

UNIVERSITY OF GHANA

COLLEGE OF HUMANITIES

POLITICAL ECONOMY ANALYSIS OF ELECTIONS IN GHANA'S

FOURTH REPUBLIC (1992 TO 2016)

BY

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(10138349)

**THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON
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RESEARCH**

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DECLARATION

I declare and certify that this thesis is my own work for the award of Doctor of Philosophy in Development Studies, and to the best of my information and knowledge, it contains no material or published work which has been accepted for the award of Doctor of Philosophy Degree or any other degree by this University or any institution elsewhere, with the exception of material used that has been duly acknowledged in the text. All other references consulted for this work have also all been duly acknowledged.

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ABSTRACT

This study analysed the determinants of participation in voting and electoral choices by citizens, and established the relationship between national presidential elections and the performance of the economy in Ghana's Fourth Republican era from 1992 to 2016. The study proceeds within the theoretical framework of political economy which looks at the interplay between economics and politics using macro-micro approach. The study conceptualised political economy as an approach focusing on the application of economic tools of analysis to the study of economy and electoral behaviour within the multi-party democratic framework of Ghana's Fourth Republic.

The study utilises macro-level data (secondary district-level data) to establish the determinants of voter participation, impairment of voter participation through the incidence of spoilt ballots, and actual voter choices using the 2000 and 2012 national presidential elections results synchronised with the 2000 and 2010 population and housing censuses respectively, and involving all 216 districts. The study also analysed the determinants of voter participation and electoral choices based on micro-level data (survey data) from a random sample of 600 respondents in four electorally-swing districts in the Brong Ahafo and Central regions to examine several hypotheses concerning electoral behaviour within the multi-party democratic framework where ethnicity was not a dominant factor influencing voter choice in order to unravel the other key factors influencing voter choices beyond the ethnicity factor.

Based on the macro-level and district-level data, the analysis of the determinants of voting participation revealed that the locality factor (urban-rural) was a significant factor. However, the results were mixed with increasing urban share of the population in a district leading to increasing turnout rate of voters for the 2000 Presidential election,

while the opposite result held for the 2012 Presidential election. Voter turnout tended to decrease with increasing proportion of age dependency ratio in a district. This suggested that districts with higher age dependency ratios tended to participate less in voting, a plausible outcome which also suggested that increasing poverty burden discouraged participation in voting. Voter turnout tended to increase with increasing proportion of Asantes in a district in Ghana and decreased with increasing proportion of Ewes in a district in the 2012 Presidential election; but did not produce clear results for the 2000 election. On spoilt ballots, the study found that for both 2000 and 2012 Presidential elections, the relative intensity of spoilt ballots was its literacy level with increasing levels linked with reduced spoilt ballots. Also, the regression analysis of voter choices for both the 2012 and 2000 national presidential elections clearly showed that ethnicity, with regards to these two dominant groups in Ghana, was a major determinant of electoral outcomes. Asantes and Ewes vote largely on ethnic lines for the respective parties that they dominate, that is the NPP for Asantes and NDC for Ewes. This particular phenomenon in the Fourth Republican era in Ghana of **Asante-Ewe countervailing voting patterns** is a manifestation of the countervailing power struggle paradigm. Further, Brong Ahafo and Central Regions are two closest swing regions where ethnic identification is not a major factor in the choice of national presidential candidates.

The random survey of 600 respondents in the four electorally-swing districts in the Brong Ahafo and Central regions allowed for deeper investigation into reasons why individuals participate and vote in an election in ways that could not be easily captured by aggregate district-level data ascribed to the "average district voter". The single most important motivating factor that would attract people to vote for a presidential candidate was his/her articulation of development-oriented issues. Other factors influencing the

choice of presidential candidates by voters included the perception of the ability of the candidate to develop and improve the economy, political party affiliation and the orientation and likeability of the candidate.

On the links between elections and development, the study found that their participation in the elections brought about increased levels of improved electricity supply, improved water supply and expanded road infrastructure. However, for individual and household economic welfare related to personal income, personal employment opportunities, personal and household educational opportunities and personal and household health status, the results of the analysis of voting participation and its links to these four measures of economic welfare were varied.

With regards to the effect of elections on macro-economic performance, using annual data the study found that there were no statistically significant differences between economic growth rates in election years and those in non-election years in Ghana's Fourth Republic (1992 to 2016). However, there were significant increases in the government budget deficits in election years compared to those of non-election years, largely as a result of excessive government spending during election years. Using quarterly data and statistical autoregressive models, it was clearly established that elections in Ghana from, 1992 to 2016 led to increased inflation and increased Treasury bill rates. A major conclusion of this study is that the enhancement of democracy through participation in the voting process would need to emphasize increased inclusive access of citizens to income and employment opportunities in the country. The study recommended that the growth of Ghana's Fourth Republican Constitutional Democracy must be linked to economic prospects, guarantee development and equity for all citizens in the country.

Keywords: Political economy, Political economy of elections, Political economy of voting, Elections, Political business cycles, Voting behaviour, Democracy, Development, Ghana's economy, Ghana's Fourth Republic

DEDICATION

This report is first and foremost dedicated to the God Almighty (Allah) for His guidance throughout my professional career and especially my PhD programme. Secondly, I would like to dedicate this report to my late father, Bukari Banyisah Tangia and my mother, Fati Bukari for their vision and unflinching support for my education. Finally, this thesis report is also dedicated to my nuclear family.

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LIST OF ABBREVIATION

CP	Conventions People Party
DF	Democratic People's Party
DPP	Democratic People's Party
EC	Electoral Commission
ERP	Economic Recovery Programme
GCPP	Great Consolidated Party
GDP	Gross Domestic Product
GDP	Growth Domestic Product
GoG	Government of Ghana
MoLG&RD	Ministry of Local Government and Rural Development
GPRS	Ghana Poverty Reduction Strategy
GSS	Ghana Statistical Service
HIPC	Highly Indebted Poor Countries
IMF	Internal Monetary Fund
INP	Independent Candidate
ISSER	Institute of Statistical Social and Economic Research
LEAP	Livelihood Empowerment Against Poverty
MASLOC	Ministry finance and Small Loans Centre
MMDCEs	Metropolitan, Municipal and District Chief Executives
MoFEP	Ministry of Finance and Economic Planning
MPS	Ministry of Private Sector Development
NCD	National Commission for Democracy
NDC	National Democratic Congress

NDPC	National Development Planning Commission
NHIS	National Health Insurance
NIP	National Independent Party
NPP	New Patriotic Party
NRP	National Reform Party
PHC	Population and Housing Census
PNDC	Provisional National Defence Council
PNP	Peoples Heritage Party
PNP	Peoples National Party
PPP	Progressive Peoples Party
PSI	Presidential Special Initiative
RPD	Renaissance People Democrats
SAP	Structural Adjustment Programme
SDF	Skills Development Fund
SOEs	State Owned Enterprises
SPSS	Statistical Package for Social Sciences
SSA	Sub-Saharan Africa
UFP	United Front Party
UN	United Nations
VP	Vote Popularity Functions
WB	World Bank

CHAPTER ONE

INTRODUCTION AND PROBLEM STATEMENT

1.1 General Introduction to the Study

The late 1980s and the early 1990s were characterised by a concerted struggle for democracy and elections, and the clamour for improved governance and development in the developing world including African continent.¹

In Africa, the clarion call for greater freedom and justice coincided with the political fallouts from the 1980s Economic Recovery and Structural Adjustment Programmes (ERP/SAP) have seemingly become the pushed factors for the democratic discourse. But, in the midst of this struggle were rather entrenched autocratic political systems dominant in the larger part of developing world, particularly the post-colonial African's political history (see Gyimah-Boadi, 2001a, 2009, 2010). Thus, this scenario was not peculiar in Africa alone, but Post World II phenomenon in the developing world as a whole. This has provided the incentive and legitimacy for popular democratic struggles in the early 1990s in what is known in literature as 'Third Wave' of democratisation (see Huntington, 1991).

¹ The early post-independent Africa was largely characterised by one-party systems (civilian one party states) and dictatorship, military interventions, numerous coup d'états and civil wars amidst poverty and underdevelopment. After more than three decades of one party system of governments and military dictatorships (or military regimes), many African countries' including Ghana (upon the promulgation of the 1992 Fourth Republican Constitution) were returned to constitutional democracy in the early 1990s. This is because, meaningful development depends on political leadership that must strengthen civic voices, demonstrate responsive governance systems and promote interest of all its citizens in the country.

The democratic struggles which triggered constitutional development, political changes and reforms in many of the third world countries, including Africa compelled the holding of elections and granting of greater civil and political freedoms (see Bratton & van de Walle, 1997; Gyimah-Boadi, 2004). This change of political and economic reforms in the early 1990s in Africa marked what is called “a watershed in African politics” (Bratton & van de Walle, 1997:6). The dramatic political reforms follow the fall of Berlin Wall on 9 November, 1989, and collapsed of the then Soviet Union (USSR) on 26 December, 1991,² coupled with the influence or pressure of the Western governments and donors converged with the activism of domestic forces in demand of democratic reforms.

Ghana like many other African countries' constitutional democratic government following the country's independence on 6 March, 1957 was overthrown by a combined military and police in a coup d'état on 24 February, 1966 (see Gyimah-Boadi, 2001, 2009; Ayee, 1997, 1998; Boafo-Arthur, 2006). The military interventions therefore truncated the democratic process in the country, and by the end of Cold-War in the early 1990s, Ghana had experienced many years of military rule than constitutional rule.

² The period before 1991, was called ‘Cold War era (1947-1991), after the end of ‘Second World War’ in 1945. The ‘Cold War’ was an ‘Ideological War’ between the then Union of Soviet Socialist Republics (USSR) and United States of America and its allies. It divided the world into Eastern bloc and Western bloc (often referred to as ‘Bipolar World’). The Cold War ended following the fall of ‘Berlin Wall’ on 9 November, 1989, and the collapsed of ‘USSR’ on 26 December, 1991. The end of Cold War therefore ushered in a ‘Unipolar World’ with constitutional democratic governance the world over including Africa, with the exception of few countries such as North Korea, Cuba and China. The new governance paradigm is about process, politics and partnerships. Governance paradigm compiles governments to expand public consultation, implementation of participatory democratic practices at the national and local levels through encouragement of popular participation.

In 1992, following a long struggle for freedom and democracy, a political transition was achieved with the holding of democratic elections in November (Presidential elections) and December (Parliamentary elections), 1992. This phenomenal political change did not happen without external and democratic pressures on the entrenched autocratic regime of the Provisional National Defence Council (PNDC). On the external front, the dramatic end of cold war era coupled with the influence or pressure of the Western governments, development partners and the donors forced the PNDC regime to concede to democratic transformation. At the domestic scene, civil liberation forces that had gone into hibernation emerged to voice out concerns for political reforms.

Thus, Ghana which was also affected by the 'Third Wave' of democratisation has undergone radical political transformation in 1992, and the seventh democratic elections (Presidential and Parliamentary elections) under the Fourth Republic were held on 7 December, 2016. Democratic elections therefore form the core of political reforms, and thereby provided an environment within which elected governments under the 1992 Fourth Republic of Ghana fashion out economic and development policies.

Arguably, a significant move towards democracy and elections in Ghana for the fourth time in 1992 follows an effort of broad consultation involving cross-section of Ghanaians, and civil society on the political future of this country. The active participation of Ghanaians in the consultative process conducted by National Commission for Democracy (NCD) put together a report entitled *Evolving True Democracy for Ghana* (Gyan, 1995).

A proposal for *Draft Constitution of Ghana* was then developed by the committee of constitutional experts. This was also followed by *Draft Constitution of Ghana* by Consultative Assembly, and which embodies multi-party democratic principles and ideals essential for national development under the Fourth Republic (see *ibid*, 1995). Consequently, a whooping majority of Ghanaian registered voters 18 years, and above voted to approve the *Draft Constitution of Ghana* by a measure of 92.6 percent of valid votes cast in a referendum on 28 April, 1992 (see Boafo-Arthur ed., 2006).

The Fourth Republican Constitution of 1992 was then promulgated, and the Presidential and Parliamentary elections were respectively held on 3 November, 1992 and 28 December, 1992. This led to the re-institution of multi-party democracy and the democratic elections that saw the inauguration of first elected government on 7 January 1993, following the first presidential and parliamentary elections under the Fourth Republic. This also marked the beginning of multi-party democracy in the country for the fourth time.

The successful conduct of these democratic elections marked important milestone in Ghana's democratic transition, and its drive towards democratic consolidation. In particular, the 2000, 2008 and 2016 General elections effected peaceful change of democratically elected governments in the country. Ghana is therefore, a good case to study political economy of elections and voting behaviour in one of Africa's new democracies.

1.2 Background to the Study

In his work titled ‘Political Control of the Economy’ Tufte said “When you think economics, think elections; When you think elections, think economics” (Tufte 1978, 65). This study examines two strands in the political economy literature,³ namely: 1) Economic voting behaviour (Kiewiet, 1983; Leighley ed., 2013; LeDuce *et al.*, 2014); and 2) Political business cycles (Nordhaus, 1975; Hibbs, 1977).

The nexus between economy and elections has received scholarly attention for a very long time, beginning with scholarly works such as Kramer (1971), Nordhaus (1975), Lindbeck (1976), Hibbs (1977), Tufte (1978), Fair (1978) and Lewis-Beck (1988). However, ‘Political control of the economy’ (Tufte’s, 1978) is the most complete effort that established the relationship between presidential elections and the economy. This initial study of elections and the economy of the US Presidential elections generated euphoria and interests among scholars, and political economy researchers in the study of political economy of elections and voting behaviour. Political economy analysis of elections therefore explores the interaction between national elections and the economy, and examines the aggregate effect of the elections on macro-economic performance in democracies (see Kayser, 2014).⁴

³ Political economy focuses on ways the state and the economy interact. It is thus, concerned with how the economy affects the state (e.g. effects of the economy on elections), and how the state affects the economy (e.g. whether independent Central Bank reduces or increases money supply).

⁴ Political economy of elections examines the determinants and consequences of voting, with an explicit emphasis on the economy. It covers the state of the art in the academic understanding of how voters respond to the economic stimuli: how voters attribute responsibility and hold political parties electoral accountable (cf: Kayser, Lecture notes, Hertie School of Governance, Berlin, 2014).

Arguably, two schools of thought or strands of study are noticeable in political economy literature. One strand of the literature relates to economic voting behaviour (Kiewiet, 1983; Lewis-Beck & Stegmaier, 2009; Leighley ed., 2013; LeDuce *et al.*, 2014), and the other relates to political business cycles (Nordhaus, 1975; Hibbs; 1977, Tufte, 1978). What really justify the study of political economy of elections?

Many scholars agree that a good economic performance correlates strongly with the popularity of incumbent governments and their ability to retain political power in a competitive democratic elections (see Downs, 1957; Fair, 1978, 1996; Key, 1966; Fiorina, 1981; Kiewiet, 1983; Lewis-Beck, 2007; Debrah, 2009; Duch & Stevenson, 2010; Leighley ed., 2013; LeDuce *et al.*, 2014).

In democratic elections, voters attach so much importance to general economic welfare conditions in the state when making their voting decisions. This means that economic conditions or welfare provide insight into what precisely drives the individual voter choice, and this has an implication for democratic accountability in terms of rewarding or punishing the incumbent party seeking re-election to retain political power and administer the state (see Downs, 1957; Duch & Stevenson, 2010; Lewis-Beck & Norpoth, 2007; Debrah, 2009, Nadeau *et al.*, 2012; Lewis-Beck *et al.*, 2013, Lewis-Beck & Whitten, 2013; Dassonneville & Lewis-Beck, 2014).

The rational average voter who considers that government is responsible and accountable for his or her economic well-being will act upon the reward-punishment hypothesis. This means that voters' will reward the incumbent government seeking re-election by voting them in good economic times, and vote against them when the economy is said to be weak as a punishment. The voter therefore makes assessment based on the available

information or based on the expectation about the government performance to make his or her decision to vote or not to vote in an election.

The central argument as expressed by scholars such as Downs (1957), Tufte (1978), Lewis-Beck (1983, 2007), Lewis-Beck and Stegmaier (2009), Debrah (2009), Leighley ed. (2013) and LeDuce *et al.* (2014) is the fact that in a rational fashion, the available information about economic and development outcomes is important to the average voter in an election in a democratic state, such as Ghana under the Fourth Republic.

Also, the reward-punishment hypothesis instigates the incumbent governing party seeking re-election to manipulate or manage the economy for electoral purposes, with the sole aim to win election and retain political power to administer the state, and thereby creates what is known in literature as 'Political business cycles' (see Kramer, 1971; Nordhaus, 1975; Lindbeck, 1976; Hibbs, 1977; Tufte, 1978; Fair, 1978; Gonzalez, 2002; Brender & Drazen, 2005; Dewan & Shepsle, 2011).

The incumbent government seeking re-election in this case adopts policy strategies (like the manipulation of monetary policy instruments, special employment schemes) and overspending to ensure the growth and development of national economy. The government does this by providing public and merit goods in the pre-election or in the election year to increase its chances of victory, and thereby suffer post-election year period slow economic growth or weaker economic performance as suggested by 'political business cycle model' (see Nordhaus, 1975; Lindbeck, 1967; Hibbs, 1977; Tufte, 1978).

The work of Nordhaus (1975) in particular underscores the fact that in election years, there is always the tendency for incumbent government seeking re-election to retain political power to administer the state engage in expansionary economic policies and social interventions in pre-election years which are considered as opportunistic measures

essentially designed for electoral purposes. Also, works on electoral politics and political economic cycles by scholars such as Acemoglu and Robinson (2001), Gonzalez (2002), Rodrik and Wacziarg (2005) as well as the Libich et al. (2010) have underscored the view that there is the tendency for incumbent governments seeking re-election to control and administer the state to spend excessively in election years in order to influence voters' for re-election, arguing that there is a link between the election years expenditure and the country's economic performance in modern liberal democracies.

Further, in supporting the hypothesis of political business cycles, Gonzales (2002) suggests that excessive spending by incumbent governments is likely to be observed in the new democracies, and this excessive spending is essentially for electoral purposes. This view is particularly important in the democracies or countries where the margin of electoral victory between the incumbent governing party seeking re-election to retain political power and the main opposition party in the presidential elections is often narrow such as the Ghanaian 2008 and 2012 Presidential election results, particularly (the 2012 Presidential election results) triggered constitutional law process in the country's apex court by the main opposition party in that election.

Ghana like many other developing economies is suffering from poor economic growth and development or unstable macroeconomy, poverty, inequality, unemployment, high interest rates, low income levels, low literacy levels in both urban and rural communities in the country. These economic conditions often place governments at certain advantage position, and therefore use economic and social policies in the direction to maximise votes in the election (see Brender & Drazen, 2005b). It is thus, important to evaluate the economic factors in explaining the political process (election and voting behaviour) in comparison to the relevance of other factors such as the objective factors (socio-demographic characteristics) or subjective factors (perceptions of the voter).

Therefore, by situating Ghana's democratic experience within the explanatory framework of political economy of elections under the Fourth Republic, the study asked the following research questions: (1) What determines electoral behaviour in a competitive democratic election? (2) How do voters respond to economic conditions as measured by welfare of the population, attribute responsibility and hold governments electorally accountable? (3) What is the aggregate effect of elections on macroeconomic performance? Or how do incumbent governments manage the economy in the pre-election and election years to influence voters?

The answers to these research study questions are not farfetched. (1) In a democratic election, voters are the key decision makers in the determination of electoral outcome, and thus, elect leaders to represent their interests in the state, and (2) Also, in the democratic sense, political power or political sovereignty reside in the people, and voting is therefore seen as the legitimate exercise of democratic power in this regard.

But, how the electorates participate and make their choice in an election, and why they do so matters greatly irrespective of whether the individual voter is rational, irrational, informed or uninformed, self-interested or collective decisions in an election time are all important in competitive democratic elections (see Miroff *et al.*, 1999). What is the justification of political economy analysis of elections in Ghana's Fourth Republic? To provide answers to this question, the study makes five specific central propositions as follows:

1. Multi-party democracy promotes competitive elections that are required for consolidating democracy at the national level, and when pursued at the level of local governance in Ghana, broadens democratic space and involvement of the wider population to deal with both national and local development issues;

2. Political decisions are substantially influenced by electoral behaviour. Economic and social development depends on political decisions. Hence, economic and social development are therefore linked to voting behaviour;
3. The level of support for the election and re-election of incumbent government depends on voters' perceived performance of the government. That is, whether the government has delivered both adequate short-term material payoffs to voters personally, or provide medium and long-term infrastructural and social services including security to communities in the country;
4. For opposition parties that want to be elected by voters, they propose alternative policies that attempt to clearly delineate the differences between them and the incumbent government (see McConnell & Brue, 2002, 497-499), for Sweezy kinked-demand curve on oligopoly theories;
5. By the working of multi-party national democratic system, development issues can be politicised as the various parties seek to establish political control of scarce national resources for economic and social development.

Against these five specific central propositions are the underlying relevance and the framework of analysis for this study. The study explores the determinants of electoral behaviour that are largely linked to rational choice and economic behaviour of voters with regards to incentives offered to them by the competing political parties within the cost-benefit analytical framework. The study also analyses the perception that voting decisions in Ghana is influenced by social determinants such as ethnicity, location (using region) and religion (using Moslems and Christians) within the structural political economy framework.

Further, the study explores and analyses other determinants of voting behaviour that are linked to macro-economic or political business cycles in democracies. This is because the existing institutional framework that runs the democratic system especially, the special powers acquired by the incumbent Republican President within the governance system enshrined in the Constitution of the Fourth Republic of Ghana, has control over monetary, fiscal and exchange rate policy instruments in pre-election and election years. This study argues that political and economic issues of voter participation and choices in an election are growing in importance in both urban and rural Ghana, relative to social and party identification issues in the electoral politics under the Fourth Republic, 1992 to 2016.

The conventional position of the study is therefore that the unresolved problems of unemployment, poverty and income inequality are the underlying practical and theoretical important issues for the study of economy and electoral behaviour. Therefore, the study is in two parts: 1) The first part of the study examines economic voting and electoral behaviour; and 2) The second part of the study deals with extension of economic voting to macro-economic or business cycles in Ghana's Fourth Republican era, 1992 to 2016.

1.3 Statement of the Problem

Ghana returned to constitutional democracy for the fourth time on 7 January, 1993 following the Presidential and Parliamentary elections of 3 November, 1992 and 28 December, respectively in 1992. A crucial component of any successful democracy is the level of citizens' participation in the democratic elections to express their preferences in terms of parties, candidates and development policies and issues.

In the democratic process, although the outcome of elections is very important, the determination of the factors that condition voters' participation and choices in elections, and the relationship between elections and the economy is even more critical. This means that in a representative democracy, citizens often hold governments accountable in an election, and reward them with vote in good economic times, and punish them in bad economic times. Therefore, a conventional wisdom in the study of political economy of elections is that governments manage the economy essentially for electoral purposes (see Nordhaus, 1975; Hibbs, 1977; Tufte, 1978). In the words of Nordhaus:

While political economy has increasingly concentrated upon the behaviour of markets, in some areas it is impossible to ignore the interaction between economic motivation and political decisions. The theory of political business which analysis the interaction of political and economic systems arose from the obvious facts of life that voters care about the economy while politicians care about power (Nordhaus, 1975:1).

In the context of the above statement, citizens in the democratic state hold those seeking political power to control the resources in the state responsible. Whereas, the governing party seeking re-election to retain political power and manages the economy to win voters choice, the opposition party (ies) often present alternative economic and social policies to the electorate in this regard.

In view of the above statement as suggested by Nordhaus (1975) three important theoretical research questions worth consideration for this study. These are:

What determines voters' participation and choices in competitive democratic elections in Ghana's Fourth Republic? How do voters' perceived the nexus between elections and development outcomes as measured by welfare of the population? What is the aggregate effect of elections on macroeconomic performance in Ghana's Fourth Republic?

A large body of literature on electoral politics has provided analysis of the past Ghanaian elections in the Fourth Republic, but the studies could not provide adequate answers to such research questions. All these useful studies have focused on explaining democratic processes and democratic institutional development (see Boafo-Arthur, 2006; Gyimah-Boadi, 2001, 2004, 2009; Ayee, 1997, 1998, 2001, and 2002). That is, the available studies on Ghanaian elections focus on explaining democratic processes, and often largely based on qualitative and descriptive analysis.⁵

Also, available aggregate election data provided by the Electoral Commission of Ghana on the Presidential elections under the Fourth Republic (1992 to 2016) have limited information on the explanatory factors that determine voter turnout and the share of the total votes cast that are obtained by various presidential candidates, and are largely inconclusive in explaining the relationship between economy and electoral behaviour.

The aggregate election data though sheds some broad explanatory relationship between the economy and electoral behaviour in the country is limited in explaining the determinants of participation in voting and electoral choices under Ghana's Fourth Republic. Besides, the aggregate election data do not explain the electoral behaviour of individual voters.

⁵ Econometric modelling of the political process, regarding the interaction between elections and economics is limited. Literature on Ghanaian elections under the Fourth Republic is largely qualitative with little descriptive statistical analysis (This approach is referred to as 'Traditionalist Approach'). It is an approach that describes democratic processes, political institutions and theories of democracy. What is largely missing in the study of elections in Ghana's Fourth Republic is the use of 'Behavioural Approach'. Behavioural approach is the use of economic tools of analysis to the study of economy and voting behaviour (i.e. quantitative analysis). This study is credited by its grounding in econometrics approach by the use and interpretation of statistical data.

Further, the existing micro-level studies in Ghana are also inadequate, as often they do not provide a direct link between voting behaviour and economic welfare (both individual welfare and aggregate or community welfare). The micro-level studies though more informative and allow investigation into the reasons why individual voters often vote, are also inadequate and do not provide reasons why individuals voted in a particular way. That is, few of the studies established the synergies on the influence of the economy on elections and vice versa in Ghana's Fourth Republic (see Debrah, 2009).

Though a lot of lessons can be drawn from these studies, voters' aggregated preferences in the elections have not been adequately studied. In other words, there is limited information on the determinants of participation in voting and electoral choices. Further, the effect of the opportunistic behaviour of governments/politicians in terms of excessive use of the power of incumbency during election years on economic outcomes has not been adequately investigated to establish the effect of national presidential elections on the performance of the economy in Ghana's Fourth Republic. This means that the phenomenon is largely understudied in the case of Ghana's Fourth Republic.

Therefore, a major motivation of the study is to emphasise the theoretical difference between political desires and economic outcomes as measured by economic welfare of the population. This is the research gap that attracts the scholarly interests, and underlying relevance of this study. The study is an addition to the existing literature on the economy and electoral behaviour in Ghana's Fourth Republic, and thus contributes to filling the knowledge gaps.

In line with the main supposition or hypothesis of political economy of elections, the study sets out to look at the determinants of participation in voting and electoral choices, and established the relationship between presidential elections and the performance of the economy in Ghana's Fourth Republic. This is thus a study of economy and electoral

behaviour. It explains how voters respond to economic welfare conditions in the state, attribute responsibility and hold the incumbent governments electorally accountable.

The analytical framework of the study assumes that voters' are economically rational beings and evaluate government's economic policies and performance in elections. The framework also assumes that government expenditure typically increases on activities with short-term payoffs during election years to influence voters to vote, especially when the incumbent government is seeking re-election to maintain political power. This study conceptualised political economy as an approach focusing on the application of economic tools of analysis to the study of economy and electoral behaviour. It therefore, provides a comparative base documentation on the nexus between elections and economic development outcomes by providing scientific literature, quantitative analysis and empirical answers to the research questions and/or research hypotheses for this study within the multi-party democratic framework of Ghana's Fourth Republic.

1.4 Research Objectives

The main objective of the study is to analyse the determinants of electoral behaviour, and to establish the relationship between elections and the economy. The time frame for the study is the Fourth Republican Constitutional era from 1992 to 2016.

Specifically, the study seeks to:

1. Examine how socio-economic factors influence voter turnout and the share of the total votes cast for the winning candidate in the 2000 and 2012 National presidential elections (based on the district-level aggregate data for all districts in Ghana);
2. Determine the nexus between national elections and development outcomes in the 2016 Presidential elections based on a survey of 600 respondents from four

electoral-swing constituencies (Agona East, Effutu, Techiman North and Sunyani East);

3. Analyse whether the dynamic behaviour of economic growth (based on changes in real GDP), government budget deficits, and inflation and Treasury bill rates is affected by the timing of elections, 1992 to 2016.

1.5 Research Questions

The study questions are mirrored by a major complementary enquiry that asks a conventional question: *Who is voting and for whom and why?*⁶

1. What are the factors that influence people to participate and vote in a national presidential election?
2. How do voters perceive the effect of their participation in national elections on their individual/household welfare, and on the aggregate welfare of their communities?
3. Does the timing of national elections have an effect on the performance of the overall economy as measured by macroeconomic indicators related to economic growth and government budget deficits

⁶ This complementary research question seeks to establish and explain individual voter socio-economic characteristics and group factors, as well as presidential candidate and political party attributes that influence participation and electoral choices in national presidential elections in Ghana under the Fourth Republic (1992 to 2016), using primary data gathered from survey (see chapter 7 and chapter 8 of this report).

1.6 Research Hypotheses

The basic rationale in the study of economy and elections is the reward-punishment hypothesis which states that "when the economy is good, voters will reward the incumbent governing party with their vote, and when the economy is bad, voters will punish the incumbent governing party by casting their vote for the main challenger" or the opposition party in an election (Lewis-Beck & Stegmaier, 2007:1). This explains the simple relation between elections and the economy, whereby the electorate holds the incumbent government seeking election to maintain political power, responsible for their economic welfare (see Lewis-Beck & Paldam, 2000; Lewis-Beck & Stegmaier, 2009; Nadeau *et al.*, 2010; Nadeau *et al.*, 2012; Lewis-Beck *et al.*, 2013, Lewis-Beck & Whitten, 2013; Dassonneville & Lewis-Beck, 2014).

The incumbent government is punished by the voters in case of poor performance of the economy, and rewarded with their votes in case of good performance. How does the economy performance (or economic conditions) influence the results of elections more specifically? Or how do elections influence economic performance? In the first place, standard responsibility hypothesis also referred to as 'heart of the economic voting theory and studies' must be presented and discussed. Table 1.1 below presents the questions asked by economic voting studies as suggested by Tucker (2006: 5).

Table 1.1: Questions Asked by Economic Voting Studies (Tucker's classification)

Hypothesis	Governing	Party Type
Standard Economic Voting Hypothesis	Do incumbent parties perform better if the economy is better?	Do certain types of parties perform better if the economy is better/worse?
Conditional Economic Voting Hypothesis	Under what conditions do we find more support for the claim that incumbent parties perform better if the economy is better?	Under what conditions do we find more support for the claim that type of parties perform better if the economy is better/worse?

Source: (cf: Tucker, 2006: 5).

Based on the opinion of scholars with regard to the nexus between elections and economic development, the specific hypotheses stated for this study are:

Hypothesis 1

H₀: The socio-economic factors significantly explain voter turnout and choices in the 2000 and 2012 Ghanaian Presidential elections;

H_i: The socio-economic factors do not significantly explain voter turnout and choices in the 2000 and 2012 Ghanaian Presidential elections;

Hypothesis 2

H₀: The state of the economy as measured by economic welfare of the population significantly explains voter participation and choices in the 2016 Ghanaian Presidential elections;

H_i: The state of the economy as measured by economic welfare of the population does not significantly explain voter choice in the 2016 Ghanaian Presidential elections;

Hypothesis 3

H₀: The timing of elections in Ghana's Fourth Republic significantly affects the performance of real GDP, inflation, government expenditure and/budget deficits, and Treasury bill rates, 1992 to 2016;

H_i: The timing of elections in Ghana's Fourth Republic does not affect the performance of real GDP, inflation, money supply, exchange rate and government expenditure and/budget deficits, 1992 to 2016.

1.7 Operationalisation of Variables

1.7.1 Operationalisation of the study

The study is mainly orientated to the search of economic voting, but hypotheses related to other politically motivated factors have been tested. That is the study evaluated economic factors in explaining the political process (election and voting behaviour) in comparison to the relevance of other factors such as the objective factors (socio-demographic characteristics) or subjective factors (perception of the voters').

