates at the expense of higher rates of unemployment and lower growth. In contrast, left-wing governments will tend to favour employment and higher growth at the expense of inflation. Thus, the traditional partisan PBC models indicate that incumbents again, use economic policy to garner voter support, but based on their partisan political orientation, they will prefer economic policies with different emphases to accomplish this end.

The second stage in the development of the literature is the incorporation of the rational expectations in the political business cycle (Rogoff & Sibert, 1988; Rogoff, 1990). In the approaches of rational expectations, information asymmetries between politicians and voters take centre stage in explaining electoral cycles in fiscal policy. The incumbent exploits his information advantage to signal his competence before elections. For instance, in the moral hazard model of political completion of Shi and Svensson (2002), politicians may behave opportunistically even if some voters know that government policy, but some voters are uniformed. The larger is the number of voters that fail (ex-ante) to distinguish pre-electoral manipulations from incumbent competence, the more incumbent profits from boosting expenditures before an election. Alt and Lassen (2006) point out that the

greater is the transparency of the political process while the lower is the probability that politicians behave opportunistically.

An important feature of the rational opportunistic political budget cycles models is the presence of uncertainty regarding the policymakers' competence. In this environment, the incumbent has an incentive to manipulate fiscal instruments. Rosenberg (1992) shows that in election periods, the incumbent, who is uncertain about the electoral outcome, may increase expenditure targeted to activities that will raise his employment prospects in case he is not re-elected. In general, rational PBC models predict a negative electoral impact on taxation. However, aggregate public spending may rise in the election period, as the incumbent will have an incentive to increase expenditures financed by a deficit observed by voters in the post-election period but it may also fall, as the rise in the incumbent's level of effort will limit wasteful public spending (Besley & Case, 1995).

Rogoff (1990) was the first to provide a firm theoretical foundation for the possibility of electoral timed shifts in the composition rather than the level of public spending. Rogoff shows that electoral incentives may induce the incumbent to signal her competence by shifting public spending towards more visible government consumption and away from investment goods. Government consumption expenditures are more visible in the sense that they are observed before election while capital expenditures are mostly long-term projects that will increase voter's utility upon completion. Assuming that the cost of fiscal distortion is higher for the more competent incumbent, a rise in current expenditure in the election period at the cost of lower public investment will signal the high competence of incumbent if the cost of

mimicking this policy is sufficiently high for less competent policymaker. Similarly, Saporiti and Streb (2008) show that with a fiscal authority the incumbent has an incentive to change the composition of public spending in favour of more visible public good in order to appear competent to the voters and to increase the probability of being elected.

Another theoretical perspective focuses on the economic determinants of electoral outcomes. In their review of economic voting literature, Lewis-Beck and Stegmaier (2000) conclude that economics and elections are intertwined and stressed that all democratic nations that have received considerable amount of study, plausible economic indicators, objective or subjective, can be shown to account for much of the variance in governments' support. Brender and Drazen (2005) provide three reasons why expansionary fiscal policies in a pre-election year may lead to a higher re-election probability. Firstly, a fiscal expansion could stimulate economic growth. Voters may interpret more vigorous economic growth as a signal of talented incumbent. Secondly, government expenditures for special target groups may increase the number of votes given by this group for the incumbent. Finally, voters may simply prefer low taxes and high spending and reward politicians who deliver these.

The review has shown that there are two dominant theories that explain why the political budget cycle occur. These are the partisan and opportunistic theories. The partisan theory states that PBCs are predetermined by the ideology of the incumbent government. This study applies Nordhaus (1975) opportunistic theory according to which policy-makers maximise their probability of re-election. Indeed, the partisan approach (Hibbs, 1977) is

unlikely to be useful in studying electoral policy cycles in African countries, where the differences in economic and ideological preferences among parties are much harder to pin down, and where the pattern frequently does not exhibit the typical Western left-right distinction.

Rational Choice Theory and Voter Turnout

The first theoretical perspective on voter turnout is the standard rational choice theory first developed by Downs (1957) and later extended by other scholars (Riker & Ordeshook, 1968; Aldrich, 1993; Blais, 2000). The rational choice model views the individual voter as a utility maximizing individual that calculates the costs and the expected benefits of voting, before making the decision to vote or not. When the expected benefits outweigh the costs, the rational voter will go to the polling station. The costs of voting include the costs of obtaining information, processing it, and deciding which party or candidates to vote for and the direct costs of registering and going to the poll. The expected benefits of voting are the benefits the voter would gain from having a preferred candidate win rather than lose.

Downs' rational choice model of voting can be expressed as: R = PB-C. Where R is the utility of voting, P is the probability that one's vote will affect the outcome of an election, B is the difference in the expected utility to be derived from each candidate and C is the costs associated with voting. If R is positive, the voter will cast the vote, otherwise not. This is what is commonly referred to as the decision hypothesis, which is highly dependent on the assumption that people only participate in mass decisions if they can expect to play a decisive role

Several modifications have been made to the original rational choice model developed by Downs. The modifications have been made in an attempt to resolve the paradox of voting relating the Downs' original model. The original rational choice model claims that the probability that one single vote will be decisive is infinitesimal (Funk, 2010), which leads to the question why anyone would want to vote at all. This is because the direct costs of voting are deemed to always outweigh the benefits of voting and therefore participating in elections seems to be irrational.

As a counter to the irrationality of voting, Geys (2006) identified seven reasons why people may decide to vote in elections. These are: 1) to maintain democracy; 2) out of a sense of duty; 3) because they are risk-averse and wish to avoid the regret of having not voted and seeing their preferred candidate lose by one vote; 4) because they reason that other citizens will not vote and that their own vote could become decisive; 5) because group leaders and politicians make it easy for them to vote; 6) because the cost of voting is practically nil; and 7) because they find it rational not to calculate benefits and costs when both are very small.

The first modification to the rational choice model was made by Riker and Ordeshook (1968). They extended Downs's idea in a useful model of the decision to vote that starts with the rational assumption that individuals will vote if their expected utility from voting is higher than their expected utility from not voting. They included a variable D in the rational choice model. Their framework is stated as: R= PB – C + D. Where R is the expected utility of voting, P is the probability of casting a decisive vote (that is the probability that the individual's vote will yield the preferred outcome), B is the benefit of

the preferred candidate being the winner (that is the utility gained from getting the preferred outcome), C is the cost of voting and D is the utility of voting regardless of the outcome (that is, the positive benefit of the act of voting itself). This is often labelled as civic duty. The D term is attributable to a number of factors relating to appropriate social and political behaviour and personal psychological factors.

Riker and Ordeshook (1968) identified five sources of gratification for voting in an election. The gratification for voting arises from complying with the social obligation to vote, affirming one's allegiance to the political system, affirming a partisan preference (also referred to as expensive voting or voting for a candidate to express support, not to achieve any outcome), affirming one's importance to the political system and expressing interest in politics and making decision. The framework by Riker and Ordeshook still maintains the idea that voters compare costs and benefits associated with voting before they decide to vote. They claim that people vote in elections when the benefits of voting exceed the cost of voting. This is expressed as: $PB + D > C$. This expression implies that voters should be more likely to engage in voting when they think they have more chances to influence the results (that is, they have the chance to cast the decisive vote) (Simonovits, 2012). The prediction about the effect of P term in the expressions above is referred to as the Downsian Closeness Hypothesis. This hypothesis indicates that electoral participation should increase when the race is more closed. That is, when "more is at stake" people have a higher incentive to go to the polling stations to vote.

The original model by Downs (1957) and its modification and extension by Riker and Ordeshook (1968) have attracted criticisms. Critics

challenge the ability of the rational choice model to predict voting even with the inclusion of the D term. Barry (1970) argued that voters will not pay for something they can get for free, meaning that a voter will not incur cost of time and money to vote if his or her candidate will win without his or her vote. Barry also questions the degree to which the D term fits within the rational-choice framework. Green and Shapiro (1994) also criticised the degree to which the rational-choice model can predict reality and are critical of the model's ability to move the voting behaviour research forward. Similarly, Mueller (1989) criticised the exclusion of strategic aspects of voting from the rational choice models. Again, Coate and Conlin (2004) in a game theoretic account of electoral participation have argued that the probability of casting a decisive vote should be modelled as endogenous variable, that is, the equilibrium outcome of a game.

Another modification to original rational choice model of Downs was made to the C term by Aldrich (1993). Aldrich argues that costs associated with voting is partly covered by political parties and candidates through political campaign events, television adverts and mobilization techniques. For this reason, turnout is a low-cost and low-benefit activity, at least for many people most of the time. Turnout decision is made "at the margin". Small changes in costs and benefits change the turnout decision for many people. When turnout is a marginal decision, a slight change in cost of voting would cause a change in voter turnout. Blais (2000) showed that marginal adjustments to the costs of voting are likely to have a small, though measurable impact on voter turnout.

Minimax Regret Model and Voter Turnout

Ferejohn and Fiorina (1974) developed an alternative decision-theoretic model for understanding voter turnout that is not based on expected utility maximization but on the minimax regret decision criterion. Unlike the rational choice model which assumes maximization of utility of an action, the minimax regret model states that people minimize regrets for taking or not taking an action. Minimax regret refers to taking the course of action that yields the minimum of the maximum regrets. Thus, the minimax regret model asserts that people calculate the difference between the utility from voting and the utility from not voting for each combination of election outcome and whether or not the individual would have been pivotal. People then select the option that yields that smallest value of regrets. The authors argue that their model predicts voter turnout more than the rational choice model.

Invalid (Rejected) Ballots Explained

In any election, electorates go to the polls to vote for their preferred candidates in the race. At the end of the polls, the ballot papers are sorted into one of the two categories: valid and invalid. After ballot count is completed, election officials report the number of ballot papers belonging to each category. A ballot is considered invalid if the voter's preference is not clearly indicated or the vote's secrecy is undermined (Aldashev & Mastrobouni, 2016). Herbert and Edwards (2007) reckon that a rejected ballot is a ballot paper that cannot be counted for one or more of the following reasons. These are: the ballot paper does not have an official mark; the voter has cast more votes than he or she is entitled to (termed 'over voting'); the voter has made marks by which they can be identified and the voter has left the ballot paper

blank or has marked or thump-printed the ballot paper in such a way that the voter's preference is not clearly stated, that is, it is not clear for whom they intended to vote. These rules apply to all democratic elections including elections in Africa.

Electoral officials are required to apply these rules in accepting or rejecting ballot papers as valid or invalid. However, sometimes the acceptability of ballot paper as valid and invalid becomes dependent on the knowledge of electoral officials and polling agents about electoral rules and how objective they are. This is because where these people are biased or are not fully conversant with the electoral rules, they may reject a ballot paper where it should have been accepted as valid.

Theoretical Background of Rejected Ballot

The explanations for rejected ballots in democratic elections have revolved around two dimensions. These are the view that rejected ballots occur accidently as result of voters' incapacity to cast a valid ballot and the explanation that rejected ballots are the result of deliberate and purposeful action of disaffected voters (Gyampo, 2009; Power & Garand, 2007, McAllister & Makkai, 1993). Stiefbold (1965) identified two types of invalid voters: the "apathetic invalid" and the "highly politicised invalid". The apathetic invalid is a voter who responds to electoral mobilization as a civic duty but remains indifferent to the political system. She submits invalid ballot during voting day for reasons of ignorance, negligence and peer pressures. In contrast, the highly politicised invalid is a voter who has a high interest in politics but deliberately cast invalid ballot as a protest against political system or social institution.

Gyampo (2009) provides three factors that make voters to accidentally invalidate their ballots. These are: ignorance of voters about the voting procedures; confusing public education on the electoral process and low level of education among the voting public. Regarding the ignorance of voters about the voting process, not all voters are conversant about the voting process. Those people who are not conversant with the voting process mark or thump-print their ballot paper anyhow causing their ballot papers to be rejected. Moreover, some level of skills is required in completing a ballot paper. Education enables voters to acquire these skills which help them to cast a valid ballot. When people are illiterate they lack the capacity and the skills (such as reading comprehension and experience) necessary to cast valid ballot and this leads to high incidence of invalid ballots.

An influential explanation by some scholars reject the view that invalid ballots are caused by voting error. Stiefbold (1965) first rejected the proposition blank and spoilt ballots occur because of voting error but claimed that they are the result of deliberate or intentional action of voters. This means that voters deliberately spoil their ballots as protest against the political system or social institutions. Invalid ballots may also be a reaction to government corruption, aggression and restricted political climates or an outrage to a political crisis (Driscoll & Nelson, 2014). Similarly, Superti (2014) claims that invalid votes are not caused by irrational actions of voters or by incompetent actions of uneducated voters but rather they are primarily a form of political expression used by discontented and educated voters. He argues that voters who cast invalid ballots understand the voting process in its practical and symbolic aspects.

Rejected Ballot

A rejected ballot is a ballot that has not been properly executed by a voter and therefore declared invalid during counting in accordance with the relevant regulations. In other words, it is a ballot which has been handled by a voter in such a way that the voter's intention cannot be ascertained or it has some deficiency on the face of it.

In accordance with regulation 39 of the public Election Regulation 2016 (C.I 94) a ballot shall be void and not counted (Rejected) if it;

(i) Does not bear the official mark of the Electoral Commission.

Example: Figure 2

Figure 2: Ballot paper not bearing the official mark of the Electoral Commission

Source: Electoral Commission of Ghana (2012).

(ii) Is not thumb printed by the voter to clearly identify the candidate for whom the vote was cast. For instance, if the mark of the voter lies in two (2) candidates' boxes.

Example: Figure 3

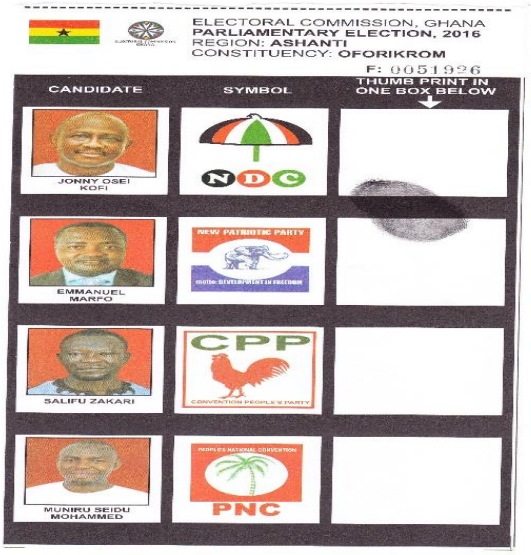

Figure 3: Mark of the voter lies in two candidates' boxes on the ballot paper

Source: Electoral Commission of Ghana (2012).

(iii) The voter marked for more than one candidate in an election where the voter is required to make only one choice as in the Presidential, Parliamentary or District Assembly Elections.

Example: Figure 4

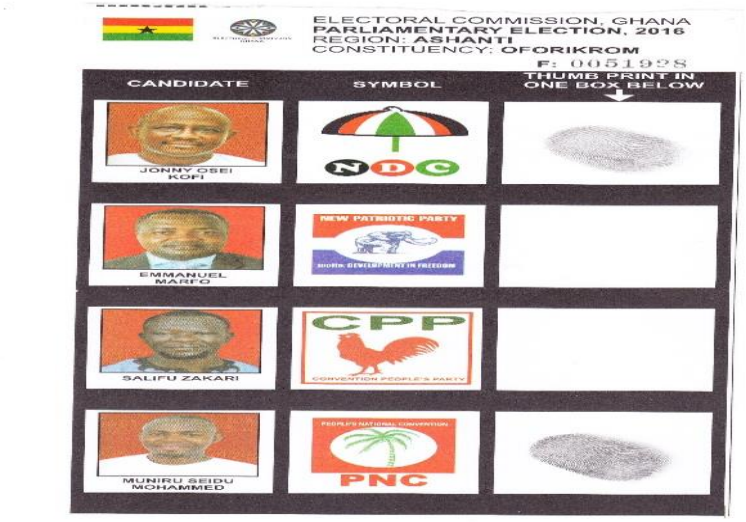

Figure 4: Voter marked for more than one candidate on the ballot paper

Source: Electoral Commission of Ghana (2012).

(iv) Is not thumb printed or marked at all by the voter, i.e. when the voter fails to make a mark to show his choice of candidate.

Example: Figure 5.

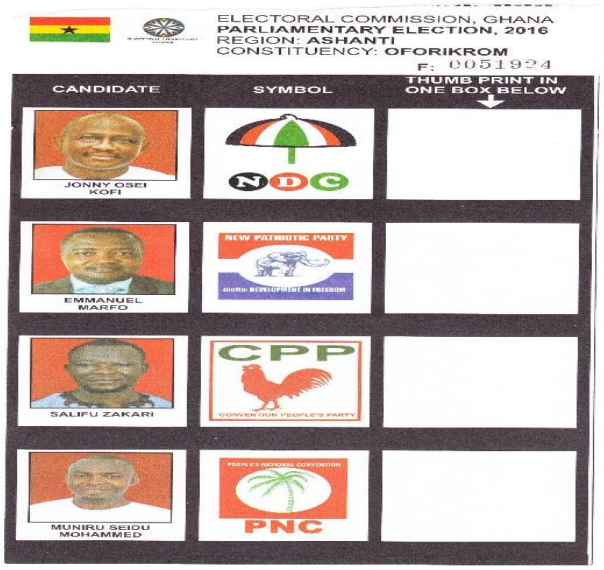

Figure 5: Voter fails to make a mark to show choice of candidate

Source: Electoral Commission of Ghana (2012).

(v) Has on it a writing or mark by which the voter could be identified.

Example: Figure 6

Figure 6: Ballot paper has a mark by which the voter could be identified

Source: Electoral Commission of Ghana (2012).

In accordance with Regulation 39 of C.I 94 of Ghana's electoral law on elections, before a Presiding Officer declares a ballot invalid or rejected, he/she must do the following;

1. Take proper precautions to prevent a person from seeing the serial number printed on it
2. Show the paper to each candidate or counting agent of the candidate if present
3. Give the candidate or the counting agent of the candidate an opportunity to express an opinion on the matter.

Institutional, Political and Socioeconomic Approaches to Invalid Ballots

Power and Garand (2007) developed three theoretical approaches to the study of invalid ballots. These are the institutional approach, the socioeconomic approach and the political-protest approach. Each approach to invalid ballots draws attention to different factors presumed to explain the incidence of invalid ballots.

The socioeconomic approach views invalid ballots as a product of the social structure. The level of development and urbanisation contribute to the availability of political information necessary to completing a ballot in national elections (Power & Garand, 2007). Compare to people who live in rural locations, urban dwellers have more access to political information via the media and other platforms. They acquire more information vital to completing ballot papers in national election. This in effect empowers them to cast ballots in such a way that minimize the number of invalid ballots. This suggests that rural dwellers who have less access to electoral information are

likely to make mistakes in voting leading to high number of invalid ballots. Stiefbold (1965) found that invalid votes are common with village and farm dwellers. In addition, the propensity of electorate to cast invalid ballots reduces when they have high aggregate levels of literacy and when they belong to higher levels of income inequality with relatively higher socioeconomic status (Power & Garand, 2007).

The institutional approach asserts that invalid ballots occur mainly because of institutional structures. This approach draws attention to the institutional structures that make voting desirable versus undesirable, simple versus complex or easy versus difficult. The main factors considered under this approach include ballot design, complexity of the electoral process, compulsory versus voluntary voting and electoral system (for example, electoral disproportionality). Regarding voting law, compulsory voting has been associated with higher numbers of invalid voting. According to Power and Garand (2007), where compulsory voting is strictly enforced, people who normally would abstain if they had a choice would go to the polls to cast a blank or spoilt ballot. This suggests that compulsory voting should increase invalid ballots more than voluntary voting.

It has been recognized that confusing ballot design (for example, where candidates are listed in more than one page) accounts for higher invalid ballots. The structure of the ballot paper makes voting easier or difficult. The ballot paper can be simple or complex depending of the number of parties or candidates appearing on it. When the number of candidates is many the ballot paper becomes long and complex. Long and complex ballot papers create confusion in the minds of some voters. The confused voters may fail to select

or make too many selections. There is evidence that long and complex ballot papers (for example with more than eight candidates) generate more invalid ballots (Kimball, Owens & McAndrew, 2001; Knack & Kropf, 2003). Moreover, McAllister and Makkai (1993) argue that high number of candidates creates indecision for voters and consequently spoil their ballots. When the number of parties are more there are more choices available to voters but a higher number of choices also increases the cost of decision making and some voters instead of making this cost-benefit decision would prefer to invalidate their votes.

The political-protest approach claims that invalid ballots are not related to the structure of society or the institutional design but rather they occur because of voter protest. Voters might have feelings about the choices facing them and may act in the voting booth in reaction to these feelings (Aldashev & Mastrobouni, 2016). In every election, voters have preference for different candidates and would go to the polls to vote for them with the hope that their candidates win. But it is unlikely that all the candidates will win, definitely only one will emerge as winner. The probability of a candidate winning is dependent on the expected margin of victory for that candidate. If the expected margin of victory is sufficiently large, some of the voters that support the losing candidates may feel that their votes will have less impact and thus might voluntary invalidate their ballots at the polls.

Protest through invalid ballots might manifests against perceived lack of electoral choice and restricted political environment. A person who knows exactly how he would vote if he could find a party corresponding to his ideas, but who, not finding that party, deliberately invalidates his ballots at the polls

(Stiefbold, 1965). This means that some voters spoil their votes not because they are not satisfied with the political institutions, poor economic conditions or even because they lack the information to decide between the candidates but because of lack of preferences over the available parties and candidates (Kimball, Owens & McAndrew, 2001). The invalid ballots occur because citizens do not see their interest represented by the candidates contesting the election. This suggests that increase in the number of parties or candidates could possible reduce the occurrence of invalid ballots due to lack of preference for the available candidates. More political parties increase the number of choices for voters so that voters who will spoil their ballots because of lack of choices would not do so. On the contrarily, Arbache, Freire and Rodriques (2014) suggest a positive relationship between number of political parties and invalid ballots. They observe that high rate of invalid ballots occurs in Brazil mainly in elections in which many candidates contested.

Moreover, there is association between invalid ballots and disqualification of a party or candidate from contesting an election. Some emotionally charged electorates whose party or candidate has been disqualified may express their emotions by going to the polls to voluntary invalidate their ballots as a form of protest against the electoral system or rules. Another cause of invalid ballots is distrusts in politics by society and low popularity of politicians. When citizens distrust politics and politicians become unpopular, they may express their feeling by either deciding not to vote or where they vote deliberately casting an invalid ballot (Kouba & Lysek, 2016).

Power and Garand (2007) have argued that invalid ballots are a form of protest against poor (or worsening) economic conditions, policies of the incumbent government and condemnation of existing political system. Poor economic conditions resulting in high unemployment and low-income constraint economic choices available to people. The unemployed and low-income earners find it difficult to meet their needs. These people are more likely to express their disaffection about the poor economic conditions occasioned by the policies of the government through voting by deliberately casting invalid ballots. Moreover, if there is gross inequality in a country between the citizens and the politicians, the citizens are likely to demonstrate their disaffection about politicians through voting by deliberately casting invalid votes as protest against the political system.

Stakes, Voter Error and Disenchantment Models of Invalid Ballots

An alternative explanation links the occurrence of invalid ballots to stakes involved in the elections, voter error and disenchantment (Kouba & Lysek, 2016). The stakes model suggests that invalid ballots are more common when there is less at stake. When there is less at stake in any election, voters care less about its outcome and are likely to cast invalid (as opposed to valid) votes. The stake of casting an invalid is influenced by the structure of competition and the economic condition. More closed election increases stake and invalid votes are minimized. In the same vein, poor economic conditions undermine stakes and results in more invalid votes.

An alternative model of invalid ballots is error model. This model views invalid ballots as not related to the stakes or disenchantment but rather are related to unintentional voter error that occur in the process of casting a

ballot. Voters commit errors in voting when there are low educational campaigns on electoral process and high illiteracy rates among the voting population. The electoral process itself can be cumbersome and confusing to first time voters who have little or no experience in voting and the risk of committing mistake for such people are high. Unless there is rigorous voter education that equips voters with some skills prior to election, invalid ballots resulting from errors are likely.

The disenchantment model claims that invalid ballot is a result of disenchantment, the sources of which are from poor or worsening economic conditions, retrogression to authoritarian regime or restricted political space and unpopular policies of the government. This model suggests that invalid ballots are indicative of deliberate protest action by voters. The action is generally exhibited by highly educated and well-informed voters. Contrarily to this model empirical evidence reported by Arbache *et al*. (2014) show a negative relationship between political knowledge and invalid ballots suggesting that highly informed voters tend to be less likely to cast invalid ballots.

Rational Behaviour Theory of Invalid Ballots

This theory explains invalid ballots from the perspective of voters. From the voters' point of view, there are costs and benefits associated with casting a ballot. Consider the cost side. Suppose that marking or thump-printing a ballot requires concentration and thump-printing it correctly has some attention cost. Again, suppose that the probability of thump-printing wrongly and submitting an invalid ballot decreases with the attention allocated by the voter (Aldashev & Mastrobouni, 2016).

On the benefit side, voters normally have their preferred candidates in an election and they go to the polls to cast ballots in favour of such candidates. They may perceive benefits from feeling that their votes helped to increase the chances of victory of their preferred candidates. As the rational choice theory indicates, the probability of casting a decisive vote is dependent on the expected closeness of the election, defined as the margin of victory between the two leading candidates. The closer the election the more pivotal a single vote becomes. Thus, the lower the expected margin of victory of one of the candidates in the election, the higher the voter's expected benefit of casting a valid vote. Conversely, the higher the expected margin of victory of one of the candidates in the election, the lower the expected benefits of casting a valid vote. Since the margin of victory affects the benefits side and not the cost side, the higher the margin, the lower the attention that the voter devotes to casting a valid vote, and thus the higher is the probability of submitting an invalid ballot. Thus, closeness of election directly affects the level of invalid ballots in an election. The relationship between expected closeness of election and invalid ballot is positive one suggesting that as the margin of victory increases between the candidates, invalid votes increase.

Rather than viewing invalid ballots as result from social structure or political motivations, the rational behaviour theory assumes that invalid ballots result from electoral competition. Basically, there are two measures of electoral competition: the effective number of political parties and the margin of victory between the two leading parties or candidates. It is expected that less competitive elections lead to more invalid ballots. When election is less competitive, voters are likely to cast invalid ballots because they consider their

votes to be less decisive (Kouba & Lysek, 2016). This theory also assumes that invalid votes are not result of unintentional action but rather are result of purposive action. Voters consider competitiveness of the election and react accordingly during voting time. In a highly competitive election where the expected margin of victory is less, voters devote more attention to casting ballot reducing the chance of casting invalid ballot. The opposite is true for less competitive election where the margin of victory is very wide and even the outcome is known.

Review of the Empirical Literature

As in the case with the theoretical literature, the review of the empirical literature is based on the objectives and how they are organized in the study. The scope of the empirical literature on political budget cycle has experienced significant advances in terms of the methodology, region of coverage (cross-country and country specific studies), system of governance, democratic versus authoritarian societies (Blaydes, 2006) and time period. In the same vein, some studies focus on the effect of elections on total central government expenditure as a measure of the fiscal policy, while others pay attention to the effect of elections on the disaggregate components of government expenditure. The major components of fiscal policies used in these studies are tax revenue, government spending, public debt, budget deficit and debt servicing. Early empirical studies on the political budget cycle focused on the experience of developed countries (Tufte, 1978; Alesina, 1988; Alesina, Cohen & Roubini, 1993; Alesina, Roubini & Cohen, 1997).

The studies were later extended to cover the experience of developing countries (Schuknecht, 1996; Schuknecht, 2000; Block, 2002). Mention must

be made of the fact that there is another strand of the literature that combines data from developed and developing countries to assess the political budget cycle (Shi & Svensson, 2002). Others have concentrated on political-budget cycle in the parliamentary democracies and countries with proportional voting rules (Persson, Roland, & Tabellini, 2007). Some of the studies have also paid attention to fiscal transparency in election periods and budget deficits (Alt & Lassen, 2006) while others have concentrated on political-budget cycle in new democracies (Brender & Drazen, 2005). The section that follows presents a comprehensive empirical literature on political budget cycle beginning from the studies done in developing countries and later to studies covering developed countries and both developed and developing countries.

Political budget cycle

Schuknecht (1996) tested the political budget cycle using data from 35 developing countries over the period, 1970-1992. The results show that on average, fiscal deficit fluctuates by as much as 0.66 percent of GDP around elections. The study finds significant evidence of political business cycle in these countries, an indication that governments in developing countries try to improve their re-election prospects by resorting to expansionary fiscal policies. The expansionary fiscal policies occur in these countries during elections because checks and balances are weak and incumbent governments have more power over monetary and fiscal policies. Schuknecht noted that in developing countries' expenditure policies, such as distribution of free or subsidized goods or employment generation via public works programmes, are probably more effective than tax cuts to affect voter behaviour.

Schuknecht (2000) studied fiscal policy instruments used by governments to boost their popularity in election using a sample of 24 developing countries over the period, 1973 -1992. The study uses fixed-effects regression and finds that in election years, governments use expansionary fiscal policies to boost their chances of re-election. They note that such expansionary fiscal policies take the form of increasing expenditure rather than lowering taxes. The author argues that public spending increases are preferred by governments because they have direct and immediate impact on the welfare of voters. This finding is corroborated by the results of Brender and Drazen (2005) who found that the political deficit cycle in new democracies accounts for findings in both developed and less developed economies, for the stronger cycle in weaker democracies, and for differences in the political cycle across governmental and electoral systems. According to these authors, less-consolidated democracies have relatively weaker institutions of fewer constraints on executive power, leading to greater executive control over the instruments of macroeconomic policy and consequently to more perverse macroeconomic management around elections than in developed countries.