However, in the economy and electoral behaviour studies, the dependent variable is often the popularity of government in power or the responsibility object (party, politician, and coalition), votes or changes in votes. Therefore, in the operationalisation, it is important to decide what is the responsibility object, and what attribute will be measured. Thus, in the formulation of hypotheses for this study, it is important for the party in government to be treated as a responsibility object, and define this concept more precisely, with reference to particular political party in government, for the purpose of this study.

1.7.2 Macro-Economic Variables

For the period 1992-2016, Ghana Statistical Service, Ministry of Finance and Economic Planning, and Bank of Ghana provide data on the economic indicators such as economic growth rates, money supply, government expenditure, government budget deficits, inflation rate, exchange rate and exchange rate depreciation, 91day Treasury bill rate, for testing economic voting and political business cycles hypotheses.

Economic voting as measured by welfare of the population is considered as important variable in the determination of voter choices and electoral outcomes in democracies. Therefore, significant effects of the economic factors on voter choices and electoral outcomes in democracies have been well articulated by scholars such as Downs (1957), Hibbs (1977), Tufte (1978), Lewis-Beck (1983, 2007), Gonzales (2002), Leighley ed. (2013) and LeDuce *et al.*(2014).

1.7.3 Socio-Economic Variables

There is also a relationship between socio-economic status and electoral behaviour in a democracy. That is individual socio-economic status as measured by his or her level of education, occupation and income level directly or indirectly influences his or her voting behaviour.

The individual health, education, income, employment and others like register to vote in an election all affects individual life. This means that the socioeconomic status of average voter is positively correlated with his or her participation and choice of vote in an election (see Lazarsfeld *et al.*, 1944; Lipset, 1960; Kriesberg, 1963; Murray *et al.*, 1977).

Hence, this study expects that health, level of education, employment and income levels of people or registered voter population should correlates with their participation and

choices in the Ghanaian elections under the Fourth Republic, for the 2000, 2012 and 2016 Presidential elections.

Generally, people of a low socio-economic status or with poor economic conditions in the democratic society such as Ghana are not so much enthused about politics or elections, and also participate less in the voting process or civic engagement in the country. On the other hand, people with good education, good health condition, employment and also earn high incomes appear to be politically active in democracies (see Kriesberg, 1963; Murray *et al.*, 1977). Therefore, for the purpose of this study, it is important to establish that turnout and choices are positively correlated with socio-economic status of the individual voter during elections under the Fourth Republic of Ghana, particularly for the 2000, 2012 and 2016 Presidential elections.

This study has established that an individual voting decision in an election in Ghana is influenced by economic and development outcomes as measured by his or her economic welfare, and other objective factors (socio-economic factors) or subjective factors (perceptions of the voter) in the Ghanaian elections under the Fourth Republican era, 1992 to 2016.

1.8 Scope of the Study

The study examines political economy of elections within the framework of Ghana's multi-party democratic process in Ghana, 1992 to 2016. The study covers the understanding of how voters respond to economic stimuli, and hold politicians electorally accountable. The state of the economy is considered as the key issue in the contemporary election studies, and as such an economic vote is the evidence that citizens

hold their governments electorally accountable for poor economic performance (see LeDuce *et al.*, 2014).

It is noted that the effective constitutional democratic governance and economic development must be judged by the extent to which democratic structures, institutions, norms and values have been rooted in the political and economic behaviour at the national and local levels political processes, especially the elections.

1.9 Justification of the Study

The trends in Ghana's elections held since 1992 under the Fourth Republic revealed important dynamics and complexities that make the application of political economy tool of analysis all the more portentous.

At the heart of contemporary development lexicon is the political economy debate. In one hand, scholars are of the view that political transition has become a window of opportunity for economic development created by the established modern democracy. On the other, scholars argued that political economy of elections is an issue in economic research in contemporary times because it integrates political process into the analysis of economic problems (see Persson & Tabellini 2000; Drazen, 2000).

Also, despite the importance of election in the democratic process, the study of average voter rationality in the elections is limited under the Fourth Republic of Ghana. The available studies concentrate on democratic institutions, election outcomes or explaining consolidating democracy. But, this study aims to unearth the synergies between elections and the economy in the Ghanaian elections, from 1992 to 2016.

Thus, the earlier studies of Ghanaian electoral politics are limited by their failure to establish elections and economy relationship. The earlier studies, therefore do not enrich the Ghanaian polity the knowledge of Ghana's democratic electoral processes and add relatively little indeed to the understanding of interplay between economics, elections and politics in Ghana's Fourth Republic using macro-micro approach. This is the lacunae in the Ghana's constitutional democratic governance and development, generally needed to be filled. The study thus, contributes to filling the knowledge gaps in the Ghanaian elections in this regard, using the 2000, 2012 and 2016 Presidential elections.

More so, the inauguration of the Fourth Republican Constitutional Democracy which has some institutional, legal and procedural provisions intended to promote and safeguard the democratic practices in the country since 1992. This adds urgency to the need for understanding of how Ghanaian society and democratic institutions and practices could shape the prospects for Ghana's democratic society. Thus, if it is true that the electoral process encapsulates the entire politics of a democratic society as expressed by Butler et. al. (1997), then it is important to understand the politics, economics and elections, and the implication for democratic governance and development under Fourth Republic of Ghana.

Moreover, the findings of this study may be relevant for government in power, opposition and politicians, policy makers and citizens in many ways. In this regard, the study could, for instance give an orientation to incumbent governments whether priority should be given to sustaining economy growth or manipulate or manage the economy in order to win elections.

The study could also provide knowledge and opportunity for students of politics and development studies for further study or research either in the same topic or similar one for the advancement of democratic project of Ghana's Fourth Republican Constitutional Democracy and economic development. The findings of the study could also provide citizens the opportunity to hold their elected representatives accountable, based on promises made to them during electioneering campaigns, and this can further enhance the country's democratic credentials, and hence democratic consolidation.

1.10 Organisation of the Study

The study is in two parts: The first part of the study examines economic voting/electoral behaviour (objectives one and two), and the second part of the study deals with extension of economic voting to macro-economic or business cycles (objective three). The study is therefore, based on two strands of literature in political economy of elections and electoral behaviour organised into ten chapters. The main and the complementary research questions are analysed conceptually and empirically.

First, the theoretical and conceptual part of the study develops political economy analytical framework that offers explanation of economy and electoral behaviour relationship. The conceptual framework identified and develops desirable attributes of voters' rationality, socio-economic and macro-economic variables and the behaviour of incumbent governments and parties in power within Ghana's multi-party democratic framework, from 1992 to 2016, and this covers chapters one, two, three, four and five.

The second part covers the empirical study and analysis. Thus, the empirical aspect of the study covers voting behaviour and economic voting covering chapter six, seven, eight and nine. Therefore, the empirical analysis of the study focuses on the economy and electoral choices of voters, behaviour of politicians in terms of manipulation of

macroeconomic indicators in pre-election and election years. The detailed organisation of the study is as follows:

Chapter one of this study is the general introduction and background to the study. It provides the background of the political economy of elections in addition to putting the entire study into context. The research aim, specific objectives, research questions, hypotheses as well as the scope for the entire research is presented. This chapter also outlines the significance and the benefits of the study;

Chapter two is the economy and elections nexus. This chapter documents existing empirical literature on the subject matter. It contains detailed and critical review of the literature from which the analysis is based. It includes the review of political business cycles, the economy and voter prospective and retrospective voting behaviour, the pocket and sociotropic vote, and finally, the economics, elections and voting behaviour in Ghana's Fourth Republic;

Chapter three presents political economy of Ghana's Fourth Republic. The chapter analyses and discusses the political processes and electoral cycles, as well as the economic policies and performance of various governments under the Fourth Republic. The chapter elucidates political processes under the Fourth Republic of Ghana, and how the economic policies and performance of the various governments impact on voters' choices, and effect change of government. This build up leads to the analysis of Ghana's economic policies and performance, and the democratic processes in Ghana's Fourth Republic;

Chapter four is the theoretical and conceptual framework of the study. The chapter documents existing literature on theoretical models of elections and political business model. It contains detailed and critical review of the literature from which the analysis is based. It includes the review of conceptual definitions of political economy, political economy of elections, political economy of voting behaviour, theoretical and conceptual framework. The study compares the theoretical models and approaches of electoral studies. Based on the theoretical review, the study adopts a theoretical framework to analyse the research problem of this study. Finally, the chapter discusses the application of theoretical models of elections in the context of Ghanaian elections, 1992 to 2016;

Chapter five is the profile of the study area, study philosophy and research methodology adopted for this study as well as description of the entire research process. It initially discusses the profile of the study districts, followed by philosophical position of the study, approach and methodology of the study. It then describes the kind and nature of data collected at various stages of the research. The techniques of data analysis and model specification adopted are then discussed and justified as well as the procedures involved in the collection and analysis of the data. The design, testing and validation of the designed framework are also discussed together with methodological issues of political economy of election studies;

Chapter six examines macro-level determinants of voter participation and choices in the Ghanaian elections based on aggregate district level data. The chapter looks at the presidential election results in all the 200 and 275 constituencies for the 2000 and 2012 Presidential elections respectively. The presidential results are combined into the socio-economic factors and demographic characteristics data base comprising of 110 and 216 districts. It focuses on variables such as the education, employment, religion, rural-urban divide and ethnic mobilisation, and how these characteristics influenced voter

participation or turnout ratio, spoilt ballot proportion and the share of the winning party votes in the 2000 and 2012 Presidential elections. The chapter defines the characteristics of each of the 110 and 216 administrative using the 2000 and 2010 Population and Housing Census data, conducted by Ghana Statistical Service. This follows up with detailed analysis of district-based polling station voter data to compare the socio-economic characteristics which influences voter participation and electoral choices in the presidential elections in both urban and rural Ghana, based on the concept of the "average district voter";

Chapter seven analyses and discusses micro-level determinants of voter participation and choices in the Ghanaian elections based on the survey of voters in a cross-sectional study of four key swing districts of the country. It analyses and discusses the demographic characteristics of the respondents, and how these socio-economic factors influenced voter participation and choices in elections in Ghana. It establishes individual voter and group factors, and candidate and political party attributes, which influence voting behaviour and participation in national elections in Ghana using primary data gathered from the survey of 600 randomly selected respondents at the household levels;

Chapter eight is the elections and the economic development nexus as measured by both individual and aggregate economic welfare using the survey data. It analyses and discusses how voters respond to economic stimuli and development outcomes in an election. That is how voters attribute responsibility and hold the incumbent governments electorally accountable.

The abuse of incumbency during elections in order to retain political power by ruling governments has become a contentious issue in the political economy literature. This chapter therefore examines how economic conditions as measured by economic welfare

of the population influenced voters in the previous Ghanaian elections as well as the 2016 General elections under the Ghana's Fourth Republic;

Chapter nine analyses and discusses the aggregate effect of elections on the macroeconomy of Ghana's Fourth Republic. It explores the linkages between elections, and the incumbent government economic and social policies to determine the aggregate influence of elections on economic welfare of the population as measured by indicators such as economic growth rates, money supply, government expenditure, government budget deficits, inflation rate, exchange rate, exchange rate depreciation and 91 day Treasury bill rate. It discusses the influence of elections on economic growth and development as measured by welfare of the population in Ghana using secondary data available from the Ghana Statistical Service and Bank of Ghana on macroeconomic indicators. The chapter examines and tests whether political business cycles exist in Ghana's Fourth Republic, including issues related to incumbency factors;

Chapter ten provides concluding statements regarding the entire research study. It provides a summary of the rationale for the research, a summary of findings and the achievements by providing answers to the overall aim, specific objectives and questions of the study. It outlines the contribution of the study by stating its philosophical contributions, theoretical contributions and practical contributions for electoral politics and democratic consolidation in Ghana, and recommendations for further political economy of elections research study.

1.11 Conclusion and Summary of Chapter

This chapter has provided general introduction to the study and touched on the background to the study, problem statement, overall aim and specific objectives and the research questions. It also identifies the justification or the significance as well as the benefits of the study to academia, policy makers and political economy of election researchers. This study examines the contemporary determinants and consequences of voting with an emphasis on the economy to influence central government policy. The motivation is to establish the relationship between elections and the economy to underscore the economic conditions of election outcomes and political desires.

CHAPTER TWO

ECONOMY AND ELECTION NEXUS: AN EMPIRICAL REVIEW OF THE LITERATURE

2.1 Introduction

This chapter documents empirical literature on the economy and elections nexus. The review takes into consideration both cross-country and country specific studies. The study reviews the literature based on economic voting from the prospective and retrospective perspectives as well as self or pocketbook (egotropic) and collective (sociotropic) voting behaviours.

The empirical literature gives an account of similar studies and their findings on the present work. The review takes into consideration their objectives, samples sizes, designs, findings and conclusions. A brief and critique of the various studies on the economy and electoral behaviour including their strengths and weakness are given considerable attention and organised according to the conceptualisation of the research problem of this study.

What is missing from the empirical literature also called research gap is identified. This study filled the void by identifying the determinants of elections, and estimate political and vote popularity functions to underscore theoretical differences of political desires and economic outcomes. The review of relevant empirical literature gives deeper understanding of the research problem in context, and also forms the basis for comparison with the findings and conclusion of the study.

For the purpose of this study, the empirical review explaining the economy and election nexus is divided into four sections as follows: 1) Voting behaviour; 2) Economic voting; 3) Political business cycles, and 4) Economy and electoral behaviour in Ghana's Fourth Republic.

2.2 Voting Behaviour

This section review and discuss the context in which voters' participate in an election and make their choices. The study of political economy of elections and electoral behaviour constitutes a significant area of theoretical and empirical investigation in the electoral studies. The underlying assumption is that the nature of election and electoral system can affect voting, voters may choose to protest, abstain or vote tactically (see LeDuc *et al.*, 2014). Therefore, the question is: *In what context do voters' make choices?* In the context, traditional democratic theory argues that, in order for good democratic, citizens in the nation-state such as Ghana, be well informed themselves about the parties, candidates and more importantly political and the development issues. In this case, while some voters vote based on party identification or affiliation, others rely on information, provided by friends, relatives, peer or pressure groups, and the print and electronic media as suggested by 'Dominant School of Thought' (see Dunleavy & Husbands, 1985).

The other view is that in the philosophical sense of the word, all human beings are rational creatures operating rationally in both the political and economic sense. This is underpinned by the empirical evidence that man behaviour is not only influenced by economic factors, but socio-economic factors like age, gender, religion, location, ethnicity, region and social class, emotional and irrational factors emanating from pressure groups, religious and communal factors, money, charismatic leaders, and a host of other factors that influence the choice of an individual in an election.

Besides, in an election situation, the average voter already formed opinions (*predispositions*) and over the course of electioneering campaign, the voter acquire (*information*) from different sources such as the parties, candidates and the mass media (print and electronic).

Thus, the interaction between these factors takes place within the voting in context such as the underperforming economy, debates on policy issues like the health, the environmental or social issues (see LeDuc *et al.*, 2014).

Finally, it is important to study economy and electoral behaviour in terms of the various longer-term and shorter-term elements that interact to determine *how and why* voters make the electoral choices the way they do. The process of opinion formation of an election revolves around two interacting forces as 'predisposition' and 'information' (LeDuc *et al.*, 2014).

The implication is that the average voter acquires information from campaigns and policy issues that are debated, in radio, televisions and newspapers and other sources like the social media, may cause them to abandon the predispositions before the elections or held on to them or may even reinforced those predispositions altogether. The longer-term and shorter-term factors that interact to determine *how and why* voters make their choices the way they do are indicated in the Table 2.1 below.

Table 2.1: A Framework for the Study of Voting Behaviour and Election Outcomes

Longer-Term Factors	Medium-Term Factors	Short-Term Factors
Demographics	Economic Performance	Candidates
Partnership	International Conflicts	Media
Social Change	Public Policies	Money
Value Change	Development Projects	Organisation
Generational Replacement	Community Development	Debates
	Programmes	Campaign Events
		Turnout

Source: Literature review, (cf: LeDuc *et al.*, 2014:141).

2.3 General Studies on Economic Voting

The economy and electoral behaviour literature documents a link between economic welfare conditions and voting in an election. The relationship between the economy and elections has been given different conceptualisations and definitions, but for the purpose of this study, economic voting can broadly be defined as the aggregate welfare conditions that impact negatively or positively on the individual voter and influence his or her electoral decisions.

In its simple terms, it refers to how the socio-economic welfare of the voter correlates with his or her choice in an election. This is because, the common interest of average voter is self-economic wellbeing, and make his or her decision to vote with regards to the performance of macroeconomic such as inflation (high prices of consumer commodities), and unemployment situation in the country (see Kinder & Kiewit, 1979).

However, while some schools of thought have different views, others such as Monroe and Erickson (1986) conclude that economic factors such as inflation and unemployment have no effect on support for either the governing or opposition party in an election. It is assumed therefore that the choice made in an election meant to enhance the individual economic welfare. As a result of this, scholars have expressed interest in the study of economy and electoral behaviour, and a lot of published works exist on subject matter under study. But, for the purpose of this study, the literature on economic voting is done and analysed at two levels. These include: 1) Cross country and country specific studies, and 2) The nature economic conditions and electoral behaviour.

2.3.1 Cross Country, and Country Specific Studies

The initial economic voting studies used macro approach using macroeconomic indicators such as economic growth, unemployment, inflation to determine their significance on vote choice (see Goodhart & Bhansali, 1970; Kramer, 1971; Frey & Gradbers, 1972; Rosa & Amos, 1976). These studies suggested that voters' response strongly to economic conditions in an election year in the democratic system. The current study wants to ascertain individual economic welfare and his or her voting behaviour.

The economy and electoral behaviour studies largely began with Tibbits (1931), using quantitative surveys analysis. Tibbits tried to find the relationship between economic fluctuations and electoral outcomes in the democratic systems. The governmental popularity in a competitive democratic elections research study followed the work of Tibbits and was popularised by Mueller (1970), who sought to establish the link between government popularity, and the rate of unemployment. The conclusions from these studies are varied with some claiming that there is a strong relationship between

economic factors and the vote choice, but others present contradicting results. This study broadly discussed the economy and election nexus with the focus on Ghanaian elections.

The first empirical study to evaluate the hypothesis was the work by Goodhart and Bhansali (1970). They examined the economy and election relationship and analysed unemployment, inflation and party support in the United Kingdom (UK). Their conclusion was that the support for the Labour Party increases with the rise of unemployment and inflation; and the support for Conservative Party decreases with the rise in unemployment and inflation. The studies established dissatisfaction with ruling governing parties seeking in relation high unemployment rates as well as inflation rates in advanced democracies as determining factors in an election.

The current study is instigated by several empirical studies that established the relationship between economic welfare conditions and the voting in the democratic system, and thus seeks to establish election and development nexus in four selected districts of the Central and Brong-Ahafo regions of Ghana.

In building on these findings, Erikson (1989) analysed the effect of economic growth on presidential vote, and concludes that economic growth has a significant positive effect on the incumbent's vote share in an election. Also, Persson and Tabellini (1990) find a strong support for small size of government under presidential regimes, and weaker support for majoritarian elections associated with less public goods.

A study of 197 elections in 17 Western countries by Paldam (1991) using government swaps in relation to economic fluctuations also showed significant relationship. Further, Powell and Whitten (1993) extended the population of study to 202 elections in 19 countries and established more significant results than Paldam (1991).

Thus, Powell and Whitten argued that:

A large literature has demonstrated that such economic factors as growth, inflation, and unemployment affect the popularity of incumbents within democratic countries. However, cross-national aggregate analyses of economic voting show only weak and inconsistent economic effects. We argue for the incorporation of political factors that shape the electoral consequences of economic performance (Powell & Whitten, 1993:391).

They argued that unemployment and inflation are significant factors that voters consider in the democratic elections, but their results were also inconclusive and calls for further research on economy and electoral behaviour.

Pacek and Radcliff (1995) examined economic voting in the major industrial democracies using pooled time series data for 17 nations from 1960 to 1987. The study concluded that (a) countries with low levels of economic welfare has considerable influence on vote choice in the elections, but (b) the economic conditions play less role in elections in countries with high welfare conditions. The current study is a single country study, Ghana Fourth Republic from 1992 to 2016 in order to ascertain the determinants of voter participation and choices, and establish the economic and elections relationship.

Further, Whitten and Palmer (1999) extended Powell and Whitten (1993) analysis and extended to view to larger number of observations, and concluded that voters used economic growth as an important determinant of vote choice during elections. Nadeau et al. (2002) also built on Powell and Whitten (1993) work, but focus on the importance of clarity of responsibility in economic voting, and argue that the clarity measures do not only vary across space, but also over time in specific countries.

Anderson (1996: 447) investigated the performance of government in what he referred to as 'barometer elections' and defined it as: "Elections that reflect changes in citizen's attitude towards the government in response to changing political and economic conditions, absent the opportunity to install a new executive."

In their study, Chappel and Veiga (2000) used data from 13 European countries to analyse the effects on macroeconomic variables on election outcomes using different estimation methods. They find that high inflation rate adversely affects the incumbent government seeking re-election bid to retain political power.

Anderson (2000) also studied economic voting and political context in comparative perspective using individual-level survey data collected from 13 European democracies. The findings suggest that voters' ability to express their dissatisfaction with economic performance in the country is often enhanced when the mechanisms of political accountability are simple and transparent. Lewis-Beck and Stegmaier (2000) opined that economic conditions shape election outcomes in the world's democracies.

In good economic times governing parties are kept in office, but in bad times these governing parties are pushed out. Also, Dutch and Steven (2006) examined the magnitude of economic vote over time and across nations using data of 163 national surveys from 19 countries over two decades. They found out that the economic vote varies significantly across national contexts and over time, and established that the economy is a significant determinant of vote choice.

More importantly, Anderson (2007) said, "the justification for research on economic voting has been its role in shaping democratic accountability, and further argued that economic voting does not function as envisioned by advocates of democratic accountability" (Anderson, 2007:271).

Brender and Drazen (2008) used data from 74 countries to test whether good economic performance and expansionary fiscal policies of the government are rewarded by voters in the elections. The results indicate that bad policies (deficits) prior to elections are penalised by voters, while they reward the government with votes when there is budget surplus or balancing finances in the country. Dutch and Steven (2008:338) conclude that: "Economic voting is pervasive indeed; there is almost no variation in its broad nature across different contexts". That is, poor economy hurts incumbents and helps opposition parties.

Lewis-Beck and Nadeau (2010:288) said voters "reward the incumbent for good times, punish it for bad economic times." Also, the study of eight European countries by Kayser and Wlezien (2011) using Eurobarometer data from 1976 to 1992, found that there is an inverse relationship between partisanship and the economic vote. In expanding on the idea of "benchmarking" which placed the economy in the international context, Kayser and Peress (2012) studied the post-2008 elections, and find that there is an effect of relative economic growth on vote share among voters, but they added that the effect of unemployment on vote share was not statistically significant.

Other scholars have also studied the relationship between government support and the economic performance in the election time by estimating equations known as popularity or vote share functions (Bruckner & Gruner, 2010; De Neve, 2013). These point to economic and vote choice relationship whereby the electorate hold the incumbent government responsible for their economic welfare (see Lewis-Beck & Paldam, 2000; Lewis-Beck & Stegmaier, 2000; Nadeau *et. al.*, 2010, 2012).

Nadeau *et. al.* (2013:565) study of micro-level effect on economic vote argues that there is a great relationship between economy and electoral behaviour. The study concludes that “voter do not see economy as a mirage, but rather see it clearly and that economic perceptions when properly understood have a greater impact on electoral outcomes than imagine. Also, in their study of the ‘buck stops over there, and the benchmarking elections in the open economy’ Kayser and Peress (2013) suggested that ‘voters’ punish governments less for weak economies when those economies are highly globalised’. They also argued that ‘increasing integration into the international economy implies smaller deviations from international business cycles’ and, hence, smaller effects on the vote.

Lewis-Beck *et al.* (2013: 524) also study the ‘nature of economic perceptions in mass publics’ and concludes that “voters who believe that the nation's economy has been worsening are more inclined to vote against the incumbent president than are those who believe it has not been getting worse” They study further explained that “this relationship could be present because voters condition their support for the incumbents upon their perceptions of the economy, or, alternatively, because they condition their perceptions of the economy upon their underlying, partisan-based support of the incumbents” (*ibid*, 2013: 524). In supporting this argument, Dassonneville & Lewis-Beck (2014: 376-377) concluded that the “link between the economy and incumbent vote

share becomes more pronounced in times of economic crisis.” This is because, “voters have sometimes been found to be more responsive to negative economic information, as opposed to positive economic information.”

Jenny and Leonard (2014), based on their work in Benin and Kenya, concluded that vote-buying in sub-Saharan Africa is an incomplete transaction between candidates and voters, and that constituency-level variables such as patronage or targeted public goods have stronger effects on voting behaviour than electoral money and gifts. Nicolas et al. (2014) conducted an analysis of economic and political data of 43 Sub-Saharan Africa countries from 1982-2012, and concluded that in those countries, people hold governments accountable for poor economic performance, and reward them when the economy is good, and vice versa in the elections.

Dassonneville and Lewis-Beck (2014: 372) also studied the ‘possibility of a micrological fallacy through rigorous analysis of a large time-series cross-sectional data set of European nations’. The study concluded that “macroeconomy strongly moves national election outcomes, with hard times punishing governing parties, and good times rewarding them,” and that “negative growth, has much greater electoral effects than positive economic growth.” The principal economic vote indicators are listed in Table 2.2 below.

Table 2.2: Summary of Principal Indicators in Early Economic Voting Models

Model	Dependent Variable	Economic Indicators	Political Indicators	Principal Economic Findings
Goodhart and Bhansali (1971)	Governmental Popularity	Unemployment, Inflation	Electoral cycle effects	Unemployment and Inflation are significant in predicting popularity
Mueller (1970)	Presidential Popularity	Unemployment	Incumbent cost Rally-Around the Flag War	Asymmetrical effect(higher unemployment=president punished, lower unemployment=no reward)
Kramer (1971)	Congressional Vote	Monetary income prices(consumer cost of living index) Real personal income, unemployment	Incumbency effect, Presidential coat-tails effect	Real personal income significant in predicting vote, unemployment and price inflation not significant

Source: (cf: Evans, 2004:127).

Notes:

Electoral cycle refer to election time during which the incumbent popularity is measured;

Rally-Around- the -Flag refers to the hypothesis that people support incumbent government increase when the government engages in internal events that will benefit citizens;

War in this case means that the support of incumbent government during elections decrease when the country find itself either in symmetrical or asymmetrical war situations;

Presidential coat-tails effect refers to the hypothesis that vote of candidate from victory presidential party benefits from latter popularity.

2.3.2 The Nature of Economic Conditions and Electoral Behaviour

The fundamental issue that pre-occupies voting literature is the economic conditions voters consider. The conventional wisdom is that in election, people vote based on their pocketbook, rather than collective or sociotropic (see Lewis-Beck & Stegmaier, 2007).

Various studies have established the relationship between elections and personal and collective vote choice. This means that whereas, the individual economic welfare conditions affect his/ her vote, vote choice is conditioned by the national economic development. Therefore, the economic conditions influencing electoral behaviour identified in literature are: 1) Retrospective versus prospective voting, and 2) Pocketbook voting versus sociotropic voting.

2.3.2.1 Retrospective versus Prospective Vote

One of the fundamental issues in economic voting is the economic conditions voters consider in making their choices. *Do voters really assess past government economic performance or they look into the future prospects?*

Key said, in an election the electorates' play a "crucial role of appraising past events, past performance, and past actions and judges the incumbent retrospectively" (Key, 1966: 61). In supporting Key argument, Fiorina (1981) also said "electorate treats elections...as referenda on the incumbent administration's handling of the economy" (Fiorina, 1981:26).

Fiorina (1978) specified retrospective voting model to study micro-economic influence on congressional and presidential elections in the USA elections, and tried to provide answers to the following questions: Is there an individual basis for the aggregate relationship between the economy and voting for the president's Party? Do citizens believe elections actually affect the economy? Does a voter's personal economic situation influence his or her vote or against the incumbent President party?

The study compares presidential voting responses to perceived changes in an individual welfare conditions to determine the incumbent government votes in good economic times and poor times. The current study explores how citizen's personal economic condition affects his or her presidential vote, the direction as well as the conditions that influence the direction of vote.

Downs (1957) argue that in an election voters do not only evaluate past performance of government, but they consider future prospects as well. Downs said: "When a man votes, he is helping to select the government which will govern him during the coming election

period....He makes his decision by comparing future economic performance he expects from the competing parties" (Downs, 1957:39).

In supporting this argument, Lewis-Beck and Stegmaier (cf: 2007:2) suggested the following questions: Retrospective question: Looking back over the past year, would you say the national economic situation has gotten worse, better, or stayed the same? Prospective question: Looking ahead to the next year, do you think the national economic situation will be worse, better, or stay the same?

Also, according to Lewis-Beck and Paldam (2000), this phenomenon is well founded in Downs (1957) economic rationality vote theory. The concept fundamentally assumes that electorates cast their votes based on past performance of parties. In this case, a citizen's vote is based on utility maximisation or assumed to maximise individual economic welfare given that the incumbent government performs better.

MacKuen et al. (1992) in providing answer to the question Peasants or Bankers? Said voters' often express their dissatisfaction about the economy in the elections based on their expectations or based on individual or personal well-being experience prior to the elections (here the average voter is considered as peasant). Michelitch et al. (2012), building on Fiorina (1981) and Key (1966) models, using the 2008 Presidential Elections of United States, suggested that despite the difficult economic conditions during the 2008 elections, finds little evidence to support the economic vote hypothesis.

2.3.2.2 *Pocketbook versus Sociotropic Vote*

The other strand of economic vote is whether the average voter assesses his/her personal economic welfare alone or the aggregate national economic conditions before making his or her vote choice. This is what Kinder and Kiewiet (1977) distinguished as 'rationality personal or individual rationality (egotropic) and collective (sociotropic) rational' voting

behaviour. They argued that sociotropic hypothesis consider national economy development or the impact of economic policies. In this case, the voter choice is based on society or national economy outlook or the state of national economy. Kinder and Kiewiet (1977) estimated this hypothesis using the following:

$$V = B_0 + B_1P + B_2C + B_3I + e \quad \text{Equation 2.1}$$

Where, V =Legislative vote, P = personal economic situation, C = collective economic judgment I = Left-Right ideology and e = error term. The results of their analysis suggested that the choice of candidates in congregational elections in the United States correspond to factors dealing with individual economic situations and also that of the collective national economic situation.

Kiewiet (1983:35) also finds that ‘individual economic welfare conditions are not significant factor in America presidential elections, but collective economic vote is highly significant’. Also, Lewis-Beck (1988, 2007) finds significant prospective effects in the 2004, 2008 and 2012 America presidential elections.

Kramer (1983) examined the individual and macroeconomic level variables in the voter participation and choice. In its estimation, the voter evaluates his or her personal income situation as induced by government economic policies. Thus, the vote choice accounted for by individual voter predisposition induced change by government economic policies in the period preceding elections.

Also, Sanders (2003) examines the effect of party identification and economic perceptions in five separate British general elections between 1974 and 1997, and concluded that the governing party loses support among those voters who believe that economic conditions have worsened.

Further, Lewis-Beck and Nadeau (2000) studied French economic voting in the face of systematically changing institutional conditions such as cohabitation, election type and ballot order, and proposed the following equation.

$$\textit{Vote} = \textit{Class} + \textit{Religion} + \textit{Left} - \textit{Right Ideology} + \textit{Economics}$$

Equation 2.2

Thus, the focus is on the coefficients for these independent variables: retrospective sociotropic evaluation, retrospective sociotropic evaluation times (x) cohabitation. The dependent variable is incumbent vote (binary or logistic) as (1) and opposition vote as (0). However, a generally standard specification model across many studies was proposed by Alvarez and Nagler (1995; 1998) as follows:

$$\textit{Vote} =$$

$$\textit{Economics} + \textit{Other Issues} + \textit{Party Identification} +$$

$$\textit{Socioeconomic Status Control}$$

Equation 2.3

This economic vote is one of the rare empirical regularities that have now virtually become an accepted hypothesis. Thus, it provides insight into what precisely drives the individual vote decision which in turn has implications for theories of democratic accountability. The above studies therefore formed the pivot around which the current study revolves as they also focused on the presidential elections.