Ebeke and Ölçer (2013) investigated the behaviour of fiscal variables over the electoral cycle in 51 low-income countries. They found that during election years, government consumption increases and leads to higher fiscal deficits. During the two years following elections, the fiscal adjustment takes the form of increased revenue mobilization in trade taxes and cuts in government spending with no significant cuts in government recurrent consumption. The study showed that elections do not only imply a

macroeconomic cost when they take place but also trigger a potential fiscal adjustment in which public investment is largely sacrificed. They find the existence of the political budget cycle in the low-income countries. The study also showed that fiscal rules are effective in dampening the magnitude of the political budget cycles.

Vergne (2009) reports that as countries gain experience in electoral politics, politicians may not increase overall budget deficits but rather change the composition of government spending during election years. There are systematic distortions in the allocation of government spending during election year. Politicians shift the composition of pre-election spending towards recurrent expenditure away from capital expenditure. In fact, politicians prefer to use broad-based rather than targeted spending at election times. Moreover, while political budget cycles disappear as there is more experience with elections, electoral impact on the allocation of public spending endures in developing countries.

Block (2002) studied the effects of elections on monetary and fiscal policies using data from 44 sub-Saharan African countries over the period 1980-1988. The study uses the GMM regressions in estimating the electoral effects on government policies. The results showed that government budget deficit increases by 1.2 per cent in election years. The study revealed that in election years fiscal deficits, government consumption, public spending and net claims on the government as a share of GDP increase. The findings with regard to monetary policy instruments demonstrated a similar pattern of electorally-timed interventions. Elections years typically see faster monetary expansion, lower nominal interest rates and lower inflation. Money growth

and interest rates return to normal rates in post-election year. Electorally-motivated macroeconomic interventions directly undermine economic reforms programmes meant to reduce deficits, money supply and inflation.

In South Africa, Kroth (2012) tests the theory of context-conditional political budget cycle in dominant party framework and demonstrates that the central government has both an incentive and the ability to implement PBCs on the subnational level. The study employed panel dataset comprising South Africa's nine provinces over the period 1995 to 2010. The results show that provinces where the national ruling party faces greater electoral competition received higher per capita transfers in a year before an election. Moreover, the increase in provincial revenue in more competitive provinces displayed compositional patterns, with increased spending on education, welfare and roads.

Narrowing the review of the literature to elections-debt servicing nexus, the findings suggest that cross country studies on elections-debt servicing nexus remains under researched particularly in developing countries. A comprehensive review reveals that so far, no known cross-country studies on election-debt servicing nexus exist. In terms of country specific studies, only very few studies exist (Khemani, 2004; Sáez, 2016). In India, Khemani (2004) used an original data set of political variables and subnational fiscal expenditures on interest payments on the debt from 1960 to 2006. The core finding of the author was that significant increases in expenditures on the debt occurred the year in which a state assembly election was held in India.

Katsimi and Sarantides (2012) investigated the impacts of elections on level and composition of fiscal instruments using a sample of 19 high-income

OECD democracies during the period 1972-1999. They reported that even in established democracies elections shift the composition of public expenditures away from capital expenditure to consumption expenditure. Although no evidence was found for an electoral cycle for government deficit and overall expenditures, they found negative effects of elections on revenue attributed to a fall in direct taxation.

Potrafke (2012) examined whether electoral motives and government ideology influence short term economic performance. The study employed data on annual GDP growth in 21 OECD countries over the 1951-2006 period. It was discovered that political budget cycles are more prevalent in two-party systems because voters can clearly punish or reward political parties for government performance. Again, for OECD countries, Drazen (2000) finds evidence for rational opportunistic cycles, with clear post-electoral increase in inflation. According to the author, given autonomous central banks in OECD countries, inflation following elections most likely reflects incumbent politicians' efforts to manipulate fiscal policy lever. In a related works, Kohno and Nishizawa (1990) indicate that Liberal Democratic Party (LDP) in Japan targeted public works projects toward critical districts prior to elections. Similarly, Limosani and Navarra (2001) discovered that local Italian official expanded government outlays beyond their standard growth rate before national elections to enhance their national party's re-election prospects.

Efthyvoulou (2011) reports for the 27 EU members over the period 1997- 2008 show that incumbent governments tend to manipulate fiscal policy in order to maximize their chances of being re-elected. He finds that the relative importance of non-economic issues prior to elections and uncertainty

over the electoral outcome can to a large extent explain the variability in the sizes of PBCs across and within the EU countries. In a related research, Mink and De Haan (2006) studied the existence of political budget cycle (PBC) in countries within the European Union after the start of the monetary union. Using a multivariate model for 1999-2004 and various election indicators, they found strong evidence that fiscal policy-makers in the euro area pursued expansionary fiscal policies before elections. In election year- but not in the year prior to the election- budget deficit increases. Their results were in consonance with the rational PBC models, which are based on moral hazard. They also reported evidence of partisan effect on fiscal policy outcomes.

Klomp and De Haan (2013) examined the effects of elections on budget balance and government spending in 65 developing and OECD countries over the period 1975 to 2005. The results of the study showed that fiscal policy in most countries is hardly affected by upcoming elections. However, in few countries, government spending is affected by upcoming election. These countries were diverse in the sense that they were not only new or developing democracies but also established and developed democracies.

Shi and Svensson (2002) investigated the existence of the political budget cycle using a data set from developed and developing countries over the period of 1975 to 1995. The data allowed them to study whether electoral effects on fiscal policy variables are common across countries and whether there are differences in the size and composition of political budget cycles between developed and developing countries. The study used GMM technique and finds that on average, fiscal deficit increases by 1 per cent of GDP in election years. Moreover, the magnitude of political budget cycles is much

greater in developing countries than in developed countries. Regarding the source of electoral budget cycles, they show that political budget cycles are driven by the reduction in taxes and increase in government spending and the two effects are of similar magnitude.

In a similar study in eight-member countries of the European Union, Doležalová (2011) used the Ordinary Least Squares Method to estimate the political-budget cycle and found some heterogeneous outcomes. The study did not find evidence of political budget cycle in countries such as in Finland, the Netherlands and Estonia. On the other hand, evidences of political budget cycles were identified in Austrian, Czech and Greece that governments of these countries tended to manipulate fiscal policy before elections. According to the author, the regression coefficients of Poland electoral dummies were very statistically significant but they had a wrong sign. The differences in the findings across the selected countries and in comparison, with other studies such as those of Shi and Svensson (2002) and Brender and Drazen (2005) may be due to a couple of factors. These factors may include the differences in country characteristics such as differences in the political settings, level of democracy and flexibility of the constitutions with regard to the conduct of elections. The type of estimation techniques used in the analysis could also influence the direction and magnitude of the effect of election years on the political budget cycle.

In Russian provinces, Akhmedov and Zhuravskaya (2004) used regional monthly panel data to test the theory of opportunistic cycles. The authors found that the budget cycle is sizeable and short-lived; public spending shifts toward direct monetary transfers to voters. They concluded

that the magnitude of the cycle decreases with democracy, government transparency, media freedom, voter awareness, and over time. They also observed that pre-electoral manipulation increases incumbents' chances for re-election. It is obvious from the findings of this literature that institutional factors play significant role in influencing the political budget cycle. Given that Russia is one of the most developed countries, the findings of this study contradict the observation of Alesina, Roubini, and Cohen (1997) who found weak evidence of political budget cycle is in developed countries.

Sjahrir, Kis-Katos, and Schulze (2013) studied the political budget cycles (PBC) in newly democratised and decentralized in Indonesia at the local level. The authors found significant budget cycles for discretionary budget categories at the disposal of the district head (not for the overall budget) only for direct elections, not for indirect elections. They concluded that the cycles were much larger if the incumbent run for re-election. Taking into consideration the Fiscal Illusion effects, Mourao (2008) also provided evidence of electorally-motivated changes in the political budget cycles in a large range of democracies. The author concludes that without considering the effects of Fiscal Illusion as a complex process of hiding the real fiscal situation from the political agents (policymakers and voters), election-year government balance shifts downwards and post-election year government surplus shifts upwards. In another study, Sakurai and Menezes-Filho (2011) tested the evidence of opportunistic and partisan cycle models in Brazil using data over 1989-2005 period. They found increase in total and current expenditures and decrease in investment, local tax revenues and budget

surplus in election years. They found evidence of both opportunistic and partisan cycles in the management of budget.

The survey of the literature showed that empirical studies have examined the impact of election on fiscal policy in both developed and developing countries but the results of these studies have been largely mixed with regards to the constituents of fiscal policy. While there are mixed findings in the literature on the effect of election on government expenditure, little is known of the effect of election on government debt servicing in developing countries.

Throughout the review of the existing literature, only one country-specific study (Sáez, 2016) was found to have been conducted on the effect of elections on provincial or sub-national debt servicing in India. The main contribution of this study is to assess the effect of elections on government debt servicing in sub-Saharan Africa. Specifically, this study asserts that in their bids to win power, governments in sub-Saharan Africa cut down on debt servicing during election years and divert the funds into provision of tangible items such as infrastructure that can win them votes. This in turn contribute to debt accumulation and increase their risk of being debt distress. The extent of validity of this argument is however conditioned on the level of development of the country in question. Central to the contribution of this study is that the level of spending in election years is largely influenced by the level of development and the needs of the populace of the country in question. An indiscriminate generalisation of the effect of election on political budget cycle could be questionable.

The reason why this study finds it imperative to narrow the analysis to debt servicing is that debt payment is an important variable that moderates the relationship between politically motivated fiscal choices and social spending that may have implications for the wellbeing of the citizenry. Debt accumulation has implication for the debt sustainability of a country and its ability to further borrow and attract investment. As of November, 2015, a significant number of African countries had been classified as being susceptible to the risk of debt distress as presented in Table 2.

Table 2: Risk of Debt Distress Countries as at November, 2015

Low risk	Moderate risk	High risk	In debt distress
Benin	Angola	Burundi	Sudan
Ethiopia	Burkina Faso	Central Africa Republic	Zimbabwe
Kenya	Cabo Verde	Chad	
Liberia	Cameroon	Djibouti	
Madagascar	Comoros	Ghana	
Nigeria	Congo	Mauritania	
Rwanda	Côte d'Ivoire	Soa Tome and Principe	
Senegal	Congo (DR)		
Tanzania	Gambia		
Uganda	Guinea		
	Guinea-Bissau		
	Lesotho		
	Malawi		
	Mali		
	Mozambique		
	Niger		
	Sierra Leone		
	South Africa		
	Togo		
	Zambia		
	Zambia		

Source: International Monetary Fund (2015).

Socio-economic Determinants of Voter Turnout

At the individual level, factors such as political attitude, demographic factors (such as education, age and gender) and socio-economic status have been identified as determinants of voter turnout. Political influences include individual partisanship and strength of partisanship. Individuals who are highly involved in politics and who have emotional ties to the parties are much more likely to participate in elections than others who do not have strong partisan ties. Powell Jr. (1986) stresses that politically involved citizens are more likely to vote both because of their personal motivation and ties to politics.

On the influence of socio-demographic factors, the general findings from the literature are that men vote more than women, the elderly more than the young, the better educated more than the less educated, and the rich more than the poor (Wolfinger & Rosenstone, 1980; Powell Jr., 1986; Jan & Nagler, 1992; Verba, Schlozman & Brady, 1995). Explaining why high-income people would vote more than the poor, Russell, Fraser and Frey (1972) argue that people with more income have more time for non-labour activities like leisure and are more likely to participate in the electoral process as a part of their job or work in positions where not voting would be frown upon.

The first study in which the role of socio-economic characteristics in explaining voter turnout was systematically investigated was by Wolfinger and Rosenstone (1980) using US survey data. They found education to be the single most important characteristic explaining turnout. Specifically, their estimates showed 38% gap between people with college degree and the others. Also, they found that the propensity to vote also increases with age and

income (Wolfinger & Rosenstone, 1980). In a related work, Rosenstone (1982) examined how voter turnout is impacted by economic adversity. The study focused on unemployment levels and their impact on voters. He finds that people tend to withdraw from politics and become disinterested when they are facing more difficult economic circumstances such as unemployment. He pointed out that, when people are unemployed, they have concerns with higher priorities than politics such as job searching and filing for unemployment insurance.

Moreover, Matsusaka and Palda (1999) evaluated the factors accounting for the variation in voter turnout rates using survey and aggregate data on four Canadian national elections. The logistic regression approached was used in the study. They found that usual demographic variables such as age and education and contextual variables such as campaign spending have significant effects on the probability of voting. The results showed that more educated people and older people had higher propensities to vote than less educated people and younger people. Their finding for education and age supported long established findings for established democracies. Other studies concentrating on established democracies have equally reported significant effects of higher education and older people on voter turnout. These studies conclude that more educated people and older people vote more than less educated and young people. However, results for education and age for new and transitory democracies have been contradictory. For instance, Lehoucq and Wall (2004) find that literacy decreases turnout in Guatemala while Jacobs and Spierings (2010) report that higher education increases turnout in

the Dominican Republic. Still, Power and Roberts (1995) finds that illiteracy suppresses turnout in Brazil.

In Latin America, Lehoucq and Wall (2004) examined voter turnout rates in Guatemala using a sub-national research design. The study employed several ordinary least square models to evaluate the impact of sociological and non-sociological factors on turnout across 330 municipalities in three different elections, 1985, 1990 and 1995 presidential, legislative and presidential runoff elections. The sociological factors included in the regression models comprised gender, literacy, urban population and indigenous population. The results show that sociological factors consistently shape turnout rates. The study finds a direct and positive relationship between female share of registered voters and voter turnout. Of all the sociological variables included in the model, gender variable was seen as the most important. The estimate shows that for every percentage increase in the share of registered females, turnout goes up between half and nearly one percent. Literacy was negatively related to turnout. For every percentage increase in the number of literate registered voters, turnout decreases by approximately one-fifth of a percentage point. The result of urban population was weak. Only in one election, out of three elections, was the percentage of population that lives in urban areas statistically significant and positively related to turnout.

Kuenzi and Lambright (2007) used an Afrobarometer survey data to assess the determinants of voting for over 17,000 voting-age adults in 10 African countries. The study discovered that many Africans are driven by many of the same forces as their counterparts elsewhere. On the determinants of voting, they observe that identifying with a political party and support for

democracy directly influence voting. Among the demographic variables, age and education had significant effects on voting. The findings regarding the socio-economic status (SES) model were contradictory. While educated Africans in these countries were significantly more likely to vote than their less educated counterparts, more impoverished Africans were also significantly more likely to vote than their wealthier counterparts. In addition, individuals' propensities to vote were related to the institutional and political context. This study revealed the importance of socioeconomic factors that affect turnout in African countries. However, the empirical analysis did include Ghana which is one of the stable and growing democracies on the continent.

In another study, Young (2004) engaged a sample of cases from sub-Saharan Africa to comparatively examine the individual level determinants of voter turnout. The logistic regression analysis was employed to test common determinants of turnout. The study finds that individual level plays, a limited, though meaningful role in driving turnout. Moreover, demographic factors, political attitudes, political affiliation explain well the variance in turnout across individuals' turnout.

Individual socio-demographic factors have been used to explain voter turnout for quite a long time and a lot of empirical studies have included them as explanatory variables (Matsusaka & Palda, 1999; Lehoucq & Wall, 2004). However, Mattila (2003) argues that socio-demographic factors like age, education, gender or income are more descriptive than explanatory. According to the author, unless there is strong convincing link between any social-demographic variable and voting, analysing voter turnout using socio-

demographic variables is largely theoretically irrelevant. A theoretically plausible explanation for electoral participation must be linked to the motivations, values and attitudes of potential voters. These factors may or may not be related to the socio-demographic variables.

Marginality and Turnout

Marginality also referred to as closeness of election is measured as the percentage vote gap between the first and second candidates in the race. According to Cox and Munger (1989), close elections provoke more political mobilization efforts by candidates which lead to higher turnout. The competing political candidates use more resources in mobilizing the population when elections are expected to be close. The candidates involved reduce the voter's costs of acquiring the knowledge needed to make an informed decision on the voting day. This implies that turnout should be higher the closer the expected outcome because the costs of voting are reduced.

Kirchgassner and Schluz (2005) agreed with Cox and Munger (1989) that closeness of election causes higher turnout because of greater voter mobilization by politicians. They argue that closeness measures the intensity of the electoral campaign, and thus reflects the pressure put on the citizens to vote rather than the perceived efficacy of their vote. Close elections induce greater voter mobilization, which leads to high electoral turnout. Simonovits (2012) states that closeness of a race increases turnout because of the possibility for people to systematically overestimate the chance of being pivotal and the possibility that even though voters know that the magnitude of P is small, their expected utility of participation increases non-linearly with

closeness so that a small absolute increase in closeness leads to substantive increase in participation.

Empirical studies on closeness and voter turnout have produced mixed results. While some studies confirm the relationship between marginality and voter turnout, others find no impact of closeness on voter turnout. The direction of the relationship has also been contradictory as a positive relationship is reported in some studies while others report negative relationship between turnout and closeness.

In one of the most comprehensive studies on the effects of closeness on turnout Matsusaka (1993) used data set of 885 California ballot propositions from 1912 to 1990 to test the hypothesis that turnout increases as an election become closer. In the study, various measures of voter participation were regressed on different measures of election closeness. Two measures of turnout were used. The first measure is the number of votes cast on a proposition divided by the total number of ballots cast (as a percentage). This measure captures only within-ballot abstention and so adjusts for voting costs. The second measure is the total number of votes cast on a proposition divided by the number of registered voters expressed as a percentage. The study finds no evidence that turnout is higher in close elections. The evidence rejected the Downsian Closeness Hypothesis which posits that turnout is higher when electoral competition is intense and that turnout increases as closeness dwindles. The results reveal that voters in California were not sensitive to the probability that their votes are decisive. They concluded that other studies which found higher turnout for close elections probability detected an increased mobilization of party elites in tight races.

Kirchgaessner and Schulz (2005) examined whether voter turnout could be attributed to expected closeness or mobilization efforts of parties involved. Using data of Swiss referenda from 1981 to 1999, they found that closeness only does not contribute to turnout but the mobilization efforts of parties in close elections does. The closer the expected results of elections, the more the interested individuals and groups will try to mobilize those sections of voters of whom they expect that they will cast their vote in their direction.

Simonovits (2012) tested the Downsian Closeness Hypothesis (DCH) using data from runoffs in general elections in Hungary. Closeness of election was measured as the margins of victory between political parties. The study finds that increase in margins between parties in the first round significantly decreases turnout in the second, even when turnout in the first round is controlled for. Similarly, Fauvelle-Aymar and Francois (2006) investigated the relationship between closeness and turnout using two-round legislative elections. Using different measures of closeness in the econometric analysis, the results show that closeness, whatever the way it is measured, has a significant effect on turnout. The closer the ballot on the first round, the more registered voters decide to participate on the second round.

In another study, Shachar and Nalebuff (1999) developed a structural model to evaluate the feedback effects between closeness, turnout and mobilization efforts of political leaders. They estimated that a one percent increase in electoral closeness increases turnout by 0.34 percent. In addition, Kirchgassner and ZuHimmern (1997) found a small positive closeness effect on turnout for the federal elections from 1983 to 1994. Similarly, Denver and Hands (1974) tested the impact of marginality on turnout using data from five

British general elections. Their results show that the closer the election the higher the turnout is expected to be. However, they also introduced the notion that parties appear to make greater efforts in marginal seats which might be expected to result in higher turnout.

Moreover, Arnold (2015) tested the rational choice theory with data on all mayoral elections in the German State of Bavaria between 1946 and 2009. He used two constitutionally prescribed two round elections to measure electoral closeness. The results show that electoral closeness matters for understanding voter turnout. More people go to the poll at a higher rate when election is very competitive.

However, in Guatemala, Lehoucq and Wall (2004) found evidence of positive relationship between closeness of elections and voter turnout suggesting that electoral participation increases when electoral competition is less tense. In their study, closeness of elections, as measured by the difference between the top two vote receiving parties, was statistically significant in all elections. Their results showed that turnout actually increase for every percentage increase in the difference separating the winner and the second-placed candidate in all types of elections. They observed that closeness of election impacts on voter turnout but the direction of the relationship between the two variables is somewhat different from that reported in other studies. While many studies have found negative relationship between closeness and turnout this study reports a positive relationship between closeness and turnout implying that turnout increases as the gap between the two leading candidates widens. Explaining this seemingly inconsistent finding, Lehoucq and Wall

(2004) adduced that about half of all voters live in often remote rural areas and these voters may have little information about the closeness of the race.

Population Size and Voter Turnout

According to Downs' (1957) rational choice model, voters vote in order to change the outcome of election and only incur the costs of voting if these do not outweigh the expected benefits of that action. The expected benefits of voting increase with the probability of affecting the election result. The probability of being decisive is influenced by the size of the population and closeness of the race. In general, the greater the size of the community, the smaller the probability becomes that one single voter will make a difference (Mueller, 2003). This decreases the expected utility from voting and makes it more likely that one abstains. The relationship between population size and turn out rates is negative one meaning that as population size increases turnout rates falls.

Empirical studies testing the relationship between population size and voter turnout have generally confirmed the theoretical perspective that population size and turnout rates are negatively related. Studies such as Lehoucq and Wall (2004), Matsusaka and Palda (1999) and Geys (2006), have reported that population size has negative effect on voter turnout suggesting that turnout is higher when the population size is smaller. They argue that this relationship supports that rational voter hypothesis, with population size serving as a proxy for decisiveness of vote.

Kaniovski and Mueller (2006) offer an alternative explanation for the population size- turnout nexus. According to them, large communities, that also have large population size, are more heterogeneous than smaller ones, and

turnouts are inversely related to the heterogeneity of the community. Population size is related to the degree of heterogeneity of the community and that turnout declines as heterogeneity increases. They provide an empirical support using a data from Norway. Their findings reveal that community size and linguistic heterogeneity have significant impact on voter turnout, even after controlling for the probability that a single vote is decisive. The study showed that other factors such as heterogeneity of the population have important impact on voter turnout and not just the decisiveness of the vote.

Literature on Rejected Ballots

Empirical studies investigating rejected ballots in democratic elections are few. These few existing studies have focused more on developed countries and developing countries in Latin America. For example, Carman and Mitchell (2007) carried out a statistical analysis of the rejected ballot papers in Scottish parliamentary election. They tested the relationship between rejected ballot papers and different institutional and social factors. In terms of the social factors used these were: 1) percentage of adults without academic qualifications, percentage of public that are unemployed and the percentage of the public reporting that they are not in good health. These indicators were adopted in order to test whether constituencies with higher levels of social deprivation and lower average levels of academic qualifications would have higher relative rates of ballot paper rejected.

Carmen and Mitchell (2007) found a significant relationship between each of these three variables above and higher level of rejected ballot papers. Based on this, they concluded that strong relationship exists between constituency social context and the relative level of rejected ballots. Higher

relative level of social deprivation leads to higher relative level of rejected ballots. Two institutional variables were used namely, the rate of ballot paper rejected at previous parliamentary elections and the number of parties listed on the regional ballot paper. They found no relationship between ballot paper rejection at previous elections and level of rejected ballot papers in 2007. However, positive relationship was found between the number of parties on the ballot paper and the level of rejected ballot papers.

Similarly, Knack and Kropf (2003) assessed the factors associated with the rate of rejected presidential ballots in the 1996 elections of United States. The results of the study showed that institutional and social factors are important in explaining variation in rates of rejected ballots in election. The rate of rejected ballots was lower in larger counties and in counties with a higher percentage of high school graduates. More education was associated with lower rejected ballots. The estimated results showed that each 10-percentage point increases in high school graduates reduces rejected ballots by three-tenth of a percentage point. Furthermore, the analysis revealed that the rate of rejected ballots declined as the number of presidential candidates on the ballot increases, but only up to a point, and then rose with further increases.

Gyampo (2009) examined the incidence of rejected ballots in national elections in Ghana from 1992 to 2008. He identified several factors that account for rejected ballots in Ghana. These are: ignorance of voters about the voting procedures; voter protest; confusing public education on the electoral process; low knowledge of electoral officials and polling agents about the electoral process; biasness of electoral officials and low level of education among the voting public. Regional analysis of the rejected ballot data showed

that rejected ballots occurred more frequently in the regions with high rates of illiteracy. Regions that had low illiteracy rates also had low incidence of rejected ballots.

Power and Garand (2007) conducted a cross-country study that examined the determinants of invalid voting in Latin America. The study used data from 80 legislative elections held in 18 different countries between 1980 and 2000 to test the relationship between invalid voting and three cluster of factors that can be classified into socioeconomic, political and institutional. The main socioeconomic factors used were: urbanisation, literacy, per capita income and income inequality. These factors were chosen in order to test the extent to which invalid voting is affected by economic conditions, level of development and educational level. The evidence pointed to the importance of socioeconomic variables in determining levels of invalid voting. Invalid voting was negatively associated with urbanisation and education but was positively associated with income inequality. Based on this, they concluded that socioeconomic variables have important effects on the propensity of voters to cast invalid ballots.

The political variables used were: change in per capita income, founding election, freedom house index, and change in freedom house index. These variables were selected to test whether performance and legitimacy of political regimes influence invalid voting. The results revealed that invalid voting is affected by protest-democracy variables. To a greater extent when voters confront high levels of political violence, when they live in less democratic countries or when their political systems are changing in an anti-democratic direction, invalid ballots occur frequently. They suggested that

measures such as political democracy deepening and promoting human development are necessary in reducing the incidence of invalid ballots in election.

The institutional variables included in the analysis were district magnitude, personal vote, electoral system, governance system and compulsory voting. With the exception of personal vote and measure of governance system, all the institutional variables were significantly associated with invalid voting. The results showed that institutional variables are equally important in explaining variations in invalid ballots across countries just like any other cluster of factors. Among the institutional factors they found that complexity of voting process fosters higher levels of invalid ballots. In addition, enforcing compulsory laws to the latter generates hither invalid ballots. Based on the evidence obtained in the study, Power and Garand (2007) concluded that invalid voting is a complex phenomenon which requires multidimensional approach to understand.

Unlike Power and Garand (2007) who studied the effects of institutional, socioeconomic and political factors on the incidence of invalid ballots in democratic elections, Kouba and Lysek (2016) limited their work to institutional factors in explaining invalid ballots. Their study also focused on presidential elections as compared to the legislative elections used by Power and Garand (2007). The authors used data from presidential elections in the new democracies of post-communist Europe and Latin America between 1980 and 2013 to test three theoretical models explaining invalid ballots: stakes, voter error and disenchantment models of invalid voting. The results showed that all the model had significant effect on invalid ballots. Comparing the

predictive strength of each of the model, the stakes model had strongest predictive power on invalid ballots. Much of the variations in invalid ballots across countries was explicable by the stakes associated with casting an invalid vote. In addition, institutional variables included in the analysis were strongly associated with invalid ballots. Institutional factors such as concurrence of elections, compulsory voting, rules for electing presidents and rules governing the reelection of incumbent government explained the incidence of invalid ballots across countries.

Arbache, Freire and Rodrigues (2014) investigated the causes of invalid voting in Brazil using dataset from three different elections held in 2010: presidential, parliamentary and gubernatorial elections. They tested the relationship between invalid voting and three different factors: low education, political disaffection and lack of preference about candidates. The results showed that education, political disaffection and lack of preferences for candidates matter for invalid voting. They found political knowledge and evaluation of political institution to be important predictors of invalid voting. Education was positively related to invalid voting contrary to the idea that invalid voting is common with illiterate voters. The authors argued that voters spoil their votes when they hold negative views of political institution and at the same time does not care about politics and elections.

Conclusion

This chapter presented a comprehensive review of the existing literature on the three main themes for the study. The review was broken into two parts. The first surveys the theoretical perspectives on the election- fiscal policy nexus, voter turnout and rejected ballots. It is observed that the main

theoretical foundation for analysing the election-fiscal policy nexus is the political budget cycle. Two theoretical perspectives on voter turnout identified in the literature are the rational choice model and the minimax regret model.

Regarding rejected ballots, the literature reveals that the explanations for rejected ballots have revolved around two dimensions. While some consider rejected ballots as occurring accidentally because of voters' lack of capacity to cast valid votes others view rejected ballots as the result of deliberate and purposeful action that channel from voter disaffection and disenchantment. The second part reviews the empirical studies on the impact of elections on fiscal policies, determinants of voter turnout and factors affecting rejected ballots in democratic elections. The review was also narrowed to specific countries to ascertain the dynamics of the results. What is very obvious from the review is that there exists mixed conclusion on the elections-political budget cycle nexus for both cross-country studies and country-specific studies as some studies found evidence of political budget cycle while others did not. It is worth noting that the variations in the findings could be ascribed to a number of factors including the estimation techniques, the type of data used and the level of democracy and the scope of the study.

The survey of the literature reveals that the issue of rejected ballots has not been explored much as compared to other phenomenon of electoral participation such as choice of presidential candidates. It was very evident that occurrence of rejected ballots in democratic elections remains understudied in the literature. The few empirical studies have concentrated largely in developed countries and developing countries in Latin America.

CHAPTER FOUR

RESEARCH METHODS

Introduction

This section discusses the methodology adopted for the study of the effects of elections on fiscal policy. In this section, both the theoretical and the empirical models are developed. The theoretical model is developed from the opportunistic political budget cycle theory with information asymmetry of Rogoff (1990). As pertains in economic studies, the empirical model follows the theoretical model and the dependent and independent variables included in the empirical model have been broadly described. With regard to objective two, the section explains the sources of the data used in the analysis, the data building process and operational definition of the variables included in the models. A comprehensive description of the theoretical model that constitutes the basis for the empirical models and subsequent econometric analysis are also discussed.

Research Design

This study draws on the positivist and empiricists' philosophy which emphasise quantification of objective knowledge. This paradigm pays particular attention to quantitative approach for testing objective theories by examining the relationship among measurable variables (Creswell, 2002). Positivists assume that patterns (trends), generalisations, methods, procedures, cause-and-effect issues are also applicable to the social sciences. They maintain that the objects of the social sciences, namely people, are suitable for the implementation of scientific methods.

Given its quantitative nature this study draws on positivist ontologies which is concerned with the collection and analysis of data in numeric form. It tends to emphasise relatively large-scale and representative sets of data. In line with the positivists' quantitative approach, this study is based on longitudinal research design which involves the gathering of data at multiple time points and providing more of events, people or social relations across time. It requires researchers to collect data on many units at many time points and look for pattern across the units or cases. Longitudinal studies are used for exploratory, descriptive, and explanatory analyses (Torres-Reyna, 2007; Neuman, 2011).

There are three types of longitudinal studies namely, time series, panel and cohort (Neuman, 2011). Of these three forms of longitudinal designs, the study employs the panel research approach which involves an observation or gathering of data on the same people, group or organisation across time points. According to Park (2011), a panel data set has multiple entities, and each has repeated measurements at different time periods. Panel data may have individual or group effect, time effect, or both, which are analysed using fixed effect and/or random effect models.

Panel data can be built from a single study that follows organisations, individuals or households over time. It can also be built from data sets of existing studies with different objectives, and scope across time and space. It is important to indicate that panel studies can be macro or micro in nature. A panel study is considered to be micro if it involves individuals, households or firms. On the other hand, it is considered as being macro in nature if it covers

national level aggregates such as inflation, national income, exchange rate and employment across space and time (Torres-Reyna, 2007).

Panel data can be long, short, balanced or unbalanced. A short panel has many entities (large N) but few time periods (small T), while a long panel has many time periods (large T) but few entities (Cameron & Trivedi, 2010). In the same vein, a short panel data set is wide in width (cross-sectional) and short in length (time-series), whereas a long panel is narrow in width. Both too small N (Type I error) and too large N (Type II error) problems matter (Park, 2011). A panel data is balanced panel when all entities have measurements in all time periods. On the other hand, it is unbalanced when each entity in a data set has different numbers of observations. Panel data can also be classified as being fixed if the same individuals (or entities) are observed for each period or rotating panel if a set of individuals changes from one period to the next. This document assumes a fixed panel (Greene, 2008).

In summary, panel data building is influenced by time, space and scope. The panel data used in this study follows the approach that requires the build data from different sources of existing studies. Specifically, this study relied on data from the World Bank, the Electoral Commission of Ghana, and National Elections across Democracy and Autocracy, Hand book on African Elections and African Election Database for the preparation of the panel data set for the analysis.

The Theoretical and Empirical Models for Government Expenditure

In assessing the effects of elections on fiscal policies, three different theoretical models of political budget cycle have been used in the literature. These are the populist cycle models that predict the persuasion of uninformed

and myopic voters; the signalling models with asymmetric information; and the moral hazard model with high discounting by political agents (Khemani, 2004). The signalling models with asymmetric information of Rogoff (1990) have predicted that in democratic regimes, where elections are the means by which governments are chosen, incumbent governments have the incentive to manipulate fiscal policies at their disposal to increase their probability of being re-elected. According to Martinez (2009), such manipulation of fiscal policy tools begins even before the elections.

Following Drazen and Eslava (2010), the study uses the signalling theoretical model of Rogoff (1990) in addressing the objectives of this chapter. The model is built on the following principles: 1) Two periods: Period 1 is before an election and period 2 is after an election; 2) Policy instruments which are exogenous tax (levied in each period), and two public goods. The first good which is represented by the variable g_1 is a short-term public good. With this good, voters can see immediately what is being provided while the second good represented by the variable G_2 is a long-term public (investment) good. It is important to indicate that voters cannot see how much is spent in this period until the next period. The third principle is the preferences and conflict of interest which can be further looked at in three forms: a) voters and politicians have the same preferences over public goods; b) Politicians get ego-rent from being in office; c) The conflict of interest is not about rents, but about the competency of the politician.

In this model, the representative voter's two period utility can be specified as:

$$U^v = \underbrace{\mathrm{y} - \tau + \ln(g_1)}_{pre-election\ utility} + \underbrace{\mathrm{y} - \tau + \ln(g_2) + \ln(G_2)}_{post-election\ utility} \quad (1)$$

In equation 1, the variable y represents income which is also assumed to be non-discounting whereas τ represents the exogenous tax. In line with equation 1, the two-period utility function for a politician can specified as:

$$U^p = \mathrm{I}b + U^v \quad (2)$$

In equation 2, $b > 0$ is the ego-rent of re-election and I = 1 if reelected and zero if not re-elected. The utility of the voter is influenced by government policy which is also dependent on the type of the politician. The politician is either competent (C) or incompetent (L) and this can be functionally summarised as: $(i \in \{C, L\})$. Competence is defined in the context of how good the politician is when it comes to the production of public goods:

$$\underbrace{G_2 + g_1 = \tau + \epsilon_i}_{pre-election\ utility} \quad \text{and} \quad \underbrace{g_2 = \tau + \epsilon_i}_{post-election\ utility} \quad (3)$$

From equation 3, the variable ϵ_i represents the lasting competency of a politician of the type i with $\epsilon C > \epsilon L \equiv 0$. The probability that a randomly selected politician is competent (C) can be written as $P \in (0,1)$. Similarly, the probability that a randomly selected politician is incompetent (L) can be written as $P \in (0,1)$. At the beginning of period 1, the incumbent observes his competency ϵ_i and decides on how to allocate tax revenues between the two public goods (g_1, G_2). However, voters observe how much is spent on g_1 but not what is spent G_2. At the end of period 1, if an election takes place where the incumbent runs against a randomly chosen challenger, he is either re-elected if he is supported by a majority of the voters or otherwise the challenger takes office. If the incumbent is re-elected, he spends the post-election budget on the short-run public good g_2 at the beginning of period 2.

Nonetheless, if the challenger is elected, she observes her competency and spends the post-election budget on the short-run public good g_2.

In period 2, the politician (either incumbent or the challenger) spends all taxes on short-term public goods: $g_1(\mathrm{i}) = \tau + \epsilon_i$. In period 1, the politicians and the voters equally care about policy. Therefore, the maximized decision in period 1 and 2 can be functionally written as:

$$\underset{g_1, G_2}{Max} = \underbrace{y - \tau + \ln(g_1) + \ln(G_2)}_{period\ 1\ decisions} + \underbrace{y - \tau + \ln(\tau + \epsilon_i)}_{period\ 2\ decisions} \quad (4)$$

The decisions in the two periods are subject to the constraint:

$$\tau + \epsilon_i = g_1 + G_2$$

The logarithmic form of the utility for the two periods which also represents the preference of voters can be specified as:

$$g_1^* = G_1^*(i) = \frac{\tau + \epsilon_i}{2} \text{ for } i \in \{C, L\}. \quad (5)$$

In model 5, $G_1^*(i)$ represents the long-term expenditure of the incumbent or government while g_1^* is its short-term expenditure. The voters' re-election of competent politicians is based the trust that they repose in them (the incumbent) in providing more post-election public goods. The voters observe what the incumbent does before the election g_1 and use that to estimate the level of competence of the incumbent. Based on this estimate, voters re-elect the incumbent if they think it is sufficiently likely that the incumbent will be competent or elect the challenger if otherwise. Being guided by their desire for re-election, they have the incentive to provide lots of short-term public goods at the cost of long-term public goods during the pre-election period if that will enable them get re-elected. Equation 5 can be further expanded in the form of

equation 6 to include other control variables that influence the incumbent's (government) spending in the short term:

$$g_1^* = G_1^*(i) + \beta_i X_i + \epsilon_i \quad (6)$$

From equation 6, X_i is the vector of other factors that influence government spending, β_i is the vector of coefficient of those explanatory variables while ϵ_i represents the error term.

Empirical Model Specification

The empirical econometric model formulated to examine the effect of elections on government expenditure and debt servicing is the System Generalised Method of Moment (GMM) which falls within the broad category of the dynamic panel estimation techniques prescribed by Arellano and Bond (1991). The model relates government expenditure with indicators such as elections years, economic growth, GDP per capita and other correlates. Unlike the static models, the dynamic panel models allow for the testing of the relationship between the dependent variable (government expenditure) and its lagged values.

In addition, the model allows for the possibility that time might elapse between a change in the independent variable and the resulting change in the dependent variable. It is also relevant for recovering consistent estimates of other parameters included in the model (Bond, 2002). The dynamic model is used in an instance where the independent variables are not strictly exogenous (Vučković & Basarac Sertić, 2013). This estimator also considers the specificity of each observed unit and allows for heteroscedasticity and autocorrelation within the unit of observation (Roodman, 2006).

The choice of this estimation model is informed by the fact that election year, which is the regressor of interest is not entirely exogenous in reality. Evidence suggests that the timing of elections and the fiscal policies could be affected by a common set of unobserved variables, including crises or social unrest which can be hardly included in the specification of the regression model (Shi & Svensson, 2002). As a result, failure to consider the endogenous nature of election has the potential to bias the estimates of election. Specifically, there will be a downward bias when the omitted variable correlates positively with election timing and negatively with fiscal policy outcomes such as government expenditure (Shi & Svensson, 2002).

In some Africa countries, the timing of elections is strategically chosen by the incumbent government political parties to favour them. There is likelihood of a reverse causality problem if politicians condition the timing of elections on fiscal policy outcomes. In such an instance, the coefficient estimate on election does not correspond to the notion of political budget cycles. From equation 6, the dynamic panel model is specified as follows:

$$Y_{it} = \beta_0 + \beta_1 Y_{it-1} + \beta_2 EL_{it} + \beta_3 X_{it} + \epsilon_{it} \quad (7)$$

In model (7), Y_t is the government fiscal policy (government expenditure) which is the dependent variable of interest. In the same vein, Y_{it-1} is the lag of the dependent variable and addresses the presence of autocorrelation between current and previous values of government expenditure. The variables EL_{it} represent the election period. In the same vein, X_{it} is the vector of other control variables, β_0 is the constant term which represents government expenditure if all the explanatory variables are equal to zero. Also, the parameters β_1 and β_2 represent the coefficients of the lag of

the dependent variable (government expenditure) and election periods respectively. The parameter β_3 represents a vector of the other control variables included in the model. The subscript $i \ldots \ldots N$ represents the individual countries, $t \ldots \ldots T$ is the time dimension of the model and $t-1$ shows the time lag of the dependent variable.

It is important to indicate that apart from the potential endogeneity between election and government expenditure, time-invariant country characteristics (fixed effects), such as geography and demographics, may be correlated with the explanatory variables. These fixed effects are contained in the error term in model (7), which consists of the unobserved country-specific effects, ν_i and the observation-specific errors, e_i. As a result, the error term in equation 1 can be expanded as specified in equation 8:

$$\epsilon_{it} = \nu_i + e_{it} \tag{8}$$

Variables such as GDP growth and GDP per capita are expected to be endogenous in the sense that there is potential element of simultaneity between these two variables and the dependent variable. In addressing these problems, the Arellano – Bond (1991) difference GMM estimator first proposed by Holtz-Eakin, Newey and Rosen (1988) were applied by using the lag levels of GDP growth and GDP per capita as instruments. Including these lag variables makes the endogenous variables pre-determined and uncorrelated with the error term in equation (7). Also, in addressing the problem of the fixed effects, the difference GMM uses first-differences to transform equation (7) into:

$$\Delta Y_{it} = \beta_i \Delta Y_{it-1} + \beta_2 \Delta X_{it} + \Delta \epsilon_{it} \tag{9}$$

Through transformation of the regressors by first differencing, the fixed country-specific effect is removed, since it does not vary with time. From equation (8), this can be obtained as:

$$\epsilon_{it} - \epsilon_{it-1} = (v_i - v_i) + (e_{it} - e_{it-1}) = e_{it} - e_{it-1} = \Delta\epsilon_{it} \quad (10)$$

One point that needs to be noted is that the first-differenced lagged dependent variable (in equation 9) is also instrumented with its past levels. It is also worth noting that the Arellano – Bond estimator was designed for small- time dimension (T) and large country dimension (N) panels as in the case of this study where the time is thirty-one (31) years (from 1985 to 2015 inclusive) and forty-three (43) countries. Roodman (2006) has observed that in large time (T) panels a shock to the country's fixed effect, which shows in the error term, will decline with time. Similarly, the correlation of the lagged dependent variable with the error term will be insignificant. In such cases, the Arellano – Bond estimator will not be useful in producing consistent and unbiased estimates. Taking all other explanatory variables into consideration, equation (7) can be expanded in the form of equation (11) and (12) which represent the function for government expenditure and debt servicing. Note that all derivations from equation (8) to equation (10) are also applicable.

$$Gexp_{it} = \beta_0 + \beta_1 Gexp_{i,t-1} + \beta_2 Elec_{it} + \beta_3 Gdpg_{it} + \beta_4 (Elec_{it} * Gdpg_{it}) + \beta_5 Gdpcap_{it} + \beta_6 Inf_{it} + \beta_7 Unemp_{it} + \beta_8 Sysgov_{it} + \beta_9 ADR_{it} + \beta_{10} Elsys_{it} + \epsilon_{it} \quad (11)$$

$$Debt_{it} = \beta_0 + \beta_1 LDebt_{i,t-1} + \beta_2 Elec_{it} + \beta_3 Gdpg_{it} + \beta_4 (Elec_{it} * Gdpg_{it}) + \beta_5 Gdpcap_{it} + \beta_6 Inf_{it} + \beta_7 Unemp_{it} + \beta_8 Sysgov_{it} + \beta_9 ADR_{it} + \beta_{10} Elsys_{it} + \epsilon_{it} \quad (12)$$

In model (11), *Gexp* is government fiscal policy proxied with (government expenditure as percentage of Gross Domestic Product (GDP), $Gexp_{t-1}$ is the lag of government expenditure, *Elec* is election season or year, *Gdpg* represents the growth rate of Gross Domestic Product (GDP), and *Debt* in equation (12) represents debt servicing of the respective countries. In addition, *Inf* is the rate of inflation in the countries included in the analysis, *Unemp* represents unemployment rate, *Sysgov* is the system of governance in the countries under consideration, *ADR* represents age dependency ratio and *Elsys* is the electoral system in the respective countries. The interaction between election year and level of development (GDP per capita) is captured as *Elect*Gdpcap*. Table 3 summarises the variables included in the model and their respective a' priori expectations.

Table 3: Variables in the Empirical Model for Government Expenditure

Variable	Meaning	A priori sign
$Gexp$	Government expenditure	Dependent variable
$Debt$	Debt servicing	Dependent variable
$LGexp$	Lag of government expenditure	Positive
$Elec$	Election year or season	Positive/Negative
$Gdpg$	Growth rate of Gross Domestic Product	Positive
$GdPcap$	Gross Domestic Product per capita	Positive
Inf	Inflation rate	Positive/ Negative
$Unemp$	Unemployment rate	Positive
$Sysgov$	System of governance	Positive/ Negative
ADR	Dependency ratio	Positive
$Elsys$	Electoral system	Positive/ Negative
*Elect*Gdpcap*	Interaction of election year and GDP per capita	Negative/Positive

Source: Author, 2018.

In assessing the robustness of the system-GMM model estimates the Sargan test and Hansen J statistic were conducted. The statistic of these two post estimation tests are by default produced together with the results with just single command using the Stata software. Though both the Sargan and Hansen J statistic perform the same function and have the same null hypothesis the results for both tests will be reported in the interest of comparison. Another test that was conducted was the Arellano –Bond test for autocorrelation. This test has a null hypothesis that there is no autocorrelation and is applied to the differenced residuals.

One advantage of the system GMM is that it increases the efficiency of the estimates. However, there are two important points to be noted in its usage. As indicated earlier, the system GMM uses more instruments than the difference GMM. As a result, it may not be appropriate to use system GMM with a dataset that has a small number of countries. This is because when the number of instruments is greater than the number of countries, the Sargan test may be weak. Second, Roodman (2006) explains that a panel with fixed effects including the equation in levels requires a new assumption that the first-differenced instruments used for the variables in levels should not be correlated with the unobserved country effects.

Data, Variable Measurement and a priori Expectation

The analysis was based on annual data on a sample of forty-three (43) sub-Saharan countries covering the period 1985-2015. This allowed for the creation of a balanced panel of 1333 country-year observations. Mention must be made of the fact that as a usual characteristic of data across developing countries, there were some missing observations that caused a drop in the final

sample size used in the analysis. Countries such as Egypt, Morocco, Algeria, Tunisia and Libya were automatically excluded from the analysis because they do not have consistent democratic elections. In the same vein, countries such as Djibouti, South Sudan, Chad and Swaziland were excluded because they had significantly large missing observations on election variables. Moreover, some of these countries are recovering from civil unrests and they are in the process of strengthening their democracies. The detailed descriptive statistics of the sample for countries included in the analysis is provided in Table 6.

In choosing the period of coverage of the study, critical consideration was given to the period in which democracy began to gain recognition as a means for a change of government in most African countries. This is because many African countries have gone through series of military dictatorship where there were no contest of election and competition. However, Brender and Drazen (2005), and Block (2002) have observed that political budget cycles make sense in instances where elections are contested in a competitive manner and the incumbent government faces some probability of losing office. This compels the incumbent government to develop high incentive to alter the outcome of the election. In the form of counter argument to this claim, Shi and Svensson (2002) have explained that the desire of dictators to eliminate signs of discontent in elections may account for their attempt to increase spending and deficits in jurisdictions of non-democracies.

The dependent variables of interest in this study are general government final consumption expenditure, formally known as the general government consumption and debt service. Though the final government expenditure includes debt servicing, the study considers the need to

concentrate on debt service as another dependent variable because of its wide range of implications for debt accumulation and development. Also, the study sought to examine the response of governments of African countries to debt servicing in election periods. The data on public expenditure, inflation, unemployment, age dependency ratio, gross domestic product per capita, and growth rate of gross domestic product were obtained from the World Development Indicators of the World Bank.

Government final consumption expenditure includes all government current expenditures for purchases of goods and services (including compensation of employees). It also includes most expenditures on national defense and security, but excludes government military expenditures that are part of government capital formation. Also, the total debt service used as another dependent variable is the sum of principal repayments and interest actually paid in currency, goods, or services on long-term debt, interest paid on short-term debt, and repayments (repurchases and charges) to the IMF.

With regard to objective one, election is the main variable of interest and it is measured as dummy which takes on the value 1 if election was held in a particular country and 0 otherwise. Theoretical and empirical evidence suggest that government in mostly developing countries use expenditure to influence voters' decision during election years. This affect their ability to remain committed to their debt serving obligations. As a result, it is expected that election period or years of election should be positively associated with government expenditure but negatively associated with debt servicing. Empirical evidence in developing countries including Ghana indicate that governments mostly delay developmental projects until periods close to

election before they use such projects as bates to solicit votes from the citizenry. Similar to the situation in years of election, government divert funds meant to finance debts into provision of tangible projects including roads to win the votes of electorates. It is *a priori* expected that pre-election years should be positively associated with government expenditure negative but relationship with debt servicing.

Gross Domestic Product (GDP) growth rate which was included in the analysis as an independent variable is the annual percentage growth rate of GDP at market prices based on constant U.S. dollars. Per the World Bank's definition, aggregates are based on constant 2005 U.S. dollars. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.

Studies that focused on the relationship between government expenditure and economic growth remains uncertain. One strand of the literature suggests a strong Granger causality from economic growth to the growth rates of total and disaggregated government expenditures while another strand find evidence of reverse causality (Abdullaev & Kónya, 2014). There are other studies that find no any evidence that the growth of government expenditure contributes to the growth of GDP. Thus, they conclude that there is no evidence of any reverse causality (Sinha, 1998). GDP growth is used in this study to represent income space that is available for government to spend and the level of development of a country in question. It

is therefore expected that GDP growth should have a positive relationship with government expenditure.

Inflation rate is measured by the consumer price index and reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified interval, such as yearly. Inflation rate is included as an independent variable because inflation may affect government receipts and expenditures through nominal progression in tax rates, and tax brackets, and through price indexation of receipts and expenditures (Klomp & De Haan, 2013). However, Mink and De Haan (2006) explained that unexpected inflation erodes the real value of nominal government debt so that the overall effect of inflation on total spending and debt servicing is not clear a priori. In view of this, it is expected that inflation should have negative association with government expenditure and debt serving.

Unemployment generally refers to the share of the labour force that is without work but available for and seeking employment. The unemployment rate therefore is the percentage of the labour force that is unemployed. Unemployment rate is included in the analysis to gauge the level of economic activity as reflected by the labour market. The inclusion of the unemployment rate as independent variable is because of its direct link with government spending and revenues. Higher unemployment will increase government spending on social transfers and decreases revenues and hence constrains government capacity to service its debts.

Age dependency ratio included as an independent variable in the analysis is measured as ratio of dependents to the working-age population. The

dependents are people younger than 15 years and older than 64 years. The variable is included because of the direct relationship between the share of children and elderly and government spending. Higher share of children and elderly will lead to increase in government spending due to, for example, greater social spending on education and health care.

GDP per capita is measured as the gross domestic product divided by the population size of the country in question. The gross domestic product is based on constant 2005 U.S. dollar. GDP per capita is included to control for the level of development of a country as this could influence voters' preference for public goods and hence the level of government spending. Election year are dummies created for the election and pre-election years. Election year dummy takes on value of one if election is held in that year and zero if otherwise. Pre-election year dummy equally takes on value one for a year preceding the election year and zero, otherwise. In creating the dummies for the two-election variable, we considered only the year for the election and the year before. The actual month that election is conducted and the interval between elections were not considered.

The other independent variables included in the analysis are governance system and electoral system. Dummy variables that are 1 for simple majority system and presidential system were created for electoral system and governance system respectively. Persson and Tabellini (2002) and Klomp and De Haan (2013) have argued that elections may have different effects on fiscal policy under different electoral and governance systems. Under the electoral system, proportional elections may induce politicians to seek support from larger groups in the electorate. For this reason, government

spending may be larger under the proportional electoral system than under simple majority electoral system. Regarding the governance system, there may be differences in the effects of elections on fiscal policy under presidential system and parliamentary system. In presidential system the executive cannot be brought down by the legislature, but he or she is directly accountable to the voters and this may affect the way the president conducts fiscal policy during election period. The president may have the incentive to use higher spending as a way to influence voters' decision during elections.

In addition, we include an interaction term of Gross Domestic Product (GDP) and year of election (election variable) in both models for government expenditure and debt servicing. We hypothesis that in relatively developed countries that have good infrastructure, highly educate and politically descending populace, the incumbent government will not be compelled to spend much on election years in order to solicit the vote of the electorate. This means that regardless of the fierceness of the electoral contest, government may not be significantly influenced by the electoral season. This will enable the government to have much space to cut down spending and shift some resources into the payment of the country's debt. It is thus expected that the net effect of the interaction term will be negative for government expenditure and positive for debt servicing.

The descriptive statistics of the variables employed for the analysis in this section are presented in Appendix A.

The Theoretical and Empirical Models for Invalid Vote

Following the cardinal principles of the rational choice theory, we model the behaviour of a voter who is assumed to cast a valid vote by weighing the benefit and cost of his action. In this modelling process, there are two points that are worth noting: 1) For simplicity sake, the model focuses on the behaviour of the voter rather than that of the election officer or both though it is acknowledged that in some instances, the behaviour of the election officer can also determine the size of invalid votes. 2) The model concentrates on only the margin of victory between the two leading candidates and not all the three variables of interest or more than two candidates. In reality, the number of candidates vying for the position of a president is usually more than two. It is only when the election results in a run-off that the number reduces to two. Nevertheless, this once again borders on the issue of simplicity of the model. In this model, the tendency that a voter will cast a valid vote is dependent on the net benefit of his action. Following Arnold (2015), this expression can be written as:

$$Y_v = \pi B - K \tag{13}$$

In model 13, the variable Y_v represents the net benefit of casting a valid vote, πB is the expected benefit of casting a valid ballot which depends on the outcome of the election. The expected benefit of voting πB comprises the probability that a single vote will make decisive impact (π) and the specific benefit that the voter will realise should the preferred candidate win and takes office (B). The variable K captures the voter's cost of paying attention in order not to cast an invalid vote that will not make any positive impact on the votes of his preferred candidate.

As a rational economic agent, the voter decides to cast an invalid vote (Y) if the benefit πB is lower than the cost (K) of voting $(Y_v > 0)$. It is important to indicate that the voters have different perception of the parameter π in close races. If one's preferred candidate wins (or loses) for sure π is 0. In that instance, a single vote has no impact and the expected benefit πB plays no role in explaining the net benefit of casting a valid vote.

$$\pi = f(C) \tag{14}$$

where C is the margin of victory or the difference between the two leading candidates. The interpretation of equation 14 is that the effectiveness of casting a decisive vote is influenced by the magnitude of the difference between the two candidates. The larger the magnitude of the margin, the lower the probability that the voter will cast a vote that will make impact. Conversely, a lower magnitude of the margin is associated with a higher probability that a voter will cast a vote that will make an impact. Substituting equation 14 into equation 13, the function for net benefit of casting a valid can written as:

$$Y_v = \pi(C)B - K \tag{15}$$

From equation 15, margin of victory can be differentiated with respect to the probability of the voter's vote making an impact. It must be noted that the margin of victory and expected benefit of casting a valid vote are negatively related.

$$\frac{\partial \pi}{\partial C} < \tag{16}$$

As indicated in the explanation of equation 14, the margin of victory impacts π negatively. While π impacts valid voting negatively, margin of victory and valid voting are therefore negatively related. We express the first

order derivation of margin or closeness of election via the probability of a decisive vote as:

$$\frac{\partial Y}{\partial C} = \frac{\partial Y}{\partial \pi} * \frac{\partial \pi}{\partial C} = B\frac{\partial \pi}{\partial C} < 0 \quad (17)$$

Equation 17 indicates that increase in the margin of victory decreases valid votes by affecting both the probability of casting a decisive vote and the benefits of casting a valid vote. Contrary to the above, margin of victory is positively related to the probability of casting an invalid vote. When the magnitude of the margin increases there is less likelihood that a single vote will be decisive and this depresses the benefits of casting a valid vote. As the benefits of casting valid votes lowers due to a wide vote difference between the two leading candidates, voters pay less attention to casting a valid vote. The lower attention devoted by the voters result in more invalid votes. Thus, all things being equal increase in the margin of victory increases invalid votes by affecting the probability of casting a decisive vote. From equation 13, it can be deduced that net benefit of casting valid vote is directly related to the total valid vote and this expression can be written as:

$$Y = f(Y_v) \quad (18)$$

Equation 18 can be interpreted that a positive net benefit of casting a valid vote increases the number of valid votes. Conversely, a negative net benefit of casting a valid vote reduces the amount of valid vote cast. One would ask what if there is a third scenario where no net benefit is obtained by the voter? In that case, the response is that the voter is not motivated at all to cast a ballot. Such a voter does not make any attempt to go to polling station to cast his ballot. The behaviour of such a voter is not considered at all in the model.

Empirical Estimation Strategy

The literature on the empirical analysis of the determinants of invalid votes remain one of the under researched areas of political economics. This may be partly due to the unobserved nature of the factors that cause invalid vote. In line with the theoretical challenge of modelling the behaviour of both the voter and the election officer whose actions to some extent influence the number of invalid votes, few identified empirical studies (mainly in advanced countries) differ in their approaches to the estimation. Among such factors that have constituted the basis for justification of why some studies use certain estimation techniques are the type of data (cross-section, pooled cross-section or panel) used and the nature of the measurement of invalid vote.

In most cross-sectional studies (Alvarez, Sinclair, & Wilson, 2004), invalid vote is measured as a binary variable that takes on the value 1 if the voter admits having cast an invalid vote and 0 otherwise. However, country level data on invalid vote such as the one used in this analysis are mostly aggregated as a continuous variable. With the focus of this thesis on sub-Saharan African countries, the estimation approach required the organisation of such aggregated data on election, political and socio-economic factors into a panel. The reason why panel data was used instead of the other forms of data was to take advantage of the superior advantages of panel data in addressing the issues of heterogeneity among the countries under consideration.

In panel studies of this nature, the standard econometric models used in the analysis are mostly the fixed effect and random effect models. According to Baltagi, Bresson and Pirotte (2003), the choice between fixed effects (FE) and random effects (RE) estimators has remained a source of long-standing

debate among econometricians. Mundalk (1978) cited in Balgati *et al*. (2003) argued that the random effect model assumes exogeneity of all the explanatory variables and the random individual effects. In contrast, the fixed effect model allows for endogeneity of all the regressors and the individual effects.

The fixed-effects (FE) model is used when one is only interested in analysing the impact of variables that vary over time and it allows for the exploration of the relationship between predictor and outcome variables within an entity such as country, person, company and many more. Each entity has its own individual characteristics that may or may not influence the predictor variables. For instance, the political system and level of electoral experience of a particular country could influence variables such as voter turnout and rejected ballot. The use of fixed effect involves an assumption that something within the individual may impact or bias the predictor or outcome variables and it has to be taken into account.

This explains the assumption of the correlation between entity's error term and predictor variables. The fixed effect allows for the assessment of the net effect of the predictors on the outcome variable by removing the effect of those time-invariant characteristics. Another important assumption of the fixed effect model is that those time-invariant characteristics are unique to the individual and should not be correlated with other individual characteristics. Each entity is different therefore the entity's error term and the constant (which captures individual characteristics) should not be correlated with the others. Should this assumption fail to hold, the fixed effect is no suitable since inferences may not be correct-hence the choice of either a random effect.