2.4 Economic Voting and Political Business Cycles

Political business cycles denote effect of elections on the performance of macro-economic indicators as a result of government manipulation of macroeconomic policy instruments such as monetary policy, fiscal policy and exchange rate policy. Political business cycle thus, occur when the incumbent government seeking re-election manage

the economy through its expansionary economic policies and social interventions in order to improve voters' economic fortunes in election times (Nordhaus, 1975).

This opportunistic behaviour of incumbent governments or the politicians seeking political power often produces economic expansion in election year, and the contraction in post-election period (see Nordhaus, 1975; Lindbeck, 1976; Tufte, 1978).

However, Hibbs (1977) criticised Nordhaus (1975) opportunistic model on the basis that the model excludes the partisan preference of policy outcomes by the incumbent governments. Hibbs therefore, argue among other things that during the periods of leftist governments, unemployment is low as against inflation rate, but high unemployment and low inflation rate during the periods of the centre and right wing governments. This produces Phillip's curve trade-off between unemployment and inflation rate (see *ibid*, 1977).

Other scholars revised the non-rational opportunistic and the partisan models to include the rational expectations among voters in an election (see Rogoff & Sibert, 1988; Rogoff, 1990). In their view, voters often use information available to them and assess the incumbent government performance in the pre-election and election years.

In this case, the rational expectations of the voters are based on information available to them, and thus judge the government based on the observed economic outcomes retrospectively or prospectively. The voters thus, evaluate the government based on available information, perhaps on aggregate experience of their economic welfare before making their electoral choices.

Further, in contributing to political business cycle theories, scholars like Acemoglu and Robinson (2001), Gonzalez (2002), Rodrik and Wacziarg (2005), Libich et al. (2010) have also opined that the incumbent governments actually spend excessively during election years as suggested by Nordhaus (1975). Thus, Gonzales (2002) suggests that the excessive spending by incumbent governments is often observed in the new democracies. This is particularly obvious in the democracies or countries where the margin of victory between the incumbent governing party and the main opposition party in the elections is smaller, like the case of Ghanaian 2008 and 2012 Presidential elections, as pointed also by Anamam (2016a).

Generally, in the study of political economic cycles, three categories are identified in literature as follows: 1) the first model of tries to locate the existence of political economic cycles in the macroeconomic outcomes. This model focuses on macroeconomic performance as measured by indicators such the real economic growth, inflation, unemployment and income in the country (see, Batool, 2012:14-15).

The central argument with the macroeconomic model is that in the short run, the economic policies may not result in the growth of the economy and create employment opportunities, and voter's expectation may not be met. As a result, the incumbent governments stimulate and manage the policy variables to give direct benefits to the voters like the reduction or removal of tax, government transfers, provision of subsidy facilities to the people like the fertilizer subsidy policy in Ghana, the establishment of employment schemes among others; 2) Secondly, the study of political economic cycle concerns itself with the formulation and the implementation of policy instruments in the country, and 3) The study of political economic cycle focuses on the monetary policy instrument, also called the 'political monetary cycle' in the democratic system (see, Batool, 2012:14-15).

Political business cycle framework establishes that there is the link between competitive democratic elections and the macroeconomic performance as suggested by Nordhaus (1975), Tufte (1978) and Hibbs (1977). They underscore that in an election year, there is the tendency for incumbent government seeking re-elections to spend excessively causing post-election economic growth slowdown. This view has been corroborated by the works of Acemoglu and Robinson (2001), Gonzalez (2002), Rodrik and Wacziarg (2005) and Libich et al. (2010), who argue that there is over spending in each election years.

As, Gonzales (2002) suggests the government excessive spending is likely to be observed in new democracies such as Ghana, especially when the incumbent party is seeking re-election to retain political power. The theory suggests that government expenditure typically increases on activities with short-term payoffs during election years. The higher expenditure is then hard to cut, once the elections are over.

For the purpose of this study, all the three categories have been covered using macroeconomic, monetary and fiscal policy indicators such as the economic growth, inflation, exchange rates, and fiscal balance in the analysis. In fact, under the Fourth Republic of Ghana, this area has largely remained under researched in the scholarly discussion of elections in Ghana.

The above review of the literature formed the utmost importance for the current study, since they established governmental control of national economy in an election year and the vote choice of the citizens in the democratic system. This study sought to establish economic conditions of electoral outcomes, and the impact of elections on the aggregate economic welfare of the population in Ghana from 1992 to 2016.

This study is a valuable addition to the academic literature, and thus contributes to filling the knowledge gap in Ghana's Fourth Republican democratic dispensation. The study covers at least all the three categories of political economic cycles, it analysed the effect of elections on economic growth, inflation, government expenditure and some fiscal and monetary policy indicators. These indicators were chosen for the analysis because they are often affected by the timing of elections, and welfare of the population

It can be argued therefore, that the government of Ghana expenditure typically increases on activities with short-term payoffs during election year. But, in the case of Ghanaian 2016 General elections, the incumbent government led by Mahama (former president of Ghana, who was then the sitting President), typically increased its expenditure on long-term capital expenditure projects instead of short-term payoffs projects, and this was not appreciated by the average Ghanaian voting public.

This political decision was probably one of the reasons that accounted for the loss of the incumbent governing party in the 2016 General elections to the main opposition party, and its candidate. However, the overall government expenditures increased over the election year period with the budget deficit reaching about 8.7 percent of GDP on cash basis by the end of December, 2016 which was an election year.

2.5 The Case of Ghana's Fourth Republic

This last section of the review of literature discusses the economy and electoral behaviour in Ghana's Fourth Republic. A body of literature has provided analysis of the past Ghanaian elections and seeks to answer one or all the following questions: *How and why do voters in contemporary Ghana align with political parties? Which factors underlie their voting decisions?*

Three principal claims play a prominent role in the literature concerned with elections and voting behaviour in Ghana. The first one is *ethnicity matters*. Two (out of many) ethnic groups in Ghana show a robust leaning towards a certain political direction. The second claim regards the existence of a *rural-urban divide*. A number of studies found rural and urban dwellers having particular party preferences. A third finding can be described as *economy matters*. Various scholars stress on the state of the economic conditions and election outcomes in Ghana under the Fourth Republic. This section therefore sums up the results from the literature on the Ghanaian elections in the Fourth Republic, 1992 to 2016.

2.5.1 The Ethnicity Matters

The analysis of Ghanaian elections by various scholars have all observed the structural variables of urban-rural dimensions based on not only material wellbeing of the people, but on ethnic dimension as well (see Jeffries & Thomas, 1993; Oquaye, 1995; Nugent, 1999; Bawumia, 1998; Ayee, 1998; Jonas, 1998; Anebo, 2006; Gyimah-Boadi, 2007; Arthur, 2009, Anaman, 2016a, Debrah, 2016). The ethnic and cultural factor is a key contested issue in the Ghanaian elections under the Fourth Republic. The ethnic factor has become a determinant of electoral outcomes, since 1992 (see Anaman 2012; Anaman & Agyei-Sasu, 2012; Anaman, 2016b).

There are two main ethnic grouping or superstructures of Ghana. These are: 1) Akans (constituting about 47.5%) of the voting population); and 2) Non-Akans (about 52.5%). However, Anaman (Anaman, 2012, 2016b) categorised ethnicity and politics in the Fourth Republican era into eight major ethnic/cultural structures in his political model as follows: 1) Akans who are Asantes (vote primary for NPP); 2) Akans who lean towards NPP (such as Akyems, Akwapims and Kwahus); 3) Akans who are swing voters (mainly those originated from Brong Ahafo, Central and Western Regions); 4) Ewes (vote

primarily for NDC); 5) Ethnic groups originating from the three northern regions (leaning towards NDC, majority vote for NDC); 6) Gas (swing voters); 7) Ga Adangbes (swing voters and /or lean towards NDC); and 8) Non-Gonja Guans (swing voters).

Some research work on social cleavages such as the ethnicity in the Ghanaian context is based on electoral geography. This involves mapping of electoral constituencies under the Fourth Republic indicating the winning party based on voter ethnic identity and party alliance. But, a first such study on Ghana's elections of 1992 and 1996 (Nugent, 1999: 287) largely rejects ethnicity-based voting. However, the picture changes with the 2000 Presidential election results which were won by the NPP and bring the first turnover by ballot in Ghana's eight year old democracy (see Anaman, 2012, 2016b). The analysis of the 2000 election (and subsequent races) reveals an at least partly ethnic pattern.

In expressing their views in the 1992 Presidential elections, Jeffries and Thomas (1993) argued that:

Convention Peoples Party (CPP) tradition faced three problems: (1) Division, (2) Lack of finance, and (2) Organisational ability. The New Patriotic Party (NPP) chose an Asante seen as tribalism, and was rejected by other regions. In that election Asantes voted for the NPP candidate not because of traditional attachments, but because of anti-Ewe prejudice. Also, while the process was generally transparent and fair, there was a contradiction in Adu Boahen's (the presidential candidate of NPP in 1992 presidential elections) espousal of liberalism and his nationalistic attacks on the Economic Recovery Programme (ERP). Rawlings won in part because the majority of Ghanaians apparently cared more about their material living, than about human rights (Jeffries & Thomas, 1993).

Also, Jonah (1998) in his agency and structural analysis of Ghanaian 1992 and 1996 General elections concluded that ethnicity is a major factor in the 1992 and 1996 Ghana

presidential elections. It would be hard to gain a full understanding of these two presidential elections without reference to the ethnic factor. He further said that to "ignore the ethnic factor is to ignore a major key to understanding the mind of the Ghanaian voter" (Jonah, 1998). He further said, Ghanaians voted for NDC in 1992 and 1996 because of their administration for party candidate for his personal political attributes (charisma), in particular his capacity for decision making and ability to listen to people (ibid, 1998).

However, the view that ethnicity is a major factor that influenced Ghanaian voters cannot be well placed in the context of structural or sociological theory of elections and voting behaviour in Ghana. The structural or sociological approach has placed much emphasis on social classes. In this case, a study of the results of the 1992 and 1996 shows that the Ewes and the Akan-Asantes, the majority ethnic group were greatly divided about the position role of the president Rawlings in Ghanaian politics.

In these two elections, the people originating from Volta region (i.e. the Ewe ethnic group) voted massively for NDC and its candidate, Rawlings who hailed from that region. Also, a close scrutiny reveals that there were three different categories of Akan voters. These were first, the consistently pro-Rawlings Akans who voted for him both in 1992 and 1996. The largest of these unwavering pro-Rawlings Akan voters were the Bonos and Ahafos in the Brong-Ahafo region. Bonos are closely followed by Fanti, Agona, Wassa, Sefwi, Bawle and Nzema voters (Ayee, 1998).

In those elections, Asantes are considered anti-NDC and its candidate, but voted massively for the NPP and the Great Alliance presidential candidate. Sandwiched between these opposite extremes are the pro-Rawlings turned anti-Rawlings converts. These are people such as the Kwahus, Akyems, and Ahantas who voted for NDC and its

candidate in 1992, but rejected the party and Flt. Lt. Rawlings in 1996 in favour of NPP/Great Alliance candidate, who was Mr. Kufour (Ayee, 1998).

Anebo (2001) argue that the change in electoral fortunes of NDC and NPP in the 2000 General elections provides an opportunity to explore theories of voting behaviour in Ghana. This is in contrasts to the assertions that voters in Ghana pay so much attention to party loyalty and not the regime performance. The patterns of party support of Ghanaian electors and compare them over time; a noteworthy pattern appears to be one of increasingly volatile electoral behaviour and a corresponding fragmentation of established party loyalties (Anebo, 2001). This was particularly true in the 2000 elections. Gyimah-Boadi rightly notes that the 2000 election was also marked by high-profile defections.

The dramatic defection to the NDC of Alhaji Inusah, former campaign manager of the NPP presidential candidate, recalled a similar defection to the NDC in 1996 by Nelson, a long-time Nkrumahist activist and head of the women's wing of the opposition Convention Party (Gyimah-Boadi, 2001). Also, regarding the relationship between Akans and the NPP, the trajectory of NPP's political tradition is rather more the inclination of an ideological images, and not ethnicity that motivates Akans to vote for NPP. This is in concordance with the observation that NPP campaigns in fact rather try to overcome the party's ethnic image instead of politicizing ethnicity (Gyimah-Boadi, 2001). This is the Akan-NPP relationship suffers from inconsistencies over the years.

However, some research accord a considerable amount of attention to two specific relationships between ethnicity and voting that have proven remarkably stable through the years. Two groups, the Asantes (subgroup of the Akan group, constituting about one third of Akans) and the Ewe are frequently found to have certain pre-determined party

preferences based on their ethnicity. Asantes constitutes about 16.0 percent of the Ghanaian population, while the Ewes constitute 13.9 percent. These two groups also have the military men who have stayed all the successful coups in Ghana since 1966, as well as the civilian governments in country.

Likewise, the relationship between Ewe-Speakers and the NDC becomes concrete. In former elections this loyalty was hidden by the general rural-urban divide (Nugent, 1999) but, unlike other rural areas the Ewe dominated Volta-Region continues to vote highly for NDC in the year 2000 (Nugent, 2001a, Fridy, 2006). Both relationships are confirmed for subsequent elections. Especially the work of Fridy (2006) is illustrative. Fridy established that a significant proportion of Akan and Ewe speakers contribute to electoral success of NPP and NDC in Ghana.

However, some scholars insist that these affinities are not exclusively ethnic. Fridy (2006) introduces the concept of cognitive shortcuts, stating that individuals associate parties with certain categories and use these associations as shortcuts in order to distinguish between and align with parties. A self-conducted survey with open questions reveals a bunch of such categories prevalent among Ghanaians. Although, Friday's (2006) electoral maps and statistical models provide evidence for a general trend, he underlines that there is a substantial number of districts that deviate from the expected Akan-NPP theme because, the deciders of the elections vote on other issues. Fridy (2006) thus concludes that 'ethnicity is an important factor, but does not decide election outcome in Ghana. This sentence is a quite good summery of the general findings on this issue in this study. Ethnicity matters, the two relationships are comparatively robust.

Also, in their study of ethnic and clientelistic vote of 1996 and 2000 involving 690 voters in Ghana, concluded that about one person in every ten voters sampled vote decision is

influenced by either clientelism or ethnic and family considerations in elections, while 85 percent to 90 percent vote based on issues rather than ethnicity (Lindberg & Morrison, 2008).

In the study of Ghana's party system under the Fourth Republic of Ghana, particularly in the light of 2008 Presidential election, Whitfield (2009) deemphasizes ethnicity and stresses the meaningful role of historic ideological images bound to Ghana's political parties in general. In explaining the link between Volta region electorate (Ewe-Speakers) and the NDC, Whitfield (2009) said the relationship "might have begun as an ethnic affinity but has developed into a party loyalty based on other factors" (ibid, 2009: 632). Thus, ethnicity is frequently mentioned as a determinant of voter alliance (Whitfield, 2009).

The Ghanaian 2008 General elections have been received a lot of commendations, despite the concerns about ethnic voting and changelings associated with the conduct of 2008 elections (Jockers *et al.*, 2010). In his study of 2004 elections, Bossuroy (2011) argued that ethnicity as a factor explain structure of voting in Ghana, but does not rule out the significance of other variables such as education, employment or unemployment and income. This argument was supported by Anaman (2012, 2016b) who made an assertion that about 70 percent of Ghanaian voter population largely vote based on ethnic/cultural lines with voting or very high ethnic groups, and about 30 percent vote of them is ethnically high. However, the other 40 percent vote is moderate to moderately-high. Also, Anaman (2016b) further made an assertion that the electoral outcomes under the Fourth Republic of Ghana are largely determined by the remaining 30 percent of Ghanaian voting population, who vote mainly on personal, local and district development issues in the country. This is particularly evident in the four swing regions of Central, Western, Brong-Ahafo and the Greater Accra.

However, the robustness of the two tendencies should not obscure the fact that these deciders of the elections are neither purely ethnic nor thoroughly consistent. Furthermore, it needs to be noted that a considerable number of Ghanaians belong to neither of the two groups. However, considering Ghana's voter population as a whole, it has been suggested about 30 percent is strongly influenced by ethnicity (Anaman, 2016b). This view corroborates with Lindberg and Morrison (2008) who have also indicated that about 10 percent of Ghanaian voters' are influenced by ethnic consideration. Even though, these studies gave difference magnitudes, both arguments have been made in respect of effect of ethnicity on voting in the Ghanaian elections.

The ethnic model is a significant explanatory model for Ghanaian elections not only in the Fourth Republic of Ghana. According to Frempong in his study of 'Ethnicity, Democracy and Ghana's Election, 2004', as the country continues to consolidate its democracy, there is a growing concern that ethnic rivalries pose a threat to the democratic gains the country has had since 1992. Perhaps, the clearest manifestation of this dangerous trend was the post-election 2004 bashing of the people of the Central region (Boafo-Arthur, 2006). That region's only political crime ironically, had been the rejection of the canker-worm of ethnicity for Kufuor and rejected Mills who had campaigned there on the virtues of voting for a son of the soil (ibid, 2006).

The success of the NPP is largely attributed to a sea change in the Akan-speaking regions (Fridy, 2006: 286). The NPP becomes the dominant force in almost all Akan parts of the country (Nugent, 2001a, 2001b), and this appears to have been repeated in the 2016 elections. In the 2016 presidential elections, the Akans swing voters who voted for John Mahama in the 2012 presidential elections appeared to have deserted him in the 2016,

with many of them choosing to stay home, and not participating in the election partly explaining the dramatic drop of the voter turnout from 79.4 percent in the 2012 elections to 69.2 percent in 2016 elections. The Akans have to be seen as a super group making half the country, so there will be considerable variation in voting patterns in Ghana.

2.5.2 The Rural-Urban Divide

The second finding is the Ghanaian version of a classic socio-economic cleavage, namely the struggle between the interests of rural and urban dwellers. The rural-urban dimension is a significant consideration in Ghana's Fourth Republican constitutional democracy. The rural-urban divide has therefore received considerable discussion in the electoral studies of Ghana's Fourth Republic, since 1992. Some scholars have suggested north and south or centre and periphery divide in the electoral politics of Ghana's Fourth Republic (Nugent, 1999). However, the bottom line is usually the same. The rural areas are likely to favour the NDC, while the urban voters support the NPP. The rule seems to be quite clear in the first two elections 1992 and 1996.

The three rural northern regions of Ghana exhibit an increasing parity between the big parties (the NDC and NPP), while the remote western region becomes a swing-region showing no constant party alignment under Ghana's Fourth Republic (Fridy, 2006). Thus, the voting behaviour in the urban centres across the country becomes increasingly ambiguous (ibid, 2006). In supporting Fridy argument, Bawumia (1998) suggested that in 1992 Presidential elections, rural voters supported NDC and got Rawlings elected due to urban bias of the Structural Adjustment Programme, which was distributionally favourable to rural communities than urban areas in Ghana.

The 1996 General elections was a turning point for Ghanaian democratic reversal or consolidation. A plethora of variables explain the 1996 General elections, just like the previous 1992 elections. Thus, the 1996 General elections, just like the 1992, in order to identify and analyse theoretical model(s) explaining the 1996 elections, then attention should be given to vote patterns of rural/urban and ethnic consideration (Ayee, 1998; Nugent, 1999).

The NDC and its candidate appeared to have targeted the more easily appreciative rural-urban poor and actually won their votes by the developments they observe around them and also by the prospect of further and more development projects which were demonstrated in the governments' well-timed and electioneering targeted physical and infrastructural initiatives (Ayee, 1998).

In contributing to rural-urban and ethnic vote debate in the 1992 and 1996 Elections in Ghana (Nugent, 1999), argued that in 1992 and 1996 elections the results show two clear patterns of vote in Ghana. He argues that the 1992 and 1996 elections present centre-periphery vote pattern, rather than the north-south divide vote patterns. That is while the centre of the country leaned towards NPP, the outlying regions which include Volta Region, Western and Brong-Ahafo Regions, Upper East and Upper West Regions aligned with the NDC in those elections (ibid, 1999). Nugent (1999) notes that the NPP-Candidate, though "comprehensively beaten overall, actually won a majority of constituencies in the principal cities and regional capitals."

Finally, the urban and rural was evident in that NPP won majority of the urban constituencies and regional capitals. These includes: the Cape Coast and Akropong constituencies; all the three constituencies in the Sekondi-Takoradi, all the six constituencies in Kumasi; Tema and Sunyani constituencies; one of the two constituencies in Tamale, and five out of the thirteen constituencies in Accra. The NDC

also captured majority of the votes in Wa, Bolgatanga and Ho. It is significant to mention that NDC won both the 1992 and 1996 presidential and parliamentary election, despite losing major cities and regional capitals (see, Nugent, 1999). Thus, contrary to the ethnic cleavage, the rural-urban divide becomes increasingly fuzzy in the post-millennium elections.

2.5.3 The Economy Matters

The first two findings on Ghanaian elections of the Fourth Republic (i.e. ethnicity and rural-urban divide matters), present structural relationship between comparatively stable social characteristics and party preferences in the country. However, the finding of relationship between Ghanaian voting behaviour and the economy is surprisingly robust (see, Bawumia, 1998; Gyimah-Boadi 2001, 2006, 2010; Debrah, 2009, 2016).

Bawumia (1998) provides an economic explanation for the strong urban-rural discrepancy in the election of 1992. He argues that Ghana's Structural Adjustment Programme (SAP), controlled and implemented by the NDC-Administration before 1992, was especially economically favourable to rural households and infers that the high support for the NDC in rural area was a case of retrospective economic voting.

It seems not implausible, therefore, to expect some linkage between oscillating voting habits and policy evaluations of political parties and party candidates in Ghana. The argument is that disenchanted and alienated individuals vote for the incumbent party or incumbent Member of Parliament (MP) to register their protest to show how the country is being run. Thus, "voting for an opposition political party becomes an outlet for expressing that dissatisfaction" (Anebo, 2001:85). Also, the economic shocks originating from abroad often constrain domestic policy-making, and influence voters choice in an election.

In supporting the protest or the negative hypothesis theory, Nugent in his analysis of 2000 elections has concluded that the infighting in NDC and the party failure to hold primaries for its presidential and parliamentary primaries contribute to its defeat in the 2000 elections (Nugent, 2001). In comparison with other African countries, Nugent (2001) exemplifies Kenya and La Cote d'Ivoire, the ethnic fractionalisation of Ghana's political arena seems relatively low.

Lindberg and Morrison (2005) study of Ghanaian 1996 and 2000 elections said about 82 percent of the Ghanaian voting population or voter turnout is instigated by economic consideration. The study refuted the assertion that the volatility in voting is always extremely high in the emerging democracies (ibid, 2005). The study also concluded that the core and swing voters in Ghana cannot be determined by structural factors alone, but factors like party affiliation or party identification, the level of education among voters, the rural-urban divide, the income levels, and unemployment largely determine the core and swing and voter's choice in the Ghanaian elections. Finally, the swing voters cast their votes based on evaluation of government performance in those elections (Lindberg & Morrison, 2005).

Another noticeable work stressing the role of the economy for the Ghanaian voting behaviour comes from Youde (2005). Youde finds that there is a strong correlation between state of the economy and government popularity in an election in Ghana. His Ordinary Least Square-Popularity-Function is based on Afrobarometer-data and controls for several other potential influences. The result "regarding government popularity can be interpreted as a strong suggestion of economic voting in Ghana" (Youde, 2005: 13).

The analysis of indices of electoral volatility reported high values for Ghana (see Fereee, 2010). Consequently, there must be a considerable amount of swing-voters in the country. Concrete numbers vary between roughly 20 percent (Lindberg & Morrison, 2005), and 35 percent (Ephson, 2009). But, it seems evident that a crucial part of Ghana's electorate is not constrained by long-term social structures. It suggests more issue related motives for vote-casting. Especially, the economic consideration seems to influence the electorates in Ghana, than any other.

Debrah (2009) suggested that the Ghanaian elections are shaped by economic factors more than known issues of ethnicity, regionalism and personal ambitions. The events that lead to political transitions are to a large extent influenced by economic circumstances in the country. In his study of 'The Economy and Regime Change in Ghana, 1996-2004', Debrah said: "macroeconomic instability including deteriorating living standards of the people was blamed on the incumbent's economic mismanagement. Consequently, majority of Ghanaian voters effected a change of government hoping that the new government would bring about improved economic and living conditions" (Debrah, 2009:101; Debrah, 2006). Debrah (2009) and current study have something in common. That is economy and electoral outcomes in Ghana though focus on period 1996-2004, the current study covers the period 1992-2016.

Further, the economy is seen as essential factor in qualitative explanations for Ghana's two turnovers. Nugent (2009: 412) attributes the fall of the NDC in the year 2000 and in 2008 are largely to "economic crisis rooted in a decrease in prices for Ghana's primary export commodities and a high international oil price". Likewise, Whitfield (2009) explains the turnover in 2008 almost exclusively by economic factors. In contribution to why the NPP lost the 2008 elections, she concludes that the unfulfilled economic

promises made by the NPP administration were decisive for the change in office 2008. Gyimah-Boadi (2010) also points to issues like rising fuel-prices and cost of living deeming them significant liabilities for the lost of incumbent NPP in the 2008 General elections.

In a nutshell, the literature seems to reveal comparative literature but failed to explain the relationship between concrete political issues like the party identification and its influence on vote choice. The only clear finding is the explanation of party switching, ethnicity and electoral volatility in the Ghanaian elections remain the influence of economic considerations.’

2.6 Empirical Literature Gap

There is limited empirical literature on relation between economy and elections in developing democracies such as Ghana, because democracy in these countries is a post-cold war phenomenon. Again, the available data is challenged with systematic effects. It has been hypothesised in literature that when welfare conditions of voters are negative, they punish the incumbent governments and reward the incumbent with votes in good economic times. But, the economic conditions not only have symmetric effects on vote choices, but also have asymmetric electoral effects.

Although, the economic welfare conditions of the voter are considered in making his or her voting decision, but there are other determinants worth considering. The literature on the economy and electoral behaviour is thus, subjected to spurious criticisms on the basis of this approach. Thus, there is evidence of significant relationship between economic conditions and electoral outcomes, scholars have divergent views with no convergence in the literature. There is also disagreement in literature on the time frame of electorates’

response. In this case the literature is limited with respect to the time with which the voters react to economic conditions (whether last year, this year, quarter or month).

In a nutshell, the literature failed to specify the importance of economic indicators influencing electoral outcome compared with non-economic variables in the case of Ghana's Fourth Republic. There is also a limitation associated with the cross-sectional studies or micro-level literature regarding the biasness of the responses. Another limitation of the literature is the data reliability, and it is a huge gap. It is assumed since the current researcher is not the one who collected the various documents reviewed, the respondents truthfulness of the data collected cannot be guaranteed, and it is a key limitation. This potential problem in my opinion may be due to fear of political retribution, and the respondents would not disclose their voting intentions.

2.7 Conclusion and Summary of Chapter

This chapter reviewed related empirical studies explaining the elections and economy nexus. While some literature established little or no significant relationship between the economy and elections nexus have been others provide substantial evidence confirming the economic voting hypothesis.

However, the reality is that economic play a significant role in voter participation and choices in a competitive democratic election. This study attempts to overcome this empirical literature gap by examining political economy of elections in Ghana under the Fourth Republic. Also, the aggregate-level analysis explains the economy and election nexus, but the results obtained from the methodologies applied are open to criticism of spuriousness. The individual micro-level analysis allows some investigation into the reasons why individual voted in a particular way and is thus more informative.

The conduct of elections under the Fourth Republic of Ghana continues to produce the same pattern of electoral behaviour of Ghanaians in the Fourth Republic. The success of the democratic elections and outcome generally made Ghana's democratic journey as an African model. In supporting this view, Gyimah-Boadi (2009a) was also of the opinion that the outcome of the 2008 Ghanaian elections is commendable, as the conduct and the outcome of that elections was a marked of democratic achievement under the Fourth Republic of Ghana, and was largely seen as another step forward in consolidating the country's multiparty democracy since 1992.

CHAPTER THREE

POLITICAL ECONOMY ANALYSIS OF GHANA'S FOURTH REPUBLIC

3.1 Introduction

This chapter analyses and discusses the political processes, and the economic policies and performance of various governments under the Fourth Republic. Ghana returned to constitutional rule for the Fourth time, on 7 January, 1993 after the 1992 Republican constitution was fully promulgated. The purpose is twofold: 1) to analyse political development and electoral cycle in Ghana; and 2) to examine the Ghanaian economic policies and performance, since 1992. It thus, aims to elucidate the political process, and how the economic policies and performance of the various governments under the Fourth Republic of Ghana, 1992 to 2016 influenced voters' participation and choices in the elections, and effected the change of governments. The chapter provides answer to the question: *What is the link between economic performance and policies of the governments, and how do voters attribute responsibility and hold them electorally accountable under the Fourth Republic of Ghana?*

3.2 Political Development and Electoral Cycles in Ghana

Ghana, since 1957 has had four Republics after military interventions in 1966, 1972, 1979 and 1981. The country's Fourth Republican Constitutional Democracy was inaugurated on 7 January, 1993 following the promulgation of the 1992 Constitution and the conduct of Presidential and Parliamentary elections in November and December respectively the same year. Between 1992 and 2016, the country has conducted seven successive competitive democratic elections in every four years.

The democratic elections conducted between 1992 and 2016 include: 1992 Presidential and Parliamentary elections; 1996 General elections, 2000 General elections, 2004 General elections, 2008 General elections, 2012 General elections and the 2016 General elections.

Ghana became a Republic on the July 1, 1960 after a referendum in April, 1960. In the election 1,008, 740 people voted in favour of the constitution, while 131,425 vote against. Dr.Kwame Nkrumah became the first President of the first Republic of Ghana with total valid votes of 1,016,076 to Dr. Danquah of 124,623 valid votes cast (Frempong, 2015).

The 1960 First Republican Constitution provides office for a Presidential System of Government, and vested all executive powers in the President. The First Republic was however, suspended on the 24 of February, 1966, after the Convention Peoples Party's (CPP) Government led by Dr. Kwame Nkrumah was overthrown in a military coup-d'etat. Thus, between February, 1966 and September, 1969, Ghana was ruled by National Liberation Council (NLC) headed by Lt.General Joseph Ankrah and later by Lt. General Afrifa.

In 1969, the Second Republican constitution was inaugurated following the general elections. The Progress Party (PP) won that elections with 105 of the 140 seats in Parliament led by Dr. Kofi Busia, as the Prime Minister of the Second Republic of Ghana, with General Afrifa as ceremonial president, and later in 1971, Edward Akuffo-Addo became the ceremonial President of the Second Republic of Ghana.

Unlike, the First Republic, the Second Republican Constitution established a Parliamentary Executive with a President as the Head of State and a Prime Minister as the Head of Government. However, the Second Republican constitution was also

suspended by Lt. Colonel I.K Acheampong in a coup-de-tat on 13 January, 1972, ruled the country until 1979.

The Third Republican Constitution was promulgated, and inaugurated on 24 September, 1979, following the general elections in that year. In the elections, the People's National Party (PNP) won both Presidential and Parliamentary elections led by Dr. Hilla Limann as the President of the Third Republic of Ghana.

The 1979 Third Republican Constitution unlike, the Second Republic, maintained the features of the First Republic Constitution and thus, established the Presidential System of Government. The third republic was also suspended following 31 December, 1981 revolution led by Flt. Lt. Rawlings and established the Provisional National Defence Council (PNDC) to steer the affairs of the state, until 1992.

The Country's Fourth Republic was promulgated, after the Referendum in April, 1992. Ghana had a 104 seat National Assembly or Parliament at independence, but this was increased to 140 and 200 in 1979 and 1992 of Third and Fourth Republics respectively. By 2016, the country has two hundred and seventy-five (275) constituencies with two hundred and sixteen (216) Metropolitan, Municipal and District Assemblies (District councils).

Ghana's political system under the Fourth Republic is hybrid system, comprising the features of both presidential and parliamentary system of government under the constitution of 1992. The president is directly elected by popular vote for a four-year of two term cycle. The members of the unicameral parliament with 275 seats are also directly elected by single-member constituency using the first-past-the-post system, for a four-year term. Ghana's four-yearly electoral cycle separates national (Presidential and

Parliamentary) elections, and local-level (District Assembly) elections, with a two-year overlap between them.