As a result of this debate over the correlation between the individual effects and the regressors and the dilemma of researchers with the choice between fixed effect and random effect, Hausman and Taylor (1981) proposed a model where some of the regressors are correlated with the individual effects (Balgati *et al*., 2003) and this is what has become the third option called the Hausman-Taylor model (HT). In order to obtain the most efficient estimates, all the three models were explored but the post estimation tests to decide on the appropriate model revealed that the Hausman-Taylor must be preferred to the fixed effect and random effect models. It is imperative to state that one of the main reasons why emphasis is laid on the Hausman-Taylor estimates is that the study seeks to take into consideration the effect of the electoral experiences of the countries. The variable used to capture this effect is dummy which takes on the value 1 if the country in question has at least four uninterrupted elections since 1990 and 0 otherwise. There is of course much reason to suspect that the level of experience of the countries will influence their experience in terms of the voting process and enhance the political discernment of the electorates.

Following Balgati *et al*. (2003) and equation 18 of the theoretical model, the Hausman and Taylor (1981) model can be expressed as:

$$Y_{it} = X_{it}\beta + Z_i\eta + \alpha_i + \mu_{it} \qquad (19)$$

From equation 19 $i = 1, 2 \ldots \ldots N$ and $t = 1, 2 \ldots \ldots \ldots T$. While the variables Y_{it} represents invalid vote, X_{it} represent a vector of the regressors including the variables of interest. The variable Z_i represents the time invariant variables which in the case of this study is captured as the electoral experience. Likewise, α_i is the IID (0, ${\sigma^2}_\alpha$) whereas μ_{it} is the IID (0, ${\sigma^2}_\mu$)

both independent of each other and among themselves. According to Balgati et al. (2003), Hausman and Taylor split $X = (X_1, X_2)$ and $Z = (Z_1, Z_2)$ into two set of variables such that X_1 is $n \times K_1$, X_2 is $n \times K_2$, Z_1 is $n \times K_2$ and $NT.X_1$ and Z_1 are assumed to be exogenous and not correlated with α_i and μ_{it}. It can be observed from the model that using OLS to produce estimates will be biased and inconsistent. Also, the fixed effect estimator which clears α_i using the within transformation will produce inconsistent estimates. The fixed effect estimator wipes the Z_1 and as a result cannot yield the estimate η. The random effect estimator which is Generalised Least Square (GLS) on (1) ignores the element of endogeneity due to α_i. This means that the random effect will also yield biased estimates of the regression coefficients.

Balgati *et al*. (2003) explain that Hausman and Taylor (1981) suggest an instrumental variable estimator which pre-multiplies (13) by $\Omega^{-1/2}$ where Ω the variance covariance term of the error component$(\alpha_i + \mu_{it})$, and then performs Two Stage Least Square (2sls) using (Q, X_i, Z_i) as instruments. The variable Q is the within transformation matrix with $Y = QY$ having at least as many time varying exogenous regressors X_i as there are individual time varying endogenous regresssors, Z_2. This expression can be written as $K_1 > g_2$ and it makes the Hasuman-Taylor estimator more efficient than that of the fixed effect. Finally, if the model is under identified, where $K_1 < g_2$ then will be impossible to estimate η.and the Hasuman-Taylor model will produce an estimator β which is identical to that of the fixed effect (Balgati *et al.*, 2003).

Substituting the dependent and independent variables used in this analysis into equation 19, the empirical model now becomes:

$$Invalvote_{it} = \beta_0 + \beta_1 LM_{it} + \beta_2 COBP_{it} + \beta_3 VT_{it} + \beta_4 UE_{it} + \beta_5 GDPG_{it} + \beta_6 GDPPC_{it} + \beta_7 UP_{it} + \beta_8 (COBP_{it} * GDPPC_{it}) + \beta_9 (LI_{it} * COBP_{it}) + \beta_{10} EE_{it} + \beta_{11} LI_{it} + \beta_{12} (LI_{it} * LM_{it}) \varepsilon_{it} \quad (20)$$

The detail definition of the variables and their corresponding a priori expectations are presented in Table 4.

Table 4: Definition of Variables and a priori Expected Signs

Variable	Meaning	A priori sign
$Invalvote$	Invalid vote.	Dependent variable
LM	Leading margin/closeness	Positive
$COBP$	Complexity of ballot paper	Positive
VT	Voter turnout	Positive
UE	Unemployment rate	Positive
$GDPG$	Gross Domestic Product growth rate	Negative
$GDPPC$	Gross Domestic Product per capita	Negative
UP	Proportion of urban population	Negative
EE	Electoral experience	Negative
LI	Literacy rate	Negative
*COBP*GDPPC*	Interaction of complexity of ballot paper and GDP per capita	Negative
*LI*COBP*	Interaction of literacy and complexity of ballot paper	Negative

Source: Author, 2018.

Measurement of Variables

A review of the literature shows that the measurement of invalid vote can be done in two ways. In some instances, invalid vote is measured as a percentage of the number of voters registered on the electoral list. This measure is expressed as the proportion of voters whose ballot is not valid to the total number of potential voters. Nonetheless, this function has the drawback of underestimating the impact of the invalid vote on electoral results, especially in a context of limited voter mobilization. Aldashev and Mastrobuoni (2016) have explained the term invalid vote or rejected ballot to include a ballot paper that cannot be counted for one or more of a range of reasons : 1) the ballot paper does not have an official mark; 2) the voter has

cast more votes than they are entitled to (termed ‘over-voting’); 3) the voter has made writings or marks by which they can be identified; 4) the voter has left the ballot paper blank or has marked or thumb-printed it in such a way that it is not clear for whom they intended to vote.

One of the main variables of interest is this analysis is complexity of ballot paper. It is measured as the number of candidates appearing on the ballot paper. This definition is adopted for the study because depending on the number of candidates in an electoral contest the ballot paper can be less complex or more complex. The ballot paper becomes more complex when the number of candidates is many. It is expected that complexity of ballot paper will be positively related to invalid votes. This is because if the number of candidates is many on the ballot paper it creates confusion in the minds of some voters when selecting candidates to vote for. The confused voters are likely to make mistakes resulting in higher number of invalid votes. They may fail to select or make too many selections causing their ballot papers to be rejected (McAllister & Makai, 1993).

Besides complexity of ballot paper, another variable of interest in this analysis is leading margin. This variable is included to capture the effects of closeness of election or electoral competition on invalid ballots. With regard to definition, this study adopted the existing definitions in the literature as the difference between the first two candidates' vote shares in terms of percentage (Nohlen, 2005; Nohlen & Stover, 2010). This definition is based on that of the official electoral statistics from central electoral commissions or national statistical offices. It is expected that leading margin will be positively associated with invalid votes. Earlier empirical studies that considered the

effect of leading margin on invalid vote conclude that lower leading margin reduces the number of invalid votes. Kouba and Lysek (2016) have explained that highly competitive elections lead to lower invalid votes. In highly competitive elections voters consider their votes to be decisive and therefore are careful not to cast invalid ballots.

Voter turnout which is another regressor of interest is operationally defined as a share of the total registered voters who cast their ballot on the day of election. Voter turnout includes both valid and invalid votes cast but it excludes any spoiled ballot paper that could not find its way into the ballot box. Such ballot papers include those that had to be replaced because the voter detected that he or she had mistakenly rendered the ballot invalid. This analysis assumes a positive relationship between turnout and invalid votes. Even though one can argue that the relationship is influenced by voters' capacity and experience of voting and education of the electorate. The widespread illiteracy rates in many sub-Saharan African countries suggests that the positive relationship between turnout and invalid vote is valid.

In addition to the electoral variables, the socioeconomic variables were obtained from the World Bank. These variables are part of the world development indicators. As a result, their interpretation, definition and explanation are strictly based on those of the World Bank. Beginning with the explanation of the socio-economic variables with unemployment, the World Bank defines it as the share of the labour force that is without work but available for and seeking employment. According the author, the definitions of labour force and unemployment differ by country (World Bank, 2016) but this

is based on the ILO estimate which can be found from the website (http://data.worldbank.org/indicator) of the World Bank.

The literature suggests that unemployment increases the incidence of invalid vote as people demonstrate their disaffection about poor economic conditions through voting for the politicians and government whose policies have created such situation for them by deliberately casting a rejected ballot. The protest model also posits that invalid votes are the result of voter protest that channel from the poor economic condition such as unemployment. Thus, an increase in unemployment rate is speculated to generate more invalid votes. Also, there is enough evidence that unemployment is a challenge for many sub-Saharan African countries. As a result, this analysis considers the impact of unemployment rate on invalid vote. Unemployment rate is included to represent motivation of electorate to cast an invalid ballot.

In the same vein, urban population refers to people living in urban areas as defined by national statistical offices. It is calculated using World Bank population estimates and urban ratios from the United Nations World Urbanisation Prospects (World Bank, 2016). Urbanisation is expected to impact negatively on invalid votes. The reason is that urban population have access to mass media where information about upcoming elections is better organized, distributed and received (Power & Garand, 2007). Also, people in urban areas are constantly exposed to strongly political systems and intense political campaigns and educations. All these enable them to vote in a manner that minimizes invalid votes.

Gross Domestic growth rate is explained as the annual percentage growth rate of GDP at market prices based on constant local currency.

Aggregates are based on constant 2010 U.S. dollars. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources (World Bank, 2016). Annual percentage growth rate of GDP per capita based on constant local currency. Aggregates are based on constant 2010 U.S. dollars. GDP per capita is gross domestic product divided by midyear population.

In addition, we expect that the effect of the election variables (margin and complexity of ballot papers) on predictor variable (invalid vote or reject rejected ballot) are different at different values of the other socioeconomic variables. As a result, include a number of interaction terms in the analysis. Since education is instrumental in helping the populace to understand the essence of election and it importance for the development of their respective communities, and countries at large, we include a variable that considers the proportion of literate people in the countries under consideration in this study. Although, a variable on election-specific education could have been the ideal, we believe that general education may equally be a good proxy variable.

In order to make our findings relevant to policy, we interact some of the socioeconomic variables with the election variables. Specifically, we interact Gross Domestic Product per capita with complexity of ballot paper to assess the extent to which complexity of ballot paper influences rejected ballot is dependent on the level of development of the country in question. In addition, we interact education with complexity of ballot paper in to find out how the level of literacy of the people influences their ability to understand the

features of the ballot paper regardless of its nature in order to avoid voting invalidly. In closely contested elections, the levels of education of the electorates are crucial in minimizing their tendency of not casting any invalid votes that decrease the chances of their preferred candidates. As a result, we interact closeness of election (margin between the two leading candidates) with the literacy in our model. In order to assess the influence of each interacted term in the analysis, we perform the interactions using step-wise approach.

Sources of Data and Panel Construction

The data sets used for the analysis to achieve objective two were organized from different sources. The socio-economic variables were obtained from World Development Indicators (WDI) of the World Bank. Given the voluminous nature of the variable and data on the website, only the data on the variables of interest were extracted. These variables are unemployment rate, proportion of urban population, Gross Domestic Product growth rate, literacy rate and Gross Domestic per capita growth rate.

In building the panel data for the analysis, one of the challenges encountered was availability and consistency of the data on elections for all sub-Saharan African countries. To ensure that the elections data is consistent with the socio-economic data, the former was extracted from three different sources: the NELDA data base, the Hand Book on African elections compiled by Nohlen, Krennerich and Thibaut (1999) and published by Oxford University Press, as well as the African Election Database. These different sources of data on election and socio-economic variables were extracted, and organized into a balanced panel of six waves starting from 1992 to 2012.

The Theoretical and Empirical Models for Voter Turnout

The theoretical model of voting was first proposed by Downs (1957) and later extended by Riker and Ordershook (1968). This model is known in the literature as the Rational Choice Model. It posits that individuals compare the benefits and costs of voting in a rational choice manner. Downs' (1957) asserts that voters are instrumentally rational. They therefore vote with the intention of changing the outcome of the election and only incur the costs of voting if these do not outweigh the expected benefits of that action. These expected benefits increase with the expected difference between the (two) candidates in the election and with the probability that one's vote can affect the outcome of the election.

Following Arnold (2015), the function of the benefit of voting can be represented by the following equation:

$$Y = \pi B + D - K \quad (21)$$

In equation 21, Y is the net benefit of voting, πB is the expected individual benefit of voting which also depends on the outcome of the election. The expected benefit of voting πB comprises the probability that a single vote will make decisive impact (π) and the specific benefit that the voter obtains should the preferred candidate wins and takes office (B). In the same vein, D represents a payoff that the voter realises independent of the electoral outcome. In the literature, this is usually referred to as the "civic duty". The variable K captures the opportunity costs of the voter going to the polls.

Intuitively, an individual will decide to vote if the net benefits (Y) outweigh the costs of voting. The perception of the individual regarding the probability that his or her vote will be decisive (π) in close contest plays an

important role in determining his or her preparedness to cast a ballot. If the individual's preferred candidate loses, π is 0, and a single vote does not make any changes. Consequently, πB reduces to zero and does not influence the turnout decision any more. In a very close race, a single vote can make decisive impact and $\pi \in (0,1)$.

Inversely, a loss of a single vote can result in a marginal loss of one's preferred candidate (Andersen, Fiva & Natvik, 2014). As a result, close races offer the incentive for the individuals to turn out to vote through an anticipated additional benefit B. Since closeness positively influence the probability that a vote will be decisive π, and π itself has a positive effect on the turnout decision, closeness and turnout are positively related as well. It is imperative to indicate that population size also plays the same role as the closeness of election. Thus, the probability that one's vote will be decisive is especially relevant here as it is influenced by how close one expects the race to be and by the size of the population (Owen & Grofman, 1984; Mueller, 2003).

According to Geys (2006), the greater the size of the community or population, the smaller the probability becomes that one single voter will make a difference in a voter turnout. This decreases the expected utility from voting and makes it more likely that one abstains leading to low voter turnout. It is therefore intuitive to hypothesize that there is a negative relationship between population size and voter turnout rates. These interrelationships can be expressed as:

$$Y = \pi(C + P)B + D - \qquad (22)$$

where C and P denote closeness of election and population size of the districts respectively. The functions for the differentiation of the closeness of election

(C) and population size (P) with respect to the probability of a decisive vote (π) can be expressed as:

$$\frac{\partial \pi}{\partial C} > 0 \quad (23)$$

$$\frac{\partial \pi}{\partial P} > 0 \quad (24)$$

Further differentiation of closeness of election and population via the probability of a decisive vote can be expressed as:

$$\frac{\partial Y}{\partial C} = \frac{\partial Y}{\partial \pi} * \frac{\partial \pi}{\partial C} = B\frac{\partial \pi}{\partial C} > 0 \quad (25)$$

$$\frac{\partial Y}{\partial P} = \frac{\partial Y}{\partial \pi} * \frac{\partial \pi}{\partial P} = B\frac{\partial \pi}{\partial P} > 0 \quad (26)$$

Holding all other factors constant, electoral closeness increases turnout through the probability that a single vote will make a decisive impact. Put it differently, the higher the margin between the first and second candidates, the lower the probability that a single vote will make a decisive impact in the voter turnout. Similarly, the higher the population size, the lower the probability that a single vote will make any decisive impact-hence low voter turnout. In essence, increase in the closeness of election and population size have negative relationship with voter turnout. The next subsection describes the empirical strategy applied in the analysis.

Empirical Estimation Strategy

The empirical estimation technique for analysing voter turnout depends on the operational definition of voter turnout. Technically, voter turnout is measured as a binary (either the individual will cast his or her ballot during an election or otherwise). Other studies such as Fumagalli and Narciso (2012) have measured it as a continuous variable. Analysis of voter turnout as a continuous variable has mostly involved the use of linear models. In the

literature, Barzel and Silberberg (1973) applied a linear model in relating closeness and turnout including some control variables. From equation 22, three empirical strategies can be specified. The first empirical estimation was carried out on the years 2000 and 2012 as separate samples using Ordinary Least Squares (OLS). The essence was to explore the dynamics of the results for the years 2000 and 2012 as separate models. As a starting point, the OLS equation is specified as:

$$Y_i = \beta_0 + \beta_i X_i + \mu_i, \qquad (27)$$

$$i = 1 \ldots\ldots\ldots 110$$

From equation 27, Y is the voter turnout in district i. Respectively, β_0, β_1 and μ_i represent the constant term, vector of coefficients of the regressors including the two variables of interest (closeness of election and population size) and the error term. Similarly, X_i denotes the vector of regressors. In equation 27, the time dimension is not considered. The main assumption here is that the behaviour of the individual remains constant. However, within the 12-year time difference between the 2000 and 2012 several socioeconomic and political events that could account for changes in the voter turnout. In addressing this potential aggregate time effect, the pooled regression equation is specified as:

$$Y_{it} = \beta_0 + \delta_0 D_{2,t} + \beta_1 X_{it} + \nu_{it}, \qquad t = 1, 2 \qquad (28)$$

where$\nu_{it} = \alpha_{it} + \mu_{it}$ is called the composite error.

In equation 28, i denotes the cross-sectional unit and t is the time dimension. The time effect is captured by the dummy variable D_{2t}. The dummy variable D_{t2} is zero for $t = 1$ or the year 2000 and one for $t = 2$ or the year 2012. It

models the time-varying part of the unobserved factors. The parameter δ_0 represents the extent of time effect.

In this second stage of the analysis, the data for the two years were pooled together as one composite data. It is important to make it clear here that the pooled data constitutes a pooled cross section and not panel. This is because the data were obtained from random samples of Ghana's population independently of each other at different points in time. The fact that the random samples are collected independently of each other implies that they need not necessarily of equal size and might contain different statistical units at different points in time. One advantage of this estimation strategy is that serial correlation of regression residuals is not an issue of concern. In addition, the pooled data can be analysed the same way the cross-sectional data is analysed. The only exception is that the dummies are supposed to be included in order to capture shifts in the distribution between different points in time.

With the pooled regression analysis, the assumption held is that the observations are independently distributed across time. As a result, serial correlation of regression residuals become an issue. One shortcoming of the pooled regression approach is that it gives rise to observations that are not identically distributed. This is particularly problematic if there are characteristics (especially unobserved ones) that are common to all units but vary across time. Also, the pooled approach becomes problematic if it turns out that $cov(v_{i1}, v_{i2}) = V(a_i)$ even though a_i and u_{it} are pairwise uncorrelated, such that the composite error terms become positively correlated over time. This problem has been addressed in this study by using robust standard errors to serial correlation in the residual.

Another deficiency of the pooled regression is that although the time-varying parts (assumed to be common for all cross-sectional units) has been accounted for by the time dummy, there still exist a potential problem of omitted variable bias. The fixed effect a_i remains unaddressed. It hides within the composite error term ν_{it} and it is not modeled. Unless the fixed effect $a_i$and the regressors, X_{it} are uncorrelated, the parameter estimates are biased. However, it is difficult to determine *a priori* whether the fixed effect or random effect estimates are the appropriate. In order to make this decision, the Hausman post estimation test was conducted. The results showed that the random effect estimates must be preferred to the fixed effect estimates. As a result, the random effect equation is specified as:

$$Y_{it} = \alpha + \beta X_{it} + \mu_{it} + \varepsilon_{it} \quad (29)$$

Following the three equations, the empirical equation can be specified as:

$$Vturnout_{it} = \beta_0 + B_1 Marginality_{it} + \beta_2 Popsize_{it} + B_3 Agesixtyplus_{it} + B_4 FTV_{it} + B_5 Fem_{it} + B_6 Rural_{it} + B_7 Educ_{it} + B_8 Married_{it} + B_9 Ethnicity_{it} + \mu_{it} + \varepsilon_{it} \quad (30)$$

Note that vector X_{it} comprises the explanatory variable of interest (marginality or closeness of election) and the other correlates while μ_{it} and ε_{it} represent the between entity and within entity errors respectively. In Table 5, the meanings of the variables in equation 28 and their *a priori* expected signs are presented. The choice of the explanatory variables and proposed expected signs are informed by theory and existing literature.

Table 5: Explanation of the Variables in the Empirical Equation

Variable	Meaning	A priori sign
$Vturnout$	Voter turn out	Dependent variable
$Marginality$	Marginality (closeness of election)	Negative
$Popsize$	The population size of the districts	Negative
$Agesixtyplus$	Proportion of population at age sixty plus	Negative
FTV	Proportion of population at age 18 to 20 (First time voters)	Positive
Fem	The proportion of female population	Positive
$Rural$	Proportion of the population rural areas	Positive
$Educ$	Proportion of population with at least first degree.	Positive
$Married$	Proportion of married population	Positive
$Ethnicity$	Proportion of Akans to other ethnic groups.	Positive

Source: Author, 2018.

The Data Building Process

The study relies on a compilation of data from two different sources in addressing objective two of this study: the 2000 and 2010 Ghana Population Census from Ghana Statistical Service and data on 2000 and 2012 election results from the Electoral Commission of Ghana. Since the objective of the study was to capture changes of the parameters of interest (voter turnout and closeness of election) over the years, a balanced panel data set for the analysis was constructed using these two data sets.

The building of the panel involved a number of process since the two datasets were collected at different levels. The election data were collected at the constituency level while the population data was collected at the district level. In order to ensure consistency in matching these two data sets together as one composite data for the analysis, the election data for the years 2000 and 2012 were matched on to the population and census data which was collected at the district level for the corresponding years. The following subsection

presents detailed explanation of how the data from each source was built before the final aggregation.

Ghana has conducted five population censuses since 1960. The censuses were held in 1960, 1970, 1984, 2000 and 2010. On the other hand, election in Ghana has gone through two phases, the pre-independence era (before 1957), and post-independence era (1957-2016). The post-independence era can be further classified into two phases-: from 1957 to 1992 and from 1992 to 2016. Elections held before 1992 were the ones held at the period that the country experienced unstable democracy.

After 1992, the country's democracy has been very stable. Since 1992, Ghana has had six national elections. These elections were held in 1992, 1996, 2000, 2004, 2008, 2012 and 2016. Ideally, given the focus of the study, the data on all these elections and the population censuses in the country could have been pooled together for the analysis. However, with the exception of only one period (2000) where election periods and census periods coincided, there were differences in the remaining periods in which these two events were held. The study therefore considered the data on only the censuses that coincided with years that elections were organized in building the panel data for the analysis.

In the interest of consistency, the study focused on the 2000 and 2012 elections result. In terms of the census data, the study focused on the 2000 Population and Housing Census while the 2010 Population and Housing Census data was used as a proxy for the year 2012. In 2012, no population census was held. However, the Ghana Statistical Service projections based on the sixth round of the Ghana Living Standard Survey shows that the estimated

household population in 2012 was 25,824,920. Comparing these figures with the 2010 population census figure of 24,658,823. Ghana's population had increased by about 1,166,097 which is about 4.7 percent increase within the two-year interval. Given that this study uses a proportion and not actual population size, the increase in the population size between 2010 and 2012, may not be so significant to discount the reliability and validity of the results using the 2010 Population and Housing Census.

In 2004 and 2012, the Electoral Commission of Ghana, mandated by the constitution of Ghana created new constituencies out of the existing constituencies that were considered to be too large. The creation of the new constituencies in the two years lead to an increased in the total number from two hundred (200) in the year 2000 to two hundred and thirty (230) in 2004 and two hundred and seventy-five (275) constituencies in the year 2012. In Ghana, the creation of new constituencies is based on 10 percent weight for land size and 90 percent weight for the population size.

Following the split of some of the constituencies in 2004 and 2012, the number of the constituencies in 2012 were more than the number in 2000. In order to ensure uniformity and balancing of the panel, the split constituencies were re-aggregated to match the same naming and number of the constituencies in the year 2000. Thus, the two hundred and seventy-five (275) constituencies were re-aggregated and renamed to match the original two hundred (200) constituencies in the year 2000. Since the population census data were collected at the district level, the elections data which was collected at the constituency level also had to be further re-aggregated and the renamed to match the original names and number of districts in the 2000 census data.

It is imperative to indicate that like the constituencies, one hundred and six (106) new districts were created between 2000 and 2012. This increased the number of the districts from one hundred and ten (110) in 2000 to two hundred and sixteen (216) as of June, 2012. Since the treatment of these new districts as separate districts had the potential of causing the panel to be unbalanced, the split district was re-aggregated to reduce the number of the districts in 2012 to the 2000 figure of one hundred and ten (110) districts. The reason of reducing the 2012 figures for both the population census and election data to the figures in 2000 was to ensure a balanced panel and consistency of the measurement of the variables. The structure of the two data sets and the process by which they were aggregated to arrive at the final data set for the analysis is presented in Figure 7. The figure shows that, eventually, the sample pooled together as the panel was balanced and the observations were one hundred and ten (110) for each year. The next sub-section presents the details of how the variables were measured and the reasons for their inclusion in the analysis.

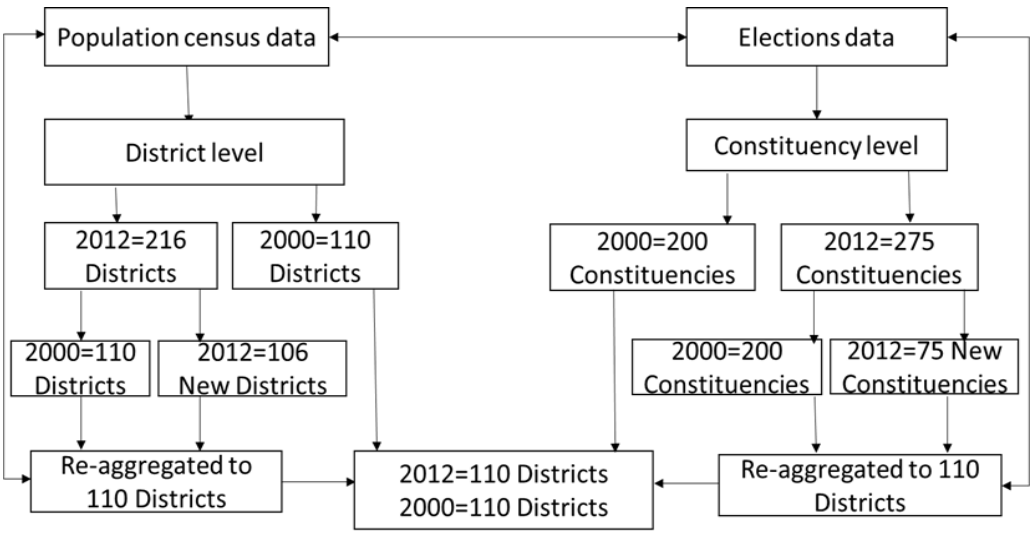

Figure 7: The structure of the data and aggregation process

Source: Author, 2018.

Measurement of the Variables

In this chapter, the two variables of interest are the closeness of election and population size. Eggers *et al*. (2015) have indicated that the literature has not yet agreed on one commonly used measure of electoral closeness. Commonly used indicators include proxies for closeness of election is the vote margins between winner and runner-up. However, Arnold (2015) has explained that one disadvantage of this measure is its interpretability. According to the author, when vote margins are introduced as closeness proxy in a regression framework, signs are reversed. Following Arnold (2015), the closeness of election in this study was measured by the variation of the vote margin between the share of the votes obtained by the winner and runner-up. This can be expressed as 1-($v_1 - v_2$). With this definition, the closeness variable is bounded between 0 and 1 and has a positive sign. A value of 1 indicates maximum closeness: There is a tie for first and second place. A value of 0, on the contrary, shows that the election was not close at all. Either the first-placed candidate was able to garner all the votes, or there was simply no contender (Arnold, 2015).

Another control variable included to account for the influence of first-time voters on voter turn turnout in Ghana is the proportion of the population who are between the age range of 18 and 20 years. This indicator may not necessarily capture all first-time voters since there may be some individuals whose ages may exceed 20 years but who will be voting for the first time. However, given the difficulty in capturing all these people, the best available proxy is the age range used in this analysis. At least, it is expected that people within this age range might not have participated in any national election

before. The first-time voters as a variable is measured as the share of the population between the ages of 18 and 20 in relation to the total population of the respective districts.

In some instances, age is used as a proxy for experience. In the existing literature, the direction of relationship between age and voter turn remains inconclusive. One important finding in the existing literature is that age is positively related to voter turnout. Particularly, the elderly vote more than the young (Wofinger & Rosenstone, 1980). This study captured the variable as the proportion of the population aged 60 years and above. The variable was measured as the share of the population at the age sixty and beyond relative to the total population of the respective districts.

According to Bratton, Bhavnani and Chen (2012), the subjective perspective of individual African citizens, feelings of ethnic identity are sufficiently concrete to constitute a basis for forming political opinion and stimulating political action. In the Ghanaian context, ethnicity is one variable that plays an important role in the pattern of vote during elections. Earlier study by Fridy (2006) indicate that ethnicity matters in Ghanaian elections even more than socioeconomic variables. In addition, the 2010 population and housing census report show that Akans constitute the greatest proportion (45 percent) of the ethnic groups in Ghana. In order to take care of the influence of this dominant ethnic group on voter turnout, the proportion of Akans relative to the total population was included in the analysis. It was measured as a share of Akans to the population of each district.

Gender equality in political participation has been one of the extensively discussed issues both in Ghana and beyond. The gender of the

candidate contesting the election and the electorates are instrumental in determining the voter turnout in an election. The proportion of female to male was included in the analysis to assess the effect of gender on voter turnout. The share of female population was measured as the total female population divided by the total population of the districts.

Family structures have been identified in the literature as one of the determinants of voter turnout. The finding of a study conducted by Wolfinger and Wolfinger (2008) suggested that family structure, defined as marital status and the presence of children, has substantial consequences for turnout. The authors claimed that married adults were found to be more likely to vote than those who have never been married. This finding is not surprising as married adult especially, married women care more of themselves and the future of their children. In this study, the share of the married population was measured as the share of the proportion of the married population divided by the sum of adult population who are both married and never married.