For the purpose of this study, and considering the four year electoral cycle system in Ghana (where elections are conducted in every four years under the laws of 1992 constitution), an electoral period can be considered as the year in which presidential and parliamentary elections are held irrespective of which month of the year the elections are held.

But, for the seven general elections that have been conducted as provided for, under the laws of the Fourth Republican Constitution of Ghana (see Article 112 (4), on 7 December, in every four years. The pre-electoral period can also be referred to as the year before the electoral period, while the post-electoral period is the two years after the electoral period.

Arguably, although multiparty democracy was adopted in 1992, upon the promulgation of the 1992 Fourth Republican Constitution, it is clear that the multiparty elections in the country have largely developed into been a two-party zero-sum game. Currently, the two political parties have won the elections and formed governments under the Fourth Republic, since 1992. These are the National Democratic Congress (NDC) and the New Patriotic Party (NPP).

Also, the NDC and NPP are considered as political left and political right parties respectively, but they are essentially centre-right political parties with mixed political economy ideologies consisting of publicly owned state enterprises and government subvention programmes such as the Universal Health System (i.e. National Health Insurance Policy in Ghana) and education. Others are related social interventions to ensure social justice and equal opportunity for all Ghanaians as required by the Directive

Principles of State Policy (see Article 34 (1)) of the Chapter 6 of the 1992 Constitution of Ghana (see Republic of Ghana Constitution, 1992, Article 35). This means that there is little or no difference in the policies of the two main parties that have formed governments, under the Fourth Republic in Ghana, since 1992 (Anaman & Agyei-Sasu, 2012).

There are also, several left-wing parties including CPP and independent candidates, and have received about less than 4 percent of the total valid votes cast in the presidential election results, and less than 10 seats in the parliamentary election in the seven General elections conducted since 1992, under the Fourth Republic as shown in Table 3.1.

As indicated on Table 3.1 below, the percentage margin of victory between the presidential candidates of the NDC and NPP in the 2008 and 2012 elections was about 40,000 and 325,863 votes respectively, representing 0.46 percent and 2.96 percent of the total valid votes cast of 7 million and 11.2 million. Also, in the 2016 elections, the margin of victory difference between the NPP and NDC was 984,570 votes, representing 9.19 percent.

Table 3.1: Presidential and Parliamentary Election Results from 1992 to 2016

YEAR	PRESIDENTIAL				PARLIAMENT		
	NDC (%)	NPP (%)	Difference (%)	Other Parties	NDC	NPP	Other Parties/Independent candidates
1992	58.4	30.29	28.11	11.31	189	-	11
1996	57.4	39.6	17.8	3.0	133	60	7
2000	44.5(1st) 43.1(ro)	48.4(1st) 56.9(ro)	13.8	0.0	92	100	8
2004	44.6	52.45	7.8	2.95	94	128	8
2008	47.9(1st) 50.23(ro)	49.1(1st) 49.77(ro)	0.46	0.0	115	108	7
2012	50.7	47.74	2.96	1.56	148	123	4
2016	44.53	53.72	9.19	1.75	106	169	0

Source: Electoral Commission of Ghana, 2016.

Notes: NDC-National Democratic Congress, NPP-New Patriotic Party, ro (round-off)

3.3 The Economic Policy Making Environment

The economic policy making environment in Ghana is conditioned by political economy of colonialism and development in Africa. The crisis is the consequence of political economy of colonialism and the failure of immediate post independent Ghana peripheral socialist political economy and the capitalist political economy of the Fourth Republic to address development problems and needs of Ghanaians. The Ghanaian political economy can be categorised into three phases. These include (a) 1951-1966 (b) 1966-1983, and (c) 1984 and beyond.

The era, 1951-1966, refers to pre-independence and immediate post independent Ghana. The era can further be divided into (a) 1951-1956, and (b) 1957-1966. This is the era of internal self-government with Dr. Kwame Nkrumah as the Prime Minister and the Head of State as the Queen of England represented by the colonial governor.

The period 1951-1966 was the era of processes of consolidation and attempted restructuring of Ghana's economy. The economic policy in this era was conducted under colonial government and Ghana's First Republic. This is the era of Dr. Nkrumah (1957-1966) and the CPP government. This can be described in Ghana's political history as relatively stable, until the February, 1966 coup-d-etat.

The era 1966-1983 is the era of political and economic instability in Ghana's economic and political history. This era was conducted under three military regimes and two civilian administrations. These include: 1) National Liberation Council era (24 February 1966 to 30 September 1969); 2) the Dr. Busia era (1 October 1969 to 13 January 1972); 3) the Military Regimes of National Redemption Council (NLC) *cum* the Supreme Military Council I and II (13 January 1972 to 3 June 1979); 4) the Armed Forces Revolutionary Council (4 June, 1979 to 24 September, 1979), and 5) finally, era of Dr. Hilla Limann of the Third Republic of Ghana (24 1979 to 30 December 1981).

The era 1984 and beyond is referred to as the period of Economic Liberalisation/Privatisation, Structural Adjustment and the Regional Development Problem in Ghana. This era can further be divided into two: 1) 1984 to 1992; and 2) 1993 and beyond). The period 1993 and beyond is the period of civilian stability under constitutional governance. This means that the economic policy making environment is conducted under one military regime and Ghana's Fourth republic.

The first was the era of Provisional National Defence Council led by Rawlings (31 December, 1981 to 6 January, 1993). This period was also characterised by the Economic Recovery and Structural Adjustment Programme which was launched in April, 1983. The era can be described as relatively economic growth and political stability under the military dictatorship of the Provisional National Defence Council regime. The second

was Ghana's Fourth Republic from 7 January, 1993 and beyond. This is the period of constitutional governance and civilian stability for the fourth time in this country.

Since 1993, the economic policy making is seen as a response to democracy and good governance agenda, after the epoch of *third wave* of democratisation that engulfed the whole world since 1991 (Huntington, 1991). The economic policy making in the Fourth Republic of Ghana is conducted within the framework of constitutional democratic governance. For instance, the 1992 Republican Constitution of Ghana, particularly the Chapter six contains the Directive Principles of State Policy of Ghana's Fourth Republic. The Article 34 (1) of the Chapter six of the 1992 Constitution states that:

The Directive Principles of State Policy contained in this Chapter shall guide all citizens, Parliament, the Judiciary, the Council of State, The Cabinet, political parties and other bodies and persons in applying or interpreting this Constitution or any other law and in taking and implementing any policy decisions, for the establishment of a just and free society (see, Constitution of Republic of Ghana, 1992, Article 35).

The Article 34(2) further states that:

The President shall report to parliament atleast once a year all steps taken to ensure that realisation of the policy objectives contained in this Chapter and in particular the realisation of basic human rights, a health economy, the right to work, the right to good health care and the right to education (Constitution of Republic of Ghana, 1992, Article 35).

This requirement, it seems, is in addition to the Sessional Address delivered by the President in Parliament as provided for under Article 67 of Chapter Eight of the 1992 Constitution. The Chapter Six therefore contains five main objectives, the policy on international relations (Article, 40) and duties of citizens (Article, 41). The five main objectives are: Political Objectives (Article, 35), Economic Objectives (Article, 36), Social Objectives (Article, 37), Educational Objective (Article, 38), Cultural Objectives (Article, 39). The Economic Objectives, Article 36 (1) states that:

The State shall take all necessary action to ensure that the national economy is managed in such a manner as to maximise the rate of economic development and to secure the maximum welfare, freedom and happiness of every person in Ghana and to provide adequate means of livelihood and suitable employment and public assistance to the needy (Constitution of Republic of Ghana 1992).

Also, Article 36 (5) states:

For the purposes of the foregoing clauses of this article, within two years after assuming office, the President shall present to Parliament a co-ordinated programme of economic and social development policies, including agricultural and industrial programmes at all levels and in all the regions of Ghana (Constitution of Republic of Ghana, 1992).

In pursuance of the Article 34 of the 1992 Constitution of the Fourth Republic, particularly 36(1) and (5), the successive governments since 1993, drew up development policy frameworks to guide the overall economic and social development of the country in line with the Directive Principles of State Policy of the 1992 Constitution of Ghana. These policy frameworks since 1993 include:

Ghana Vision 2020 (1996-2020); Ghana Poverty Reduction Strategy I (2003-2005); Ghana Poverty Reduction Strategy II (2006-2009); Ghana Shared Growth and Development Agenda I(2010-2013); Ghana Shared Growth and Development Agenda II (2014-2016). The Government of Ghana is currently debating a forty year National Development Plan (2018-2057). Launching the proposed National Development Plan for Ghana, Ghanaian President said:

The plan must capture the aspiration of the people and what we need to do to achieve this aspirations and that the strategic direction for national development is to leverage our natural resource endowments, agriculture potential and relatively large human resource base to accelerate socio-economic transformation through value addition and industrial production starting with light manufacturing and diversification (www.ghana.gov.gh, 2015).

Unfortunately, the post-independence economic policy frameworks up to the Fourth Republic are characterised by inconsistencies and policy reversals largely due to ideologies of political economy and ambitions of the various administrations.

In Ghana, what prevailed in the economic policy framework environment is that the incumbent government or the predecessor is an enemy while the opposition or the prospective candidate is an adversary. In the political and economic history of Ghana therefore, every leader since independence tried to obliterate the legacy of the predecessor (see, Baah-Nuakoh, 1997).

The economic policy making in Ghana since independence has been dominated by three political economy ideologies. These include; the Economic Liberalism or the Market Economy, the Economic Nationalism also called Mercantilism, and Socialism. Thus, the economic policy framework in Ghana since independence can be modelled along several lines of political and economic thought.

In the immediate post independent Ghana is described as African Socialism under Nkrumah, Capitalist leaning system under both NLC and Dr. Busia and Economic Nationalism (self-reliance) under National Redemption *cum* Supreme Military Councils I and II (Killick, 2010). In the early 1980, from 1982 to March 1983, the economic policy approach in Ghana was African socialism; this gave to an extreme of liberalism starting in April, 1983.

In order to lay the foundation for sustained economic growth and development, the government of Ghana in August 1986 broadened the economic reform programme embarked in 1983 by further implementing the Structural Adjustment Programme (SAP). Ghana's economic growth since then remained positive with decreasing rate, despite occasional challenges brought by factors of globalisation. That is, in spite of the global

political economy or geopolitical factors as well the population and the rising expectation of growing demands, the overall economic growth rate still remained positive since 1992.

The return to the constitutional democratic governance upon promulgation of the 1992 constitution on 7 January, 1993, the successive governments in the Fourth Republic therefore, drew up various development policy frameworks to guide the overall economic and social development of Ghana in line with the constitutional provision as stated above, for sustain growth.

The economic policy framework since 1992 can be group into three phases. These include; Rawlings era (1993-2000), Kufour era (2001-2008), Prof. Mills's era (2009-2012), and Mahama era (2012-2016) were characterised by socialist and capitalist political economy ideologies. The economic policy framework of Ghana's Fourth Republic therefore, exhibits the characteristics of a strained marriage of two political economy ideologies.⁷ It makes the economy of Ghana as a 'dualistic economic system' with the interactions which permit the flow of information, commodities and factors of production at unrealistically low prices from the C-economy or the Marxian (Socialist economy) to the M-economy (see Baah-Nuakoh, 1997).

⁷ Political economy of Ghana's Fourth Republic can best be described as *Rent Seeking Political Economy*, where there is a juxtaposition of two different political economy ideologies or economic philosophies and systems in the same economy. That is the tenets of socialist economic system or the Marxian tools of economic policies or better still, the tenets of controlled economy (C) and the tenets of market oriented economic system (M).

3.4 Ghana's Economy since 1992

Ghana is a developing country. But, the term developing has dynamic implications; in that there are margins of resources both human and non-human that can further be developed or improved upon. The term developing country is also relative in the sense that it originated from comparing these countries' material and welfare levels with those of the developed (or rich or advanced or industrialised or first and second world) nations.

Ghana is a poor country but, accumulating capital and developing an industrial and commercial base. Broadly, Ghana has recently started or is beginning to utilise available natural resources towards sustained increase in per capita production of goods and services in order to create welfare economy or society.

The economy has gone through a number of economic experiences with growth in real growth domestic product (GDP) and declines in some years which necessitated various policies geared at steering the economy to achieve growth, price stability and general economic and social welfare of Ghanaians since 1983. The economy has grown positively for 33 years from 1984 to 2016 (from 3.2% in 1984 to 14% in 2011).

3.4.1 The Structure of Ghana's Economy

The Ghanaian economy continued to be dominated by three sectors; the primary, secondary and the tertiary sectors. The contribution of Agriculture in GDP has shown a decline since independence from 25 percent in 1960 to 46.9 percent in 1970, 54 percent in 1981, 38.2 percent in 1995, 36.2 percent in 2000 and 36.9 percent in 2005. The agriculture contribution to GDP saw further shrink due to the rebasing of GDP in 2006. The sectoral contribution to GDP is indicated on Table 3.2a below based on 1991 structure of the economy.

Table 3.2a: Sectoral Contributions to National Output/GDP based on 1991 Structure of the economy, 1992-2005

Year	Agriculture	Industry	Services
1992	42.6	14.6	45.2
1993	41.6	14.7	46.2
1994	41.1	14.5	46.7
1995	36.2	24.9	28.1
1996	36.5	24.9	28.0
1997	36.6	25.4	28.7
1998	36.8	24.9	29.1
1999	36.9	25.1	29.0
2000	36.2	25.2	29.7
2001	35.2	24.9	29.9
2002	35.5	24.9	30.0
2003	36.2	24.9	29.8
2004	36.7	24.7	29.5
2005	37.0	24.7	29.4

Source: Ghana Statistical Service, 2015.

Table 3.2b: Sectoral Contributions to National Output (GDP) based on 2006 structure of the economy, 2006-2016

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Agriculture	30.4	29.1	31.0	31.8	29.8	25.6	22.9	22.4	21.5	20.3	3.6*
Industry	20.8	20.7	20.4	19.0	19.1	25.9	28.0	28.6	26.6	25.3	1.2*
Services	48.8	50.2	48.6	49.2	51.1	49.1	50	49.8	51.9	54.4	5.9*

Source: Ghana Statistical Service, 2017. Notes: * Denotes provisional figures for the close of December 2016.

Ghana's record high GDP growth of 14.0 percent in 2011, but could not be sustained in the subsequent years. For the first time since at least the last half-decade, the country's growth in 2014 of 4.2 percent has fallen below the Sub-Saharan African (SSA) average of 5.0 percent (ISSER, 2015). Furthermore, the 4.2 percent growth rate is against the target of 7.1 percent and is much lower than the rate of 7.3 percent in 2013.

There is, moreover, an indication that the positive effect of the oil find on Ghana's growth has petered out, with the non-oil growth rate at 4.1 percent in 2014, as compared with the 4.2 percent overall growth rate. In contrast, the respective overall and non-oil growth rates were farther apart in previous years: 7.3 percent and 6.7 percent in 2013, 8.0 percent, 7.3 percent in 2012, 14.0 percent, and 8.4 percent in 2011 (GSS, 2015; ISSER, 2015).

3.4.2 Economic Performance

The economy of Ghana went through a lot of tumultuous times in post-independence Ghana since 1957. Even though in the immediate post-independence period from 1960-64 saw relatively economic growth, but the country however suffered macroeconomic instability and volatile growth from 1965 to 1983, mainly due to political instability as a result of military interventions. This is period has been characterised by price and exchange controls, poor administrative system and leadership, political instability and inconsistent economic policies implementation. The country economic situation was worsening by drought, bush fires and hunger in the early 1980s and, in April, 1983, the PNDC regime launched an Economic Recovery Programme and this re-established macroeconomic stability (see, Baah-Nuakoh, 1997).

By the early 1990s, the country's trade regime was largely liberalised limiting the control of price and distribution of goods and services, the exchange rate was also determined by the market forces. The economic reforms or the economic measures under the Structural Adjustment Programme (SAP) have helped reduce the macroeconomic imbalances as well as the rate of inflation. The fiscal performance from the period 1984 to 1992 was largely strong, but suffered in the election years of 1992, 1996 and 2000, the government

expenditure position was equally bad with the average GDP growth rate of 4.5 percent from the period, 1983 to 2000 (cf: ISSER, 2001).

In, 2011, the Ghanaian economy performed well as compare to other economies in the Africa sub-region. The country poverty levels was brought from 66.6 percent in 1992 to 50.7 percent in 2006 and further to 35.7percent in 2013, and this surpassed the Millennium Development Goal target of halving poverty by 2015. The average economic growth rate was 4.5 percent from 1983 through 2000, but accelerated to 14 percent in 2011, and fell to 4.2 percent 2014, 4.0 percent in 2015, but increased to 4.1* percent (provisional figure) by the close of December, 2016, in a response to the government's program of reforms. Also, Ghanaians' access to electricity is about 75 percent, the highest in Sub-Saharan Africa outside South Africa.

Thus, Ghana's economic growth has been stable though not the best, in the face of the global recession since 2011. The economy's real GDP growth rate was 4.2 percent in 2014, short fall of 7.1 percent target (cf: ISSER, 2015). It was the highest negative outlook since 2008, with the highest economic growth in 2011 due to oil exports, and not the case in 2014. In 2013, non-oil GDP growth rate of Ghana was 3.9 percent as compared with the overall GDP growth rate of 5.4 percent. In 2014, the non-oil GDP growth rose to 4.1 percent compared with the overall GDP growth rate of 4.2 percent.

However, the oil sector did not contribute significantly to the overall GDP growth rate in Ghana over the period due to primarily to unstable oil prices on the world market. The oil has become an important share of exports commodities in Ghana, as it contributes about 40 percent to the GDP in 2012, as against 0.3 percent in 2010 (cf: World Bank, 2014).

The Per capita GDP growth tracks GDP growth quite closely due also to population growth. The real per capita GDP growth therefore fell from 4.7 percent in 2013 to 1.6 percent in 2014, compared with a GDP growth decline from 7.3 percent to 4.2 percent over the same period. Indeed, per capita GDP growth in 2014 was the lowest since 2009's rate of 3.1 percent (cf: ISSER, 2015).

In the economy sector, service industry, the largest sector, registered a growth rate of 5.6 percent in 2014, down from 10.0 percent in 2013. Despite the sector's decline in growth, in 2014 it still remains the largest sector with a share of 49.6 percent of GDP, falling only marginally from its 2013 share of 49.8 percent. The industrial sector, which is the second largest sector, grew even much slower at 0.8 percent in 2014, down from 6.6 percent in 2013. Growth of the agricultural sector also fell from 5.7 percent in 2013 to 4.6 percent in 2014 (cf: ISSER, 2015). Thus, the growth rates of all the three sectors fell between 2013 and 2014. However, with the strongest growth in 2014 being in services, followed by agriculture, and then distantly by industry, this permutation is different from 2013 when the strongest growth was also recorded in services, but followed by industry. The rather precipitous decline in industrial growth between 2013 and 2014 is worrisome, given the country's quest for industrialisation (cf: *ibid*, 2015). The end of year inflation rate in 2014 was 17.0 percent compared to 13.5 percent in 2013 and 8.8 percent in 2012. This outturn far exceeds the targeted rate of 13.0 percent in 2014. Broad Money Supply including foreign currency deposits (M2+) grew by 36.8 percent in 2014 compared to 28.8 percent in 2013, thus ratifying the higher inflation rate.

Also, between 2013 and 2014, the interest rates for demand deposits increased, but those for savings and time deposits decreased. Meanwhile, the lending and 91-day treasury-bill rates rose and the cedi depreciated by 31.0 percent (cf: ISSER, 2015). By the close of December, 2016 it fell to 15.4 percent. In fact, economic shocks are

sometimes through both external and internal factors dampens economic growth rates pushing them into negative growth rates, but this has never happened in Ghana over the period 1984 to 2016 in contrast to the early years in the country's economic and political history.

Table 3.3: Selected Ghana's Economy Performance Growth Rates

Year	GDP growth	Growth deficit	Govt-Exp	Govtexp(%)of GDP	msupplym1	msupplym2+	M2+Grate
1992	3.900	-8.10	149.9	14.4	305.4	521.4	32.20
1993	4.971	-7.40	176.1	19.7	451.8	758.9	44.40
1994	3.269	-3.80	114.1	21.7	617.6	1091.8	35.40
1995	4.023	-4.00	169.9	24.2	896.0	1616.3	53.10
1996	4.596	-8.40	244.6	22.5	1234.9	2387.6	43.70
1997	4.198	-10.10	384.3	19.1	1646.4	3320.9	41.90
1998	4.694	-8.10	451.3	18.3	2148.7	4207.3	24.60
1999	4.429	4.50	496.6	16.8	2521.4	5044.4	19.00
2000	3.736	-8.50	751.0	20.1	3434.2	7017.3	24.00
2001	4.182	2.40	982.9	23.0	4605.0	9895.8	32.00
2002	4.548	-5.26	1277.8	17.1	6805.8	14316.0	50.00
2003	5.248	-5.30	1894.6	28.14	10105.1	20087.9	37.80
2004	5.578	-3.40	2604.7	20.5	14415.3	35811.7	26.00
2005	5.868	-2.80	2963.3	19.5	16609.6	42133.6	14.10
2006	6.430	-4.70	3872.7	21.8	20812.4	41894.0	38.80
2007	4.346	-5.40	5623.6	22.9	27490.5	56976.5	35.90
2008	9.151	-11.30	8009.8	24.4	35941.7	78363.4	40.20
2009	4.844	-7.00	8345.5	23.5	43486.5	103468.2	26.90
2010	7.902	-9.40	11532.2	26.1	50625.8	120531.7	27.20
2011	14.045	-5.20	888.00	24.4	8714.4	18195.2	33.20
2012	9.292	-12.10	1,180.0	30.7	11156.7	22620.1	24.32
2013	7.314	-10.90	1,448.9	26.7	12902.5	26937.0	19.08
2014	3.986	-9.80	36296.1	18.4	8714.40	36843.1	36.77
2015	3.881	-7.00	38.854	25.7	11156.73	34150.1	26.09
2016	4.100	-8.70	51,125	30.3	26076.38	56692.09	22.04

Source: Bank of Ghana, Ghana Statistical Service, Ministry of Finance, 2016.

3.5 The Economics, Politics and Elections

The electoral behaviour of voters is an important criterion for democratic consolidation. Elections have rather short-term tradition in Ghana's. But, for the last twenty-five years, under the Fourth Republic, electoral competition has led to the deep transformations of the Ghanaian society, its political system and valuable political and social orientations of citizens.

The first elections under the new Constitution were held in 1992. In an apparent reaction to the presidential elections, won overwhelmingly by Flt. Lt. Rawlings of National Democratic Congress (NDC), but the New Patriotic Party (NPP) boycotted the parliamentary elections, and so the NDC won 189 seats of the 200 seats, while the other 11 seats went to other parties and independent candidates. Though, shifted to constitutional rule, the slower pace of economic growth and development was a challenge. The development partners and donors contend that the economic policy in the country has shifted from the technocrats to the paradigm of political control and voter sensitive policies.

The macroeconomic imbalances re-emerged, fuelled in part by elections risk, hence governments overspending, and privatisation was accelerated. In 1994, the government started a long development policy framework for the country and was termed 'Ghana-Vision 2020' to achieve average GDP growth of 8 percent and macroeconomic stability, ensure human development, agricultural development, business development, and the reduce poverty among Ghanaians by 2020.

In 1996, the second elections under the Fourth Republic were held. Thus, the 1996 General unlike the 1992 the presidential and parliamentary elections were held concurrently. The elections were fought on the basis of economic development in the country. The period saw the emergence of multi-party democracy and significant outline of economic policies of the contesting parties in those elections given a certain economic policy direction.

The then incumbent government fought the 1996 elections on the basis of its economic record from 1983-1992/and 1993-1996. In April, 1983, the PNDC regime openly accepted the neo-liberal economic programme, though was highly criticised. In that elections, the main opposition party, promised to continue with the Vision 2020 policy formulated by Rawlings government if elected into power in 1996, if elected into office.

The opposition party promised business-friendly environment and social intervention policies such as the introduction of health insurance in the country. The NPP also criticised Rawlings government of bad economic policies like cost-recovery and cost-sharing reform policy, cash and carry health-care system, poor educational system, and promised to provide good economic and social policies to ameliorate the suffering of Ghanaians if it wins the 1996 elections.

Also significant in the 1996 elections was the fact that court ordered the state owned media to grant equal opportunity to all contesting parties. In the 1996 General elections, voter participation recorded 78 percent of turnout, and this was remarkably giving a clear indication of acceptance of democratic ideals by Ghanaians. In that election, the incumbent governing party, the NDC was retained with Rawlings (who was then the sitting President) as its candidate, and was re-elected with victory margin of 57.4 percent.

The candidate of the NPP, John Kufuor also garnered nearly 36.6 percent of the vote in the elections, with 66 seats, out of the total seats of two hundred (200) contested for in the elections. The 1996 elections have also confirmed the regional and ethnic vote pattern like the previous 1992 elections, and this has become a feature of Ghana's multiparty politics since 1992. In the 1992 presidential elections for instance, Mr. Rawlings (who is an Ewe) won Volta Region with 93.2 percent (See, Jonah, 1998, 1999), while the NPP's candidate, Adu Boahen (an Asante) also won 60.5 percent of the vote in the Ashanti Region. This general pattern thus, repeated itself in the 1996 presidential elections, with 94.5 percent of the Volta region voting for Rawlings, while 65.8 percent voted for candidate Kufuor (also, an Asante) in his home region of Ashanti.

The run-up to the 1996 elections demonstrated, that in a competitive democratic elections, the incumbent government sacrifice prudence fiscal and efficient economic policies for electoral purposes. For instance the government launched projects that were not budgeted for electoral purposes, and the suspension of petroleum tax, as a result the government's fiscal situation was worsened. The International Monetary Fund (IMF) programme was also suspended. All the suspended reforms were implemented and including the introduction of VAT in 1998, the electricity tariffs were also increased by 280 percent. Many other reforms were carried out such the creation of independent regulatory agencies for telecommunications, electricity, and water utilities in order to ensure the private sector participation.

Between 1992 and 2000, several policies and economic reforms that were carried out such as uniform salary and grading system in 1998, 20 percent salary increase, a cocoa-development plan, in 1999, 15 percent cocoa price increased in 1999, the cocoa producer price was increased from 60 percent of the export price to 70 percent in 2000, and privatisation of 230 of about 300 state enterprises by the close of 2001.

However, the poverty levels were still high, about 51 percent of Ghanaians in 1992 to 43 percent in 1999 were poor (GSS, 2000).

Though school enrolment had improved, gender gap declined in the country. The life expectancy rate had increased, maternal mortality rate fell by 2/3 percent, and the infant mortality rate decreased by 25 percent. Finally, access to safe water, sanitation, and electricity increased in the country, and by 1998, all the district capitals were connected to national grid up from the 45 percent in 1990 (see GSS, 2000).

However, by the close of 1999 and 2000, the country was faced with a lot of economic challenges such as low productivity rates, high population growth, and little investment in human capital, inadequate private savings and investment rates, poor educational performance, poor agricultural development, environmental problems, and aid dependency. Also, prior to the 2000 elections the money supply increased by 40 percent, coupled with low prices for gold and cocoa, high oil prices, affects the foreign reserve position of the country. The inflation rate hit 40 percent, the cedi depreciated to about 70 percent against dollar, and the GDP growth 1999 declined (see World Bank, 2000). All these economic problems, coupled with high poverty and high prices of goods on the market angered people to vote for change of government in the 2000 general elections.

In 2000, the third General elections under the Fourth Republic were also conducted on 7 December, 2000. The economic conditions were poor such as high inflation, high prices, and unemployment. The 2000 election was therefore fought on the basis of poor economic conditions in the country. But, interesting in the 2000 elections was the fact that the incumbent, President Rawlings who had then served his constitutional mandated term, supported his vice president.

In the elections the NDC lost both presidential and parliamentary election to the NPP. The NPP won 100 of the 200 seats in the 2000 elections. The NDC lost its majority from 133 to 92, with 8 seats also went to independents and other parties.

In the first round of the 2000 presidential elections, NPP candidate, Kufuor, got 48.4 percent and the NDC's, Professor Atta Mills also garnered 44.5 percent of the vote. In the second round, NPP candidate won the elections with 56.9 percent of the total valid votes cast to defeat NDC candidate, Mills on 28 December, 2000.

The 2000, unlike the 1992 and 1996 elections, the ruling NDC could not benefit from the incumbency advantage as Ghanaians needed change. The economic indicators in the country in 1999 and 2000 were very poor, and include the rise in oil prices, declines in prices of gold and cocoa, a cedi depreciated about 70 percent between January and December 2000, the interest and inflation rates were over 40 percent, joblessness, inequality and corruption. There were also allegations against the government appointees. The positive change slogan of main opposition, NPP was therefore well resonated with Ghanaian voters in the 2000 elections, hence the lost of NDC to NPP in the elections.

Also significant of the 2000 General elections was vibrant mass media for freedom of expression of people's opinion in the country. All contested parties in the 2000 General elections were allocated equal air time and print space on national television, radio and national daily papers. By 2000, the private radio stations rose to 30 and have provided alternative balanced coverage and reporting largely on opposition parties and their campaign messages.

The use of criminal code by the government to prosecute certain influential journalists and publishers in the country worsened the relationship between the NDC government and the media at that. The main opposition NPP took advantage of the bad relationship government and the media, and promised to repeal the criminal libel law if voted into power in the elections.

Again, the 2000 General elections, unlike the 1992 and 1996, the ethnicity and regional vote patterns was evident. In the parliamentary elections, the NPP won majority of the seats in the five Akan-dominant regions plus the Greater-Accra Region (which is cosmopolitan), but suffered defeat in the three northern regions and Volta, where the NDC was very strong.

In the second round of the presidential elections, the NDC, regain some of the constituencies it lost to the NPP in the first round, through vote mobilisation drive among voters particularly in the swing constituencies of the Western, Central, Brong-Ahafo and Greater-Accra Regions. What weakens the NDC was that all the other opposition parties joined hands with the NPP to unseat NDC in the second round of the presidential elections.

The 2004 General elections was the fourth to be organised under the Fourth Republic. In the 2004 General elections therefore, the opposition NPP winning the 2000 elections was again retained with the incumbent president Kufuor as the candidate was re-elected with a victory margin of 52 percent of votes in the first round in that elections.

In parliamentary elections also, the NPP won 128 seats, an increase of 26 percent in the 230-Member Parliament (increased from 200 seats in 1992,1996 and 2000 elections) while the main opposition then, the NDC won 94 seats and the remaining 8 seats went to

CPP, PNC and independent candidates. The positive change chapter two was the slogan of the ruling NPP in the 2004 elections.

The then incumbent government under Kufuor, used the slogan to claim a solid record of economic stability, market-based economic growth and development and broad quality of life improvements of Ghanaians and promised that the positive change chapter would do far better than the 'positive change chapter one', hence, his re-election in that elections.

As noted earlier, external factors contributed significantly to economic down turn of Ghana by 2000. The new government led by John A. Kufour in 2001, therefore faced poor economic indicators such as low growth rates, currency depreciation, poor prices for Ghana's main export commodities (gold and cocoa), high inflation and interest rates, youth unemployment rate, and many other problems facing the country.

As a result the government in 2001 applied for the IMF-World Bank Heavily Indebted Poor Countries (HIPC) Initiative, though was heavily criticised, the government went ahead with the initiative. The country's \$1.5 billion debt was then cancelled and got \$3.5 billion debt relief from its creditors (World Bank, 2005). This policy initiative saw a significant improvement in the Ghanaian economy. For instance, the GDP growth rate was brought from 3.7 percent in 2000 to 6.3 percent in 2007.

Between 2000 and 2007, Ghana GDP growth rate was 5.2 percent compare with sub-Saharan Africa which was 4.8 percent. Inflation was also reduced from 40.5 percent in 2000 to 10 percent in 2007, but rose to 16 percent in the 2008, due to election year spending. The country's external debt was also reduced from \$6.3 billion in 2000 to \$2.6 billion in 2007. Ghana also signed a Millennium Challenge Account Compact with the U.S. government worth \$547 million in 2007, the country got \$750 million Eurobond

and it was sold in September 2007, and the country sovereign credit ratings was also B+ (see ISSER, 2009).