The dependent variable in the regression analysis is voter turnout. This study measures turnout as the total votes cast as a share of registered voters in each district. The total votes cast are inclusive of blank and annulled votes. That is the total votes cast are made up of valid votes and rejected votes. The population size of the districts is one of the main variables of interest in this study. Population size is the total number of people living in the district. The inclusion of this variable is informed by the theoretical underpinning of this work. Theoretically, population size is related to the probability of casting a decisive vote in the election (Geys, 2006).

According to instrumental theory of voting, voters vote in order to influence the election outcome. They participate in voting if the expected benefits of voting exceed the costs incur in the process. The expected benefits increase with the probability of casting a decisive vote. Intuitively, the greater the size of the population, the smaller the population becomes that a single vote will be decisive. This decreases the expected utility of voting and makes it less likely that people will go to the polls. It is therefore expected that population size will be inversely related to the population size.

Proportion of rural population to the total population is included as an explanatory variable to evaluate the impact of location of electorate on voter turnout. The variable is measured as the total number of people who live in the rural locations as a share of total population in the district. Another control variable included in the analysis is education. Generally, education enables people to better understand politics and make inform choices as far as election is concerned. The variable is measured as the number of people with degree and above in each district. At least education is expected to increase turnout. Empirical study by Wolfinger and Rosenstone (1980) find positive effect of education and turnout. Another study by Kuenzi and Lambright (2007) showed that higher educated Africans are significantly more likely to vote than their less educated counterparts.

The descriptive statistics of the variables used for the empirical analyses are shown in Table 6. The results show that average voter turnout for the years 2000 and 2010 is approximately 71 percent while the average margin of vote is less than 1 percent. The population size, proportion of female population and rural population are 49.122 and 40.465 respectively.

Table 6: Descriptive Statistics of Variables included in the Regression Models

Variable		Mean	Std. Dev.	Min	Max	Observations
Voter turnout	Overall	70. 967	10.202	40.884	88.322	N = 220
	Between		12.212	62.332	79.602	n = 110
	Within		5.402	49.521	82.528	T = 2
Marginality	Overall	0.695	0.244	0.078	0.999	N = 220
	Between		0.232	0.091	0.982	n = 110
	Within		0.076	0.475	0.916	T = 2
Population size	Overall	11.974	0.546	10.859	14.526	N = 220
	Between		0.520	11.232	14.388	n = 110
	Within		0.171	11.474	12.474	T = 2
Prop. Female	Overall	49.122	1.608	45.291	55.193	N = 220
	Between		1.516	45.438	53.454	n = 110
	Within		0.546	46.842	51.403	T = 2
Prop. rural	Overall	40.465	19.049	0.000	100.000	N = 220
	Between		12.532	19.803	79.249	n = 110
	Within		14.371	13.060	67.870	T = 2
Prop. Married	Overall	45.280	6.624	28.585	64.585	N = 220
	Between		6.372	32.578	63.976	n = 110
	Within		1.861	40.657	49.902	T = 2
Education	Overall	2.327	2.047	0.257	18.612	N = 220
	Between		1.624	0.619	14.787	n = 110
	Within		1.251	-1.498	6.151	T = 2
First time voters	Overall	9.204	0.610	7.679	11.952	N = 220
	Between		0.557	8.271	11.841	n = 110
	Within		0.253	8.134	10.274	T = 2
Pop. (60 plus)	Overall	9.328	0.535	8.029	11.739	N = 220
	Between		0.492	8.458	11.599	n = 110
	Within		0.213	8.421	10.235	T = 2
Literacy rate (%)	Overall	17.640	45.714	0	187.521	N = 220
	Between		3.478	0	203.421	n = 110
	Within		2.643	0	184.376	T = 2

Note: Pop and prop used in Table 6 represent population and proportion.

Source: Author, 2018.

The average proportion of the population who are married, proportion of the population who are Akans and proportion of those who have some tertiary

qualification are 45.280, 45.108 and 2.327 respectively. Within the same period, the average of the proportion of first-time voters in Ghana was 9.204 while the proportion of the population aged 60 years and above was 9.328.

Conclusion

In this chapter, we have presented and discussed the methodologies used to achieve the three empirical objectives outlined in chapter one of this thesis. We also justified the inclusion of all the explanatory variables in the models. Intuitively, we have argued that the full effect of election variables on the dependent variables of interest can be realised when interacted with other socioeconomic variables that moderates the relationship between the dependent variables and election variables. In the following chapter, we present and discuss the results on the empirical analysis of each objective.

CHAPTER FIVE

ELECTIONS, GOVERNMENT EXPENDITURE AND DEBT SERVICING

Introduction

This chapter discusses the findings of the empirical analysis of the effects of elections on government expenditure and debt servicing in Sub-Saharan African countries with particular attention to the mediating role of GDP per capita as a measure of the level of development of the respective countries.

The chapter is divided into two subsections: 1) descriptive analysis of the variables of interest and 2) presentation and discussion of the regression estimates of the: i) effect of elections on government expenditure and ii) effect of elections on government debt servicing. The chapter ends with a brief conclusion and policy recommendations based on the findings.

Descriptive Analysis

African countries have varied experiences in democratic elections. This is portrayed in Figure 8. The figure reveals that over the three decades under consideration the number of periodic elections held by countries in the Sub-Sahara Africa ranges from 2 to 6. Looking at the number of elections by countries, 15 countries have conducted at least four elections with 8 counties holding at most three elections. This suggests that many African countries are gaining considerable experience in electoral democracies in the recent decades than any period before.

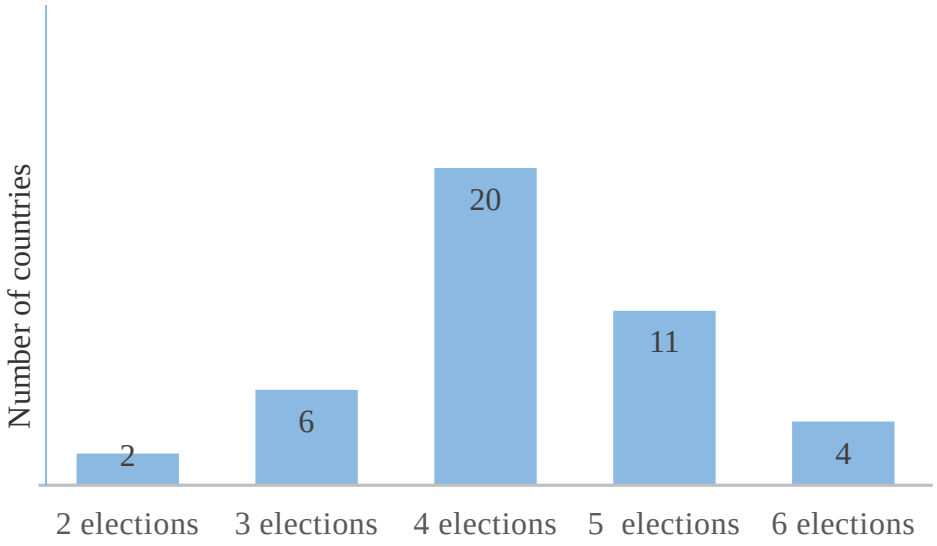

Figure 8: Number of elections by countries

Source: Author, 2018.

The general expectation is that as countries gain experience in electoral politics, governments may conduct fiscal policies in such a way that budget deficits are not increased (Vergne, 2009). The extent to which this expectation is realised is the interest of the current study. Though African countries are holding periodic elections in recent times, democracy in these countries is still at the developing stage and evidence of existence of political budget cycle has been found in a number of studies (Block, 2002). However, it is imperative to note that political budget cycle does not occur only in African countries as other studies have revealed the existence of politically-motivated government spending in other parts of the world (Efthyvoulou, 2011).

The distribution of government expenditure in election and non-election years across countries (Figure 9) generally shows that government expenditures are higher during election periods than non-election years. However, there are few exceptional countries in which government expenditures are higher in non-election years than election years. These include Angola, Comoros, Ivory Coast, Equatorial Guinea, Kenya and Liberia.

Others include Namibia, Nigeria, Zambia, Burundi and Zimbabwe. It is however important to note that the values presented in Figure 9 are averages of the years under consideration and can be affected by extreme outliers.

Narrowing the analysis to expenditures on only election years and at the country level, Figure 9 shows that within the years under consideration, Eretria, Lesotho and Seychelles experienced the highest percentage of government expenditure. It can also be observed that countries such as Ethiopia, Somalia, Sao Tome and Principe and Zambia experienced the lowest government expenditure during the period.

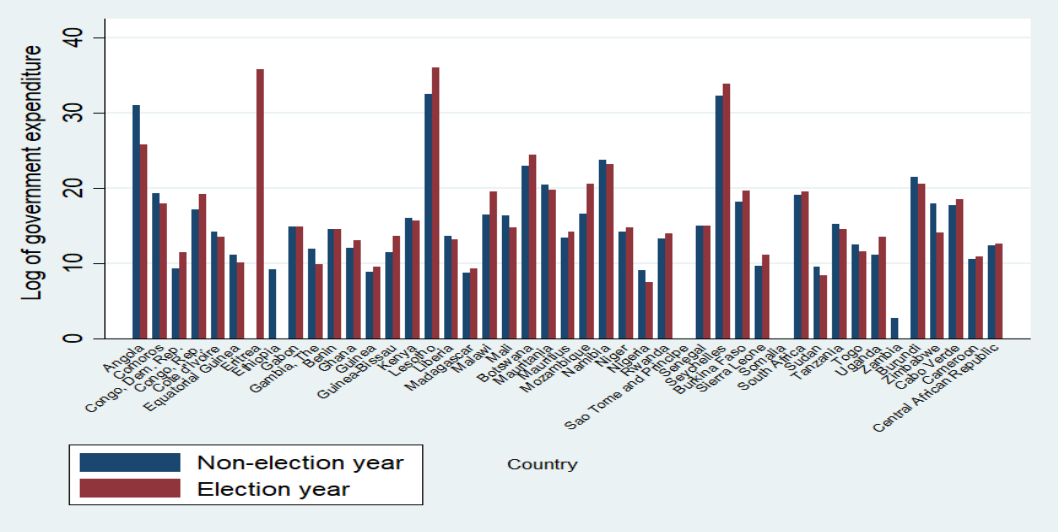

Figure 9: Government expenditure in pre-election and election years

Source: Author, 2018.

This distribution could be explained based on the democratic experience of the countries and other country-specific characteristics that are difficult to be captured in this descriptive analysis. Though this descriptive analysis does not necessarily provide the cause of such high government expenditure, it provides basis for drawing inference that some of the countries that experienced high government expenditure (for instance Eretria) which have just recovered from civil unrest have very fragile democracies. Their

records of continuous unrest may serve as impetus for the government to spend more in election years on issues of peace and security. This distribution gives an idea of the trend and distribution of government expenditures in election and pre-election years, the extent of their effects is captured within the regression analysis.

In addition to election, Gross Domestic Product (GDP) per capita is another measure of wellbeing and a determinant of the extent of government spending both in an election year and non-election year. As presented in Figure 10, there is a positive relationship between GDP per capita and government expenditure. A high level of GDP per capita is expected to translate into high government revenue and spending through payment of taxes by the citizens. The figure also depicts that with exception of few outliers, expenditures do not vary so significantly from the mean spending. It is obvious from the graph that even though election may contribute to increase in government spending on both justifiable and unjustifiable grounds, African governments will have to create the enabling environment that stimulate productivity so as to increase their spending.

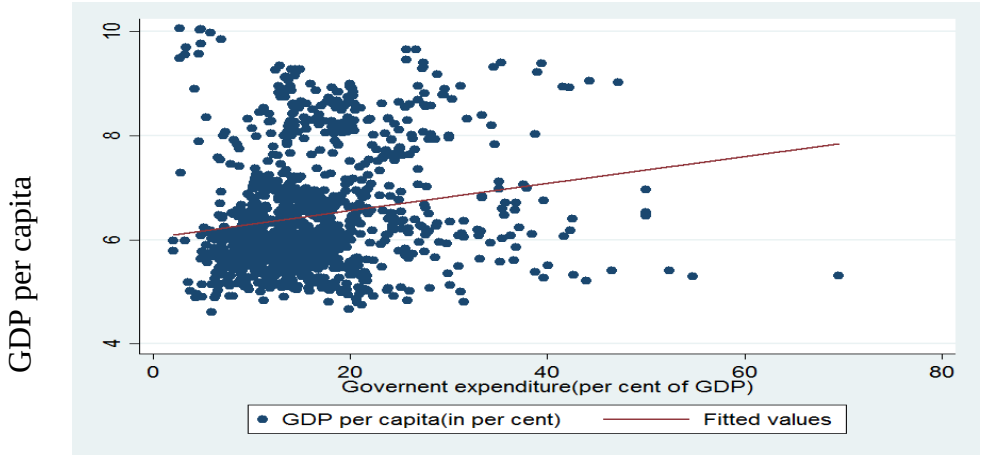

Figure 10: Government expenditure and GDP per capita

Source: Author, 2018.

Experience in most developing countries has shown that in order to influence the electoral outcomes, incumbent governments would sometimes divert funds meant for serving the debts of their respective countries to the provision of tangible projects in their bid to retain power (Sáez, 2016). This in turn leads to a reduction in debt servicing particularly on election years and further accumulation of public debt. In Figure 11, this issue is explored using histogram to assess the distribution of debt servicing in election years and none-election years.

It is imperative to note that debt servicing is captured as the sum of principal repayment and interest actually paid in currency, goods or services on long-term debt, interest paid on short-term debt, and repayments (repurchases and charges to International Monetary Fund (IMF). The result presented in Figure 11 indicates that like government expenditure, average debt servicing of majority of the countries is higher in non-election years than election years. In other words, debt servicing is very low in election years in almost all the countries considered in this analysis.

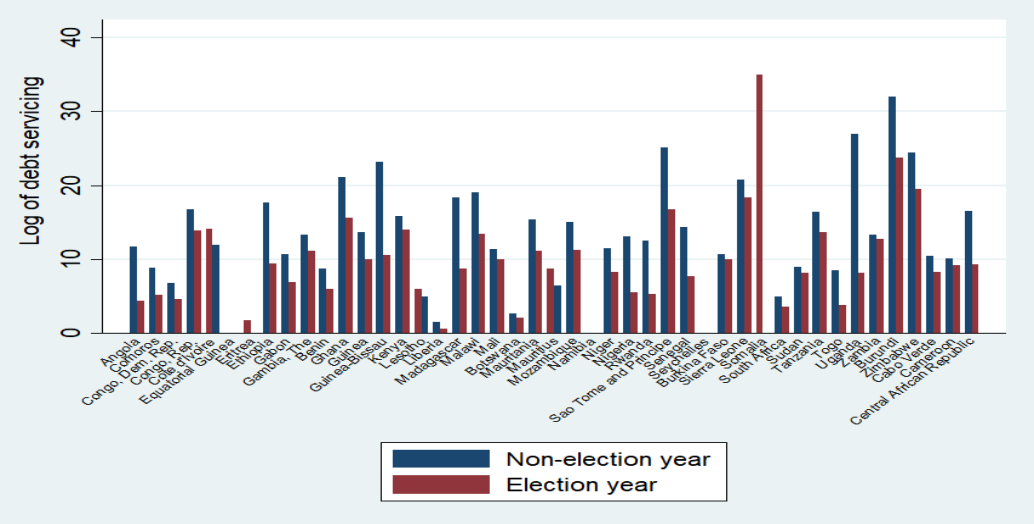

Figure 11: The distribution of debt servicing on election by country

Source: Author, 2018.

The descriptive statistics of the control variables included in the estimation are worth mentioning. These variables include GDP growth, unemployment rate, GDP per capita and inflation rate. The distribution of the variables as depicted in Table 7 shows government expenditure, rates of unemployment and inflation significantly differ between election and non-election years.

Table 7: Distribution of means of some selected variables across years of election

Variable	Obs.	Election	No election	Difference	Combined	t-statistics
Government	1333	18.519	15.758	2.761	16.178	4.377***
Expenditure		(0.774)	(0.229)	(0.631)	(0.228)	
Unemployment	1333	8.294	6.668	1.626	6.951	2.987***
Rate		(0.486)	(0.228)	(0.544)	(0.207)	
Age dependency	1333	89.136	88.929	0.207	88.965	0.222
Ratio		(0.811)	(0.397)	(0.934)	(0.356)	
GDP per capita	1333	6.424	6.441	0.016	6.438	0.182
		(0.078)	(0.033)	(0.085)	(0.031)	
Inflation rate	1333	65.214	59.743	5.471	61.990	7.234***
		(0.087)	(0.044)	(0.103)	(0.041)	

Robust standard errors in parentheses; ***p<0.01, **p<0.05, *p<0.1

Source: Author, 2018.

The observations of the descriptive statistics are only related to the years in which elections were held and years preceding election seasons. Unemployment rate shows the extent to which different governments provide opportunities for their people to engage in employment and earn a living. Lower unemployment rates are desired because unemployment generally impose economic, social and psychological costs on the citizens. Table 7 shows that the mean unemployment rate is 8.2 percent in election years and 6.7 percent in non-election years. This indicates that governments put in place measures to reduce unemployment in election years than in non-election years.

This is not surprising because evidence in developing countries shows that incumbent governments in their bid to influence electoral outcome and retain power embark on several projects in election years more than other years in the electoral cycle (Kroth, 2012). The construction of these projects creates a lot of jobs for people. Some of the jobs are permanent but majority are not. The permanent ones relate to the workers recruited to manage and run these projects after completion while the workers recruited during the construction stage are only engaged temporary and their jobs terminate with the completion of the projects. This view sits well with the findings of Kroth (2012) who finds a change in the composition of government spending with education, welfare and road receiving greater shares during election years than non-election years.

Inflation rate is another variable of interest in the analysis of elections and fiscal policy. The movement of inflation rate is important because of the impact inflation has on individuals' living conditions and business performance. Rising inflation depresses real income and distorts allocation of resources. Business confidence reduces during times of rising inflation as it makes it difficult for planning whether short term or long term. The descriptive statistics portrayed in Table 7 show that the mean inflation rate is higher in election years than non-election years. The mean inflation rate is 65.214 percent in election years and is 59.743 percent in non-election years. The higher inflation rate in election years can be linked to rise in general government spending that occur during election years as compared to non-election years. The higher government spending is inflationary because much of the increase emanates from recurrent government spending.

This analysis is consistent with Ebeke and Ölçer (2013) who find that in developing countries, of which African countries are part, government consumption expenditure increases during election years. Similarly, Vergne (2009) reported a systematic distortion of government expenditure during election years. To Vergne (2009), various governments' expenditure tends to tilt toward recurrent expenditure. That is, the change in the composition of government spending is seen as shifting from capital expenditure towards recurrent expenditure. A similar argument is that of Block (2002) who provides evidence that government expenditures shift towards more visible consumption and away from capital expenditure in competitive (multi-party) elections.

The descriptive statistics for GDP per capita as displayed in Table 7 show that on the average, the log of GDP per capita was 6.4 in both election and non-election years. The results reveal higher economic performance in pre-election years than election years. This evidence is revealing against the backdrop that government expenditure increase during election years than pre-election years suggesting that the increase in government expenditure contributes less to growth. The decline in GDP growth indicates African governments spend on areas that do not contribute much to growth during elections.

This brief descriptive analysis has shown that governments' fiscal policies and other core responsibilities are largely shaped by election seasons in Africa. It is observed that in majority of the countries understudied, government expenditure increases in election years more than non-election years. On the contrast, government debt servicing reduces in election years

than non-election years. This means governments in Sub-Saharan Africa are likely to cut down on debt servicing and shift it into spending that would enhance their chance of retaining power. However, the extent of the effect of election on government's fiscal decision has not been captured.

In the following sub-section, the study presents and discusses the regression results of the extent of effect of election seasons on government's fiscal decision. It is important to indicate that in this sub-section, the study presents three different results based on three separate estimation techniques, Ordinary Least Squares (OLS), Fixed Effect (FE) and System Generalised Method Moment (GMM) estimation techniques. The essence of presenting all these three models is to compare the reliability and efficiency of the outputs of the three estimation techniques.

Regression Estimates of Election and Government Expenditure

Before discussing the regression results, it is important to explain that although the panel data used in this analysis was balanced, there were some drops in observation from 1333 for the fixed effect models with lags of the dependent variables to 1169 for the GMM model. The cause of such a difference is that the GMM model is specified as a system of equations, one per time period, where the instruments applicable to each equation differ (for instance, in later time periods, additional lagged values of the instruments are available) (Baum, 2013). Thus, the estimation follows a two-stage estimation process where the twice-lagged level appears in the instrument matrix. As a result, the first observation is lost when the first difference (FD) transformation is applied. The missing value in the instrument for second year causes the observation for each panel unit to be removed from the estimation.

It is also important to indicate that in order to have an idea of the true relationship between the dependent variables (government expenditure and debt servicing) and the explanatory variables, we present bivariate regression analysis was performed and discussed. Table 8 presents the results of this regression. The results generally show a positive relationship between years of election and government expenditure. In addition to election, unemployment, and electoral system are also positively associated with government expenditure. However, system of governance, level of development (GDP per capita), age dependency ratio and inflation are negatively associated with government expenditure.

Table 8: Bivariate Estimates of Elections on Government Expenditure

Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Gov. expenditure	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Election	0.028***						
	(0.0081)						
Unemployment		0.002***					
		(0.0003)					
Governance system			-0.173***				
			(0.0102)				
Age dependency				-0.001***			
				(0.0002)			
GDP per capita					0.013***		
					(0.0024)		
Electoral system						-0.044***	
						(0.0052)	
Inflation (CPI)							-0.016***
							(0.0052)
Constant	0.158***	0.146***	0.504***	0.240***	0.079***	0.236***	0.215***
	(0.0023)	(0.0032)	(0.0201)	(0.0168)	(0.0154)	(0.0094)	(0.0175)
Observations	1,169	1,169	1,169	1,169	1,169	1,169	1,169
R-squared	0.0162	0.0466	0.1190	0.0225	0.0331	0.0697	0.0157

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Source: Author, 2018.

The discussion of the regression estimates of the full models is preceded by a brief presentation of the post estimation diagnoses (Hansen test

presented in Appendix B) of the preliminary results. The result of the estimation diagnoses show that the fixed effect estimates must be preferred to the random effect estimates. However, the existing literature reveals that government administrations are constrained by budgets to the extent that previous budget largely determines the current period's appropriations (Niskanen, 1971). As result, such an inertia provides some stability and predetermines fiscal spending (Schuknecht, 2000). This therefore requires the use of a dynamic panel estimation technique that can address this lag effect and other biases introduced by the inclusion of lagged dependent variables. The study further presents the results based on the System-GMM estimation method.

The post estimation diagnosis (The Sargan test) shows that the system-GMM estimates are more efficient and must be preferred to the fixed effects estimates. The Sargan test has a null hypothesis that "the instruments as a group are exogenous". Therefore, the higher the p-value of the Sargan statistic, the better. Alternatively, in robust estimation, the Hansen J statistic can be interpreted instead of the Sargan test with the same null hypothesis. The test for AR (2) in first differences which detects the presence or otherwise of autocorrelation in levels is also presented in Appendix B. It is imperative to indicate that all these post estimation tests prove that the System-GMM model are fit, well specified and devoid of autocorrelation. It is also emphasised that in order to compare the effects of the lags of the dependent variables on election variable, the fixed effect models with and without the lags of the dependent variables are presented.

Table 9: Effects of Electoral Periods on Government Expenditure

Log expenditure	OLS	Fixed effect 1	Fixed effect 2	GMM 1	GMM 2
Election	0.1072**			0.0354***	0.1836**
	(0.0427)			(0.0087)	(0.0777)
Unemployment	0.0004*	0.0010***	0.0012***	0.0013***	0.0012***
	(0.0002)	(0.0001)	(0.0001)	(0.0003)	(0.0003)
Governance system	-0.1193***	-0.1087***	-0.1098***	-0.0544***	-0.0567***
	(0.0084)	(0.0069)	(0.0067)	(0.0131)	(0.0136)
Age dependency ratio	0.0001	-0.0001	-0.0003	0.0011***	0.0010***
	(0.0002)	(0.0002)	(0.0003)	(0.0001)	(0.0001)
GDP per capita	0.0105***	0.0081**	0.0104**	0.0274***	0.0292***
	(0.0027)	(0.0037)	(0.0046)	(0.0032)	(0.0037)
Election *GDP per capita	-0.0135**		-0.0123***		-0.0240*
	(0.0063)		(0.0021)		(0.0124)
Electoral system	-0.0229***	-0.0209***	-0.0130***	-0.0162***	-0.0163***
	(0.0038)	(0.0022)	(0.0029)	(0.0037)	(0.0038)
Inflation	-0.0081**	-0.0111**	-0.0198***	-0.0072**	-0.0071**
	(0.0041)	(0.0042)	(0.0029)	(0.0031)	(0.0031)
Expenditure (Lag)			0.0482**	0.1006***	0.1101***
			(0.0206)	(0.0285)	(0.0265)
Constant	0.3691***	0.3875***	0.3963***		
	(0.0377)	(0.0523)	(0.0585)		
Observations	1,333	1,333	1,333	1,169	1,169
R-squared	0.2108	0.2110	0.2834		

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Source: Author, 2018.

Similar to the bivariate estimates, the results of the multivariate regression as presented in Table 9 show that during election years, electoral periods have significant effect on government expenditure compared to non-election years. Thus, on average, an increase in government expenditure as a percentage of GDP in election year compared to non-election year is within the range of 4-18 percent *ceteris paribus* (Table 9). In monetary terms, and depending on the size of the economy these figures can be substantial and have consequential effects on development.

Within the context of the broader literature, the results show evidence of political budget cycle in African countries, many of which are developing. The evidence confirms the findings reported in similar studies on developing countries (Shi & Svensson, 2002; Brender & Drazen, 2005). Shi and Svensson

(2002) reported that, on average, developing countries increase total spending by 3.5 percent during elections. In their study, there was a weak evidence to support the existence of political budget cycle in developed countries. They argued that probably strong institutional factors act as check on politicians to be opportunistic during election periods implying that developing strong institutions in developing countries could minimize the reoccurrence of politically-motivated fiscal policy in election years.

This result confirms the descriptive analysis (Figure 9) that government spending increases higher during election years. The results on the effect of pre-election and election seasons on fiscal policy support the findings of a similar study conducted by Vergne (2009) on selected countries across the globe. Unlike this study, Vergne (2009) disaggregated the spending into various components of government expenditure. However, the similarity between these two studies is that governments find means of expanding their expenditures during election years probably in their quest to retain power. This conclusion was also reached by Efthyvoulou (2011) in a study on 27 European Union member countries over the period 1997-2008.

These results show evidence in favour of the literature on systematic electoral cycle in fiscal policy that electoral periods are associated with increase in government expenditure (Nordhaus, 1975; Block, 2002; Potrafke, 2012). The findings are somewhat contrary to the suggestion put forward by Brender and Drazen (2005) that political budget cycles are driven by the experience of new democracies since the members of the European Union are made up of established democracies and young democracies. The above analysis shows that electoral budget cycles are not confined to African

countries but rather they appear to be a general pattern in countries where elections are held. The only difference here is that political budget cycle is more pronounced in the developing countries than developed country many of whom are established democracies.

Gross Domestic Product (GDP) per capita is one of the indicators used to measure the wellbeing of individuals within a country and the country's development in general. In this study, GDP per capita was included in the analysis to gauge its effect on government expenditure. It can be observed that GDP per capita has a significantly positive relationship with government expenditure. Holding all other factors constant, a percentage increase in GDP per capita leads to government expenditure increasing within the range of 0.8 percent and 3.5 percent. In order to capture the effect of previous government expenditure on current expenditure, the lag of government expenditure was included in the analysis. As presented in Table 9, the previous government expenditure has a significantly positive relationship with current government expenditure. Thus, a 100 percent increase in previous government's expenditure, on average, increases current expenditure by about 11 percentage point. This result points to the fact that productive government spending has the potential to engender the multiplier effect and increase in government expenditure in subsequent years.

As separate variables, it is evident that both election period and GDP are positively associated with government expenditure. Nonetheless, the extent of association is higher for election year than that of GDP per capita. Based on the objective, the study further examines the extent to which the effect of election season on government expenditure is moderated by the level of

development (GDP per capita). We achieve this objective by interacting GDP per capita with election. It is observed from all the models that the interacted terms have negative signs. As a result, the actual net effect of election year on government expenditure is approximately 2 percent (0.1072- (0.0135×6.438)) in the OLS model and 3 percent (0.184- (0.024×6.438)) in the GMM model. This is an indication that although government expenditure increases during election years, countries with higher levels of GDP per capita (which represents level of development) the spending is lower. Comparing the magnitude of the effect of election year as separate variable with that of the interaction term, it is evident that the extent of the effect of election on government spending in countries with higher levels of GDP per capita is lower.

The positive (but small) net effect of the interaction term supports the hypothesis of the current study that in relatively developed countries in Sub-Saharan Africa, existing infrastructure and improved living conditions of the people contribute to lower spending by the incumbent government during election years. This is because election results in such economies are not determined mainly by government expenditures. Instead, it is determined by the government's performance over the years. Thus, the extent to which spending in election years influence government expenditures in developed countries are lower relative to less developed countries. The results suggest that election or electoral periods do not have universal effect across all countries. In instead, the level of development of the country and existing structures matter most in drawing a conclusion on the relationship between election and government expenditure (political budget cycle).

Higher recurrent government expenditure can spur inflation due to the multiplier effect. However, the extent to which an increase in inflation affects government expenditure remains less known in the literature. The results on this issue show that inflation significantly constrains the ability of SSA governments to spend. The results follow intuition because further spending by government can exacerbate the already higher inflation. As a result, every government that has its fundamental economics right will be more likely to adopt austerity measures to contain the inflation and its consequential impact on other aspect of the economy.