The NPP government starting in 2001, declared a Golden Age of Business, created Ministry of Private Sector Development (MPSD), with its mandate to develop the private sector in the country. The MPSD was later called the Presidential Special Initiatives (PSI), the establishment of Microfinance and Small Loans Centre (MASLOC), the Venture Capital Fund and the Business Assistance Fund, all with the sole aim of aiding and providing small loans and credit facilities to individual and small businesses in Ghana.

As a result, the total government expenditure and the wage bill increased from 20 percent in 2001 to 30 percent by 2006. Also, the total fiscal deficit shot up from 9.2 percent of GDP in 2007 to 14.9 percent of GDP in 2008 which was an election year. The huge deficit fiscal deficit in 2008 was due to high government wage bill of 11.5 percent of the country's GDP over 40 percent high in 2007 (see ISSER, 2009).

Also, the privatisation of state enterprise was also slower under the NPP than in the second term of NDC from 1996 to 2000. This means that the NPP government planned to privatise the state-owned Ghana Commercial Bank was stopped due to objection and protests from the Labour Unions, The Opposition Groups and Civil Society Groups. But, in the case of Ghana Airways, despite the expressions of international organisations and airlines to manage it, the state air carrier was allowed to collapse, and Ghana Telecom sold to Vodafone UK in 2007.

Further, in 2003, Ghana Poverty Reduction Strategy I (2003-2005) the framework was developed to eradicate poverty and followed by Ghana Poverty Reduction Strategy II (2006-2009) in 2006 known as GPRS II. A number of social interventions were launched by the NPP government between 2001 and 2008 such as the National Health Insurance Scheme (NHIS); it covered about 54 percent of the population (or 12.5 million people) by 2008.

In May, 2008 all children under 18 are to be registered free into the scheme as well as all pregnant women in the country. The education capitation grant was also introduced in 2005; a school feeding programme was also introduced in 2004. The Livelihood Empowerment against Poverty Programme (LEAP) was also initiated in March, 2008 to provide cash relief to the poor and venerable individuals such as orphans and children. The LEAP initiative was piloted in 54 districts nationwide, and this resulted in the coverage of the vulnerable groups under the NHIS grew in 2008 by 22 percent (ISSER, 2009).

The fifth elections under the 1992 Fourth Republican Constitution were the 2008 General elections. The 2008 elections unlike the 2000, the incumbent president served the constitutional requirement of eight years of two terms of four years each in office (2001-2008).

In the elections, the then ruling party candidate, Akufo-Addo of NPP narrowly lost the first round election with 49.1 percent, and the main opposition candidate, Mills garnered 47.9 percent. But in the second round of those elections, Mills of NDC won with 50.2 percent defeating, Akufo-Addo of NPP who obtained 49.8 percent.

The 2008 elections once again brought change of government through the ballot under the Fourth Republic. In parliamentary elections, NDC won 114 of the 230 seats to the NPP's 107 Members of Parliament. In fact, the 2008 General elections, was a test case of Ghana's Fourth Election.

It was a test of acceptability and consolidation of the country' democratic experiment started in 1992. The NDC was again giving opportunity to rule Ghana after losing elections to NPP in the 2000 General elections. President Mills took over from Kufour on 7 January 2009, with his Vice-President Mahama.

Under the watch of president Mills-Mahama, the economy again saw a significant improvement since 2010 even the mainstay of Ghanaian economy continues to decline. Between 2009 and 2014 the economy continue to be resilient but slow pace of growth. For instance, Ghana achieved a record high growth of 14.0 percent in 2011 (IMF, 2014a), due largely to oil exported from newly discovered field.

The growth could not be sustained in the subsequent years. The country's growth has, however, been consistently above the average (median) for the sub-Saharan Africa region. In 2013, Ghana's growth rate was 5.4 percent, against the target of 8.8 percent (IMF, 2014a; GSS, 2014) and much lower than the rate in 2011, or even the 7.9 percent rate in 2012.

Since it may be argued that the phenomenal growth achievement in 2011 was primarily the result of the oncoming petroleum exploitation, the more appropriate comparison over time is the non-oil real GDP growth rate, which also fell from 9.4 percent in 2011 to 7.8 percent in 2012 and to 3.9 percent in 2013 (IMF, 2014a).

In 2012, the sixth General elections under the Fourth Republic of Ghana were again held on 7 December. In the 2012 elections, the then Vice President Mahama who took over after the demise of his former boss President Mills went into the 2012 elections with the main opposition leader Nana Akufo-Addo with minor parties and independent candidates.

There were two major electoral reforms ahead of the elections in 2012. The first was biometric registration of eligible voters in March the same year and the second the re-demarcation of constituencies which the number from 230 to 275 (The Fourth Republic started with 200 seats. This was re-demarcated and increased to 230 in 2004 and furthered increased to 275 in (2012).

In all presidential candidates contested the 2012 (seven political parties and one Independent candidate). The ruling party was retained with the incumbent president as it presidential candidate with a victory margin of 50.7 percent and the main opposition leader Akufo-Addo, garnered 47.7 percent of valid vote cast. The remaining 2.1 percent went to the minority parties and the independent candidate.

However, the 2012 General elections though was contested on the atmosphere of siren, the final verdict was pronounced by the supreme court on 29 August, 2013, the opposition party led by Akufo-Addo challenged the validity of the Electoral Commission declaration of the winner of the 2012 Presidential election.

The inauguration of President John Dramani Mahama as the Fourth President of the Fourth Republic of Ghana further consolidated the gains the country made as the beacon of elections and democracy in Africa. The wining of the 2012 General elections has also giving the ruling NDC to consolidate its development achievement.

The party campaigned on 'Better Ghana Agenda' slogan in 2008. The Mahama led administration is building on their achievements since the party was re-elected in the 2012 elections. While the main opposition party campaign on 'Free Education' as, the NDC led by then candidate Mahama, and who the incumbent President fought the elections on record of infrastructural development as the key to free education which the previous NPP administration under Kufour did little as they put it.

Under the watch of president Mahama in the last four years, the economy of Ghana continues to be in news. The macroeconomic indicators continue to decline amidst erratic power supply known in local palace as '*Dumsor Dumsor.*' The key sectors of the economy continue to register record low growth rates.

For instance, the service industry, the largest sector in Ghanaian economy overtaking agriculture, registered a growth rate of 5.6 percent in 2014, down from 10.0 percent in 2013. Despite the sector's decline in growth, in 2014 it still remains the largest sector with a share of 49.6 percent of GDP, falling only marginally from its 2013 share of 49.8 percent the industrial sector, which is the second largest sector, grew even much slower at 0.8 percent in 2014, down from 6.6 percent in 2013.

Growth of the agricultural sector also fell from 5.7 percent in 2013 to 4.6 percent in 2014 (ISSER, 2015). Thus, the growth rates of all the three sectors fell between 2013 and 2014, an indication of low growth economy in the last four years. The country's seventh General elections under the Fourth Republic of Ghana was organised and conducted on 7 December, like the six elections in the country.

In 2016, the country's seventh General election under the Fourth Republic of Ghana was held. In the 2016 General election, there were still 275 seats in a single chamber house of parliament. Though, characterised by rancour and acrimonies in the run-up to the elections was fought mainly on the economy.

In the election itself, the incumbent governing party led by the incumbent president garnered 4,771,188, representing (44.53%), the main opposition party won the elections with a total of 5,755, 758, and represents (53.72%) of the valid vote cast, and other parties including the independent candidate managed, 186,788 votes, represents (1.7%). The margin of President Akufo Addo over ex-President John Dramani Mahama of the National Democratic Congress (NDC) was 984,570 votes representing (9.19 %) difference.

In the parliamentary elections the incumbent governing party, the NDC lost its majority and managed only 106 seats, while the main opposition won 169 seats. The 2016 General election like the previous elections was fought on bread and butter issues in the contemporal politics of the Fourth Republic of Ghana.

3.6 Conclusion and Summary of Chapter

This chapter analysed the political economy of Ghana's Fourth Republic. Several of the challenges of democratic transition have been overcome, and the country's democracy continues to grow with a strong press, a largely fair electioneering process and a growing vibrant civil society in the country.

The growth of the economy and the improvement in the provision of social service have been modest over the period under review, though the economy still faces with challenges like, the widening income inequality and patronage driven electoral politics

hinged on ethnicity of major ethnic groups. The study argues that development may occur in a number of ways. One of such ways is the empowerment of poor people through building their awareness and capacity of political culture. It could also be done by connecting the interests of people with those in the society who possess greater access to power, and resources.

But, what determines voters' choice in an election in Ghana? Does the economy influence voting behaviour and electoral outcomes in Ghana? Is voting behaviour based on individual (egotropic) or collective (sociotropic) rationality? Is voting behaviour retrospective or prospective in nature? How the incumbent governments do managed the economy to influence voters? Who is voting, and for whom and why? The answers to these questions are provided in the analysis in chapters six, seven, eight and nine of this study. By providing answers to these research questions, the study is contributing to filling the knowledge gaps.

CHAPTER FOUR

THEORETICAL AND CONCEPTUAL FRAMEWORK

A REVIEW OF THE LITERATURE

4.1 Introduction

This chapter gives a concise overview of theories, models and conceptual framework of elections that have been studied, argued and established about the economy and electoral behaviour in democracies. The chapter reviews and documents the existing theoretical literature on political economy framework of elections as well as theoretical models of economy and electoral behaviour which support the research problem of this study.

In the economy and electoral behaviour literature, voting decisions can be studied from at least two theoretical perspectives. These are: 1) Theories of electoral behaviour; and 2) theories of political business cycles. The understanding of these theories is the key to understanding of political economy of elections and voter behaviour. The theoretical literature therefore gives concepts, theories and assumptions that provide the relevant theoretical basis for the study of economy and electoral behaviour.

The theoretical gap identified in the literature of economy and electoral behaviour informs the adoption of theoretical and conceptual framework for this study. The theoretical literature provides elaborative background information in order to understand the phenomenon of elections and the economy nexus, and puts this study in the appropriate theoretical and the conceptual framework.

4.2 Political-Economic Framework

Many scholars have acknowledged the interplay between economics and politics. Based on this perspective, political economy of elections explores and analyses the link between competitive elections and the general state of the economy in a democratic system. The conceptual understanding of the notion that economics shape politics, and vice-versa, is therefore, well accepted by politicians, policymakers, electorates and the scholars in electoral politics.

The re-emergence of a new political economy in the 1980s and 1990s combines the study of economy and political behaviour. This instigates the economic interest in the political (or institutional) process and the re-definition of economic science hypotheses in the areas of public choice school, the institutional economics, and the science of behavioural economics in literature (see Drazen, 2000). The concept ‘New Political Economy’ is therefore defined by “its use of the formal and technical tools of modern economic analysis” to study “how politics affect economic outcomes” (see Drazen, 2000). Therefore, in order to understand the behaviour of voters, whose actions are shaped by both political and economic rationality, this study adopts political economy analytical framework.⁸

⁸ This study adopts political economy analytical framework. It is derived from Marxist social theory of structuralism which provides a coherent foundation for comprehending voting behaviour and development at both macro and micro level of analysis. It is an approach which analyses social reality in terms of the economic organization of society and the relationship between classes. The general framework for political economy analysis is that people may be assumed to oppose policy changes if they think they are likely to personally lose by them. This approach attempts to situate and understand individual behaviour and experience within the context of electoral politics in relation to its wider socio-economic historical context in Ghana, 1992 to 2016.

In this framework, and for the purpose of this study, voters are assumed to be economically rational, based on economic vote hypothesis, and therefore evaluate government's economic policies and performance in an election. The analytical framework is based on the assumption that government expenditure typically increases on activities with short-term payoffs during election years to influence voters to vote, especially when the incumbent governing party is seeking re-election to maintain political power and administer the state, under the Fourth Republic of Ghana. Besides, the economic factors, the individual voter electoral preferences are also influenced by socio-demographic characteristics, cultural and ethnic cleavages (see Lazarsfeld *et al.*, 1944; Berelson *et al.*, 1954), and voter perception. The most important concepts of this framework are operationalised and defined below.

4.2.1 Conceptualising Political Economy

The science of economics presupposes a given or chosen political, order and cannot be independent of politics. The concept 'political economy' can be understood from two preambles. These are: 1) Politics (the state), and 2) Economics (the market). The field of politics is the state and the field of economics is the market. Even though it is easy to identify the fact that political economy is derived from the two academic disciplines. That is, a) political science, and b) the science of economics, scholars have found themselves in definitional tussle as to what the concept 'Political economy' mean precisely.

The definitional tussle is primarily due to perspectives that are heavily coloured by ideology in an effort to come out with what the subject matter in political economy embraces. In this case, political economy cannot be understood, if the two key realms that influence the discipline are not appreciated.

In the 4th century BC, an Athenian metic called Aristotle identified in his book "Politics" that human beings were essentially political animals. Adam Smith also identified in his book "The Wealth of Nations" that human beings are economic animals (see Heywood, 2007). While Aristotle was concerned with politics in the state, Adam Smith was concerned with economics or the market in the society (see Heywood, 2007). Therefore, the existential mutual interaction of these two ideologies can be termed as 'political economy'. That is, the amount of interaction of issues of politics and the issues of economics can be termed as political economy (i.e. the existential interaction of the two fields of academic disciplines).

However, an extreme interpretation of Aristotle's view on political economy places human activity in the realm of politics alone in the society as he declared that "man is by nature a political animal" (cf. Heywood, 2007:8). By this, Aristotle meant that it is only within a political community that human beings can live the good life. In this situation, the state is the sole and dominant force in the allocation of resources as well as in the decision making process. But, Adam Smith's view rather saw human being as an 'economic animal', whose business is centred around pursuing activities that will make him "The Wealth of Nations" (Smith, 1976).

The two pictures given about the human species have some semblance of truth, but the position taken by the two academists, perhaps would have more comprehensive picture of the human species, if the two extreme situations are placed in juxtaposition, so that they mutually interact and have a sphere where there is an overlap, termed as political economy.

Any attempt to define political economy must therefore not brushed over the existential mutual interaction between the state and the market. Whereas this fact is simple to appreciate, the understanding of political economy is fraught with controversies as to whether the state or the market should be the prime mover of socio-economic activities in a nation-state. Therefore, in the context of the two realms of academic disciplines, the term 'political economy' can be understood from different perspectives. Also, combining politics and economics, the concept by nature is interdisciplinary (see Hague & Harrop, 2010).

For Weingast and Wittman (2008:3), "over its long lifetime, the concept 'political economy' has many different meanings." In its original usage, political economy referred simply to the application of economic principles to the practice of public policy of nation-states (ibid, 2008).

Hague and Harrop (2010: 387) said, the "concept political economy referred to the financial management of the royal household, but in contemporary times, it refers to policy issues, where politics meet economics, with a particular focus on improving economic performance." They further argued that "As with other policy areas, the concept is also practical in the sense that it responds to problems arising in the real world today, and that the question is not just why? But, also what is to be done about recession, depressions, mass unemployment, inflation and financial crises."(ibid: 387).

Also, Weingast and Wittman (2006) drew our attention to the fact that the concept 'political economy' has its origin from the works of Adam Smith's 'Wealth of Nations' and Karl Marx 'Ownership of Means of Production'. To Smith, "political economy is the science of managing a nation's resources so as to generate wealth" That is, the study of causes of the wealth of a nation. For Marx, political economy refers to "how the

ownership of the means of production's influenced historical processes" (cf: ibid, 2006:3).

Other political economists such as Keynes (1936) and Friedman (1970) contributed to the core ideas of the concept 'Political economy.' For Keynes, "when demand is deficient, counter unemployment by boosting public spending." Friedman also argues that "to bring inflation under control, restrict growth in money supply" (cf: Hague & Harrop, 2010:388). But, in its broader contemporary meaning, Weingast and Wittman make these statements:

Political economy is the methodology of economics applied to the analysis of political behaviour and institutions. As such, it is not a single, unified approach, but a family of approaches. Because institutions are no longer ignored, but instead are often the subject matter of the investigation, this approach incorporates many of the issues of concern to political sociologists. Because political behaviour and institutions are themselves a subject of study, politics also becomes the subject of political economy. All of this is tied together by a set of methodologies, typically associated with economics, but now part and parcel of political science itself. The unit of analysis is typically the individual. The individual is motivated to achieve goals (usually preference maximisation but, in evolutionary games, maximisation of surviving offspring), the theory is based in mathematics, often as game theoretic (Weingast & Wittman, 2006:3-4).

Political economy is also concerned with "the relationship between politics and economics, with a special emphasis on the role of power in economic decision making" (Todaro, 2012:7-8). In this case, the concept is better understood, when considering the impact of economic organisation and politics on the welfare of citizens in the society, the impact on government popularity and the re-election bid of the governing party, and above all the concept of 'Political economy' can be seen as the application of methods of economic analysis to the study of electoral politics. The application of methods of economic analysis to the study of politics, economics and elections is referred to as the 'New Political Economy' (seedcase, 2000).

This study therefore conceptualised the term ‘Political economy’ as an approach focusing on the application of economic tools of analysis to the study of electoral politics and economics, rather than as the subject of study which concerns itself with government policies (such as the Capitalism, Nationalism and Marxism) for enhancing economic performance in a nation-state. This conceptualisation is in line with the view that the concept “Political economy emphasises both economic behaviour in the political process and political behaviour in the marketplace” (Alt & Alesina, 1996:645-46, cited in Krause, 2008: 36).

4.2.2 Political Economy of Elections

This study is a contribution to the concept of ‘Political Economy of Election’ in Ghana’s Fourth Republic. The concept ‘Political Economy of Election’ has received varied scholarly definitions and conceptualisations. The scholarly discussions and the debate of the political economy of elections have therefore motivated this study most. In its broader conceptualisation, the term ‘Political economy’ of elections has been defined and explained as follows:

Political economy of elections examines the determinants and consequences of voting with an explicit emphasis on the economy. It covers the state of the art in the academic understanding of how voters respond to economic stimuli: That is how voters attribute responsibility and hold political parties electoral accountable. Conversely, political economy of elections examines the consequences of voting. That is how regularities in voting behaviour influence policy making, redistribution and specific policy making. The concept, examines empirical regularities in the key relationships that determine who gains and how loses in the democratic politics (Kayser, 2014).

In view of the above definition, the “economy more so than any other variable, rank consistently among the most important issues in an election, and as such the economic vote is the strongest evidence that the governed actually hold those who govern them accountable in the democracies” (Kayser, 2014).

Also, in defining political economy of elections, Drazen (2000), referred to it as “the application of economic analysis to the study of how politics and economics interact, and affect economics and electoral outcomes”. However, the roots of political economy of elections under the concept the 'New Political Economy' can be discussed from four traditions in economics and politics (see Drazen, 2000) as follows:

The first is the older 'Public-Choice School'. This can be traced to the classical contribution by Buchanan and Tullock (1962) and Olson (1965). In their view, public choice analysis has three distinctive features, including the following: (1) Understanding the implications of rational self-interest for political interactions; (2) The importance of constitutions as constraints on self-interest; and (3) The public choice approach offers a particular slant on the concept of political failure. That is, the allocation of resources in a democratic process which does not meet economic welfare conditions of citizens in the state (cf: Drazen, 2000);

Secondly, the other fundamental tradition for the study of political economics is the rational voter theory. The rational voter theory takes its root from 'Economic Theory of Democracy' (Downs, 1957) and Riker (1962) and it is also referred to as the rational choice theory. In particular, Downs (1957) explains that ‘politics converge to the electoral choice or vote preference of the average median voter in the competitive democratic elections.’ This means that rational theory examines the rationality of individual voter and how his or her preferences are aggregated to form a collective

choice in elections. In the context of Ghanaian elections under the Fourth Republic, 1992 to 1996 (i.e. the period for this study), the electoral outcome is not often decided by the 'median voter,' but rather the preferences of the key swing voters in the Central and Western regions as well as the moderately swing regions of Greater Accra and Brong-Ahafo regions under the Fourth Republic;

The third tradition is the theory of macroeconomic policy (Lucas *et al.*, 1981). This conceptualisation gave rational expectations a game theoretic foundation. In this case, the rational individual voter strategically bases his/her expectations on their perception of the policymaker's incentives (i.e. cost-benefits calculation). The complete theory of this conception must be a specific hypothesis about what governs those incentives.

The fourth tradition is the 'New Institutionalism' (Lipset & Rokkan 1990; Linz 1994; Drazen, 2000; LeDuc *et al.*, 2014). The institutionalism concern itself with how institutions interact with organisational arrangements in modern liberal democracies, and could be extended to the understanding of how politics and economics interact to influence electoral choice in a competitive democratic election under the Fourth Republic of Ghana.

In the context of the above four (4) traditions of economics and electoral studies, there is an agreement that politics play central role in shaping economic growth and development. The study of political economy of elections is significant to the understanding of interplay between politics and economics. The concept 'Political economy of elections' in this way is the relationship between elections and the economy. It concerns how government manages the economy for the citizens to reciprocate with their votes in an election (see Nordhaus, 1975; Hibbs, 1977; Tufte, 1978; Kayser, 2014). Tufte argues among other things that (1) that politicians shape national economic policy

for electoral purposes by (2) increasing transfer payments immediately prior to the election, and (3) that these policies are rewarded by voters, which (4) produces a two year electoral-economic cycle in which economic indicators fluctuate with the occurrence of national elections (cf: Tufte, 1978:65).

In a nutshell, the concept 'Political economy of elections' "examines empirical regularities in the key relationship that determines who gains and who loses in the democratic politics" (Kayser, 2014). It explains the relationship between elections and the economy in modern liberal democratic politics. Thus, the relationship between economy and elections that rests on the willingness and ability of government to manage the national economy and the willingness and ability of voters to reciprocate with their votes in elections which is the core pivot around which modern liberal democratic theory revolves.

4.2.3 Political Economy of Voting

The conventional wisdom in the study of political economy of elections is that the incumbent governments, or better put it the 'Politicians' often manage the national economy with the aim of maximising gains largely for electoral purposes, and the retention by voters in an election to control and administer the state.

In this view, governing party seeking re-elections attempts to improve national economic conditions before the elections through its expansionary economic and social policies interventions. This intervention in the concept of political business cycle model in the economy is intended to influence voters and enhance the re-election chances, particularly when the incumbent governing party is seeking re-election to retain political power.

In this case, voters are believed to support 'Politicians' or the 'incumbent governments' whom they perceive as having improved or would improve their personal economic situation in the context of self-improved economic welfare or the community and national level development in the country (see Tufte, 1978; Remmer, 1993; Debrah, 2009). Therefore, the term 'Political economy of voting' is based on the rational choice of the average voter in the elections, and it is derived from the 'Economic Theory of Democracy' (Downs, 1957).

In this model, voters are instrumentally rational (short and long term rationality), and therefore have preference or utility ranking of policy alternatives or candidates and/or parties available to him or her. In this regard, voters have some knowledge, and how best to use this knowledge to their advantage in making vote choice in an election.

However, the extent to which this knowledge of 'rational average voter' is applied in real-life competitive democratic elections situation in the contemporary democracy and elections setting is a subject of considerable academic debate, and this is the focus of this study.

4.2.4 Elections and Voting Behaviour

In a democratic system such as Ghana's Fourth Republic, political participation process is directly linked to elections and voting behaviour. This means that elections may not be in themselves sufficient condition for political participation; therefore, there is little doubt that they are a necessary condition (LeDuc *et al.*, 2014).

However, elections form core of democracy and provide citizens with the clearest choice to influence the political process either directly or indirectly, and determine who wins political power and form government to administer the state. In the context, citizens

interest in a democracy may consists of the general or collective interests of an individual, community or national interest which is good for society as a whole.

Therefore, citizens voting behaviour is largely determines by ‘short-term and long-term influences’ (see LeDuc *et al.*, 2014). Thus, in an election situation, citizens voting depends on three main conditions as follows: 1) The first condition is that the state of the economy must reflect a link between a government’s popularity and economic variables such as unemployment, inflation and disposable income; 2) secondly, the personality and public standing of party leaders and candidates seek to be elected into public office and because media exposure, such candidates are portray as the brand image of their party, or development oriented; and 3) The mass media may also be of “long-term significance if biased or partisan coverage reflects structural, and therefore continuing, factors such as press ownership” (see Leighley, 2013; LeDuc *et al.*, 2014: 141).

4.3 Theoretical Frameworks of Economy and Electoral Behaviour

In literature, two strands of theories of elections have been largely identified. These are:

1) Theories of Electoral Behaviour; and 2) Political Business Cycle Models.

4.3.1 Theoretical Models of Voting Behaviour

The first scientific study of electoral behaviour began by three major research schools in the early 1940s, and the latest dominant ideological school model. These include: the Sociological Theory (**Columbia School**) by Lazarsfeld *et al.* (1944) and Berelson *et al.* (1954); Psychological Theory (**Michigan School**) by Campbell *et al.* (1960); Economic Theory of Democracy or the Rational Choice Theory (**School of Rochester**) by Downs (1957), and the Dominant ideological theory (**Marxist School**) popularised by Dunleavy and Husbands (1985).

These four schools of thought of the economy and electoral behaviour as stated above, and their theories of voting behaviour explaining the underlying assumptions have reviewed and discussed below.

4.3.1.1 School of Columbia

The sociological theory is identified as School of Columbia, with the publication *The People's Choice* (Lazarsfeld *et al.*, 1944). The theory also assumes that people vote according to their original political predispositions (Lazarsfeld *et al.*, 1944; Leighley, 2013; LeDuc *et al.*, 2014). The theory 'links voting to group membership, suggesting that voters in an election tend to adopt a voting pattern that reflects the economic and social position of the group to which they belong' (Lazarsfeld *et al.*, 1944).

The sociological theory therefore identified factors such as socio-economic variables mainly class, age, gender, race, religion, ethnicity and location of the voter as the key determinants of voting behaviour (Lazarsfeld *et al.*, 1944). That is, the theory highlights the importance of a social alignment, reflecting the various divisions and tensions within society, and the most significant of these divisions are class, gender, ethnicity, religion and region of the voter.

In the case of Ghana's Fourth Republic, the sociological view of voting behaviour could simple be a situation where voters from a given ethnic, geographical location of the voter or social group largely vote for one candidate or party. Thus, in the context of Ghanaian elections under the Fourth Republic of Ghana, since 1992, the NDC and NPP respectively continue to receive about 80 percent of popular vote in both presidential and parliamentary elections among Ewes and Asantes respectively in the Volta and Ashanti

regions in all the seven democratic elections that have been conducted from 1992 to 2016.

Particularly beginning with the 2000 General elections in the country, the electoral outcomes have been largely determined by the ethnic/cultural groupings (see Jeffries & Thomas, 1993; Oquaye, 1995; Nugent, 1999; Ayee, 1998; Anebo, 2006; Gyimah-Boadi, 2007; Arthur, 2009, Anaman, 2016a). Based on this assumption, it has been estimated that about 70 percent of the voting population largely vote on ethnic/cultural lines, with 30 percent of the highly-intensive type and the other 40 percent of the moderate to moderately-high intensive type (refer to Anaman, 2016a).

The conclusion is that the outcome of elections particularly the presidential elections since 1992 under Ghana's Fourth Republic are largely determined by the remaining 30 percent of the voting population who vote mainly on personal/individual economic welfare or the local, district or national development issues as the case may be (see Anaman, 2016a).

However, the limitation with this theory is that if the choice of vote is determined by social factors, then the outcome of elections may not vary for a very long time, due to social attachment. This means that the change in voter behaviour that may occur will be attributed to economic factors specific to each election. The social factors though may explain electoral behaviour of voters in an election, but cannot explain change or variation in voters' behaviour in elections as a result of other factors such as the economic variables or determinants. The major criticism of the sociological theory is that it focuses on social characteristics of groups in a society, and it ignores the individual and the role of personal self-interest in an election and its effect on electoral behaviour.

4.3.1.2 Michigan School

The Psychological Model also called *School of Michigan* also has its origin from the study of 1948 U.S Presidential elections, by the University of Michigan. The theory has its foundation from the work of Campbell and Kahn (1952) in *The People Elect a President*, and the study of 1952 America Presidential elections by Campbell et al.(1954) in *The Voter Decides*; and finally, the 1956 Presidential elections in America.

The psychological theory of voting behaviour has its major reference in the work *The American Voter* (see Campbell *et al.*, 1960). This theory of voting behaviour is based on the sense of psychological attachment that people have to parties, and places heavy stress on early political socialisation, seeing the family as the principal means through which political loyalties are forged (see *ibid*, 1960). The theory further assumes that ‘attitudes towards policies and leaders, and perceptions about group and personal interests, tend to be developed on the basis of party identification.’

The main assumption of Michigan school research agenda is that a key determinant of electoral behaviour is when individuals and groups identify themselves with a political party (Leighley, 2013; LeDuc *et al.*, 2014).

Therefore, party identification is the main factor behind the behaviour of voters (voters aligned to a certain party). Thus, the Michigan School of thought considers party identification or affiliation as the key determinant of voter choice, and it is considered as socio-psychological product of family and social group ties.

However, the Michigan school or the psychological model complements the Columbian model in explaining change in electoral behaviour. This means the combination of sociological and psychological (also called psychosocial approach) contributes significantly to the understanding of electoral behaviour, and also helps to explain

change in voter participation and choice in elections (Leighley, 2013; LeDuc *et al.*, 2014).

However, the limitation of this psychological theory is that the explanation of changes in electoral behaviour in elections is only related to psychosocial variables, and neglects other factors. The general criticism is that the growing evidence from a number of countries is the partisan de-alignment, and indicates a general fall in party identification and a decline in habitual voting patterns. Therefore, the limitation of psychological theory leads to the School of Rochester research agenda titled 'Economic Theory of Democracy' in 1957.

4.3.1.3 School of Rochester

The Rational Choice Theory, also referred as the School of Rochester is largely attributed to Downs (1957), and takes its roots from 'An Economic Theory of Democracy' (Downs, 1957). The School of Rochester identified the rationality, choice, uncertainty and information as factors that determine voter participation and electoral behaviour. Downs developed explanations for why some people voted, even though the cost of voting was very likely to be greater than its benefits. Lastly, Downs explained how citizens could reduce information costs and discussed the role that political parties played in reducing them (Leighley, 2013; LeDuc *et al.*, 2014).

The basic assumption of the School of Rochester, other words called 'Economic Theory of Democracy' is that a voter casts his or her vote for the party that brings the most personal benefits to him or her in terms of economic gains (egotropic voting/pocket voting).

Hence, the voting behaviour is called 'rational choice', where an individual tries to maximise personal utility in accordance to well-known microeconomic terms. The theory further stresses the fact that a voter bases his or her predictions about a specific party's future activity on real facts and not on promises made by the very same.

The underlying assumption of the theory is that average rational voter evaluates (retrospective voting) how well the present government performs in terms of the voter's personal utility (pocket voting consideration). If he or she believes that the opposition party or an independent candidate contesting the election can accomplish more for him or her, then the voter looks into the future (prospective voting), and thus votes against the incumbent government in election (Downs, 1957).

Finally, the voter retrospectively and prospectively evaluates economic and social policies and performance of the government and then makes his or her decision to vote or not to vote for the incumbent governing party in an election (sociotropic/collective voting) decision. As Downs argued that voters look to the future: "When a man votes, he is helping to select the government which will govern him during the coming election period....He makes his decision by comparing future performances he expects from the competing parties" (Downs, 1957:39).

The rational choice theory pays much attention on the individual interest, away from the behaviour of social groups as explains by sociological and party identification theories. Based on rational theory, the "behaviour of voting is seen as a rational act," in the sense that individual voters are believed to decide their party preference on the basis of personal self-interest (Leighley, 2013; LeDuc *et al.*, 2014). However, the criticisms and general limitation of this theory is that it abstracts the individual voter from his or her social and cultural context in a democratic system.

4.3.1.4 Marxist School

The latest model of electoral behaviour is Dominant-Ideological theory identified as Marxist School (Dunleavy & Husbands, 1985). In the view of Marx, voters' choice is manipulated by those in power using media, and hence this theory is called Conspiracy theory. The Dominant-Ideological Model identified as Marxist School (also called Conspiracy theory), thus mostly identified with the media (print and electronic), and popularised by Dunleavy and Husbands (1985) is the latest school of thought theory of voting behaviour.