Aside these variables, other two dummy variables were included in the analysis to capture the system of governance and electoral system. The system of governance takes on the value 1 if the country in question has a presidential system of governance and 0 if it has a parliamentary system of governance. The electoral system also takes on the value 1 if it is simple majority and 0 if it is proportional. Compared to the parliamentary system of governance, government expenditure reduces by a little over 5 percent if the country operates the presidential system of governance. In other words, government expenditure is higher within countries that run parliamentary system of governance. This could possibly be due to the high number of parliamentary candidates and the complexity of the electoral process which require more spending to provide the requisite logistics for the successful conduct of elections. More so, all the salaries and allowances of elected parliamentarians add to government expenditure. This compound the already high government spending on developmental projects.

In the same vein, government expenditure reduces by approximately 2 percent if the country operates the majority electoral system compared to the proportional system. This observation can also be ascribed to the complexities involved in proportional system of election where each candidate would have to secure certain proportion of the votes cast before emerging as the winner. Unlike the simple majority, proportional system of election involves series of stages that need to be satisfied and this increases government spending on elections.

The age dependency ratio appears to have a significant effect on government expenditure in Africa. An increase in the age dependency ratio by a 100 percent increases government expenditure by an average of 0.01 percent holding all other factors constant. Every country that has a high proportion of its population being either too young or an aged is bound to spend much on the provision of education, health care and other health related services. It is therefore not surprising that age dependency ratio has a significant positive relationship with government expenditure in this study. This result supports the finding of a similar study carried out by Klomp and De Haan (2013) on 65 developed and developing countries, including two African countries, Mauritius and South Africa, over a 30-year period, 1975-2005. Like this study, fiscal policy was represented by total government spending, and the results showed a significant positive relationship between age dependency ratio and total government spending.

Another economic variable that we found to have a positive effect on government expenditure is unemployment. In Table 9, the results of the GMM analysis show that at the 1percent level of significance, a 100 percent increase

in unemployment is associated with a 0.12 percent increase in government expenditure. It can be inferred from these results that in order to satisfy the masses, mostly the unemployed youth, incumbent governments spend either in cash, in kind, or in the provision of infrastructure during elections so as to increase their chances of retaining power. This ends up causing their expenditure to increase. Considering these results in a broader context, unemployment increases government expenditure in diverse ways including but not limited to spending on social transfers, and training of security to address social vices associated and other negative consequences of unemployment.

Regression Estimates of Election and Debt Servicing

In the analysis of election-government expenditure nexus, debt servicing was considered as part of the total government spending. Aggregate government spending was used in the estimation and the results confirm the empirical predictions of the political budget cycle that fiscal policy expands considerably during election years. Though other studies such as Vergne (2009) have looked at the effect of election on the decomposed government expenditures, one thing that has not been explored much in the literature is the impact of elections on debt servicing in African countries. In this study, separate estimation was performed to examine the impact of election on debt servicing in African countries. Elections affect government's debt servicing decision which also has implication for government's debt accumulation and future fiscal space for development. In the following analysis, government's debt servicing is regressed on elections and other control variables including government expenditure.

As done earlier, we precede the multivariate regression with a bivariate regression estimates of government debt servicing in Table 10. The results indicate that debt servicing has a negative association with years or periods of election, unemployment, governance system, and level of development (GDP per capita). On the contrary, debt servicing is positively associated with governance system, electoral system, age dependency ratio, and inflation. It is therefore expected that these associations will be replicated in the estimates of the multivariate analyses.

In this analysis, it is expected that barring any re-negotiations for debt cancellation, a country's previous year's debt servicing should impact current debt positively. In other words, an increase in debt servicing in previous years should reduce current debt level. In view of this, the lag of debt servicing is captured in the GMM analysis. The instruments used in the GMM regressions are the lagged levels (two periods) of the dependent variable which is debt servicing, and GDP per capita for the difference equation, and lagged difference (one period) for the level equation.

Table 10: Bivariate Estimates of Elections on Government Debt Servicing

Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Debt servicing	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Election	-0.039***						
	(0.0093)						
Unemployment		-0.004***					
		(0.0004)					
Governance system			0.041*				
			(0.0234)				
Age depend. ratio				0.003***			
				(0.0002)			
GDP per capita					-0.050***		
					(0.0037)		
Electoral system						0.012	
						(0.0086)	
Inflation (CPI)							0.051***
							(0.0115)
Constant	0.141***	0.164***	0.053	-0.147***	0.446***	0.113***	-0.039
	(0.0044)	(0.0057)	(0.0463)	(0.0209)	(0.0255)	(0.0152)	(0.0381)
Observations	1,333	1,333	1,333	1,333	1,333	1,333	1,333
R-squared	0.0120	0.0628	0.0031	0.0828	0.1341	0.0020	0.0400

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Source: Author, 2018.

The results in Table 11 show that election periods are negatively associated with debt servicing in Africa countries. At 1 percent level of significance, election years compared to non-election years are associated with reduction in debt servicing by approximately 20 Percent in the GMM model. What can be deduced from this result is that during election years, government channels money meant for repaying the debts and the associated interest rates into other spending that may have direct bearing on their chances of being re-elected. The evidence is inconsistent with the results obtained by Sáez (2016) who finds significant increases in expenditures for debt occur in election years. However, Sáez's study was not cross-country, but country specific. This

means that heterogeneities in the scope and method of assessing the hypothesised relationship can largely affect findings.

Based on the findings of this study, it can be concluded that during electoral seasons, governments cut down debt servicing to enable them spend more on either developmental projects or other project that will enable them increase their chances of retaining power. Thus, the magnitude of government's rationalizing behaviour towards debt serving is more evident during election periods than non-election periods. Observing high effect of election periods on government expenditure and debt servicing in this study is not surprising since these are real in most developing countries where governments wait till election season before attempting to "impress" the electorates in order to win their mandates.

Table 11: Effects of Electoral Periods on Government Debt Servicing

Debt servicing	OLS	Fixed effect 1	Fixed effect 2	GMM 1	GMM 2
Election	-0.1882***			-0.0234	-0.1987**
	(0.0520)			(0.0141)	(0.0786)
Unemployment	-0.0015***	0.0002	0.0002	-0.0007	-0.0007
	(0.0005)	(0.0004)	(0.0005)	(0.0007)	(0.0007)
Governance system	0.0476***	0.0874***	0.0965***	0.0658**	0.0685***
	(0.0150)	(0.0210)	(0.0239)	(0.0245)	(0.0245)
Age dependency ratio	0.0005	-0.0003	-0.0001	0.0002	0.0002
	(0.0003)	(0.0002)	(0.0003)	(0.0003)	(0.0003)
GDP per capita	-0.0420***	-0.0345***	-0.0359***	-0.0414***	-0.0443***
	(0.0058)	(0.0062)	(0.0061)	(0.0047)	(0.0047)
Election *GDP per capita	0.0241***		0.104***		0.0280**
	(0.0075)		(0.0055)		(0.0118)
Electoral system	0.0083	0.0049	-0.0061	-0.0026	-0.0030
	(0.0080)	(0.0065)	(0.0079)	(0.0079)	(0.0079)
Inflation (CPI)	0.0370***	0.0315***	0.0555***	0.0677***	0.0694***
	(0.0105)	(0.0092)	(0.0129)	(0.0126)	(0.0122)
Debt servicing (Lag)			-0.0488	-0.2515***	-0.2535***
			(0.0350)	(0.0547)	(0.0545)
Constant	0.1354*	0.0884**	-0.0049		
	(0.0727)	(0.0415)	(0.0715)		
Observations	1,333	1,333	1,333	1,169	1,169
R-squared	0.1941	0.1101	0.1532		

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Source: Author, 2018.

Similar to government expenditure, the previous debt servicing records of a country have a lot of implications for current debt serving. It is expected that an increase in debt servicing in previous years (given that no new debts are accumulated) should lead to a reduction in the debt stock and consequently the quantum of debt servicing. In the System-GMM model, it can be observed that a 1 Percent increase in previous debt servicing reduces current debt servicing by approximately 025 percent, *ceteris paribus*. This is intuitively

right because an increase in previous debts serving reduces the debt stock and the associated interest. The results indicate that in addressing the accumulation of debt, governments of African countries would have to pay critical attention to the debts accumulated before and during election seasons. In other words, the impact of political variables on a state government's fiscal expenditures on interest payments on the debt need to be considered.

GDP per capita has a negative and significant effect on debt servicing. It is observed that a 100 percent increase in GDP per capita is associated with about 4 percent reduction in debt servicing. This might be because, a high GDP per capita indicates a high level of development and thus low debt accumulation which then results to low interest on debt. Another way to look at these results is that a relatively developed country has the necessary structures to translate contracted loans into productive investments that yield higher returns to enable the country in question to be able to repay its debts. Thus, relatively developed countries have the fiscal space to embark on developmental projects that enable them avoid debt accumulation and debt servicing.

The negative association between government debt servicing and GDP per capita is not far-fetched as countries that have high levels of development can channel resources into debt servicing purposes other than spending to trick the masses for votes. Observe that the net effect of election period on debt servicing is 13.6 percent (-0.1882+ (0.0241×13.4462) in OLS model and (-0.199+ (0.028×13.4462) is 17.8 percent in the GMM analysis. The net effect of the interacted term is smaller compared to the effect of election as a separate variable. This means that although incumbent governments may cut

down debt servicing during electoral periods, the level of development matters for the magnitude of such reduction. We can conclude that the extent to which election period will affect debt servicing is largely dependent on the level of development of the country in question. Thus, in relatively developed countries, election periods are not enough to sway the government from committing to their debt servicing obligations. Alternatively, we can infer that in relatively developed countries incumbent governments do not need to spend much during election periods to the extent that they will be compelled to re-channel funds meant for servicing debts into expenditures meant to attract votes.

We find statistical evidence to show that unemployment has a dampen effect on debt servicing. High rate of unemployment limits the government's ability to service its debts as resources intended for such purposes are channeled into creating avenues and other social services. Although the results in this analysis appear to be insignificant, an increase in unemployment causes debt servicing to reduce. This means that in order for government in African countries to be able to service their debts effectively, they would have to work hard to create enough employment opportunities for their citizens. This is an effective way by which they can mobilise enough revenue to repay their internal and external debts. This result is in line with the findings of a country-specific study conducted in Pakistan by Ayyoub, Chaudhry, and Yaqub (2012) who found that high debt was one of the factors responsible for increasing unemployment.

The system of governance largely influences government's fiscal and debt repayment decisions. Compared to the parliamentary system of

governance, government debt servicing increases by 6.9 percentage point if the country operates the presidential system of governance. From these results, one can deduce that in presidential system of governance, public expenditures on the size of government are not as high as the parliamentary system where size of government expenditure on the large size of the legislature exert much constraint on the governments' ability to repay their debts.

It can also be observed from the results that inflation has a positive association with debt servicing (GMM model). At 1 percent level of significance, 1 percent increase in inflation increases debt servicing by 0.07 percent, holding all other factors constant. The interpretation of this result requires some caution in the sense that the positive association does not necessarily mean that inflation creates more revenues that enable government to increase its debt servicing. Instead, it increases the cost of debt servicing which consequently increase the amount required to service debt. Therefore, effective debt servicing requires a moderate or low level of inflation.

Conclusion

Increased government expenditure, its causes and attendant implications for economic development in Africa has remained a subject of discussion within both the academia and political spheres. A wide range of factors have been ascribed to the unusually high government expenditures on the continent. As to whether such expenditures yield the expected economic and social returns remain another subject of research and deliberation. This empirical chapter assess the extent to which election influences government's fiscal policy which in this context is captured as government expenditure as a

percentage of GDP and governments' debt servicing in Africa using a dynamic panel approach. Specifically, the study used the System Generalised Method of Moment (GMM) estimation technique. The main findings of the analysis are:

Government expenditure increases while debt servicing reduces significantly during election periods. Other control variables that are found to have positive effect on government expenditure are increased unemployment rate, high age dependency ratio, and GDP per capita and inflation rate. It is also observed that government expenditures in previous years have positive effects on current government expenditure possibly due to the multiplier effect. Presidential system of governance, and simple majority electoral system are found to have negative effects on government expenditure. With regard to the effect of election on government debt servicing, the following are the main findings:

During election periods, governments in Africa reduce debt servicing and channel it into activities that either promote development or place them in a better position to retain power. We find that in both pre-election and election years, government debts servicing reduces significantly. Similar to the government expenditure, the extent of reduction in debt serving is dependent on the level of development of the country. We observe that the positive effect of high GDP per capita outweighs the negative effect of election periods and this makes the net effect of election on debts serving positive. Thus, in countries with high GDP per capita, election periods are not enough to reduce prevent the government from adhering to their debt servicing obligations.

However, it is observed that an increase in previous debt servicing helps to reduce debt accumulation and further debt servicing in the subsequent years.

Inflation has a significantly positive effect on government debt servicing. However, there is a caveat on the interpretation of the effect of inflation on debt servicing. Since inflation causes a loss in the value of a currency, it also serves to compounds the cost of debt serving. It means that as inflation increases, the amount to spend on debt servicing increases as they may lead to increasing cost of servicing the debt.

CHAPTER SIX

COMPLEXITY OF BALLOT PAPER, MARGIN AND INVALID VOTE

Introduction

The second objective of this thesis examines the effects of complexity of ballot paper, marginality and unemployment on invalid vote in sub-Saharan Africa. We examine the extent to which GDP per capita and literacy moderate the effects of complexity of ballot paper, and marginality on proportion of invalid vote in SSA. This section is divided into two sub-section: 1) brief descriptive analysis of the variables of interest, 2) discussion of the regression results which is further structured based on the results of the full and parsimonious models.

Descriptive Analysis

Beginning with the dependent variable of interest, Figure 12 presents the kennel density and normal density distributions of the rejected ballot. One advantage of presenting these distributions is that they provide good idea of the appropriateness of the variable for the regression analysis. The kennel density provides much information on the distribution of residual. In Figure 12, the kennel density distribution depicts that rejected ballot is skewed to the left even though the normal density does not. The inference that can be drawn from the distribution is that majority of the rejected ballots of the respective countries over the years under consideration are above the average.

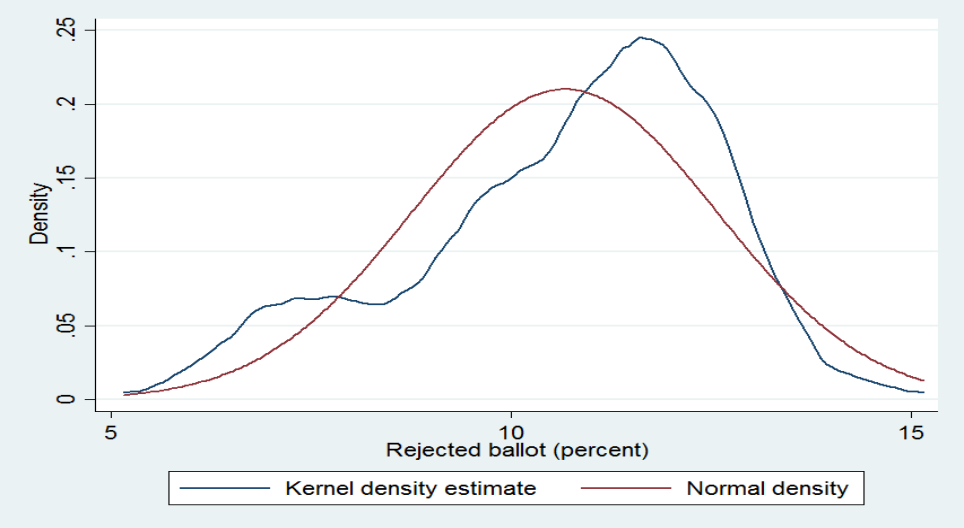

Figure 12: Distribution of rejected ballots

Source: Author, 2018.

The analysis of the distribution of rejected ballot was done at the country level using bar graph to assess the differences among the countries under consideration. It can be observed from Figure 13 that the percentage of rejected ballot papers in Nigeria was the highest while Equatorial Guinea recorded the least. If population size has any association with voter turnout and rejected ballot, then one could be right to accept this result on the basis of the population size of the respective countries. However, the causes of rejected ballot are multifaceted. They include literacy level of the voters, economic and social inequality, complexity of the ballot paper and the level of experience of the country in terms of the number and consistency of elections held. The heterogeneities of the characteristics of the countries could account for the variations in the rejected ballot.

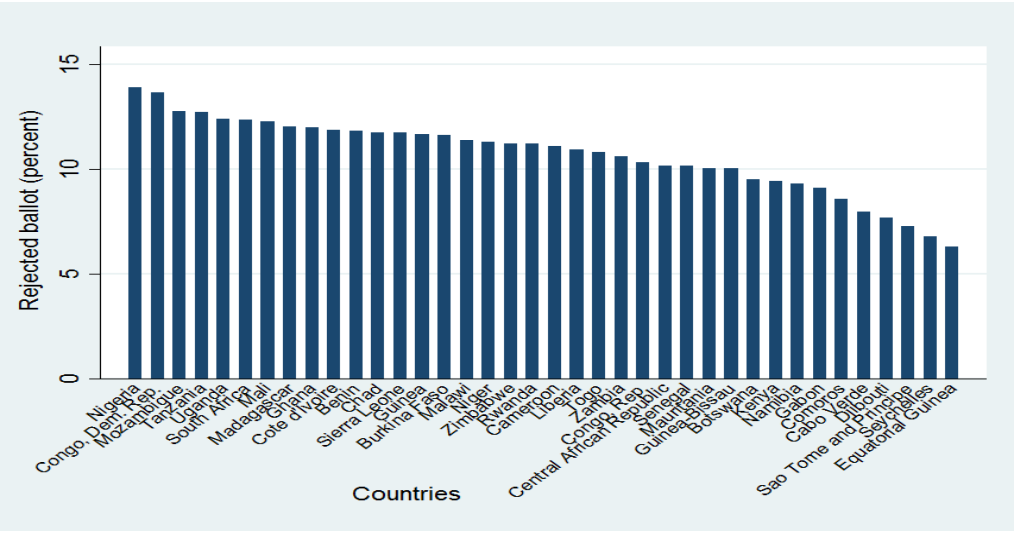

Figure 13: Distribution of rejected ballots by country

Source: Author, 2018.

The complexity of ballot paper is also dependent on country specific factors such as the degree of flexibility of the constitution in encouraging multi-party democracy, and the level of democratic experience or maturity. Figure 14 presents the distribution of complexity of ballot paper across country. It can be observed from the figure that apart from Democratic Republic of Congo, other countries that recorded high proportion of rejected ballot during the years under consideration are South Africa, Liberia and Kenya. On the other hand, those countries that recorded low percentage of rejected ballot are Zimbabwe, Rwanda, Cape Verde and Djibouti.

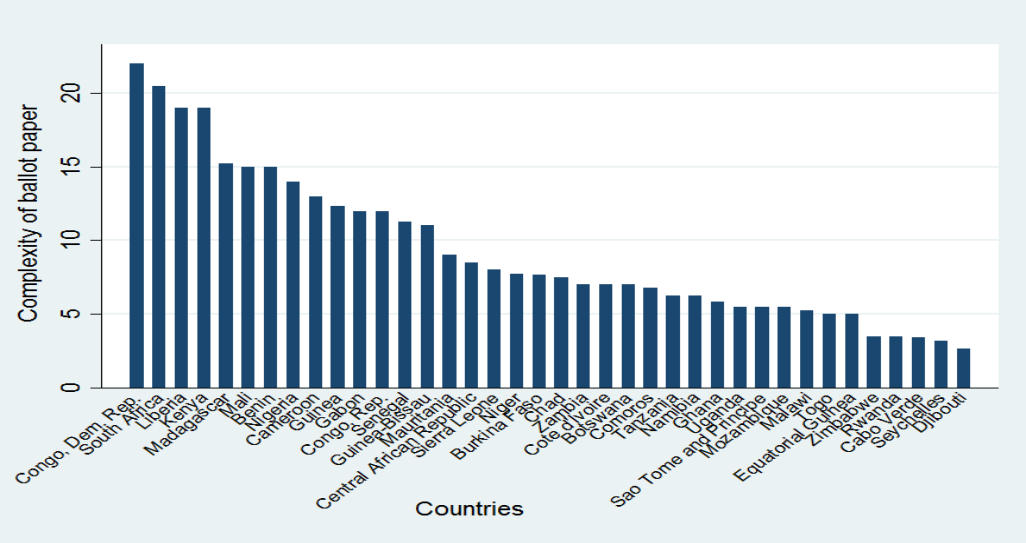

Figure 14: Complexity of ballot paper by country

Source: Author, 2018.

One of the core objectives of this chapter is to examine the effect of complexity of ballot paper on rejected ballot. In this study the operational definition of complexity of ballot paper is the number of presidential candidates whose name, image and or symbol appear on the ballot paper. The argument in the literature is that if more candidate contests the election, the probability that voters will vote invalidly is high. The reasons assigned to this assertion include but not limited to the fact that some voters become confuse of whom to vote. Having more than one favourite candidate on the ballot paper, they end up voting for more than one candidate. Another reason is that because there are many candidates whose images, symbols and name have to appear on one ballot paper, the space between the image, symbol and name of one candidate and another becomes too small. As result, some voters, especially the aged and inexperienced mistakenly thumbprint the space between two candidates and this renders their votes invalid.

In Figure 15, the relationship between these two variables is explored using local polynomial smooth function. The Figure shows that at 95 percent

confidence level, rejected ballot and complexity of ballot paper are positively related. Thus, as the ballot paper becomes more complex, rejected ballot increases. It is imperative to indicate that only the relationship between these two variables are explored. However, the extent of the effect is assessed in the econometric analysis.

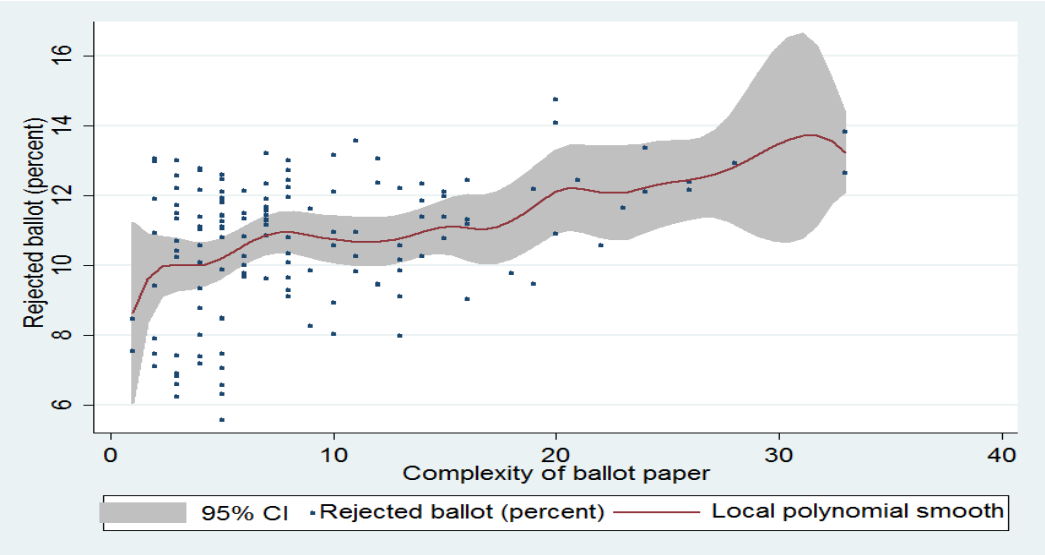

Figure 15: Rejected ballots and complexity of ballot paper

Source: Author, 2018.

The extent of the effect of complexity of ballot paper on reject ballot may also be dependent on the election experience of the country. One may therefore be intuitively correct to expect that the effect should be lower in countries where elections have been held continuously without any interruptions. In the context of this study, the minimum number of elections held is two while the maximum is six. As a result, the countries were divided into two categories using a threshold of least four successive elections since 1990. As presented in Figure 16, though the relationship is positive in both categories, it is obvious that the size of rejected ballot varies more in category of countries that have held less than four elections than countries that have at

least four elections. Also, the graph for the countries with less than four elections is steeper and points more dispersed than countries that have held four and more elections.

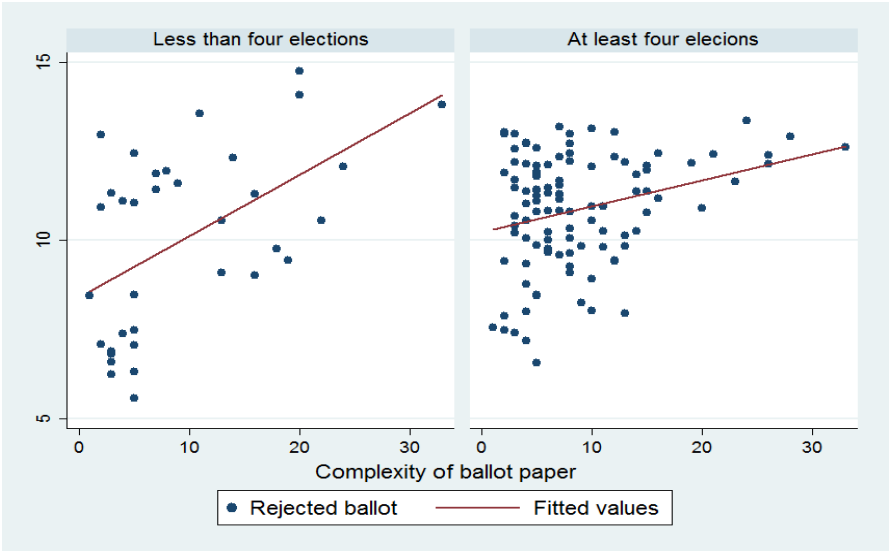

Figure 16: Rejected ballot, complexity of ballot paper and electoral experience

Source: Author, 2018.

Economic hardship and inequality are among the factors that people mostly consider during voting. The theoretical literature suggests that as a form of protest against inequality and economic hardship, some people deliberately vote invalidly. Figure 17 illustrates that with the exception of 2012 general election, unemployment and rejected ballot follow the same trend since 1992. The years in which unemployment increase (decrease), the percentage of rejected ballot also increases (decreases).

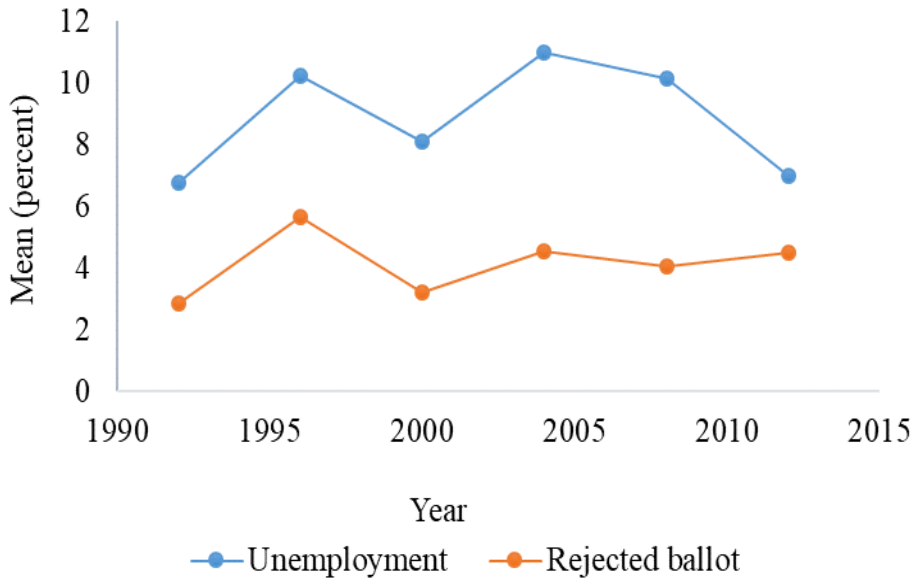

Figure 17: Trend of unemployment and rejected ballot

Source: Author, 2018.

In the context of election and voting, the growth of urban population is expected to lead to a reduction in the size of rejected ballot. This is because urban population have adequate access to election-related information and education which place them in a better position to understand the electoral process. In addition, political campaigns are more intense in the urban areas than in the rural areas. The intensity of such campaigns makes voters in the urban areas more conscious of their civic responsibility and eventually help to reduce the percentage of rejected ballot. As presented in Figure 18 the average size of urban population has continuously increased since 1992. This shows an increasing trend of urbanisation in Africa and its socioeconomic costs and benefits particularly in relation to democracy and elections.

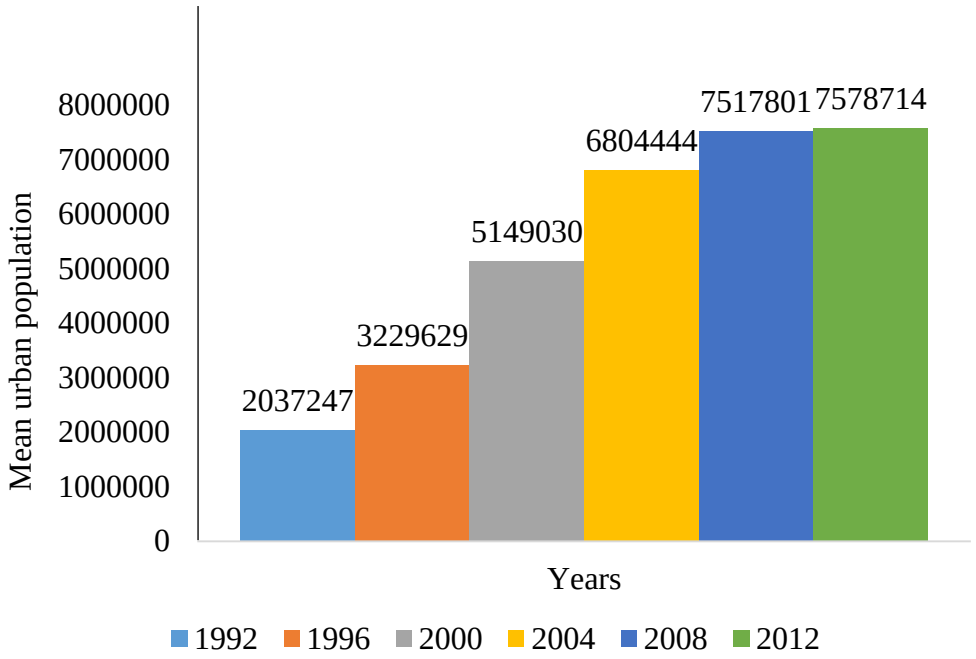

Figure 18: Trend of urban population (1992-2012)

Source: Author, 2018.

Regression Results and Discussion

In addition to the descriptive analysis, this subsection presents the econometric results and detailed discussions with constant comparison and reference to the extant empirical literature. The results presented are based on complete model that contain all the explanatory variables with interacted terms and parsimonious models that take into account only the regressors of interest. The essence of this experimental approach to the analysis and presentation of the result is to track the effect of other socioeconomic explanatory variables on the explanatory variables of interest namely; complexity of ballot paper, and leading margin.

As done in the preceding chapter, bivariate estimates of the explanatory variables are presented in Table 12 to explore the relationship between each of the explanatory variables and rejected ballot. The results show that complexity of margin (closeness of the gap between the winner and first runner-up), complexity of ballot paper, and voter turnout are positively

associated with rejected ballot. However, GDP per capita, proportion of urban population, literacy and electoral experience are negatively associated with rejected ballot. In the rest of this subsection, the influence of other correlates is explored.

Table 12: Bivariate Estimates (OLS) Marginality, Complexity of Ballots on Rejected Ballots

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Mode 7	Model 8	Model 9
Margin	0.0026*								
	(0.003)								
CBP		0.0287*							
		(0.0122)							
Voter turn out			0.0182**						
			(0.0057)						
GDP growth				0.0120					
				(0.0094)					
GDP per capita					-0.0132**				
					(0.0098)				
Unemployment						0.0212			
						(0.0384)			
Urban population							-0.0595**		
							(0.0165)		
Literacy								-0.0751**	
								(0.0015)	
Experience									-0.8368***
									(0.3625)
Constant	10.63***	10.42***	9.451***	10.67***	10.69***	11.19***	8.340***	10.4732**	10.0388***
	(0.121)	(0.122)	(0.381)	(0.0741)	(0.0620)	(0.373)	(0.648)	(0.0943)	
Observations	903	903	903	903	903	903	903		
R-squared	0.001	0.050	0.092	0.016	0.018	0.003	0.111		

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, Note: CBP and experience means complexity of ballot paper and electoral experience respectively.

Source: Author, 2018.

In order to achieve more efficient results, three estimation methods were explored. These were the fixed effect, random effect and Hausman-Taylor models which are presented in Tables 13 (full models) and 14 (parsimonious models). In choosing between the random effect and fixed effect models, Hausman (post estimation) test was conducted. As presented in Appendix C, the results illustrate that the fixed effect model must be preferred to the random effect model because the chi probability value is greater than the conventional values of significance namely; one percent, five percent and

10 percent. That is the standard Hausman test rejects the null hypothesis that the conditional mean of the disturbances given the regressors is zero. However, in the interest of comparison, both the fixed effect and random effect models are presented.

Empirical evidence suggest that the fixed effect models cannot estimate time-invariant or slowly changing variables (Vergne, 2009). Also, there is enough evidence to suggest that variables such as Gross Domestic Product growth rate, Gross Domestic Product per capita are likely to be endogenous. In such instances, the Hausman and Taylor (1981) model which derive an instrumental variables estimator can be used instead to produce more efficient estimates. The choice between the Hausman-Taylor model and fixed effect model was made based on the Hausman-Taylor post estimation results which are presented in (Appendix D). It can be observed that the p-value for the test provides evidence favouring the null hypothesis that the difference in coefficients is not systematic. Therefore, the Hausman–Taylor estimation is adequate and must be preferred to the fixed effect model.

As presented in Table 13, leading margin which is mostly used in the literature to capture the competitiveness or closeness of election is positive and significantly associated with rejected ballot. The size of the effect ranges from about 0.0467 percent in the fixed effect model to 0.0881 percent in the Hausman-Taylor model. It can be observed that in absolute terms, the magnitude of the effect of margin in the Hausman-Taylor model is relatively higher than the fixed effect model. Among the four estimated Hausman-Taylor models estimated, the fourth model (HT4) contains all the study variables and is thus chosen above the rest for interpretation.

An inference that can be drawn from the intuition sign of the leading margin is that as the difference between the winning candidate and the second candidate closes, electorates are motivated to be conscious of casting valid votes. Since they are bent on increasing the vote of their favourite candidates, they vote carefully to minimize the amount of rejected ballots. As a result, voters devote more time and attention to casting a valid ballot. Conversely, as the gap between the winning candidate and the second candidate widens voters are less motivated to casting a valid ballot since every vote has a small chance of influencing the outcome of the election. Voters therefore devote less time and attention to casting a valid ballot resulting in more rejected ballots. This evidence is consistent with the finding of Kouba and Lysek (2006) who conclude that margin of victory has a positive impact on rate of rejected ballots.

The analysis demonstrates that the rate of rejected ballots in sub-Saharan African countries are explicable by level of electoral competition. Voters consider the nature of electoral competitions and react accordingly. When election is highly competitive, with very close margin of victory between the leading candidates, voters are less likely to cast invalid votes. However, when the margin of victory between the winner and the second candidate is large, there is higher propensity for voters to cast invalid ballots.

Complexity of ballot paper is the second variable of interest that this chapter examines its effect on rejected ballot. In line with the results of the bivariate analysis, complexity of ballot paper is positively associated with the percentage of rejected ballot in all the models. Like the leading margin, the magnitude of the effect of complexity of ballot paper ranges from a minimum

of 0.131 percent in model 1 to 0.322 percent in model 6. It can be further observed that it is significant at one percent level in model 1, that is the fixed effect model but significant at five percent level in the rest of the models. Per the operational definition of complexity of ballot papers in this study, it is implied that as the number of presidential candidates increase by one, the proportion of rejected ballots increases by the mentioned percentages, ceteris paribus.

A plausible explanation of the positive effect of complexity of ballot paper on rejected ballots is that higher number of presidential candidates creates indecision for voters and consequently contribute to high proportion of rejected ballots. As noted by McAllister and Makkai (1993) more candidates increase choices available to voters but there is also high decision-making cost for voters. Voters have to spend more time to select a candidate from the list of many candidates to vote for. Instead of spending more time in selecting the candidates, some voters will prefer to vote anyhow resulting in more rejected ballots. Moreover, more presidential candidates make the ballot paper long and complex thereby confusing the minds of voters. These confused voters may fail to select or make too many selections causing their ballot papers to be rejected. The finding in this study confirms the results of Knack and Kropf (2003) in United States and Arbache *et al*. (2014) in Brazil that more presidential candidates generate high number of rejected ballots.

Aside margin and complexity of ballot paper, the third explanatory variable of interest in this study is voter turnout. As indicated at the methodology section, it is expected that an increase in voter turnout should be positively associated with increase in rejected ballot. Even though one will be

right to argue that this is dependent on other factors such as the literacy level of the voters, their experience in voting and the level of urbanisation, it may be difficult to rule out this expectation especially in developing countries where all these factors remain a challenge. The results in Table 13 show that holding all other variables constant, increase in voter turnout by 1 percent increases rejected ballot by approximately 0.04 percent in both models 1 and 6 and is statistically significant at 1 and 5 percent levels respectively. These results suggest that rejected ballots increase with electoral participation. As more people turnout to vote rejected ballots increases.

Table 13: Correlates of Rejected Ballot (complete models)

Variable	(FE)	(RE)	(HT1)	(HT2)	(HT3)	(HT4)
Margin	0.0467**	0.0319**	0.0101*	0.0286**	0.0341**	0.0881***
	(0.00340)	(0.00343)	(0.0051)	(0.00323)	(0.00326)	(0.00516)
CBP	0.131***	0.0608**	0.019**	0.106**	0.0205**	0.322**
	(0.0919)	(0.0866)	(0.0144)	(0.0853)	(0.0144)	(0.0854)
Voter turnout	0.0396***	0.0343**	0.0168***	0.0160***	0.0384***	0.0397***
	(0.0149)	(0.0150)	(0.00557)	(0.00557)	(0.0142)	(0.0140)
GDP per capita × CBP	0.0212**	0.0134*	-----	0.0191*	-------	0.0734**
	(0.0137)	(0.0129)	------	(0.0126)	-------	(0.0127)
Literacy × CBP	-0.0562**	-0.0521**	------	------	-0.0616**	-0.0603**
	(0.000357)	(0.00036)	------	-----	(0.000343)	(0.000337)
GDP growth	-0.0709	-0.0472	-0.0485	-0.0567	-0.0476	-0.0789
	(0.155)	(0.154)	(0.151)	(0.152)	(0.151)	(0.148)
GDP per capita	-0.0718**	-0.0504	-0.0459	-0.0572**	-0.0481**	-0.0799**
	(0.163)	(0.162)	(0.158)	(0.159)	(0.158)	(0.156)
Unemployment	0.0343	0.0476*	0.0365	0.0456	0.0424	0.0431
	(0.0362)	(0.0277)	(0.0273)	(0.0291)	(0.0287)	(0.0277)
Urban population	-0.0827**	-0.0391	-0.0795**	-0.0195	-0.0663**	-0.0322
	(0.0322)	(0.0298)	(0.0181)	(0.0174)	(0.0287)	(0.0294)
Elect. Experience	------	-0.535**	-0.0620*	-0.461**	-0.624***	-0.218**
	------	(0.0061)	(0.0065)	(0.0074)	(0.0077)	(0.0072)
Margin ×literacy	------	-------	-0.0533**	--------	-------	-0.0513**
	------	-------	(0.00167)	-------	-------	(0.00171)
Literacy	------	------	-0.0559**	-0.0109	-0.0928**	-0.0916**
	------	------	(0.00148)	(0.00150)	(0.00148)	(0.00147)
Constant	6.508***	8.621***	10.14***	9.284***	7.662***	8.646***
	(1.428)	(1.311)	(0.941)	(0.976)	(1.304)	(1.283)
Observations	903	903	903	903	903	903
R-squared	0.240	------	-----	------	-----	------
Rho	0.9068	0.8411	0.8829	0.9157	0.9127	0.8966

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1, Note: FE, RE and HT mean Fixed effect, Random effect and Hausman-Taylor respectively.

Source: Author, 2018.

This is not surprising particularly for Sub-Sahara Africa where most of the people are still not conversant with the voting process. For instance, Gyampo (2009) found that ignorance of voters about the voting process is one of the reasons for the high incidence of rejected ballots in Ghana. However, the finding in this study contrasts the evidence reported by Aldashev and Mastrobouni (2016) that increase in turnout has a negative impact on rejected ballots in Italian elections. The difference in the findings can be explained by the level of analysis. While Aldashev and Mastrobouni analysis is country-specific this study analysis is at cross-country level.

Gross Domestic Product growth rate has been included in the analysis as a control variable to account for the level of growth of the countries considered in this study. Though it is not statistically significant, it has the expected negative relationship with rejected ballot. This negative relationship follows intuition as the growth trajectory of every country is influenced by other complementary factors such as improved literacy and political discernment. Though GDP growth rate to large extent gives some idea of the level of development, GDP per capita rather depicts the extent of the wellbeing of the individuals in a country. In view of this, GDP per capita has been used in the literature as a measure of the effect of the level of development on rejected ballot. In this study, GDP per capita shows the

expected negative association with rejected ballot and is statistically significant.

In addition to GDP growth rate and GDP per capita, we include literacy rate in to assess the effect of people's level of literacy on their appreciation of the need to cast valid votes. The results in Table 13 show that at 5 percent level of significance, increase in literacy by one percent reduces rejected ballot by 0.0916 percent. This means that literacy is very instrumental in the outcome of rejected ballots in elections. In this study, we interact literacy and margin (closeness of election) in order to examine the extent to which literacy moderates the relationship between margin and proportion of rejected ballot. We find that net effect of margin still remains positive at high rates of literacy. For instance, in model 6, the net effect of margin (0.0881-(0.0513×0.1764)) is approximately 8 percent. From these results, it is obvious that literacy is indeed an important factor that determines the extent of effect of margin on electoral outcomes in Sub-Saharan Africa. Thus, higher literacy rate is a pre-requisite for favourable electoral outcomes in the continent.

We also interact complexity of ballot paper with literacy rate and with GDP per capita to examine how the level of development of a country and the level of literacy of its citizens influence their tendency to cast invalid in an event that they find themselves in electoral process that involves the use of complex ballot papers. The result reveals that the net effect of complexity of ballot paper (0.322 + (0.0734×1.980) – (0.0603×0.1764)) is negative and it is approximately 46 percent. Intuitively, the negative net effect illustrates that regardless of how complex the ballot paper may be, an electoral process which is largely participated by a high literate population is more likely to witness

low proportion of rejected or invalid ballots irrespective of the level of development of a country.

We further interact complexity of ballot paper with the level of development (GDP per capita) to understand how complexity of ballot paper influences the proportion of rejected ballot conditioned on the level of development of the country in question. In all the models, we found positive net effect of complexity of ballot paper. For instance, in model 6, the net effect of complexity of ballot paper (0.32+ (0.0734×2.32)) is positive (49 percent). This means that unlike literacy, higher levels of GDP per capita are not enough to reduce proportion of rejected ballot due to complexity of the ballot papers. It can therefore be concluded from the three interaction terms that literacy is more important than GDP per capita in minimising the proportion of rejected in an election.

It has been found in the literature that people demonstrate their dissatisfaction through voting, if there exist gross inequality in a country, to the government and politicians during elections by deliberately casting invalid votes. While this finding may play out significantly in advanced democracies where people vote based on issues, the evidence in developing countries remains yet an issue of research. This study therefore attempts to ascertain the validity of this finding in the literature by including unemployment as a proxy for inequality. Ideally, inequality index should have been the variable to be used. However, this variable contains many missing observations to the extent that it was not reliable. In Table 13, it can be found that unemployment turns out to be insignificant but positively associated with reject ballot as expected.

Though it is significant in the Random Effect model, the Huasman-Tylor model shows that unemployment is insignificant.

Studies by Power and Garand (2007), World Bank (2016), and Kouba and Lysek (2016) suggest that urbanisation plays important role in minimising the number of invalid votes. As greater proportion of a country's population get more urbanised, they become more discerning and politically conscious due to their access to information. This motivates them to demonstrate their desire to be part of the decision-making process by ensuring that their votes count. Their access to information and high level of political discernment are expected to make them less susceptible to the tendency of casting invalid ballot compared to their less privileged rural counterparts. In Table 13, the results show that at five percent level of significance, an increase in the proportion of urban population is associated with reduction in rejected ballot.

It is obvious that addressing the element of endogeneity improves the coefficient of urbanisation in Table 13 and makes it significant. It is also clear from the result that urbanisation depresses rejected ballots. Unlike rural areas where access to information is difficult, voters in urban areas are constantly exposed to different kinds of political organisations and easily-accessible information that enable them to cast a valid vote. This significantly contributes to reduction in rejected ballots. This evidence is in line with results of previous studies that considered the effect of urbanisation on rejected ballots. For instance, a study by Power and Garand (2007) shows a negative relationship between urbanisation and rejected ballots. They concluded that there is less propensity of voters to cast invalid ballot when political systems are highly urbanised. This stems from the fact that in urban areas information about

upcoming elections is more easily organized, distributed and received. Another study by Uggla (2008) reports a negative effect of urbanisation on rejected ballots. A recent study by Kouba and Lysek (2016) finds a negative impact of urbanisation on rejected ballots.

Power and Garand (2007) considered the effects of institutional, socioeconomic and political factors on voter turnout and rejected ballot. It is however, not yet known if any study has considered the effect of electoral experience. As a result, this study includes a dummy variable to capture the effect of democratic maturity on rejected ballot. Operationally, electoral experience or democratic maturity is defined to take on the value 1 if a country has conducted at least four successive elections and 0 otherwise. The results suggest that compared to a country that has conducted less than 4 successive elections, the proportion of rejected ballot of a country that has conducted 4 or more elections is about 22 percent lower. This means that frequent and continuous elections improve the experience of voters because they become more familiar with the voting process.

Table 14: Results on Marginality and CBP on Rejected Ballot (Parsimonious models)

Variable	(FE)	(RE)	(HT1)	(HT2)	(HT3)	(HT4)
Margin	0.375***	0.247**	0.836***	0.294**	0.280**	0.982**
	(0.0035)	(0.00334)	(0.00454)	(0.0032)	(0.0033)	(0.00492)
CBP	0.175*	0.0773	0.0186	0.0969	0.033**	0.0325**
	(0.0913)	(0.0837)	(0.0138)	(0.0824)	(0.0145)	(0.0830)
Literacy	-0.0140*	-0.0195**	-0.0165**	-0.0157**	-0.016*	-0.0310**
	(0.0108)	(0.00946)	(0.00546)	(0.00560)	(0.0094)	(0.00968)
GDP per capita × CBP	0.0296**	0.0165	-------	0.0189	------	0.0839**
	(0.0134)	(0.0123)	------	(0.0120)	------	(0.0123)
Literacy × CBP	0.0117*	-0.0135*	-----	------	-0.029*	-0.0350*
	(0.00235)	(0.00195)	-----	-----	(0.0022)	(0.00203)
GDP PC	0.0355**	0.0431**	0.0374**	0.0526**	0.052**	0.0513**
	(0.0366)	(0.0272)	(0.0334)	(0.0333)	(0.0334)	(0.0310)
Margin ×literacy	-----	-0.391***	-0.191*	-0.410**	-0.363**	-0.0492*
	-----	(0.589)	(0.624)	(0.659)	(0.652)	(0.637)
Unemployment	-----	-----	0.048**	-----	------	0.0143**
	-----	-----	(0.00146)	-----	-----	(0.00166)
Constant	9.697**	10.11***	10.02**	10.13**	10.14**	9.951**
	(0.540)	(0.584)	(0.597)	(0.614)	(0.634)	(0.601)
Observation	798	798	798	798	798	798
R-squared	0.179	----	----	----	-----	----
Countries	38	38	38	38	38	38

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. Note: FE and RE mean fixed effect and random effect.

Source: Author, 2018.

In order to disentangle the effects of other correlates on rejected ballot, we present parsimonious models with the interacted terms in Table 14. The results clearly show that the inclusion of other control variables influence the size of the effect of the explanatory variables of interest. It can be observed that compared to the results in Table 13, the results in Table 14 depicts that in some instances, the magnitude of the effect increases for all the variables of interest while the magnitude reduces for other explanatory variables. This means that relatively, inclusion of other explanatory variables has mixed influence on the size of the effect of the variables of interest on the proportion of rejected ballot. For instance, the size of the effect of marginality and the interacted term of complexity of ballot paper and GDP per capita increases while that of complexity of ballot paper and literacy rate decrease.

Conclusion

The socioeconomic cost of high rate of rejected ballot on election is enormous. This chapter examined the socio-economic predictors of rejected ballot with focus on complexity of the ballot paper, leading margin and unemployment. We further explore the effects of literacy rate and GDP per capita in moderating the relationship between complexity of ballot paper and margin (closeness of election).

The results reveal that:

More complex ballot paper and high rate of unemployment account for high rate of rejected ballot. Conversely, a very keenly contested election characterised by a slim margin between the winner and the first runners-up serves as incentive for voters to be cautious during voting. This significantly contributes to reduction in rejected ballot in sub-Saharan African countries.

Similarly, a high proportion of literate population is essential in minimizing the proportion of invalid votes. With regard to the interaction terms, we find that the net effect of margin on the proportion of rejected ballots is influenced by the level of literacy of the electorates.

Regardless of the complexity of the ballot paper, high proportion of literate voters who participate in elections contributes to minimising proportion of rejected ballots or invalid votes. In addition to these core variables of interest, other control variables that significantly determine the size of rejected ballot are voter turnout, electoral experience and proportion of urban population of the respective countries.

CHAPTER SEVEN

MARGINALITY, POPULATION SIZE AND VOTER TURNOUT

Introduction

Objective two of this study seeks to assess the determinants of voter turnout in an emerging democratic country with focus on Ghana. To achieve this objective, two research hypotheses are tested. Firstly, the study seeks to test the research hypothesis that closeness of election (marginality) leads to higher voter turnout. The second research hypothesis tested is that increase in population size of the district leads to increase in voter turnout. The presentation of the results is divided into two main sections: the descriptive analysis and the regression results. The next subsection presents the descriptive analysis. This is followed by the presentation of the regression results and discussions, conclusions and policy recommendations.

Descriptive Analysis

Between 2000 and 2012, there have been several events that can influence voter turnout, closeness of election (marginality) and population size. As part of the analysis, this study presents a t-test to assess the differences in these variables within the time period under consideration. The output (presented in Tables 15, 16 and 17 are the results of the t-tests. The H_0 (the null hypothesis) is that the difference in means between the variables of interest is zero (H_0: diff=0). The alternative hypothesis is that the difference in the means between the variables of interest is not zero (H_a: diff $\neq$ 0). If the t-test is significant, the null hypothesis can be rejected in favour of the other alternative hypothesis. It can be observed from Table 15 that the probability is

less than .05 which means that the twelve-year time difference resulted in a statistically significant difference in voter turnout.

Table 15: Two Sample t-test of Voter Turnout by Year

Group	Obs.	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
2000	110	60204.61	7487.533	78529.91	45364.56	75044.66
2012	110	106191.40	16296.31	170917.2	73892.65	138490.2
Combined	220	83198.01	9080.485	134685.4	65301.69	101094.3
Diff.		-45986.80	17934.13		-81333.3	-10640.3

Note: diff = mean (0) – mean (1) t = -2.5642

H_o: diff = 0; H_a: diff ≠ 0, Pr(|T| > |t|) = 0.0110; degrees of freedom = 218

Source: Author, 2018.

The t-test results on closeness of election (marginality) within the twelve-year difference is presented in Table 16. The result shows that though there was an increase in the difference between the vote obtained by the first presidential candidate and the second presidential candidate, the difference is not significant.

Table 16: Two Sample t-test of Margin (closeness of election) by Year

Group	Obs.	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
2000	110	20477.3	3001.492	31479.91	14528.44	26426.16
2012	110	25754.28	3574.425	37488.89	18669.89	32838.68
Combined	220	23115.79	2335.227	34637.02	18513.4	27718.19
Diff		-5276.98	4667.491		-14476.17	3922.202

Note: diff = mean (0) – mean (1) t = -1.1306

H_o: diff = 0; H_a: diff ≠ 0; Pr(|T| > |t|) = 0.2595; degrees of freedom = 218

Source: Author, 2018.

Ghana's population has experienced a considerable increase between 2000 and 2012. As part of the descriptive analysis, this study tests the

significance of the change in the population size of the districts under consideration. The results of the test (presented in Table 17) show that though there was a change in the average population size of the districts, the difference of 52243 was not significant at 95 percent confidence level. One important note that must be taken into consideration in interpreting this result is that it may not necessarily reflect the significance of the change in total population of Ghana within the period under consideration. This is because the population size of some districts might increase while others might reduce.

Table 17: Two Sample t-test of Population by Year

Group	Obs.(n)	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
2000	110	171928	17997.6	188760.4	136257.3	207598.7
2012	110	224171.1	26020.26	272902.8	172599.8	275742.4
Combined	220	198049.6	15881.28	235557.4	166749.9	229349.3
Diff		-52243.1	31638.07		-114599	10112.53

Note: diff = mean (0) – mean (1) t = -1.6513

H_o: diff = 0; H_a: diff! = 0; Pr (|T| > |t|) = 0.1001; degrees of freedom = 218

Source: Author, 2018.

In figure 19, this study explores the relationship between marginality and voter turnout. The figure shows a positive relationship between the two variables, though some districts such as the Kumasi Metropolitan, Saboba-Chereponi and Efutu-Ewutu-Senya appear to be outliers. The implication is that marginality of these districts is larger than the national average. One factor that may account for the observation of such outliers is the re-aggregation of some of the constituencies and further aggregation of the constituencies into districts. The re-aggregation makes some districts relatively larger.

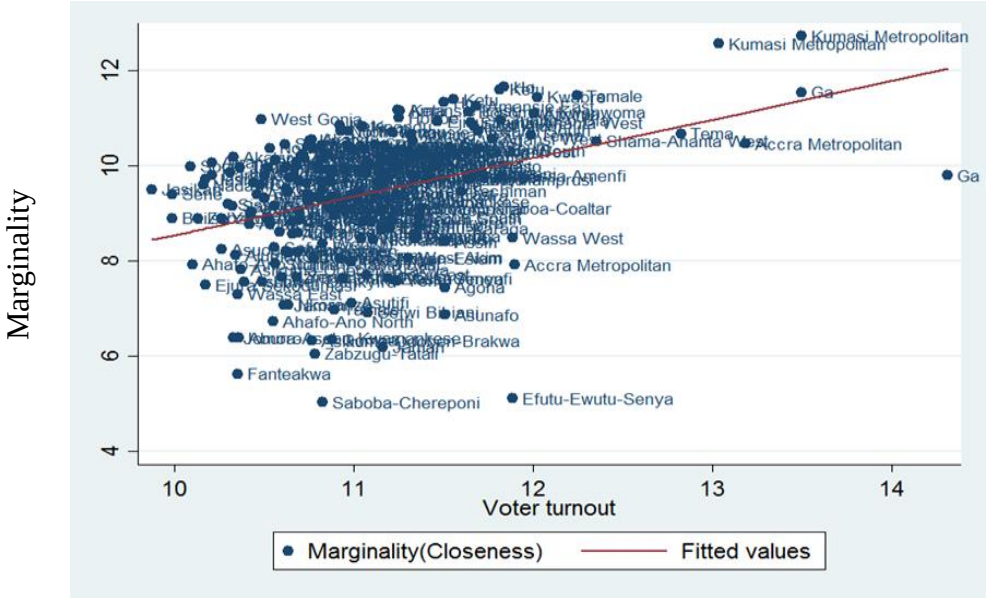

Figure 19: The relationship between marginality and voter turnout

Source: Author, 2018.

Also, the study assesses the bivariate relationship between voter turnout and proportion of first-time voters. As presented in Figure 20, the results show a positive relationship between the two variables. It can however be observed from the figure that in the Shama-Ahanta West and Ga districts, the averages of first-time voters were extremely larger than the national average. Also, the slope of the fitted line is not as steeper as the slope of the relationship between marginality and voter turnout. This means, the number of first time voters is less sensitive to voter turnout relative to its sensitivity to marginality.

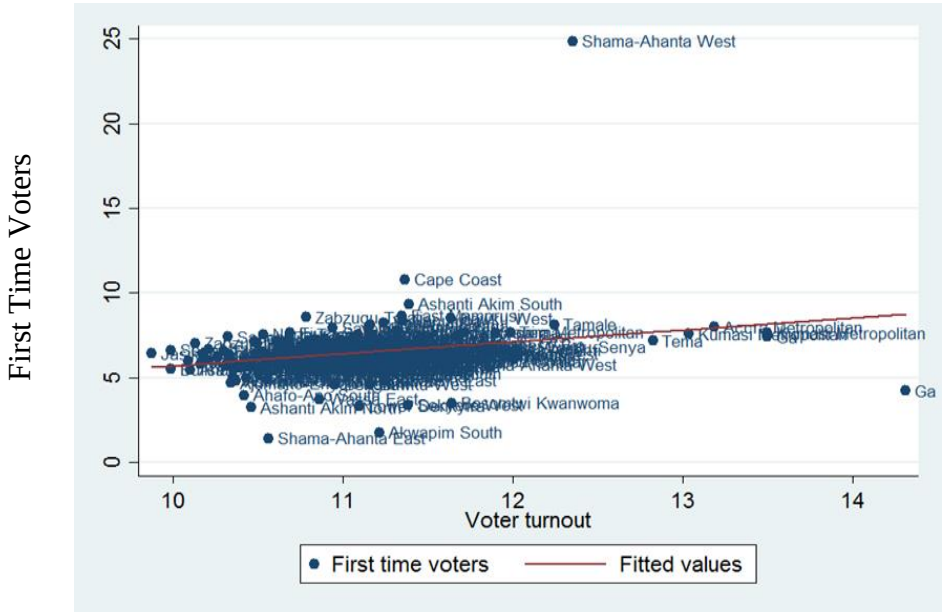

Figure 20: The proportion of first-time voters and voter turnout

Source: Author, 2018.

In Figure 21, the relationship between the proportion of the population who are at the age of sixty and above and voter turnout is explored. The result depicts a downward relationship between the two variables. This implies that ageing, which in some instances can be used as a proxy for experience, has negative association with voter turnout. Once again, the figure shows that while almost all the districts are clustered around the fitted line, some districts such as Shama-Ahanta West, Shama-Ahanta East and Ga metropolis appear to be outliers. Thus, their average voter turnouts are far higher than the national average.