The underlying assumptions of this theory are that "individual choices are influenced by media misrepresentation during electioneering campaign." That is it places emphasis on the "degree to which individual choices are shaped by a process of ideological manipulation and control" (Dunleavy & Husbands, 1985). This means that how, individuals or groups in the democratic system interpret their position during an electioneering largely depends on how it has been presented to them through education, by the government, and above all, by the mass media (ibid, 1985).

This theory tries to indicate that those who vote can easily be disillusioned by what they see, and also it suggests that people are less intelligent to think and choose for themselves. That the theory tries to indicate that those who vote can easily be disillusioned by what they see and also it suggest that people are less intelligent to think and choose for themselves which cannot be true. This is because, there are other factors and theories that can influence our voting behaviour: Class and status (sociological theory); age and gender; party identification theory (occupation and background); rational choice theory, geography and issue voting as explained above.

In the political discourse, media analysis has sometimes encouraged the view that promise of politicians has not always been matched by outcome so that in the eye of many voters the party and politicians are all seen as bad (Dunleavy & Husbands, 1985). The print and electronic media such as newspapers, magazines, television and radio (mass media) influence voting behaviour. The media is the ‘means whereby voters form opinions on the ability of political leaders.’

Dunleavy and husbands (1985) have argued that “individual choices are influenced by media misrepresentation.” In their view, “the newspaper and television distort the process of political communication.” For instance, in the run up to the 2010 UK General Election, the Sun newspaper ran the headline ‘Labour’s Lost it’, letting readers know it has switched its support from the Labour Party to the Conservative Party. The Sun has the largest circulation figures in the UK and famously supported the Labour Party in 1997. Also, in the Ghanaian electoral context, both the incumbent and opposition parties have access to wide media (print and electronic), and information flows from radio, televisions, and newspapers (both private and public), inform and educate the public.

The voter population thus, form their opinion on their choice of parties, candidates, and policies, normally manifestoes of the competing parties in the election propagated by both electronic and print media (see Dunleavy & Husbands, 1985).

The limitation however is that the media analysis has sometimes encouraged the view that promise of politicians has not always been matched by outcome so that in the eye of many voters the party and politicians all seem as bad as each other. Thus, key limitation of the dominant-ideology model is that, by politicians overstating the “process of social conditioning, it takes individual calculation and personal autonomy out of the picture altogether” (see Dunleavy & Husbands, 1985).

4.3.2 Political Business Cycle Theory

Political business cycle theory as propounded by Nordhaus (1975) and Hibbs (1977) explained that in democracies, competitive elections lead to unfavourable economic outcomes, such as a post-election recession or inflation. The theory postulates that the incumbent ruling party seeking re-election often stimulates ‘the economy in a pre-election and election years in order to secure re-election to control political power and administer the state thereby causing post-election year’s slowdown economic growth (Nordhaus,1975).In political business cycles literature, two generational theories have been identified. These includes: 1) Traditional theories (or non-rational models); and 2) Rational political business cycle theories.

4.3.2.1 Traditional Political Business Cycle Models

The traditional political business cycle models are also called ‘non-rational models,’ and were pioneered by Nordhaus (1975) and Hibbs (1977) who described politicians as non-rational opportunistic and partisan respectively.

The traditional opportunistic model of political economic cycles was pioneered by Nordhaus (1975). This model is considered as “non-rational opportunistic because voters are assumed to be myopic and naive in thinking in the elections and only based their voting decisions on the retrospective and expectations of good economic times” (ibid, 1975:1). The non-opportunistic cycles do occur when the incumbent government seeking re-election manage the economy through its expansionary economic policies and social interventions in order to improve voters’ economic fortunes in election times.

The opportunistic behaviour according to the theory, the incumbent government ruling party or the politicians seeking re-election often produces economic expansion in election years (see Nordhaus 1975; Lindbeck, 1976; Tufte, 1978). The expansionary policies pursued then produce “unemployment, high budget deficits, high inflation and low economic growth” in post-election years. That is the opportunistic model of the political business cycles believes that the expansionary government policies result in high economic growth, employment opportunities, and low inflation rates in elections years.

However, the non-rational opportunistic model of the traditional political business cycle theory was heavily criticised by Hibbs (1977), argues that Nordhaus (1975) model excludes partisan preferences of politicians in a democracy. Hibbs (1977) therefore, argue among other things that during the periods of leftist governments, unemployment is low as against inflation rate, but high unemployment and low inflation rate during the periods of the centre and right wing governments.

This produces Phillip's curve trade-off between unemployment and inflation rate (see *ibid*, 1977). Hibbs view is therefore that politicians are not only opportunistic they are partisan in nature as well as happened in the development democracies such as the USA, Germany and UK. The ruling governing party or the politicians pursue economic policies based party ideologies of left-right political leaning in modern liberal democracies of the advanced countries.

The general conclusion on non-rational theories (opportunistic and partisan) of the political business cycles is that the theories assumed that voters as ‘backward looking citizens’ who and places their self-interests on current happenings in the economy. The traditional models also believe that ruling government has control over monetary and fiscal policy instruments, and so shocks in the economy maybe unclear to the voters.

The prediction of traditional model of political business cycles is that economic policies change with regime change in a competitive democratic election. As often happens in advanced democracies, such as Germany, USA and UK the unemployment policies are pursued, when left-wing parties win political power, and inflation and growth rate policies are pursued when the right-wing parties win political power to control and administer the state. That is with experience of the voters, they understand that politicians are opportunistic in nature, hence are ready to ‘punish’ the incumbent party and ‘reward’ the challenger or the opposition in an election with their votes.

In a nutshell, the ‘non-rational opportunistic’ and ‘partisan models’ of Nordhaus (1975) and Hibbs (1977) respectively have been “criticised for assuming that voters are non-rational, retrospective in how inflation expectation is formed, and myopic in evaluating competence of politicians” (Rogoff & Sibert, 1988).

The traditional theories of political business cycles (opportunistic’ and ‘partisan models) have also ignore role play by fiscal policies, concentrate on monetary policies because government has control over the choice of monetary policy instruments to either reduce inflation or increase money supply in the economy.

4.3.2.2 Rational Business Cycle Models

The second generation of political business cycles models are called rational political Business Cycles Models. In contribution to the ‘non-rational opportunistic model’ of Nordhaus (1975), and ‘partisan model’ of Hibbs (1977) respectively, emerged another school of thought in 1980s as “rational opportunistic model,” explaining rational expectations of voters in elections in democracies (see Cukierman & Meltzer, 1986; Rogoff & Sibert, 1988; Rogoff, 1990; Persson & Tabellini, 1990).

These scholars revised the ‘non-rational opportunistic’ and the ‘partisan models’ to include the rational expectations among voters in an election. In their view, voters often use the asymmetric information available to them and assess the incumbent government in the election. In this case, the rational expectations of the voters are based on information available to them, and judge the government performance and based on the observed economic outcomes retrospectively or prospectively. The voters thus, evaluate performance of the government based on the available information, perhaps on aggregate experience of their economic welfare before making their electoral choices. While many of the voters are egotropic (pocket voters), others are sociotropic in nature (collective voters), yet they are clientelistic voters who see politicians or parties as their clients.

The rational models of the political business cycles challenged the argument ‘voters are naïve and myopic’ as suggested by traditional political business cycle models (Nordhaus 1975; Hibbs, 1977). The rational models suggest that “voters are aware of politicians’ perverse incentives to prop up the economy ahead of election, and thus provide a check (through their vote) on the opportunistic behaviour of incumbents” (see Rogoff & Sibert 1988; Rogoff, 1990).

In a nutshell, the rational models assume that when citizens expect that government intends to pursue for instance, expansionary monetary policies, then their inflation expectations would be high. Therefore, rational voters expect government stimulus package to reflect in their pockets and improve their living conditions prior to elections. It is however, noted that this policy expectation of voters limits economic growth in election years. Finally, there is a policy convergence of ‘non-rational’ and ‘rational models’ of political business cycles as both models anticipate post-election increase in inflation.

4.4 Theoretical Gap in Literature

Theoretically, the models used in the study of economy and electoral behaviour such as the major schools of electoral behaviour and political business cycle models using macro and micro approaches have been reviewed and discussed

However, one major lacunae of the scholarly literature on theoretical models of economy and electoral behaviour as reviewed above is that these theoretical frameworks have been applied and used in the study of advanced democracies such as America, German and British elections. The application of these theoretical frameworks to the study of elections in developing democracies such as Ghana is very limited and has not received much scholarly attention.

The main reason for the theoretical gap in the study of economy and electoral behaviour in developing democracies like that of Ghana's Fourth Republic is that democracy and elections is a post-cold war phenomenon. The assumptions and tenets of these frameworks were developed in the context of elections in advanced democracies such as the America and British elections. However, it is important to determine the relevance of these frameworks in explaining electoral behaviour in Ghana under the Fourth Republic.

In conclusion, although these theoretical frameworks were developed and applied in the context of advanced democracies, the determination of their relevance in explaining the economy and electoral behaviour in developing democracies such as Ghana is very important. As a result, the main theoretical assumptions or tenets that underpinned these theories have been reconceptualised, and integrate all the relevant contributions and assumptions of the models for the purpose of this study.

4.5 Theoretical Framework of the Study

This study employs three central political economy concepts to examine economy and electoral behaviour in Ghana's Fourth Republic. These are: 1) Economically-rational voter choice model; 2) Sociological theory; and 3) Political business cycles theory.

Therefore, the theoretical framework for the study is a hybrid of theoretical frameworks of electoral behaviour and political business cycle models. This theoretical approach thus envisages the use of all previously-identified theories of electoral behaviour plus the political economics cycle theory to analyse voter behaviour based on secondary data and the newly-generated data primarily from researcher-based survey for the period April, 2016 to October, 2016.

An economically-rational average voter makes his or her vote decision based on the calculation of short and long term costs and benefits to be derived from participation in the election (see Downs, 1957). The economic self-interest is of great importance to mankind. In the context of economic voting therefore, an average individual voter chooses to vote for a political party or candidate in an election that will give him or her most utility maximisation. Rational choice theory view is that the economic interests of the individual voter determine his or her choice in the elections (see Downs, 1957). Also, in their explanation of public choice or social choice theories, Buchanan and Tullock (1962) supported the economic theory of democracy (Downs, 1957), and argued that since the individual is part of the society, and as such can make rational decision and choice, then his or her actions are often guided by the desire to maximise personal utility.

Sociological theory also argue that in the electoral competition, it is the dominant social relations in the society such as classes, religion, gender, ethnic groups, tribes, location (e.g. district) or region shape and/or determine voter participation and choices in an election, and hence electoral outcomes (see Lazarsfeld *et al.*, 1944, Lipset, 1960).

The political business cycle model was also employed to analyse and discuss the aggregate effect of elections on the macroeconomic performance in Ghana. It was used in the study to investigate the existence of political business cycles in the case of Ghana's Fourth Republic, 1992 to 2016, and covers seven Presidential elections (i.e. 1992, 1996, 2000, 2004, 2008, 2012 and 2016).

The model explores the linkages between elections and the incumbent government expansionary economic and social policies to determine the aggregate influence of elections on economic welfare of the population as measured by macro-economic indicators such as economic growth rates, money supply, government expenditure, government budget deficits, inflation rate, exchange rate, exchange rate depreciation and 91 day Treasury bill rate.

The basis of this theoretical framework is conditioned by the expectations and disappointment of average Ghanaian voter in relation to economic and social development in the country. This is as a result of the consequence of political economy of colonialism, and the failure of various governments of post-colonial Ghana to fully deal with the development challenges, and meet the basic needs of the majority of Ghanaians. The crisis of economic and social development is also linked to the persistence of voting by the vast majority of individual Ghanaians in the Fourth Republic for the same two political parties with virtually identical political ideologies.

Thus, the resultant failure of the state and governments to meet the aggregate welfare of the citizens, particularly among the voting population precipitated the development of a certain level of political consciousness among the Ghanaian electorates. This situation has produced political culture that conditioned political participation to express their disappointment in their leaders in the seven General elections conducted since 1992 under the Fourth Republic.

Arguably, the core starting point of analysis of this theoretical framework is the rational choice theory. In this case, the electoral behaviour of the individual is modelled on the basis of cost-benefit calculation. That is, the average voter will want to vote for a party X, to win the elections which will yield him or her utility. That is, fundamentally, given the poverty levels, inequality and unemployment rate in the country among the voting public, the average voter view elections as an opportunity to extract 'rent' from the various parties and candidates. Specifically, voters explicitly make demands for public and merit goods, money, food, development projects, and other material goods from the various Presidential and Parliamentary candidates. In most cases voters are consumed by self-material gains (*pocketbook or egotropic*) at the expense of the country's development interests (*sociotropic or collective*).

Another element of this theoretical framework is based on structuralism or sociological perspective. There are so many proclivities for the dominant social relations in the Ghanaian society under the Fourth Republic of Ghana. These proclivities for the dominant social relations have entrenched the relevance of ethnic identity in African politics and to the average voter during national elections (see Gyimah-Boadi, 2007). The electoral campaigns are sometimes 'issueless' and largely based on ethnicity in many of the African elections and democracy, including the Ghanaian elections under the Fourth Republic since 1992; and so some voters celebrate, revere and reward

candidates based on social relations such as ethnic relation, religion, gender as well as personal attributes of the candidates that are appealing to them (see *ibid*, 2007).

Also, in the context of political business cycle theory, the voter behaviour or voter participation in the elections can be influence by incumbent government action given the vast powers conferred on the elected President of the Republic by the Fourth Republican Constitution which took effect in 1992. The President by virtue of constitutional powers, appoint all the ten (10) Regional Ministers, the 216 Metropolitan, Municipal and District Chief Executives (MMDCEs), and over 2000 appointees during his or her tenure in office.

These appointees, especially, the MMDCEs are influential in election years, and can be an important source of electioneering campaign machinery for the incumbent governing party seeking re-election to retain political power and administer the state. The President also has the power under the constitution to create new administrative districts in Ghana. This is a major source of incentives to alter voter behaviour in favour of the President especially, in key swing areas such as the Brong Ahafo, Central and Western Regions.

The incumbent Presidents in Ghana since 2004 have created a total of 106 more districts bringing to a total number of districts to 216 (by the close of December, 2016) from the original list of 110 which were promulgated with the 1992 Constitution. Thus, in Ghana the institutions controlled by the President and the powers conferred on the President by the Fourth Republican Constitution allows the incumbent or sitting President considerable leeway in altering voter alliance to his party or candidacy through a series of incentives which are allowed under the Constitutional framework of the 1992.

Finally, the conventional wisdom of political economy of elections is that the incumbent government party seeking re-election has control over macroeconomic policy instruments in the economy, during elections time. That is, incumbent governments has control over macroeconomic policy instruments such as monetary policy (i.e. Government use monetary policy to control the money supply through the short-term purchase and sale of government bonds, Mankiw, 1997), fiscal policy (refers to the government's choice regarding levels of spending and taxation, Mankiw, 1997), and/or exchange rate policy (the exchange rate policy also refers to the rate at which a country makes exchanges in world markets, Mankiw, 1997). The control of these policy instruments causes political business cycles in democracies.

The fundamental assumption of political business cycle theory is that voters base their voting decision largely on the government's recent economic performance. The assumption based on the "findings of the economic voting literature, suggesting that voters consider pre-election and election years economic performance in deciding how to vote, and thus rewards governing party seeking re-election with votes or punish the incumbent government by voting for the opposition (Powell &Whitten, 1993).

In a nutshell, to bridge the theoretical gap, the contributions of all these approaches in the context of theoretical and empirical studies are important. For the purpose of this study, the reconceptualisation of the main tenets or assumptions of the theoretical models of elections has helped in the political economy analysis of Ghanaian elections under the Fourth Republic, 1992 to 2016.

4.6 The Conceptual Framework

The conceptual framework of this study is the political-economic framework. This is because, voters' action and choice in an election are conditioned and shape by both political and economic circumstances. The conceptual framework builds on schools of structuralism/sociological, rational choice theory, and political business cycle theory revolving around key political economy concepts as stated in the preceding section (i.e. section 2.5).

This study utilises political economy framework of analysis, and therefore operationalised it as rational choice and economic behaviour of voters with regards to incentives or economic policy alternatives offered to them by competing political parties and candidates within the cost-benefit analytical framework.

Political economy analysis is an approach which analyses social reality in terms of economic organisation of the society, and the relationship between social classes and income groups in the society. The approach attempts to situate and understand individual behaviour and experience, and elections and the economy nexus within the context of electoral politics in relation to its wider socio-economic historical context in Ghana since 1992. The framework for this study provides a coherent foundation for analysing and comprehending economy and electoral behaviour with respect to development at the macro and micro levels analysis in Ghana. Therefore, for a political economy analysis, the four main engines or drivers of human behaviour are: 1) individual or the market; 2) the community especially the local community; 3) the nation state (like Ghana); and 4) the international state (such as Germany, Russia and the United Kingdom).

In a political economy of election analysis, a common unit of interest is the individual voter, who is often motivated to achieve both personal and collective goals in the

democratic society, conceptualised on the assumptions of material self-interests. These engines or drivers of political economy analysis are embedded in the conceptual framework illustrated in Figure 4.1 below.

The **country context** in the framework refers to Ghana's political, cultural and historical characteristics, including its development trajectory before 1992. It links to relevant elements of political economy in terms of social, economic and political organisation (i.e. social and economic inequality, regional disparities, political parties, institutions and power relations) within the framework of institutional and decision making at national and local levels. A key issue is the reward for citizens and constituencies, an assumption that underpins democratic elections, and how and why elections, who should vote for whom and why?

The country context thus gave birth to the democratic reforms in 1992. This then results in institutional development, stakeholders, economic and political interests under the 1992 Fourth Republican constitution. The institutions (i.e. political parties, executive, judicial, multi-party democratic framework) under the Fourth Republic govern the relations and behaviour of citizens and the stakeholders with their economic and political interests in the democratic system.

Also, the **institutional framework and stakeholders shape** the factors that influence electoral behaviour and establish causal relationship between these factors and the probability to vote or not to vote in an election in Ghana. These factors influence electorates in the election, and are also affected by changes in the social and economic conditions emanating from the economic and social policies and performance of the incumbent government or alternative policies of the opposition party (ies).

In the conceptual framework, there is a reciprocal relationship between institutional development framework in the Ghanaian democratic system, and the factors influencing electoral behaviour. This is because economy and political behaviour of groups and individuals in the modern liberal democratic society such as Ghana can influence institutional reforms and development as well as the stakeholder response. Also, the behaviour of political institutions like the executive which has powers of control, political parties, can shape and influence economy and electoral behaviour of groups and individuals in the democratic states such as Ghana.

Further, the factors ***influencing electoral behaviour*** as shown in the framework are connected to the theories of economy and electoral behaviour, whose assumptions and tenets are based on sociological theory (as social milieu or socio-economic factors), party identification model, and influencing candidates' image and issue orientation of voters' in the elections and political business cycles. These factors drive the choice of the citizens in an election. This is because, people consider development issues, and look out for a candidate or party that can bring development in order to improve their living conditions.

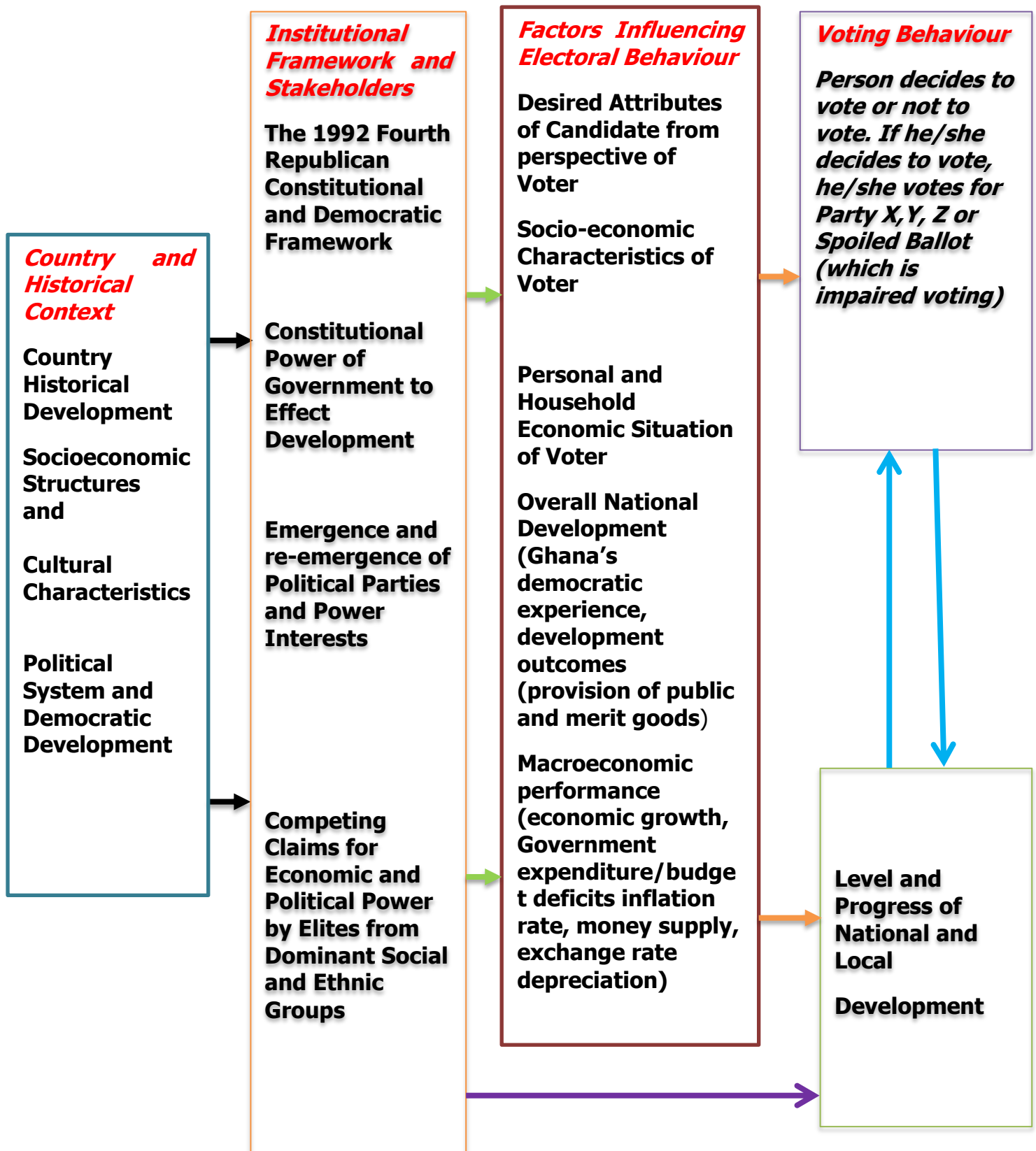
Voters do not only consider their individual economic welfare (*egotropic/pocket voting consideration*) they also consider the development of their constituency or district as well as national development (*sociotropic/collective voting consideration*). The argument is simple, the politician benefits at the expense of poor rural-urban voter, and as a result, politicians are seen as businessmen and women who are only seen in the election season, and for that matter the average poor voter see election as an opportunity and take his or her share of national cake before voting or otherwise in the national elections under the Fourth Republic of Ghana.

Finally, in the conceptual framework as illustrated in Figure 4.1, **voting behaviour** of citizens is influenced by Ghana's democratic experience, the economy and socio-economic characteristics of the voter and politicians. It has been argued that the concern of socio-economic conditions and welfare, and the general expectation of the citizens' call for support and commitment to democratic process. This view has given premium to 'aggregate measure of the level of economic growth and development', but the concern should also be on measuring citizens' experience of Ghana's democratic transition and economic development at both local and national levels in the country.

This should involve retrospective and prospective evaluation of government performance, people living standards, and the perception of multi-party democratic system that has been embraced and its practise since 1992. In this regard, democratic institutional development and the stakeholders' action can shape individual voter perception, attitude and behaviour, just as individual living standards can affect his or her voting decision and support for democracy. The underlying argument is that the performance of political institutions can adduce positive perception of economic development among citizens.

The concern of this study therefore is to understand the nexus between economy and elections, in the context of **voting behaviour** of individual Ghanaian voter. The argument is that political institutions in modern liberal democratic system are meaningful only through the activities of citizens like active participation in voting in the democratic states such as Ghana. Thus, the experience of democratic politics under the Fourth Republic of Ghana, and level and progress of local and national development can explain **voting behaviour** as well as the level of support for the country's democracy through active participation in the democratic process like voting in an election as illustrated in the figure below.

Figure 4.1: Conceptual Framework



Source: Author's Construct, Based on the Theories of Elections, 2015.

4.7 How the Theoretical and Conceptual Framework Explain the Study

This study conceptualised political economy of elections and voting behaviour within the conceptual framework of political economy analysis as explained above. This means that the study is largely linked to rational choice and economic behaviour of voters with regards to by the performance of government; incentives offered them by competing political parties or candidates during electioneering campaign. The study therefore, applied three central concepts of political economy framework to the understanding of economy and elections nexus in Ghana's Fourth Republic, 1992 to 2016.

In the first place, the results of analysis from the data gathered in the survey suggest that a larger majority of 91.6 percent of the sampled electorate said their individual socio-economic wellbeing largely influenced their vote choice. These group of voters are described as self-cantered and egocentric voters as suggested by Kinder and Kiewiet (1977), Sanders (1994) and supported by Bluwey (1998). This means that their vote is largely influenced by what they expect to gain, which is the individual economic welfare.

Conversely, beyond individual socio-economic status, about 86.1 percent of the respondents also indicated that election outcomes promoted the development of their communities and districts. By this view of the respondents, such voters are sociotropic (Kinder & Kiewiet 1977; Sanders 1994). In this case, they vote for "the good of the whole in which the parts share the greatest good of the greatest number" (Dwivedi 2005: 35).

These views as expressed by the respondents are in line with the rational choice idea that voters decide on how to vote based on the basis of what they expect to get in return. This also coincides with the rational choice theory view that voting in an election has costs and benefits and so, an average individual Ghanaian voter in the study areas, being economically-rational chooses the party or the candidate in an election that would benefit him or her most against other alternatives (party or candidate).

In this case, they evaluate what the incumbent government has provided and would be providing them in terms of utility if it stays in power, and also look at what opposition will offer if it wins power and the higher utility the average voter would get if he or she votes. This study results corroborate with Donovan et al. (2012), position that the policy of a political party contesting an election, and the state of nations health system and the national economy do greatly influence the choice of voters, and also supports the economic theory of democracy also called the rational choice theory of the "School of Rochester" (Downs, 1957).

Also, from the data gathered for this study, in the 1992, 1996, 2000, 2004, 2008, 2012 and 2016 Ghanaian elections as a whole and the four selected districts for this study, the Ghanaian electorate choose the NDC and NPP as against other parties and independent candidates. It appears that the two parties are popular in the Fourth Republic, and often present popular candidates and policies for all the seven elections conducted under the Fourth Republic, the Ghanaian electorate also voted the same way. As "School of Rochester" (Downs, 1957) argues "if the electorates are presented with the same alternatives at different times under the same circumstances, they will always make the same decision, and if the circumstances change the voters will also change", and this is exactly what happened in the 2000, 2008 and 2016 Ghanaian general elections.

Besides, the persistence voting under the Fourth Republic for the same two political parties with virtually identical political ideologies probably support the hypothesis of "Michigan Model" of party identification (Campbell *et al.*, 1960), as suggested by Anaman and Agyei-Sasu (2012) and Anaman (2016a).

In the survey, 31.6 percent reported that they identified themselves with a political party in the Ghanaian elections, at least in the study districts. To, them, it is the party that they vote, and so the concept of cost-benefits is issueless.

Further, the electoral choice in Ghana is not only conditioned by expectations and disappointment of voters related to economic development, the voter choice is also largely based on personalities characterised by direct and indirect mobilisation of ethnic vote (Gyimah-Boadi, 2007), and this proposition supports "Columbia School" of structural voting (Lazarsfeld *et al.*, 1944, Lipset, 1960), but this study, do not support this theory as revealed by the survey results. This is because in the survey, about 4.2 percent of the respondents said they vote based on ethnic lines and about 17.6 percent of the survey respondents said they consider candidate personality in the election as their choice. Also, the respondents who said they vote based on religion were about 2.5 percent, about 1.1 percent said they consider family relation with candidate leading the party, and those who consider their social class status in relation to others before they vote were 0.9 percent. Obviously, the "Columbia School" was not supported by the study results in the swing political areas in Ghana under the Fourth Republic, 1992 to 2016.

Furthermore, the micro-level survey results deviated from Gyimah Boadi (2007) position that electoral behaviour tends to be issueless because of the relevance of ethnic identity in African society, and to the voter. However, the statistical results using aggregate data for the 110 and 216 districts in the 2000 and 2012 Presidential election respectively, factors like ethnicity and religion were statistically significant, and influence voter

turnout and the share of winning party votes in those elections under the Fourth Republic of Ghana (see Chapter six, Table 6.1, Table 6.2, Table 6.5, Table 6.6, Table 6.9, Table 6.10, Table 6.11 & Table 6.12) of this study. But, in the survey these factors were not relevant as revealed by the study results, in the four selected districts, which are some of the swing districts of Central and Brong-Ahafo regions in the political history of this country, particularly in the Fourth Republic of Ghana.

Finally, the political business cycles theory holds for government spending in Ghana's Fourth Republic. Analysis of the annual data from 1992 to 2016 established that elections do not lead to increased economic growth rates. That is, the results from the computed Student t value for the test of the difference in the mean economic growth figures for the two time periods (seven election years and 18 non-election years), shows that though election years produced higher growth rates, those average growth rates were not statistically different from those in the non-election years.

However elections do produce higher government budget deficits, because the computed t value for the difference in the mean values of the budget deficit to GDP ratio between the two time periods explained that election years produced statistically higher budget deficits to GDP ratios, than during non-election years in the Fourth Republican era in Ghana. Hence, one can conclude that the relatively large government expenditures in election years (1992 to 2016) in Ghana are not growth enhancing.

In a nutshell, in the electorally-swing areas under the Fourth Republican era in Ghana, the expectations and aspirations of the average Ghanaian voter in the contemporary times is adequately elucidated by the economically-rational choice theory as revealed by the survey results. This means that economic welfare is the key determinant of vote choice in the study districts in Ghana.

4.8 Conclusion and Summary of Chapter

The chapter reviewed and explained the key concepts and theoretical literature and conceptual framework for the study. The structural or sociological approaches view is that electoral behaviour is shaped by variables such as social class, religion, and rural-urban. The social-psychological theory also relates voter choices to party identification and affiliation. The rational-choice approaches argue that voting is governed by individual rational calculation of self-interest over a period of time. The dominant ideological assumes that information is conveyed mainly through the media and form 'political consciousness'.

Finally, political business cycle model posits that politicians manage the economy for electoral purposes. The Ghanaian elections from 1992 to 2016, have continue to produce same pattern of electoral behaviour, and could be described as structural, rational and party identification pattern of voting that produced two strong party (duo politic) system under the Fourth Republic of Ghana.

CHAPTER FIVE

PROFILE OF THE STUDY AREAS, STUDY PHILOSOPHY AND RESEARCH METHODOLOGY

5.1 Introduction

This chapter documents the profile of the study areas and research methodology. It discusses assumptions of the study, research approach, design and methods of data collection and sources, analytical methods and model specification in order to address the key issue raised by the research problem, research questions and the specific objectives for this study. It describes the data collection techniques and how the data was collected, treated and analysed. In summary, the chapter describes the entire methodological approach adopted to address the research problem, research objectives and the research questions. The chapter is divided into two sections: 1) Brief profile of the study districts; 2) The research philosophy; and 3) The study approach and methodology for the study.