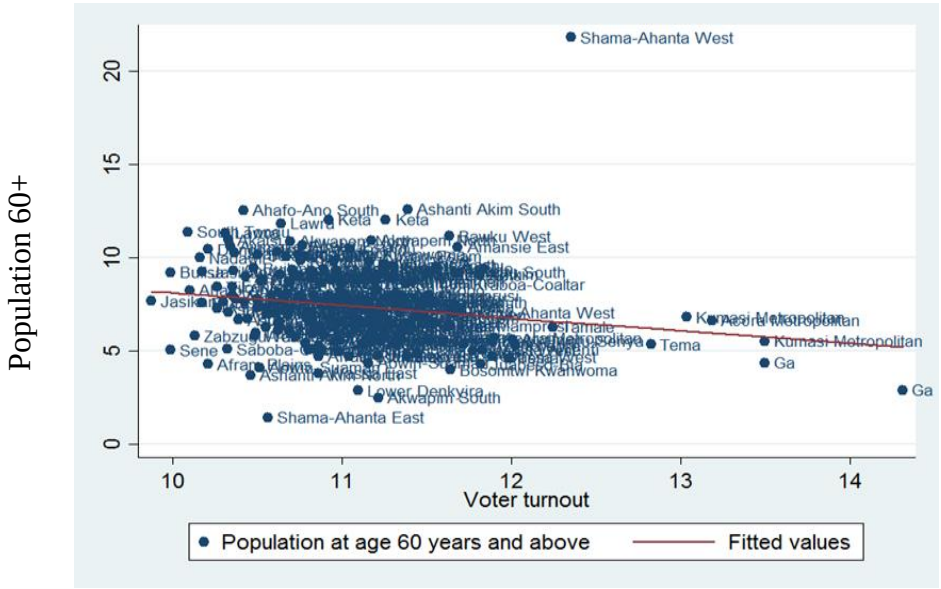

Figure 21: Proportion of the population aged 60 years plus and voter turnout

Source: Author, 2018.

The study also sought to explore the possible relationship between the proportion of first-time voters and closeness of election. The essence of this analysis is to assess the potential influence of first-time voters in either closing/widening the margin between the first and second candidates of the election in Ghana. Figure 22 demonstrates that first time voters contribute positively to the widening of the margin between the first and second candidate. As observed in the previous analysis, the Akwapim South district, Accra Metropolitan and Kumasi Metropolitan assemblies and some other few districts appear as outliers.

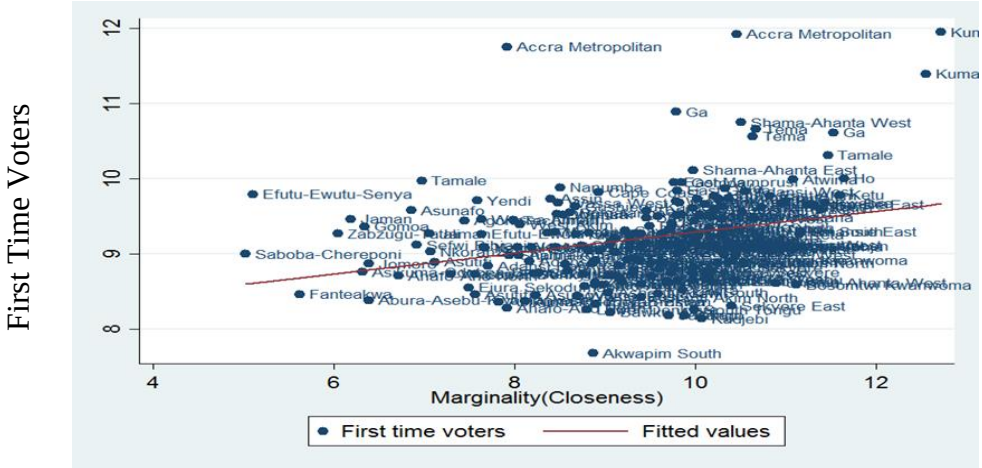

Figure 22: The proportion of first-time voters and marginality

Source: Author, 2018.

The final aspect of the descriptive analysis looks at the relationship between the population size of the respective districts and voter turnout. As presented in Figure 23, the population size of the districts are positively associated with the voter turnout. Thus, the higher the population size, the higher the voter turnout is expected to be. The dispersion of the district in this analysis exhibits the similar characteristics as the earlier analysis as some of the larger districts still appear as outliers.

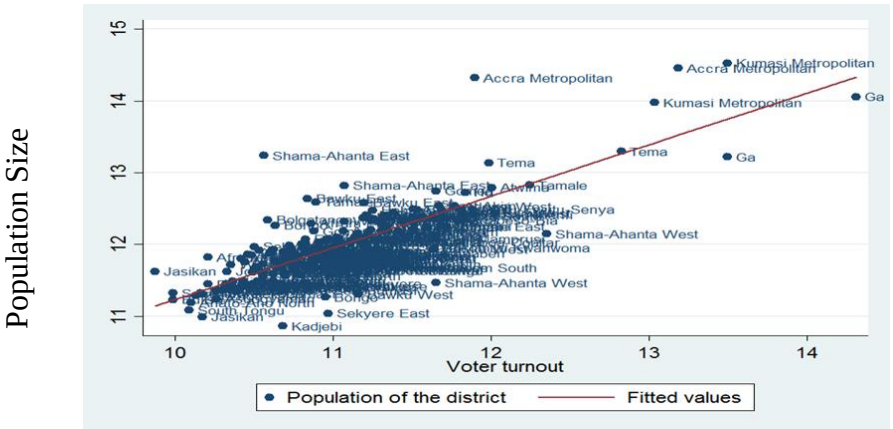

Figure 23: Population of the district and voter turnout

Source: Author, 2018.

In addition, Table 18 presents a bivariate estimates of voter turnout. The results indicate that margin, proportion of female population, proportion of the population who votes for the first time, and population size are positively associated with voter turnout. Plausibly, first time voters are more eager to exercise their franchise and hence more likely to vote. Also, given that females are mostly affectionate towards their kids, they care more about their future and the consequences of governments' actions on their future and are thus more likely to vote relative to their male counterparts. On the contrary, the proportion of rural population, and the proportion of the population aged 60 years and above are negatively associated with voter turnout. Intuitively, the aged are mostly weak and burdened with old-age associated ailments making it difficult to get to the polls.

Table 18: Bivariate Estimates Marginality and Population Size on Voter Turnout

Dependent variable Voter turnout	Random Effect	Random effect	Random effect	Random effect	Random effect	Random effect	Random effect	Random effect
Margin	0.159*** (0.0296)							
Female population		0.082*** (0.0282)						
First time voters			0.090*** (0.0194)					
Population size				0.911*** (0.0479)				
Rural population					-0.214*** (0.0155)			
Degree plus						0.046 (0.0304)		
Married population Population. >=60							0.003 (0.0134)	-0.0469*** (0.0179)
Constant	9.545*** (0.2820)	6.863*** (1.4338)	10.455*** (0.1346)	0.1197 (0.5741)	13.260*** (0.1687)	10.973*** (0.0634)	10.945*** (0.3993)	11.3790*** (0.1426)
Observations	220	220	220	220	217	220	220	220
Number of districts	110	110	110	110	110	110	110	110

Source: Author, 2018.

Regression Results and Discussion

As indicated in the empirical strategy section, the reason for pooling these two data set together was to capture the time-varying part which is assumed to be common for all cross-sectional units. This was done by

introducing the time dummy where the year 2012 was given a value 1 and the year 2000 was given the value 0. The fixed effect however, still remains unaddressed. It has just been hidden in the composite error, and is therefore not captured in the model. That is, the parameter estimates are still biased, unless it is uncorrelated with the explanatory variables. In order to address this problem, the study explored the fixed effect and random effect estimates putting into consideration the time effect.

The Hausman post estimation test was performed as basis for the choice between the fixed effect and random effect estimates. The results presented at the bottom of Tables 19 and 20 indicate that the random effect estimates must be preferred to those of the fixed effect. However, the Breusch-Pagan Lagrange multiplier (LM) test was perform to determine between the estimates of the Ordinary Least Squares (OLS) estimates and those of the random effect. The null hypothesis of the LM test is that variances across entities is zero. Thus, there is no significant difference across the units. Observe from Table 19 that the LM test is significant at 1 percent level. This means that random effect estimates are reliable and must be preferred to the OLS estimates.

One of the main variables of interest is the closeness of the election which is also referred to as marginality or margin in the literature. The results show a significantly positive relationship between closeness of election and voter turnout in Ghana in all the models. Holding all the control variables constant, closeness election (marginality) increases voter turnout by approximately 8 percent.

The positive effect of marginality on voter turnout, measured as the

difference in the votes received by the first and the second candidates in presidential election, suggests that turnout increases for every percentage increase in the difference of votes separating the first and the second candidates in Ghana's elections. The evidence observed in this study is in line with that of Lehoucq and Wall (2004) who found positive relationship between closeness of election and turnout in Guatemala. However, the results contrast with the findings by Simonovits (2012) and Fauvelle- Aymar and Francois (2006). They find that turnout is negatively related to closeness of election. Still, few studies also find no direct impact of marginality on voter turnout (Kirchgaessner & Schulz, 2005; Matsusaka & Palda, 1999; Matsusaka, 1993). This means that country- specific dynamics influence the extent to which turnout is related to closeness of election (marginality).

Another variable of interest is the population size of the respective districts. It can be observed from the results that an increase in the population size has a significantly positive effect on voter turnout. The results show that population has a higher effect on turnout than the rest of the explanatory variables. This could be partly due to the general increase in the population of Ghana within the twelve-year period (2000-2012) which possibly translated into increase in the population sizes of the one hundred and ten districts. The results do not confirm the rational choice hypothesis that population size and turnout are negatively related. The positive relationship between population size and voter turnout means that the higher the population the higher the voter turnout. This may be so because in Ghana the highly populated constituencies are urbanised hence are highly educated and appreciate the essence of elections.

Table 19: Regression Results on the Determinants of Voter Turnout

Dependent variable (Voter turnout)	Model 1 OLS	Model 2 Fixed effect	Model 3 Random effect
Female population	0.0269**	0.0357	0.0383**
	(0.0121)	(0.0264)	(0.0156)
First time voters	0.0506**	-0.0041	0.0307**
	(0.0208)	(0.0185)	(0.0143)
Population 60 years plus	-0.0170	0.0059	-0.0242*
	(0.0121)	(0.0191)	(0.0128)
Marginality	0.0696***	0.0446**	0.0758***
	(0.0193)	(0.0196)	(0.0164)
Population size	0.8777***	0.3270***	0.7412***
	(0.0846)	(0.0865)	(0.0485)
Rural population	-0.1179***	-0.2048***	-0.1389***
	(0.0210)	(0.0183)	(0.0160)
Degree plus	0.0281	0.0598**	0.0465***
	(0.0264)	(0.0238)	(0.0177)
Married population	-0.0077	0.0145	-0.0007
	(0.0060)	(0.0106)	(0.0072)
Constant	-0.2707	6.4885***	0.8882
	(1.1235)	(2.0574)	(1.0342)
Observations	217	217	217
R-squared	0.7721	0.8262	
Number of districts	110	110	110
Hausman test (chi2(8))			9.38 (0.3113)
LM test chibar2(01)			12.62 (0.0002)

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Source: Author, 2018.

The proportion of female to male population in Ghana is one of the control variables found to have positive effect on voter turnout. It is observed from the regression results that it is statistically significant at 5 percent level. A 1 percent increase in female population contributes to voter turnout by an average of 0.04 percent. The result indicates that females consider voting as an important aspect of fulfilling civic responsibilities and active participation in decision taking.

This result supports the empirical studies that report a positive relationship between voter turnout and the proportion of females in population. A study conducted in Brazil by Power and Roberts (1995) finds that the share of females in the labour force was positively related to voter turnout. Again, Lehoucq and Wall (2004) observed a positive relationship

between the female share in registered voters and voter turnout in Guatemala. Unlike previous studies in developed countries that showed that men vote more than women, this study demonstrates political consciousness of Ghanaian women as the results reveal that turnout increases when the proportion of females in population increases.

The proportion of rural to urban population was included in the analysis to assess to the extent to which rural-urban population growth differential influences voter turnout in Ghana. It can be observed from the results that this proportion has a negative relationship with voter turnout. This means that as the rural population increases relative to urban population, voter turnout reduces in Ghana. This could be due to the fact that the rural population live in remote parts of the country where there is less access to information on and education on voting as their civic responsibilities. Rural residents may also have less contacts with political parties and their candidates. Nonetheless urban residents gather more information about political parties and their candidates through campaign adverts in the media. This enables them to better understand the nature of political competition and also develops better appreciation of the essence of engaging in elections.

The decline in turnout as the proportion rural to urban population increase suggests that there is the need for more education and sensitisation on voting as civic responsibility in the rural areas. Other factors that serve as barriers to active participation in voting in rural areas would have to be addressed. The results in this study are consistent with the finding of Lehoucq and Wall (2004) in Guatemala, which is also developing country. The authors observed that turnout increases as the proportion of rural population reduces

and the urban population increase.

Most empirical findings suggest that first time voters (people who just turn the voting age before the election) have the fervour for voting to decide in electing their leaders. The proportion of first-time voters was therefore included in the analysis. The results show that holding other explanatory factors constant, one 100 percent increase in the proportion of first-time voters increases voter turnout by about 3 percent at 5 percent level of significance.

Contrary to the effect of the proportion of first-time voters on voter turnout, the results for the population 60 shows a negative association with voter turnout. This result is contrast with that of Wolfinger and Rosentone (1980) who found that older people vote more than younger people in the United States. The results demonstrate that as people grow older, they either develop less interest in politics and electoral activities or their health would not permit them to participate in active politics.

Intuitively, one's education is expected to enable him or her to understand the benefits and the need to participate in an election. It makes one more discerning in making informed choices as far as election is concerned. This analysis shows that an increase in the proportion of people with degree and above has a significantly positive effect on voter turnout in Ghana. Of course, this result is expected because people who have higher levels of education are better informed, politically discerning, and able to appreciate the essence of participating in voting as their civil responsibilities. Some previous studies show that better educated citizens pay attention to local and national politics and are more likely to go to the polls. For instance, Jacobs and Spierings (2010) find that higher education increases turnout in the Dominican

Republic. Similarly, Power and Roberts (1995) conclude that illiteracy suppresses turnout in Brazil. However, there have been evidence in some countries which indicate that higher level of education could contribute to low participation in voting. For instance, Lehoucq and Wall (2004) found that literacy decreases turnout in Guatemala.

Married people are expected to have the course to be more interested in who is in the helm of political and economic affairs in every country than those who are either single or have not married at all. This is because decisions taken by political leaders largely affect the living conditions of married individuals who most in many instances have children more than those who are single. In this study, the proportion of married to unmarried individuals is one of the variables included to assess the influence of marriage on voter turnout in Ghana. The result shows that marriage as a variable has a negative effect on voter turnout although the results remain insignificant in all the models.

In order to assess the influence of the control variables on the effect of the two variables of interest (closeness of election and population size), a parsimonious regression, based on the suggestion of Geys (2006), that involves only closeness of election and population size was performed. The post-estimation diagnoses tests show that the models are well specified and the variables included in the models are sufficient.

The results (presented in Table 20) show that indeed, the other control variables contribute to some reduction in the extent of effect of marginality and population size on voter turnout. The inclusion of the control variables causes the coefficient of closeness of election to be downwardly biased. The

results also reveal that closeness of election and population size play important role in explaining turnout in Ghana.

Table 20: Parsimonious Regression on Marginality and Population Size

Dependent variable	Model 1	Model 2	Model 3
Voter turnout	OLS	Fixed effect	Random effect
Marginality	0.0782***	0.1204***	0.0829***
	(0.0239)	(0.0336)	(0.0196)
Population size	0.8565***	0.9514***	0.8586***
	(0.0862)	(0.1211)	(0.0482)
Constant	0.0424	-1.4902	-0.0270
	(0.9039)	(1.4866)	(0.5586)
Observations	220	220	220
R-squared	0.6803	0.4070	
Number of districts	110	110	110
Hausman test (chi2(2)			2.40 (0.3015)

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Source: Author, 2018.

Conclusion

This chapter looked at the determinants of voter turnout in an emerging democratic country using district-level data in Ghana. The analysis is done at two levels. The first model includes several socio-economic and political factors. A parsimonious analysis that excludes all other control variables was conducted to assess the influence of other correlates on the effect of margin and population size on voter turnout. The results indicate that while margin and population size significantly increase voter turnout, other socioeconomic variables also matter. The proportion of female to male population, higher level of education, age and proportion of rural population relative to urban population, have significant effect on voter turnout in Ghana.

CHAPTER EIGHT

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter summarises and presents the conclusions on the empirical analysis of these three objectives. On the basis of the main findings, the chapter delineates some recommendations meant to guide policy design towards averting or minimising the burdens of election on government and citizens of countries in Sub-Saharan Africa. The rest of the chapter is structured as follows: The first sub-section presents the summary. This is followed by the conclusion, recommendation, limitations and directions for future research.

Summary

The objective of this thesis is to critically examine the social and economic burdens that elections impose on Sub-Saharan African countries. Specifically, the study assessed the extent of implication of elections for government expenditure and debt servicing. In order to understand the extent to which the level of development of a country moderates the relationship between election periods and the dependent variables (government expenditure and debt servicing), we interact periods of election with GDP per capita. As the second objective, the study analysed the extent to which the number of candidates on the ballot paper (operationally defined as complexity of ballot paper), the margin between the two leading candidates and unemployment affect invalid vote in Sub-Saharan Africa. However, in order to understand the influence of other socioeconomic variables that mediate

between the regressors of interest (marginality, complexity of ballot paper) and the respective dependent variables, we explore a number of interactions.

Democratic election has gain prominence as the ideal means of instituting governance and changing power across the globe. Evidence in advanced countries show that election contributes immensely to deepening democracy and strengthening the stability of governance and consequently ensures continuous growth and development. Nonetheless, it has been found that in spite of the positive aspect of election, it is associated with some social and economic cost to government and citizens alike. Since most countries in Sub-Saharan Africa have embraced election as the best option to ensure peaceful transition of power, it is important to analyse its potential implications especially given the fact that their democracies are at various stages of experimentation. It is also important to assess the socioeconomic factors that influence civic participation in election.

Theoretically, the study draws on the Rational Choice theories, and Political Budget Cycle model. In order to achieve the three empirical objectives, different estimation techniques were employed. While Dynamic Panel estimation technique was used in analysing the effect of elections on government expenditure and debt servicing, Pooled Ordinary Least Squares (OLS), Fixed Effect (FE) and Random Effects (RE) were used in examining the effects of marginality and population size on voter turnout. With regard to the effects of complexity of ballot paper, marginality, and unemployment on invalid vote, the Hausman and Taylor panel estimation technique was used.

The regression results for each empirical objective were preceded by a brief descriptive analysis and bivariate estimates. The descriptive analysis on

election and government expenditure shows that government expenditure in election periods are generally higher than non-election years in majority of the countries under consideration. The expenditures were found to be particularly high in less developed democracies such as Eretria, Malawi, Lesotho Seychelles and Democratic Republic of Congo. It is further observed that debt servicing, which is a component of government current expenditure is very low during election years than non-election in almost all the countries included in the analysis of this study.

In line with the analysis, the regression results reveal that election has significantly positive effect on government expenditure but negative effect on debt servicing. However, the extent of the effect is largely moderated by the level of development (GDP per capita) of the country in question. The net effects of election periods (interaction of election and GDP per capita) on both government expenditure and debt servicing are relatively lower at higher levels of GDP per capita compared to the extent of effect of election as a separate variable. It is also found that previous year's expenditure impact positively on government expenditure in the current year. Other control variables that significantly affect government expenditure are unemployment, GDP per capita, age dependency ratio, system of governance and electoral system.

The estimates of debts serving confirms the descriptive analysis and the hypothesis that election indeed contributes significantly to diversion of funds meant for serving debt in many Sub-Saharan African countries. The results further indicate that government's previous debt servicing records impact positively on their ability to reduce the extent of debt servicing in the

current year. Also, control variables such as system of governance, GDP per capita and inflation have significant effects on debt servicing.

With regard to invalid votes, the descriptive analysis shows that in all the countries under consideration, the rates of rejected ballots were over 10 percent. In relation to objective three, the descriptive analysis shows that at the county level, the proportion of rejected ballot was higher in Nigeria but very low in Equatorial Guinea. However, complexity of ballot papers was much of a problem in Democratic Republic of Congo, South Africa and Liberia than the rest of the countries. In addition, experience (the number of time times that a country has held an election), and complexity of ballot papers matter for the rate of invalid votes.

A trend analysis of the relationship between unemployment and rejected ballots confirms the long-held assertion that rejected ballots and unemployment move in the same direction. Again, unemployment is found to have consistently increased within the period under consideration. The regression results confirm the positive effect of margin and complexity of ballot paper on proportion of rejected ballot in Sub-Saharan Africa. However, it was found that literacy level of development (GDP per capita) are very important in reducing the extent to which marginality and complexity of ballot paper affect the proportion of rejected ballots. Also, high voter turnout and unemployment which serve as control variables have positive effect on rejected ballots. In the same vein, electoral experience reduces the proportion of rejected ballots significantly.

As far as the third objective is concerned, the descriptive analysis showed some significant differences in voter turnout and population size

between 2000 and 2012. Similar disparities across districts were observed on the relationship between marginality, first time voters, and proportion of the population aged sixty and above. The regression results confirm that closely contested elections induce high voter turnout in Ghana. In addition to these variables of interest, other socioeconomic variables such as the proportion of female to male population, higher level of education, age and proportion of rural population relative to urban population are import determinants of voter turnout in Ghana's election. As per figure 1, it has emerged that in Ghana whenever the voter turnout drops, the incumbent government or party loses power. This could be alluded to the fact that the electorate has become discontent with the incumbent government's performance and as a result decided to punish the party by boycotting the elections.

Plausibly, the governing parties suffer most from the apathy of its supporters and as a result the party suffers. The party suffers from the punishment of the electorate through electoral protest in the form of boycott. It came out clearly that such situations arise during the second term of the reigning government. It can be concluded that in Ghana, the incumbent governments suffer most from low voter turnout than the parties in opposition.

The findings of this study and the policy recommendations are expected to contribute significantly in shaping policies that are geared towards addressing the potential economic and socio-political downsides of elections in Sub-Saharan Africa.

Conclusions

The descriptive and econometric analyses of this study have shown that indeed, the burdens of election are not peculiar to only developed countries but also phenomena in Sub-Saharan African countries. Government expenditure increases while debt servicing reduces significantly during election periods. This confirms that argument in the literature that in their bids to retain power, governments in Africa expand their expenditures during election years to win the confidence of the populace. However, the extent of the effect of election periods on expenditure and debt servicing is significantly moderated by the level of development (GDP per capita) of the country in question. The net effects of election periods are lower for countries that have relatively high GDP per capita. The results confirm the assertion that the issues of political budget cycle, high rate of invalid votes occasioned by low level of literacy and underdevelopment are real in Sub-Saharan Africa. On the basis of the results this study concludes that the extent of the burden (political budget cycle, diversion of funds meant to service debts, low voter turnout and high rate of rejected ballots) of election on Sub-Saharan African countries are dependent on the level of literacy and development of the country in question.

The findings also give the need for further examination of the relevance of complexity of ballot papers, margin of the votes secured by the two leading candidates and unemployment in explaining the proportion of rejected ballots either at the country or cross-country level. A very conspicuous observation from the analysis is that a keenly contested election stimulates the perception of the electorates regarding the impact that their

votes would make. This eventually contributes to high voter turnouts at least in Ghana given the data available.

In spite of all the data challenges, the study provides some basis for rigorous econometric analysis of the causes of invalid votes in developing countries in general and Ghana in particular. The cardinal contribution of this study to the existing literature is that it provides empirical evidence that elections in Sub-Saharan Africa engender burdens that can potentially affect development and the welfare of the citizenry. Although much progress has been made in many African countries regarding the process and effects of elections, there is more room for improvement.

Policy Recommendations

In line with the findings of the empirical analysis and discussion, this study recommends that:

Incumbent governments should provide the Electoral Commission (EC) the National Commission on Civic Education (NCCE) and all bodies responsible for civic education on elections and election-related issues the requisite resources that can enable them give effective education on elections to the citizens of their countries. This, if done, will help the people know the relevance of voting and its implication on the economy and thus increase voter turnout and reduce invalid voting.

It is evident from the study that complexity of the ballot papers increases the level of rejected ballots. The Election Management Bodies (EMBs) must make the ballot papers as simple as possible by leaving enough spaces between candidates on the ballot papers.

Given the positive effect of closeness of election (marginality) on voter turnout the political parties (mostly the two leading contenders) will have to engage in intensive education of their followers on the relevance of marginality for voter turnout. This will contribute in reducing the low voter turnout that usually characterise elections in Ghana and other African countries. Since education has a positive effect on voter turnout in this analysis. Such election specific-education will contribute to the reduction of low voter turnouts and apathy that mostly characterise elections in Ghana and other sub-Saharan African countries.

While incumbent government must ensure level playing field that will encourage competition in election, political parties must also educate their followers on how to cast valid vote in order to reduce the rate of invalid votes during keenly contested elections.

Governments of Sub-Saharan Africa must expedite policies to address the high rate of unemployment since it has a negative impact on valid voting. In order to break the recurrence of political budget cycle, governments of Sub-Saharan African countries through their ministries in charge of finance must initiate policies that will ensure strong fiscal discipline during electoral seasons. Such policies should promote transparency, accountability and clearly set a limit to which incumbent government can spend from the coffers of the state.

Governments in Sub-Saharan Africa countries must also adhere to their debt servicing obligations irrespective of the electoral pressure in order to avoid debt accumulation and its consequential effect on long term development. Spending that promotes development and high level of literacy

is essential to ease the pressure on government to please the populace through spending on tangible projects during election periods.

Suggestions for Further Study

In line with the limitations outlined, further studies should consider:

Increasing the number of countries and extending the years using current data. It will also be worth considering the effect of election on other components of government fiscal policy to allow proper policy targeting.

Improving on the data point by considering new election and possibly socioeconomic data at the district level. The effect of institutions such as the media, civil society organisations, National Commission on Civic Education (NCCE) on the increase and reduction of voter turnout and rejected ballots respectively.

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APPENDICES

A: Variables included in the models for government expenditure and debt servicing.

Variable	Obs.	Mean	Std. Dev.	Min	Max
Election year	1,169	0.1523	0.3594	0.0000	1.0000
Pre-election year	1,169	0.1112	0.3145	0.0000	1.0000
Government expenditure	1,169	16.1783	7.8087	2.0471	69.5428
Unemployment rate	1,169	7.4617	8.0207	0.0000	39.3000
System of governance	1,169	1.9752	0.1556	1.0000	2.0000
Age dependency ratio	1,169	88.0333	13.1466	40.7957	112.6829
GDP per capita	1,169	6.4648	1.1082	4.6121	10.0583
Electoral system	1,169	1.6775	0.4676	1.0000	2.0000
Inflation rate	1,169	4.7366	0.3609	4.1614	10.1069
Debt servicing	1,169	13.4462	13.0059	0.0000	101.8891

B: Post-estimation test for the GMM estimations

Description of test	Government expenditure			Government servicing debt		
	Chi2 value	z	Prob.	Chi2 value	z	Prob.
Arellano-Bond test for AR(1) in first differences		-3.72	0.000		-3.01	0.003
Arellano-Bond test for AR(2) in first differences		-2.35	0.019		1.92	0.055
Sargan test of over-identification restrictions	524.04		0.172	332.03		0.186
Hansen test of over-identification restrictions	28.29		1.00	20.69		1.000
Difference-in-Hansen tests of exogeneity of instrument subsets: GMM instruments for levels						
Hansen test excluding group	28.53		1.00	19.17		1.000
Difference (null H = exogenous)	-0.24		1.00	1.51		1.000
Hansen test excluding group	28.11		1.00	20.21		1.000
Difference (null H = exogenous)	0.18		0.981	0.48		0.976

C: Post estimation tests for the fixed and random effect models for rejected ballots.

	Fixed (A)	Random (B)	Difference (A-B)	Standard error
Hausman specification test				
Margin	0.02443	0.02516	-0.00073	0.00279
Complexity of ballot paper	0.18498	0.21076	-0.02578	0.01461
Voter turnout	0.10718	0.10262	0.00456	0.00268
GDP growth rate	-0.05683	-0.15241	0.09559	0.05043
GDP per capita growth	-0.07453	-0.1886	0.11407	0.05339
Unemployment rate	0.0824	0.00362	0.07877	0.08616
Urban population	-0.01352	-0.03804	0.02452	0.03525
Chi2(7) =76.48	Prob>chi2 = 0.0000			
Hausman–Taylor test				
Margin	0.0244	0.0247	-0.0003	0.0028
Complexity of ballot paper	0.1850	0.2066	-0.0216	0.0146
Voter turnout	0.1072	0.1035	0.0037	0.0027
GDP growth rate	0.0568	0.1086	-0.0518	0.0380
GDP per capita growth rate	-0.0745	-0.1342	0.0597	0.0409
Unemployment rate	-0.0824	-0.0066	-0.0758	0.0848
Urban population	-0.0135	-0.0370	0.0235	0.0345
Literacy	-0.1742	-0.02471	-0.14949	0.02214
Chi2(3) =5.23	Prob>chi2 =	0.1555		

D: Hausman test for determinants of voter turnout in Ghana

Independent	Fixed (A)	Random (B)	Difference (A-B)	Standard Error
Female population	0.03575	0.0384	-0.0026	0.0213
First time voters	-0.0041	0.0307	-0.0348	0.0118
Population 60 plus	0.0059	-0.0242	0.0300	0.0142
Marginality	0.0447	0.0758	-0.0311	0.0107
Population size	0.3270	0.7412	-0.4142	0.0716
Rural population	-0.2048	-0.1389	-0.0659	0.0088
Degree plus	0.0598	0.0465	0.0133	0.0159
Married population	0.0145	-0.0007	0.0151	0.0077