5.2 Profile of the Study Districts

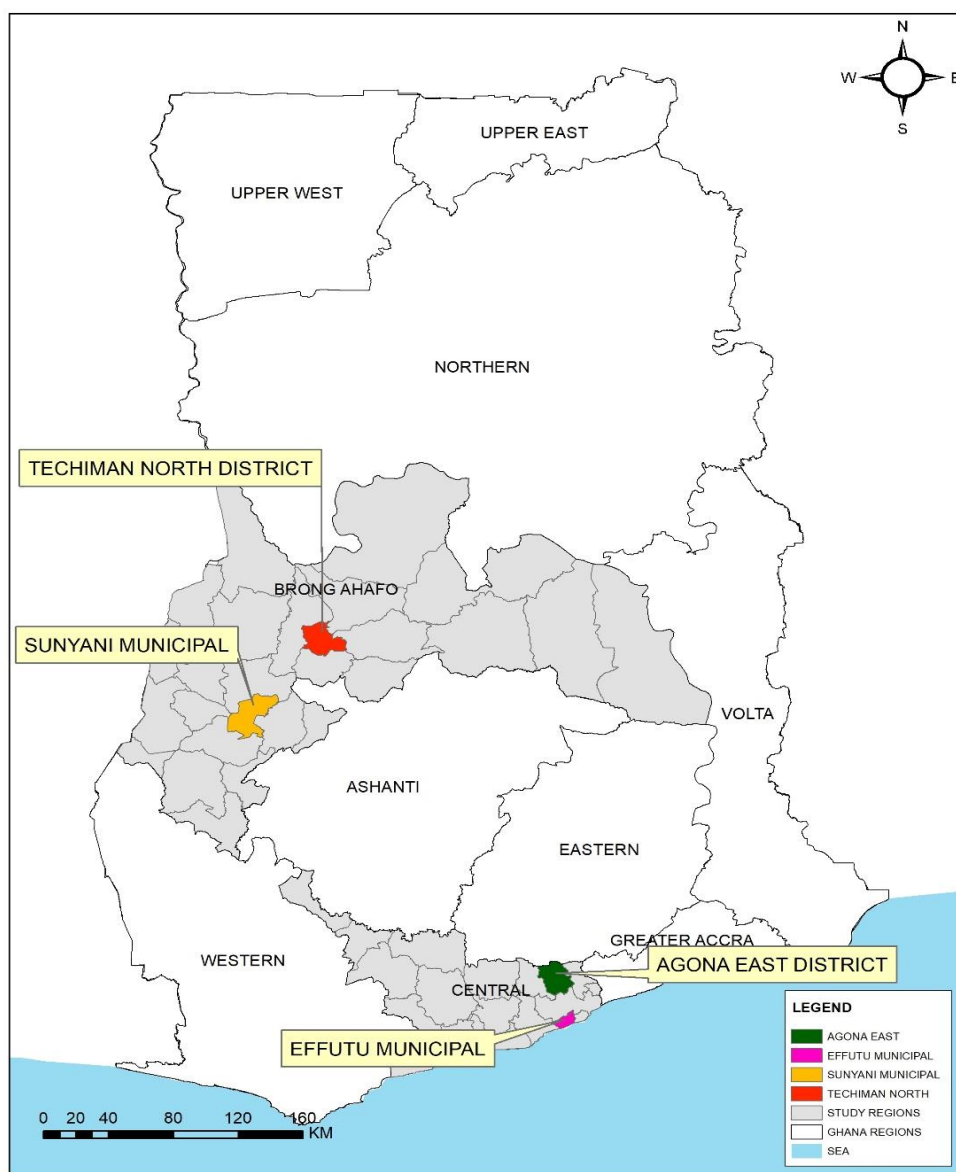
5.2.1 Introduction to the Study Districts

The survey of this study was conducted in four selected districts in Ghana. Two regions (Central and Brong-Ahafo) were purposively selected from the four swing regions in the electoral politics of Ghana's Fourth Republic, but the four (4) selected districts for the purpose of this study were randomly selected. This survey was based on a scientific design following protocol and guidelines of the selection of enumeration areas used by the Ghana Statistical Service. The four districts, which were randomly selected from the list of districts based on rural and urban characteristics of the regions are; Agona East

(rural Central region), Effutu (urban Central region), Techiman North (rural Brong-Ahafo region) and Sunyani East (urban Brong Ahafo region).

Ghana map showing the selected regions and location of the study districts, the results of Presidential elections, 1992 to 2016 in the selected regions and the study districts are illustrated in Figure 5.1, Table 5.1 and Table 5.2 below.

Figure 5.1: Map of Ghana Showing Selected Regions and Study Districts



Source: Author's construct, 2017.

Table 5.1: Presidential Election Results of Central and Brong-Ahafo Regions, 1992to 2016

Region	1992 Presidential Election Results (%)							
	NDC	NPP	PNC	NIP	PHP			
Central	66.7	26	1.9	3.5	2.2			
Brong-Ahafo	61.9	29.5	5.3	2.0	1.0			
Region	1996 Presidential Election Results (%)							
	NDC/PA		NPP/GA		PNC			
Central	55.7		42.9		1.4			
Brong-Ahafo	61.7		36.0		2.3			
Region	2000 Presidential Election Results (%)							
	NDC	NPP	PNC	CPP	NRP	GCPP	UGM	
Central	43.7	49.7	0.5	3.2	1.3	1.3	0.0	
Brong-Ahafo	44.6	50.6	1.7	0.7	1.1	1.0	0.0	
Region	2000 Presidential Election Results (%)							
	NDC				NPP			
Central	39.7				60.3			
Brong-Ahafo	41.7				58.3			
Region	2004 Presidential Election Results (%)							
	NDC	NPP	PNC/GC			CPP		
Central	39.2	58.6	0.8			1.4		
Brong-Ahafo	46.1	52.0	1.2			0.7		
Region	2008 Presidential Election Results (%)							
	NDC	NPP	CPP	PNC	DFP	RPD	IND	DPP
Central	50.1	46.0	2.3	0.4	0.4	0.1	0.2	0.1
Brong-Ahafo	47.7	50.6	0.5	0.5	0.3	0.1	0.1	0.1
Region	2008 Presidential Election Results (%)							
	NDC				NPP			
Central	53.8				46.2			
Brong-Ahafo	51.5				48.5			
Region	2012 Presidential Election Results (%)							
	NDC	NPP	PPP	GCPP	PNC	CPP	IND	UFP
Central	52.3	45.4	1.5	0.4	0.1	0.1	0.1	0.1
Brong Ahafo	51.5	47.3	0.4	0.4	0.1	0.1	0.1	0.1
Region	2016 Presidential Election Results (%)							
	NDC	NPP	PPP	CPP	NDP	PNC	IND	
Central	43.43	53.22	2.76	0.27	0.18	0.09	0.06	
Brong Ahafo	44.91	53.87	0.75	0.16	0.12	0.13	0.06	

Source: Electoral Commission of Ghana Data, 2017.

Notes:

When Central and Brong Ahafo Regions plus Western and Greater Accra regions swing towards a particular party in an election in the Fourth Republic of Ghana, that party will win the presidential elections and form government. This pattern informs the choice of the two regions for the study to unearth the determinants of voter participation and choices of the Ghanaian electorate. It can be infer from the table that the two regions are certainly not stronghold of any party at least in the Fourth Republic of Ghana.

Table 5.2: Presidential Election Results of the Study Districts (1992 to 2016)

Districts	1992 Presidential Election Results (%)						
	NDC	NPP	PNC	NIP	PHP		
Sunyani East	75.8	23.5	0.1	0.5	0.1		
Techiman North	57.6	40.4	1.1	0.6	0.3		
Effutu	61.5	36.6	1.1	0.2	0.6		
Agona East	55.8	42.7	0.6	0.8	0.1		
Districts	1996 Presidential Election Results (%)						
	NDC/PA		NPP/GA		PNC		
Sunyani East	84.9		13.1		2.0		
Techiman North	56.1		43.0		0.9		
Effutu	45.6		53.2		1.2		
Agona East	54.9		43.5		1.6		
Districts	2000 Presidential Election Results, 1st round (%)						
	NDC	NPP	PNC	CPP	NRP	GCPP	UGM
Sunyani East	26.7	67.8	3.5	0.6	0.7	0.5	0.1
Techiman North	46.2	50.0	1.0	0.5	0.8	1.2	0.3
Effutu	45.72	50.8	0.6	1.0	0.7	0.58	0.2

Agona East	43.54	49.0	0.5	0.8	5.0	1.0	0.2	
Districts	2000 Presidential Election Results, round off (%)							
	NDC			NPP				
Sunyani East	25.0			75.0				
Techiman North	44.4			55.6				
Effutu	44.17			55.83				
Agona East	40.76			59.24				
Districts	2004 Presidential Election Results							
	NDC	NPP		CPP		PNC		
Sunyani East	33.35	64.36		0.58		1.71		
Techiman North	46.48	52.32		0.48		0.74		
Effutu	42.92	55.54		0.65		0.89		
Agona East	36.12	61.52		1.44		0.93		
District	2008 Presidential Election Results, 1st Round							
	NDC	NPP	CPP	PNC	DFP	IND	DPP	RPD
Sunyani East	37.23	60.96	1.01	0.53	0.13	0.19	0.09	0.01
Techiman North	46.99	51.72	0.39	0.41	0.28	0.04	0.14	0.03
Effutu	51.18	45.83	1.62	0.93	0.25	0.08	0.05	0.04
Agona East	51.19	46.63	0.99	0.41	0.42	0.19	0.09	0.07
Districts	2008 Presidential Election Results, 2nd Round							
	NDC				NPP			
Sunyani East	39.67				60.33			
Techiman North	50.61				49.39			
Effutu	54.73				45.27			

Agona East	51.89				48.11			
Districts	2012 Presidential Election Results, 2nd Round							
	NDC	NPP	PPP	GCPP	CPP	PNC	IND	UFP
Sunyani East	39.36	58.33	0.46	0.21	0.09	0.07	0.04	0.03
Techiman North	51.94	44.35	0.36	0.39	0.13	0.09	0.06	0.06
Effutu	48.21	47.83	1.17	0.34	0.10	0.08	0.07	0.03
Agona East	50.46	44.87	0.55	0.67	0.10	0.09	0.11	0.05
Districts	2016 Presidential Election Results							
	NDC	NPP	PPP	CPP	NDP	PNC	IND	
Sunyani East	31.87	67.01	0.07	0.74	0.05	0.07	0.23	
Techiman North	45.47	53.38	0.83	0.16	0.07	0.07	0.02	
Effutu	36.89	59.89	2.78	0.27	0.05	0.07	0.05	
Agona East	46.27	52.11	0.73	0.24	0.50	0.10	0.04	

Source: Electoral Commission of Ghana Data, 2017.

Notes:

Seven presidential elections have been conducted under the Fourth Republic of Ghana at the time this study was conducted and completed as shown on the table above. In each of the elections as depicted on the table above, it can be deduced that since 1992, no political party in the electoral politics of the republic, could claim any of the four constituencies or districts as its electoral strongholds. The political parties that have won the Presidential elections and formed government since 1992, have alternated in all the four districts and could not therefore claim any of the four districts as their electoral strongholds. The swing nature of the selected districts has informed the decision of this study.

5.2.2 The Selected Study Districts

5.2.2.1 Sunyani Municipal

Sunyani is the regional capital of the Brong-Ahafo region in Ghana, with a total land mass of 506.7 Km². The Sunyani Municipality lies within the Wet Semi-Equatorial Climatic Zone of Ghana, and shared boundaries with Sunyani West District to the north, by Dormaa East District to the west, Asutifi District to the South and Tano North District to the east (Sunyani Municipal Assembly, 2015).

The municipal has a total population of 123,224 and this constitutes 5.3 percent of the region's total population. Male population is made up of 49.9 percent, while females constitute 50.1 percent in the municipality. Also, 83.1 percent of the municipal population is urban with a sex ratio of 100 percent, and aged dependency ratio of 54.0 percent for males and that of females with 53.6 percent (cf: GSS, 2013). The total registered voter population of the Sunyani was 90,766 in 2012 (EC, 2012). Administratively, the Municipal Assembly has three councils namely; the Sunyani urban council, the Abesim town council and Atronie area council, with a total of 50 assembly members. This number includes the Municipal Chief Executive, the Member of Parliament, 34 elected members and 14 government appointees. The Assembly has 7 Sub-committees, 13 Decentralised Departments and 67 unit committees which provide technical support to the assembly. The Assembly's mandate is enshrined in the 1992 Constitution of Ghana and other key legislations such as the Local Government Act 462 of 1993 (cf: GSS, 2013).

Figure 5.2: Map of Sunyani Municipality



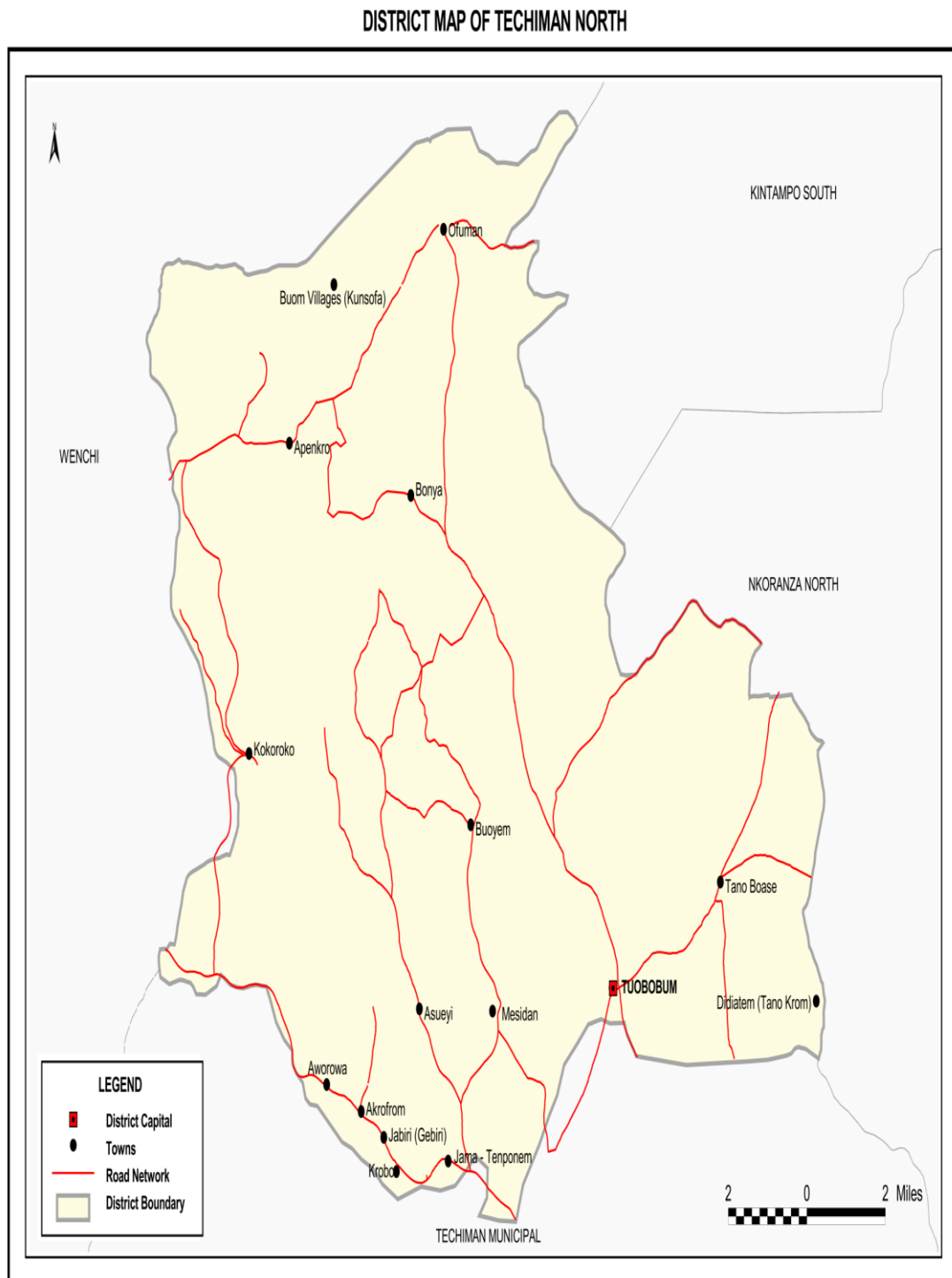
Source: Ghana Statistical Service, 2017.

5.2.2.2 Techiman North District

The Techiman North District was carved out of Techiman Municipal and was established by the Legislative Instrument (LI 2095) and was duly inaugurated on Thursday, 28th June, 2012 with Tuobodom as the District Capital. The District covers land area of 389.4km². It shares political and administrative boundaries with the Techiman Municipality in the South, Wenchi Municipality in the North-west, Kintampo South District in the North and Nkoranza North District in the North-east (cf: GSS, 2013).

Techiman North District has population of 59,068, and represents 2.6 percent of the region's total population. The population is made of 48.7 percent males and 51.3 percent females. The district is largely rural with 70 percent rural population. The sex ratio is 94.9 percent. The total age dependency ratio (dependent population to population in the working age) for the district is 75.4 percent. The age dependency for males is 77.0 percent, and that of females is 73.8 percent (cf: GSS, 2013). The registered voter population of the District as at 2012 was 37,428 (EC, 2012). Administratively, the district composed of the District Chief Executive who is the political and administrative head and 25 Assembly Members (cf: GSS, 2013).

Figure 5.3: District map of Techiman North



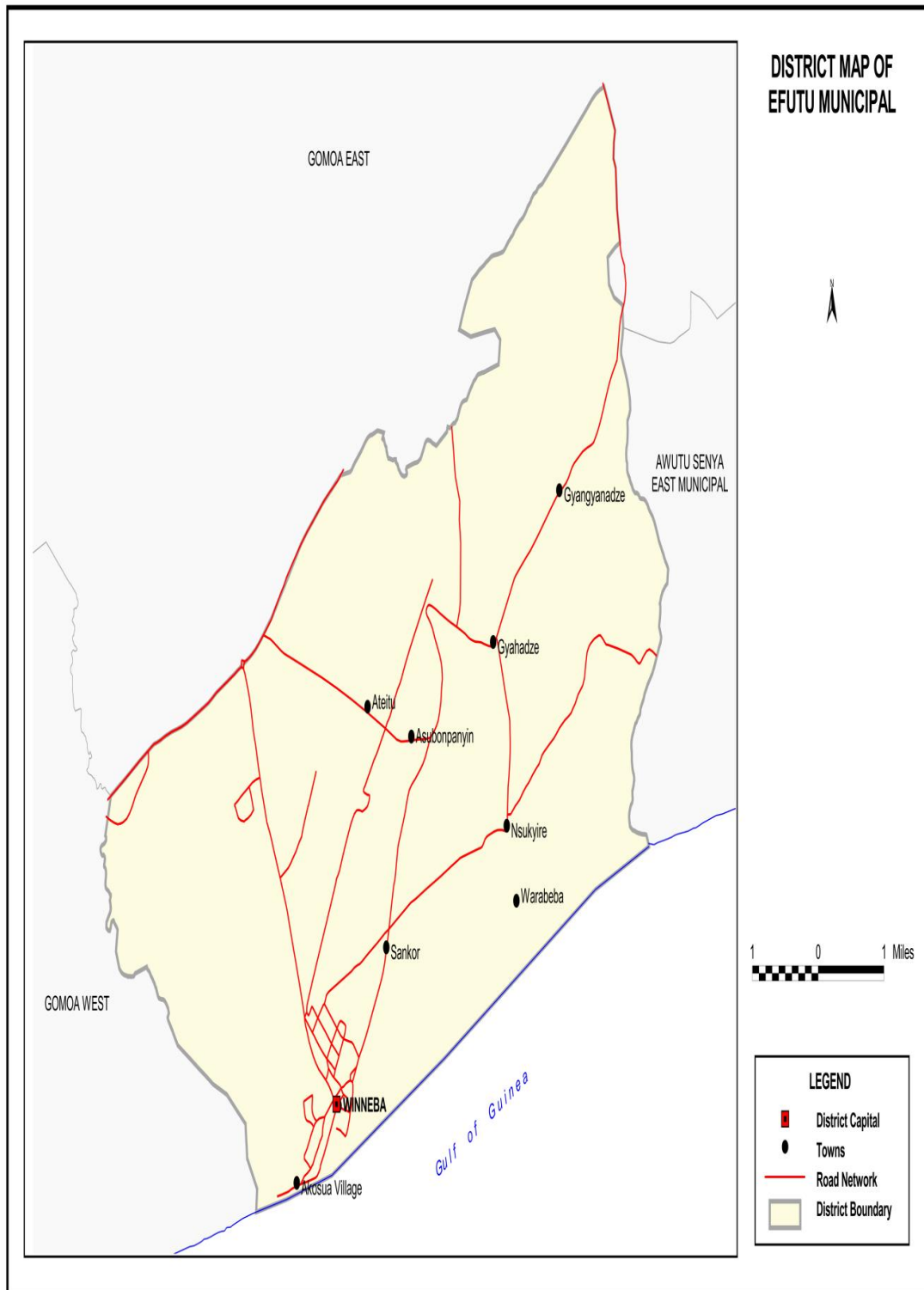
Source: Ghana Statistical Service, 2017.

5.2.2.3 Effutu Municipal

In 1988, the district was carved out of Gomoa-Awutu-Effutu-Senya District Council with the establishment of the PNDC Law 207 of 1988 which demarcated the country into 110 administrative districts from 65. Again, in 2008, the Effutu Municipal Assembly was carved from the then Awutu-Effutu-Senya District Assembly and was established by L.I 1860 with Winneba as its administrative capital. The Municipality lies between the Gomoa East District to western, northern and eastern flanks. The district has a population of 68,597 which represents 3.1 percent of the population of the Central region. The registered voter population of the Municipal in 2012 was 47,582 (Electoral Commission, 2012).

The municipal assembly is made up of twenty-eight assembly persons and this comprises; the municipal chief executive, eighteen (18) elected persons, eight (8) government appointed members and one (1) member of parliament. Out of the twenty-eight (28) members, only four (4), representing 14 percent are women. It has one constituency, eighteen (18) electoral areas and seventy-three (73) polling stations. There are four tonal councils in the municipality namely; Nsuekyir/Gyahadze Zonal Council, Kojo-Beedu North/Low Cost Zonal Council, South-East Winneba Zonal Council and South-West Winneba Zonal Council(cf: GSS, 2013).

Figure 5.4: Map of Effu Municipal Assembly



Source: Ghana Statistical Service, 2017.

5.2.2.4 Agona East District

The Agona East District Assembly (AEDA) is located in the Central region, and was established through Legislative Instrument (LI 1921). The Agona East District (AEDA) was carved out of the old Agona District in 2008. The people in the District are predominantly farmers. It has a total land area of 539.7km². The indigenous people of the District are the Agonas but co-existed with migrants such as Gomoas, Ewes, Effutus, Ashantis, Fantis, Kwahus, Atakpames, Kotokolis and several other ethnic groupings from northern Ghana (cf: GSS, 2013). The population of Agona East District is 85,920, and represents 3.9 percent of the region's total population. It has 47.8 percent males and 52.2 percent females. The district is 43.3 percent urban with 56.7 percent rural. The district has a sex ratio of 91.4 percent (cf: GSS, 2013). The total registered population of the District in 2012 was 50,583 (EC, 2012).

Administratively, the district is made up of two traditional councils. These are, the Agona Nyakrom Traditional Area and Agona Nsaba Traditional Area. The Agona Nsaba Paramountcy, the original Agona Paramountcy, dates back to 1693AD and was one of the 17 traditional states which signed the Bond on 6th March, 1844 friendship treaty with the British Government precursor to modern Ghana. The district has one constituency and five Town/Area Councils. These are; the Agona Nsaba, Duakwa, Asafo, Kwanyako and Mankrong Area Councils (ibid, 2013). The Agona Nyakrom Traditional Area has direct links to the Kumasi (Kwanan) Traditional Council due to the migration of factions of the Kumasi (Kwaman) Royal Family to Agona Nyakrom in 1660 AD.

Figure 5.5: District Map of Agona East



Source: Ghana Statistical Service, 2017.

5.3 The Study Philosophy

This section documents the philosophical assumption of the study. It describes the study philosophical approach of the study, and its concepts or basic beliefs as adopted to address the statement of the research objectives and the questions of this study.

5.3.1 Defining Research Philosophy

The term 'philosophy' may be seen as knowledge and the nature of the knowledge. In the context of this definition, research is basically search for knowledge in a particular phenomenon, and provide answers to the study questions and objectives and hence, a solution to the overall research problem (see Creswell, 2014). Though, the philosophical ideas are often not explicit in research study, they are relevant and need to be specified in this study. The "philosophical ideas help explain why the research approach is chosen" (Creswell, 2014:6). The philosophical assumption according to Creswell is a "general philosophical orientation about the world and the nature of research that a researcher brings to a study" (ibid, 2014:6). Several terms have been used to describe the philosophical assumptions. It is called worldview (Creswell, 2014).

Other scholars like Guba (1990), Mertens (2010) and Lincoln *et al.* (2011), called the philosophical assumptions as research paradigms. Further, scholars such as Crotty (1998) and Bryman (2004) referred the philosophical assumptions as epistemologies and ontologies. Research philosophy is broadly conceived as research methodology (Neuman, 2009). In literature, there are four main philosophical assumptions or world views as identified and defined by some scholars that help to explain why research approach should be chosen in the research study.

Table 5.3 shows the main philosophical assumptions or paradigms, and which are also called world views by some scholars. These include; the postpositivism, constructivism, transformative and pragmatism (also called participatory paradigm). In their contribution to the understanding of research philosophy, Guba and Lincoln (2005) identified four main basic beliefs or concepts of philosophical assumptions. These include; ethics or axiology, epistemology, ontology and the methodology.

It should be noted however, that the difference between the four main philosophical paradigms are not so clear in practice, what is important is that they guide research thinking and the identification of world view that closely approximate particular research question or problem of study.

Table 5.3: Four Philosophical Assumptions/Worldviews

Postpositivism	Constructivism
Determination	Understanding
Reductionism	Multiple participant meanings
Empirical Observation and measurement	Social and historical construction
Theory verification	Theory generation
Transformative	Pragmatism/ Participatory
Political	Consequences of actions
Power and justice oriented	Problem-centred
Collaborative	Pluralistic
Change-oriented	Real-world practice oriented

Source: (cf: Creswell, 2014: 6).

5.3.2 Philosophical Approach of the Study (Postpositivism)

This study is underpinned by the 'postpositivism' philosophical research paradigm. The research philosophy adopted for a research study often comes with certain assumptions that explain the world view of the researcher. The assumption embedded in this research philosophy thus, underpins the chosen research strategy and methods for the study.

Philosophical assumption informs the choice of research strategy, and has significant importance of understanding the phenomenon under investigation. In this case, postpositivism philosophy adopted for this study establishes the researcher's knowledge and the understanding of the phenomenon under investigation, and it depends on the research problem or research question. On the basis of this, scholars such as Guba and Lincoln argue that "the questions of research methods are of secondary importance to questions of which the paradigm is applicable to the research" (Guba & Lincoln, 1994:105).

5.3.3 Theoretical Basis of the Philosophy

The dominant paradigm in the field of research study is positivism, and it is based on rationalistic and empiricist philosophy (Creswell, 2014). Philosophical assumption which underpins the positivism is the belief that social world can be studied in same way as the natural world. The positivism research philosophy is "based on scientific methods with the aim of discovering general laws and establishes constant relationships between variables. It is objective, valid, certain and accurate" (Crony, 1998:29).

But, the positivism research philosophy falls short when it comes to human behaviour, hence the emergence of postpositivism research philosophy. This is because some

unobservable characteristics are inherent in behaviour such as, belief, feelings, knowledge and thinking.

For these reasons the emergence of postpositivism philosophy rejects the notion that what can be studied is only limited to what can be observed, and the generalisable laws as applied to human behaviour (see Creswell, 2014).

The postpositivism research paradigm is the thinking of scholars after the positivism paradigm and questions the traditional notion of positivism that there is absolute truth of knowledge (Phillips & Burbules, 2000; Creswell, 2014).

Scholars have therefore, argued that there cannot be positive claims of knowledge about the behaviour of human action in any given situation (see, Creswell, 2014). As a result, the postpositivism research paradigm holds a deterministic philosophy view that cause probably determines the effects or outcomes. Based on this philosophical assumption, the study has identified the determinants of voter participation and choices, and the effect of elections on macro-economic performance in Ghana from, 1992 to 2016. The ideas are then reduce to variables expressed in the form of research question and hypothesis.

Putting it differently, the postpositivists' research philosophy is based on the numeric measures of observation, and studying the behaviour of individuals based on empirical data and use of quantitative techniques in the analysis. This means that in a research situation with respect to this research philosophy, the study begins with a theoretical framework; collect data and analyse the information collected from both the secondary and primary sources like the survey to either support the theory (ies) or refutes the theoretical claim about the question the study sought to answer.

Though given credence to the “objectivity and generability, postpositivism research philosophy is of the view that understanding of truth should be based on probability, rather than certainty” (Phillips & Burbules, 2000; Creswell, 2014).

5.3.4 Basic Concepts (or beliefs) of Postpositivism

5.3.4.1 Axiology of Postpositivism

Research ethics are important, regardless of the research philosophy and approach for the study. In the postpositivism research paradigm view chosen for this study, research ethics should be embedded in the methodology because researcher has the responsibility to conduct good research. In the context of this philosophy, good research involves intellectual honesty, the suppression of personal biases, careful collection of accurate reporting data either from secondary sources or survey and candid admission of research limitations and reliability of empirical study (see Guba & Lincoln, 2010; Creswell, 2014; Anaman, 2014). The implication is that in a research situation, a case is made to justify the use of research methods for the collection and analysis of data, in order to provide answer(s) to the research question for this study. Adopting this philosophy for the purpose of the study followed the ethical consideration for the administration of questionnaire in the cross-sectional survey.

5.3.4.2 Ontology of Postpositivism

The positivism research paradigm or philosophy holds the view that reality exists, and it is the responsibility of the researcher to discover the reality (Creswell, 2014). Though, postpositivism philosophy acknowledges the existence of reality, the proponents of this philosophy hold the view that reality is imperfectly known because of human limitations. It is therefore argued that truth or reality can be interpreted through social conditioning. This is called critical realism (Maxwell, 2004).

Thus, from the perspective of postpositivism, reality can only be established within a certain realm of probability rather certainty and that the researcher cannot prove a theory, but can only make a stronger case by eliminating the alternative explanation.

This study therefore examines determinants of electoral behaviour, and the intricate relationship between elections and the economy, and applied the quantitative techniques (econometrics) to determine statistical significance of economic conditions of electoral outcome, and the impact of aggregate elections on macroeconomic performance in Ghana, 1992 to 2016. The alternative explanation was eliminated and controlled by the study. The study thus, applied statistics and held the view those economic conditions influencing vote choice and/or electoral outcome, and the effect of elections on macroeconomic performance is real within a level of statistical probability or level of confidence.

5.3.4.3 Epistemology of Postpositivism

The positivism view is that the researcher and the participant or the researched in the study are assumed to be independent, and therefore do not influence each other in the study (Guba & Lincoln, 2000, 2010). But, the postpositivism holds the view that the background knowledge of the researcher, theory and hypothesis can strongly influence the research study (Reichardt & Rallis, 1994).

The epistemological assumption of the postpositivism paradigm is that for the sake of objectivity, the researchers should not allow his/her personal biases to influence the research outcomes. This means that researchers are to remain neutral to prevent biases and thus, follow the prescribed procedures rigorously in the research process.

For the purpose of this study, the Randomised Response Technique (RRT) was applied, and the researcher administered the survey question himself. This was aided to protect the privacy of the respondents and reduce the biasness. This study therefore follows exactly the same procedures for asking questions of the respondents in order to standardise the responses in the crosssectional survey. The responses were also checked to ensure that they were following the same procedure for accuracy, and there are valid data for the analysis.

5.3.4.4 Methodology of Postpositivism

The positivism research paradigm dominates the field of research over decades, and borrowed its experimental methods from the natural sciences. However, the emergence of postpositivism research philosophy or paradigm though, recognises the scientific methods, the proponents of this philosophy are of the view that the scientific methods are difficult to achieve with the people, therefore, quasi-experimental and survey designs are advocated (Creswell, 2013, 2014). The argument is that it is not possible to randomly assign people to conditions (like plot of land for study of fertilizer application) therefore, the postpositivists adopt research designs like the panel/longitudinal and crosssectional surveys, in order to apply to people.

For the purpose of this study, crosssectional research design was adopted and applied in the collection of primary data. In the survey, the respondents were randomly selected. It should be noted here that because, the qualitative methods can also be used within this paradigm, the close and open-ended questionnaire was therefore developed for the purpose of this study. The survey questionnaire helped explained and discusses the respondent's perceptions and/or the opinions about the state of the Ghanaian economy,

and their vote choice. That is, given that voters have a choice in an election, how do they decide to vote and for whom, and why they do so?

5.4 Research Approach and Methodology of the Study

This documents research approach, design and methods of data collection, data sources as well as the analytical methods and models specification. It describes the methodological approach adopted to address the statement of the research objectives and the questions of this study.

5.4.1 The Study Approach

Methodologically, this study employed macro-micro approach to study the economy and electoral behaviour in Ghana's Fourth Republic. In literature, political economy of elections and voting behaviour has been investigated at two levels. These are as follows:

1. The Aggregate Macro-economic Level Approach
2. The Individual Micro-economic Level Approach

It is important to state that the application of each of these approaches comes with its merits and demerits (i.e. macro and micro approaches) to the studying economy and electoral behaviour. For the purpose of this study, the two approaches are not mutually exclusive, but are considered to be complementary approaches useful to explain factors influencing voter participation and choices, and the relationship between elections and socio-economic development as perceived by the respondents.

5.4.1.1 Macroeconomic Approach

The macro-level econometric studies in literature regressed vote share in elections or polling data against aggregate economic variables such as real economic growth (GDP) and inflation rate. The application of aggregate macroeconomic approach to the studying of economy and electoral behaviour largely depends on macroeconomic aggregates such as monetary aggregates and polling data results that are collected by the government agencies such as the Central Bank of Ghana, Ghana Statistical Service and Electoral Commission for the purposes not directly related to elections and voting behaviour.

This study used macroeconomic data collected from secondary sources, such as inflation and real GDP growth rates, government expenditure and Treasury Bill rates from various sources including the Bank of Ghana, Ghana Statistical Service, World Bank, and International Monetary Fund from 1992 to 2016. The study also made use of aggregate constituency or district election results, collected from the Electoral Commission of Ghana for the 2000 and 2012 Ghanaian presidential elections.

The macro-level econometric studies in literature regressed vote share in elections or polling data against economic variables such as income, unemployment and inflation. The aggregate macro-economic level analysis for this study therefore uses secondary data based on election results to establish determinants of participation and voter choices using the concept of the "Average District Voter."⁹

⁹ "Average District Voter" is operationalised in this study as the total number of people who voted in the national presidential election at the district level divided by the total number of people registered to vote at the district level based on data from the Electoral Commission of Ghana for district.

The advantage in the application of aggregate macro-level approach to the study of economy and election nexus is its accuracy of data collection process, largely due to the fact that no individual or group of people can influence data collection process. It is also important because it provides information about voter characteristics in each of the 2016 districts in Ghana based on the 2000 and 2010 Population census.

However, the limitation of aggregate level analysis is that it does not explain the economic welfare and voting behaviour of individual voters in the Ghanaian elections, but rather the so-called ‘average district voter.’

5.4.1.2 Micro-Level Approach

The application of micro-level individual approach to the study of economy and electoral behaviour involves collection of primary data, using questionnaire or interview guide from the respondents or participants respectively. For the purpose of this study, a cross-sectional design was applied. It involves the collection of primary using questionnaire to solicit information from key informants and respondents at the households’ levels in survey.

The micro-level individual analysis is particularly necessary, because it allows investigation into the reasons why individual voters often vote in a particular way, especially the typical swing voter. The micro-level survey is therefore, more informative in understanding electoral behaviour. Thus, the individual micro-economic level using survey data, allows investigation into individual economic welfare and vote based on personal interviews involving individual voters. The micro-economic level analysis for this study involves cross-sectional descriptive survey where data collection occurs at one

time (i.e. single point in time) for each individual at the household level, span for a period of six months from April, 2016 to October, 2016.

However, the limitation associated with micro-level approach is often the fear of political retribution. That is micro-level data in a cross-sectional survey is difficult to collect in countries without long history of democracy and elections such as Ghana, due to political retribution. Thus, for fear of political retribution, the individual voters may or would not fully disclose their voting intentions. This is likely to affect the real issues the research study intends to identify and analyse. In order to address this problem, the study adopts and applied the Randomised Response Technique (RRT), in the survey questionnaire design and administration.

5.4.1.3 Justification of the Study Approach

The application of macro-micro approach to the studying economy and electoral behaviour is not mutually exclusive, because the application of one approach alone cannot adequately explain the economy and electoral behaviour. As a result, the macro-micro approach is necessary to explain individual welfare and his or her vote choice in an election.

In explaining the above methodological issues the aggregate level analysis alone could not explain an individual economic welfare and vote choice in an election. The macro-level analysis could also be considered as underestimation of results or produce wrong study results. This is because the estimates could not explain the underlying individual-level effects of his or her interest in an election. As a result of this problem, the economy and election nexus can best be investigated using the macro-micro approach, rather than macro or individual-level data analysis alone.

Thus, while the macro-approach provides explanatory effect of socio-economic variables on voter participation as well as the effect of elections on macroeconomic performance, the micro-level analysis establishes explanatory linkage between individual economic welfare conditions and vote choice in an election. For this reason, this study adopts the macro-micro approach in order to overcome these methodological discrepancies. The application of macro and micro approaches for this study should therefore not be seen as competing or contradictory approaches, but instead as complementary approaches. This is because, in combining the two methodological approaches, the study benefits from the advantages of both macro-micro approaches.

5.4.2 The Study Survey Design

This study adopts the cross-sectional survey design for the micro level data collection. It is a quantitative research design that provides "quantitative or numeric description of trends, attitudes or opinions of a population by studying a sample of that population" (Creswell, 2014:13). The quantitative research design for this study involves sampling approach and techniques adopted to collect survey data for the analysis of objective two (see Creswell, 2009, 2013, 2014).

Also, the quantitative research design has been categorised by Babbie (2007) and Keppel (1991) into two strategic groups. These are survey and experimental research strategies. This study uses the non-experimental design or the survey design; specifically the study employed the cross-sectional survey design. The survey explains the numerics description, the pattern, behaviour, and the views of a population by means of aggregating a sampling size of the population.

One of the universally accepted advantages of quantitative research survey is its ability to predict, but its limitation is that it could not identify other influential variables or

factors (described as extraneous variables or confounding variables) considered to be important, and could explain the dependent variable in a study that cannot be controlled by the researcher. However, this problem could be overcome by non-experimental design like the survey design, whether longitudinal or cross-sectional, whereby the researcher directly collects information from the respondents over a long period of time or at a point in time respectively. For the purpose of this study, cross-sectional survey design was adopted.

5.4.3 Sample Design

The study adopted multi-stage cluster sampling approach (Creswell, 2013, 2014; Anaman, 2014). The multi-stage cluster sampling design involves the listing of primary sampling units, for example wards or residential areas. Then a sample of subjects such as households is selected from the primary sampling units. The adoption of multi-cluster sampling design for a research study, there is no need to get the entire list of homes or houses in a town for the purposes of study (ibid, 2014).

The rationale for the sample design was to give every respondent in the survey an equal chance of sample selection. To achieve this objective : (a) The ten administrative regions in Ghana were first clustered on the basis of vote patterns (i.e. based on swing, and non-swing nature) (b) The regions were purposively selected for the survey; (c) The districts were also clustered based on (1) rural-urban characteristics (2) swing nature in terms of vote pattern.

The districts were also purposively selected for the study, and random selection method was applied in the remaining stages of the study based on probability proportionate to population size of the district. The sample frame for this survey includes all citizens of voting age of 18 years within the country, and who are registered voters. In all, four

districts were purposively selected from the swing regions of Central and Brong Ahafo as the secondary sampling units, out of the 216 administrative districts based on the following four criteria:

1. First, the voting pattern of the two administrative regions (Central and Brong Ahafo) and the four administrative districts (Agona East (rural Central region), Effutu (urban Central region), Techiman North (rural Brong-Ahafo region) and Sunyani East (urban Brong Ahafo region) was considered. Thus, since 1992, two parties have been alternated in these regions and the selected districts in the exercise of political power and therefore, not an electoral stronghold of any political party;
2. Secondly, the Central and Brong Ahafo regions were selected because, apart from being swing regions; they were the most closely fought regions in the 2012, like the previous elections;
3. Thirdly, the districts were selected based on urban-rural characteristics and fall within the category of taxonomy of districts published by Ministry of Local Government and Rural Development in 2012;
4. Finally, another point of interest is that voters' behaviour in these districts; particularly the Agona East and Effutu have correctly chosen the winner of all the eight national presidential elections and referenda, since 1979. Further, voters in the Agona East district in particular, have correctly chosen the winner of all the 17 national elections and referenda since the first election was held in the Gold Coast on 8 February 1951.

It is therefore, interesting to note that the four selected districts for the purpose of this study have once again correctly chosen the winner in the Ghanaian 2016 Presidential elections. Therefore, the rationale for the choice of the regions and districts is to validate the claim that these regions and districts vote patterns have been largely instigated by economic consideration.

The sample design was a combined multi-staged stratified/clustered, systematic and simple-random approach. The optimal sample size for the study was derived based on probability proportional to population size in the study districts.

5.4.4 Sample Size Determination

An optimal sample size of 400 respondents was required for this study. However, a sample of 600 respondents at household level was selected to allow up to 50 percent for non-response. The determination of the sample size was based on the following assumptions:

1. The study assumed confidence interval of 95 percent. It is assumed that at 95 percent confidence level of statistical significance, the right decision was made in choosing the sample size for the study;
2. The significance level of 5 percent. This statistically significant level means that the probability of obtaining the findings by chance only will be less than 5 percent. In other words, there are about 5 chances in 100 that the study would reject the null hypothesis, when in fact it should be accepted;
3. Since the researcher does not have control over the respondents in the survey, the study assumed the response rate to be 90 percent;

4. The objective of the sample size determination is to look for the number of cases that will yield a smallest effect size for any test that may be conducted with the survey;
5. The study assumed a split decision of 50-50 chance of answering yes or no to a particular question;
6. Ghanaians who are 18 years and above, and are registered voters qualified are assumed to respond to the questionnaire designed for the study.

The sampling frame is the 2010 census data which captured all eligible voters of 18 years and above. The study stratified the optimal sample size of 600 based on administrative division of Ghana into the regions, districts and residential localities as urban and rural. This means that the random selection of all the 600 cases was based on adult population, with a significance level of 0.05 percent at 95 percent confidence level for the study.

The choice of optimal sample size used in surveys and other forms of data collection is rests on the concepts of binomial and normal probability distribution in statistics (Anaman, 2014). In his conceptualisation, a “binomial variable assumes two variables like gender male and or female. Another is to divide people into two groups as users or non-users of a particular service such as mobile or laptops” (ibid, 2014:47).

Generally, a basic condition of random sampling is that the samples drawn from the population give accurate estimates of the important characteristics of the population (Anaman, 2014). The ‘probability theory’ indicates a formula for estimating how closely the sample statistics are clustered around the true population value. Based on the use of proportions, the formula contains the key parameter proportions, the desired sample size (n), and the standard error. The standard error is a measure of the sampling error” (ibid,

47). The minimum statistically acceptable sample size was determined by employing a “simplified formula to calculate sample sizes” (Yamane, 1967:886). A 95% confidence level and $P = 0.05$ are assumed. It states that;

$$n = \frac{N}{(1+N(\alpha^2))} \quad \text{Equation 5.1}$$

Where:

n = Sample Size; N = sample frame or total registered voters of 18 years and above recorded in four selected study districts; α = confidence interval or level of precision; and 1 = constant. Thus, when this formula was applied the sample size was determined from sampling frame of 226,359 registered voter population. By substitution, using the above statistical or mathematical formula at 95 percent confidence interval or precision level with 0.05 percent error margin (ie $n = \frac{N}{(1+N(\alpha^2))}$);

where n = sample size, N = sampling frame (226,359), α = confidence interval (0.05), 1 = constant, therefore, $n = 399.99 = 400$ respondents. Therefore an ‘ n ’ value of four hundred (400) was adopted as the statistically significant for the survey. However, allowing for oversampling, I added 200 to the optimal sample size of 400 for non-responsiveness making the optimal sample size of 600 respondents. Therefore, the optimal sample size for this study is six hundred (600) respondents. By stratifying the optimal sample size of 600, based on proportions of population of the selected districts for this study, I used the formulae below.

$$n_{1=n_0} \left(\frac{N_0}{N} \right) \quad \text{Equation 5.2}$$

Where:

n_1 = Desired Sample Size;

n_0 = Total Sample Size;

N = Total Registered Population of 18 Years and Above ;

N_0 = District registered population. The population of study and sample size distribution is shown below.

Table 5.4: The Population of Study and Sample size Distribution

Region	District	Locality	Total Population	Adult Population	Total Registered Voters	Formulae $n_1 = (No/N)n_0$	Approximate Sample size (Individuals)
Brong Ahafo	Sunyani Municipal	Urban	123,224	84,213	90,766	$(90766/226359)*600$	240
	Techiman North	Rural	59,068	36,359	37,428	$(37428/226359)*600$	96
	Agona East	Rural	85,920	50,552	50,583	$(50583/226359)*600$	136
Central	Effutu Municipal	Urban	68,592	45,920	47,582	$(47582/226359)*600$	128
Total	4		533,421	217,044	226,359		600

Source: Author's calculation using Ghana Statistical Service and Electoral Commission Data, 2015.

5.4.5 Sample Selection

The sample selection for the study involved four stages. The sampling stages include the following:

Stage 1: The first stage in the sample design for this study, involves clustering ten (10) administrative regions in Ghana into swing and non-swing based on their vote patterns since 1992. Two swing regions were therefore, purposively selected based on criteria as stated earlier above (see 5.4.1 the sample design) in which no political party, since the return to multi-party democracy in 1992, could claim any of the selected regions as its electoral strong hold.

Stage 2: The stage two in the design involves the selection of districts from the list of 216 districts, and the districts were also purposively selected based on their vote patterns, and rural and urban characteristics within the category of taxonomy of districts published by Ministry of Local Government and Rural Development in 2012.

Stage 3: The third stage involves determination of the sample of Enumeration Areas (EAs) for this study from the list of EAs that were used for the Ghana's 2010 Population and Housing Census survey by the Ghana Statistical Service, the official agency in charge of census in Ghana. The study adopted Afrobarometer standard clustering of eight (8) interviews per Enumeration Area (EA). Thus, given the Afrobarometer approach of 8 interviews per EA, the 600 sample should be 75 EAs ($600 \div 8$). Therefore using the list of EAs in the selected districts, a total of 75 EAs (defined as primary sampling units (PSUs) were randomly selected through the probability proportional to the sample size (PPS) method. Thus, to complete the sample design process for the study, I allocated the 75 EAs with optimal sample of 600 across the districts based on the proportion of the sample size allocated to each as shown in Table 5.5

Table 5.5: Enumeration Areas in the Study Districts

Districts	Total Population	Total Households	Approximate Sample size (Individuals)	Formulae $n_1 = (N_0/N)n_0$	Estimated EAs
Sunyani Municipal	123,224	28,431	240	$(240/600)*75$	30
Techiman North	59,068	13,490	96	$(96/600)*75$	12
Agona East	85,920	21,021	136	$(136/600)*75$	17
Effutu	68,592	17,121	128	$(128/600)*75$	16
Total	3368804	80063	600		75

Source: Author's Calculation Using Ghana Statistical Service Data, 2015.

Stage 4: The fourth stage involves the selection of households. The study is designed to capture data at the households' level and registered voter as the sample unit of measurement and analysis. A household is defined as "a person or a group of persons, who live together in the same house or compound, share the same house-keeping arrangements and recognise one person as the head of household" (GSS, 2010: 26). A household could simply be defined as people eating from the same pot in the house.

In the third stage therefore, eight households were selected from each of the selected EAs in the study districts, yielding a total of 600 for the study (Note: the larger the number of EAs in the district, the larger the allocation and vice versa). In this case, a listing was done at this stage and compiled a total households per each selected EA to determine a random start using Microsoft Excel (Note: Random start equals total number of listed households divided by the sample size of eight households per each EA).

In this study, a systematic sampling technique was applied in the selection of households, using the statistical formula and the selected random number as follows;

$$R = \frac{N}{n} \quad \text{Equation 5.3}$$

Where:

R is the sampling interval for selecting the sampling units;

N is the sample size; and

n is the number of households to be interviewed in each electoral area.

Stage 5: Finally, at the fifth stage of the sample selection for this study, a respondent was randomly selected in each visited household from among all the household members aged 18 years and above, and who are registered voters and either voted before or have not voted. Thus, within each household, individual respondents were randomly selected and interviewed.

5.4.6 Techniques for Data Collection of the Study

The study of electoral behaviour is a very sensitive issue due principally to the fear of political retribution, particularly in countries without a long history or tradition of liberal democratic practice such as Ghana. As a result, to address this sensitive issue and protect the privacy of the respondent, two techniques are important as follows; 1) Randomised Response Technique (RRT), and 2) Anonymous Direct Response Technique (ADRT).

The RRT is a technique use to elicit information based on probability than a direct reply to a given question. In this case, two are more options are provided in a single question, and a respondent is asked to select by means of a chance an option (s) of which is sensitive to the study without revealing to the researcher or the interviewer the option(s) being answered. The respondent privacy is thus protected.

In applying this technique, the researcher can obtain unbiased estimation of response of the proportion of population being studied. The ADRT also involves the collection of information from the respondents, answering a given question (s), which are often return anonymously (i.e. by post) to the researcher or the interviewer. This also guaranteed the privacy of the respondents (see Brown & Harding, 1973; Chowdury & Mukerjee, 1988; Fox, 1986).

For the purpose of this study, RRT was applied to elicit information from the respondents about the primary factors influencing citizens in an election, across different spectrum of people eighteen years and above, and who are registered voters. The study used a formalised set of research questionnaire to solicit information in the survey.

The analysis of researchable problems often requires the researcher to ask specific questions from survey respondents in order to obtain answers that can be used to test specific hypothesis. Therefore, "hypothesis to be tested must have specific questions

included in the questionnaire to be linked to the proposal of the study so that it is used as a tool to obtain answers to questions that are needed to tackle the objectives of the study" (Anaman, 2014:26-27). The survey questionnaire for this study was categorised into three sections: Section 'A', Section 'B' and Section 'C'. The section 'A' sought to investigate voters' opinion on democracy and elections in Ghana and holding of elections amongst other issues. Section 'B' also investigated the economy and electoral behaviour related issues, and finally section 'C' solicited information on socio-economic characteristics of the respondents needed for the purpose of this study.

5.4.7 Data Sources for the Study

In the electoral studies, there are three types of data that can be used for empirical analysis, namely; time series, pooled and cross-sectional data. This study used all the three sets of data pooled polling station data (objective one), time series (objective three) and cross-sectional survey data (objective two and one). The study collected both secondary and primary data from the cross-sectional survey data for the analysis. Thus, the electoral data, social, economic and demographic information from both secondary and primary sources are used for the study.

For the purpose of this study, the 275 constituencies are re-classified into the existing 216 politically-administrative districts. Data for the 216 districts are available from the 2010 census and earlier censuses especially 2000 census which is based on 110 districts.

The reclassification used in this report implies that for 33 districts, the election results data from their separate constituencies have been combined. Altogether, 183 districts have one constituency each. Data for each of the 216 districts have been directly sourced from census information produced by the Ghana Statistical Service and these have been merged with 2012 electoral results produced by the Electoral Commission of Ghana. The

model has a number of socioeconomic variables together with the electoral results for each district (combined from the constituency totals).

The study also collected secondary information on macroeconomic indicators from 1992 to 2016 to determine the impact of elections on macroeconomic performance in Ghana. Finally, the primary data was also collected from the respondents in the survey to determine the effect of economic conditions on vote choice of individual voter in an election, and ultimately the electoral outcomes in Ghana.

5.4.8 Data Collection of the Study

5.4.8.1 Collection of Secondary and Primary Data for Objective One

The objective one for this study analyses the determinants of voter participation and choices in the Presidential elections in Ghana based the concept of the “average district voter” using secondary district-based macro-level data. In this case, with the voter being represented as the 'average voter' in the district, district socio-economic characteristics are employed for the analysis. The variables such as the, turnout rate, illiteracy rate, proportion of district rural/urban, sex ratio, religiosity, unemployment level and age-dependent ratio, and others are used in the analysis. Two sets of data were required for the analysis of this objective. These include: a) Electoral data; and b) Social, economic and demographic data from both secondary and primary sources (survey).

5.4.8.1.1 Electoral Data

The study collected a set of electoral results on 2000 and 2012 Ghanaian presidential elections available at constituency levels. The relevant district national presidential results for 2000 and 2012 are sourced from the published outputs from the Electoral

Commission of Ghana for each constituency. Results from districts which have more than one constituency are combined to arrive at district-wide results.

The country was divided into 200 single member constituencies with the inception of multiparty elections in 1992 from the previous 140 seats in the 1979 elections. In the 2004 elections, the electoral map of Ghana was re-arranged and demarcated into 230, and further divided into 275 single member constituencies by the close of 2012. The political demarcation for electoral purposes or constituencies boundaries does not impact on data matching, because the socio-economic variables are only available at the district level.

As a result, the Presidential election results from 200 Constituencies in the 2000 Elections were aggregated into the 110 administrative districts. Also, for 2012 Elections, all the two-hundred and seventy-five (275) constituencies' Presidential election results were aggregated into 216 sample size. This is made possible because, the demarcations of constituencies either before or after the changes in the electoral boundary are included in a district. For the conduct of election in each of these constituencies, the total number of registered voters, total ballot cast, total votes deemed valid, the number of votes garnered by each candidate, and the eventual winner of the election are all known and declared at the polling station.

Thus, for the analysis of this objective, the relevant district presidential election results for 2000 and 2012 were sourced from the published outputs from the Electoral Commission of Ghana for each constituency. The study used 2000 and the 2012 Presidential elections results as the reference point for comparison and analysis.

5.4.8.1.2 Social, Economic and Demographic Data

With the voter being represented as the average voter in the district, district socio-economic characteristics are employed for the analysis. These data are sourced from the 2010 and 2000 National Population and Housing Censuses conducted by the Ghana Statistical Service. Along with the electoral data, the study used macroeconomic and socio-demographical data collected from Ghana Statistical Service and the Bank of Ghana.

The National Population and Housing Census is a district based survey, which covered 37,642 enumeration areas nationwide drawn from each of the 216 districts in 2010. Data from this survey were used to compute variables at the district levels including detailed information on the demographic characteristics such as the education, employment, religion, and ethnic structure share of population of each of the districts. The socio-economic characteristics were collected from the 2000 and 2010 Population and Housing Census surveys in Ghana for the purpose of this study.

In addition to the population and housing data or the secondary data, the study also collected primary data on the individual and group factors as well as candidate attributes, that influence voter participation in the Ghanaian national elections from selected districts in the Central and Brong-Ahafo regions in a crosssectional-survey between April and October, 2016 involving 600 individual respondents at the household level. The objective one of this study examined these characteristics and their impact on voter participation and choices in the 2000, 2012 and 2016 Presidential elections.

5.4.8.2 Collection of Primary Data for Objective Two

The objective two for this study, also examines how voters regard elections as relevant democratic choice for individual socio-economic welfare or wellbeing. In other words how economic conditions as measured by welfare of the population influences voter choices and electoral outcomes in Ghana under the Fourth Republic. The data for this analysis was collected from crosssectional survey.

The survey was conducted in four selected districts for the purpose of this study. These include: Sunyani Municipal, Techiman North District, Effutu Municipal and Agona East District, in the swing regions of Brong Ahafo and Central in Ghana respectively. The survey conducted for a period of six months, from April 2016 to October, 2016 involving six hundred (600) individual respondents at the household level. The unit of analysis was registered voters of 18 years and above, and who have either voted in the previous Ghanaian elections since 1992, or registered to vote in the 2016 elections.

5.4.8.3 Collection of Secondary Data for Objective Three

The objective three examines the impact of elections on the macro-economic performance in Ghana's Fourth Republic. The aim here is to determine whether the elections have impact on the aggregate economic welfare of the population as measured by macro-economic indicators in Ghana such as real GDP growth, government of Ghana 91 day treasury bond bill, inflation/consumer price index, exchange rate, money supply, government expenditure and fiscal balance or budget deficits. In order to achieve this objective, quarterly available data on these macroeconomic indicators for the period 1992 to 2016, were collected from various sources like the Ghana Statistical Service, the Bank of Ghana, the World Bank and International Monetary Fund. The accuracy of the data was checked from the data bases of Bank of Ghana and Ghana Statistical Service.

5.4.9 Analytical Models of the Study

5.4.9.1 Econometric Model

In regression analysis, the primary aim is to explain the behaviour of one variable (dependent variable in relation to the behaviour of one or more variables (independent variables), allowing for that fact that the relationship between them is inexact. This relationship between dependent variable and independent variable (s) is usually expressed in a mathematical term called econometric model, so that they can be measured.

A specific method often used called econometric method in order to obtain numerical estimates of the coefficients of the econometric relationships. The most important element of the econometric model is that it contains a random element, which deals with the Random component of econometric relationships. However, the econometric models can be specified as either linear or non-linear models depending on the objective and the purpose of study. For the purpose of this study, a linear econometric model is expressed as follows:

$$Y = B_0 + B_1X_1 + B_2X_2 + U \quad \text{Equation 5.4}$$

The model above is an example of statistical or empirical or econometric model. More precisely, it is an example of what is known as linear regression model.

In the model, the variable on the left hand side of the equation is dependent variable represented by Y , and the variables on the right hand side of the equation are called the independent or explanatory variables. B_1 and B_2 are known as the parameters of the linear function as expressed above.

B_0 is the intercept or constant, which gives the value Y (dependent variable), when X_1

and X_2 are put to zero. Also, the B_1 and B_2 represent the slope, and measure the rate of change in the dependent variable (represented by Y) in the model above, or more generally, the rate of change in the value of independent variables for a unit change in the value on the dependent variable. The slope coefficients, the B_1 and B_2 can be positive or negative.

Finally, the U is known as stochastic or random, error term or simply the error term. The error term is a random variable because its value cannot be controlled or known 'a priori.' It is usually characterised by its probability distribution (assumed to be normally distributed).

5.4.9.2 Qualitative Response Models

A survey response that is based on probability often refers to a situation where the dependent variable is qualitative in nature such as whether a citizen will vote (Yes) or will not (No) in an election. The response variable is therefore a binary variable or dichotomous variable that takes off **(1)** for the yes responses, and **(0)** for the no response in the survey.

Given Y as the dependent variable (which is the dichotomous variable) and X as the vector of independent variables in the model that influences the dependent variable, then P_i is the probability of Y occurring given a level of X , meaning that Y depends on X . There are three main simple approaches for developing a probability-based model for a binary variable. These are (1) Linear Probability Model (2) Probit Model and (3) Binary Logit Model (Gujarati, 2003).

5.4.9.2.1 Linear Probability Model (LPM)

This model allows for a conditional probability of whether an event will occur or will not occur. Using citizens participation and choice in the 2016 elections in Ghana as the example, it is either the sovereign right of the citizen who is 18 years and above to vote in an election or not in Ghana under the Constitution of the Fourth Republic of Ghana. Thus, the probability that eligible voter has in an election is denoted by P_i and the probability that eligible voter will vote is then denoted by

$$1 - P_i \quad \text{Equation 5.5}$$

This model is simple in the estimation of average voter intention in an election. Its limitation is that the probability of an event to occur, increases linearly with the level of the regressor is normally assumed in the model. For example, consider that $P_i = E(Y = \frac{1}{X})$, meaning E increases linearly with X and so the marginal or incremental effect of X is constant throughout. Further, the law of probability that $0 \leq E(\frac{Y_i}{Y}) \leq 1$, is not-fulfilled. Though the model assumes that the probability the statistical values lie between 0 and 1 , there is no guarantee that the estimated conditional probabilities lies exactly between 0 and 1 . Finally, it's computed R^2 as a measure of goodness of fit of the model is normally lower.

5.4.9.2.2 Probit Model

Another model of qualitative response model is the probit model. The binary model was estimated with the use of Cumulative Distribution Function (CDF) also termed as probit model. For the estimation of probit model, the unobservable index was used and this unobservable was determined by one or more of the explanatory variables. The higher

the unobservable index, the higher the chances of obtaining success defined as the dependent variable and denoted as **1**.

For instance, assuming that this unobservable index is represented by an index **1**, then we can derive the probit model by assuming a respondent will vote or not in the 2016 election largely depends on the index **1**, which is determined by one or more explanatory variables. For example, using personal income of the respondent in the survey as the explanatory variable, this is denoted in the equation below as X_i . This is expressed as;

$$I_i = B_1 + B_1 X_i \quad \text{Equation 5.6}$$

In the determination of how unobservable index is related to the respondent vote in the 2016 election, let $Y = 1$, if the respondent would vote, and $Y = 0$ if the respondent would not vote in 2016 election. Consider the threshold level of the index as I_i^* , this means if I_i is greater than I_i^* , then the respondent would vote or not in the 2016 elections is true, if the threshold level (I_i^*) is greater than I_i , then the respondent would not vote in the 2016 election.

5.4.9.2.3 *Binary Logit Model*

In this model, the dependent variable is the log of the odds ratio, is defined as the linear function of the regressors. The binary logit model allows for estimation of parameters using data that is available in grouped form, individual or micro level provided one can explicitly take into account the possible heteroscedasticity nature of the error term (Gujarati, 2003).

The model satisfies two main conditions. Consider that X increases, $P_i = E(Y = \frac{1}{X})$, also increases but it is not outside the probability range of $0 - 1$ interval. The relationship between P_i and X_i is non-linear. The conditional probability P_i approaches

zero and one at a slower rate in the logit model as compared to the linear probability model. The logit model has some merits. These are: 1) It allows for the transformation of a dichotomous dependent variable to a continuous variable, and can give exact statistical estimates of results; and 2) The method is also simple and the results are easily interpreted.

The model however have some disadvantages (1) the estimated R^2 is limited in judging the goodness of fit of the model, and (2) the use of the model can also result in problems of multicollinearity if the explanatory variables are closely related (Gujarati, 2003). For the purpose of this study, binary logit regression model was used to analyse the factors that influence voter participation and choice based on the survey data conducted from April, 2016 to October, 2016.

5.4.10 Analytical Models Specification for the Study

The study employed statistical Software packages such as SPSS and Excel tools in the analysis. Statistical techniques such as Descriptive Statistics, Chi-Square, And Standard Multiply Regression, Logistics Regressions and Student T-Test have been used to determine statistical significance and the relationship between the variables and their influence on the dependent variables for this study. The specific analytical methods and models used for each objective are discussed below.

5.4.10.1 Analytical Model for Objective One

The objective one tests the accuracy of three alternate models of voter participation or turnout ratio, spoilt ballot proportion and the choice of a presidential candidate in each of the 110 and 216 districts in Ghana in the 2000 and 2012 Ghanaian presidential elections respectively. Thus, the analysis of voter participation was based on the relationship between voter turnout ratio, spoilt ballot proportion and the share of votes of the winning

party in each constituency/district and selected socio-economic characteristics such as average educational attainment, occupation, sex ratio, dependency ratio, ethnicity index, religion of population classified as urban and rural and performs econometric analysis to determine the influence of these independent variables on the dependent variables (participation/turnout ratio, spoilt ballot and choice).

The statistical analysis for the objective one was conducted through Standard Multiple Regression the determinants of voter participation, choice and spoilt ballot in the Ghanaian elections. In multi-regression analysis more than one independent variable is used to explain the dependent variable in the model.

For the purpose of this objective, the researcher-observable voter characteristics such as education, marital status, religion, ethnic background, employment status, and urban-rural to which the individual voter belongs (X_1). The researcher-unobservable voter characteristics or the differential impact of government policies on individual also called the pocketbook effect (X_2). The candidate or party attributes as perceived by the voter (X_3). The macroeconomic conditions or the sociotropic effect (X_4), and finally, the vote choice can also be influenced by party identification (X_5). Given above information, the voter participation and choice in the election can be modelled as follows regression:

$$Vote = F(X_1 \dots X_n) \quad \text{Equation 5.7}$$

Thus, a plausible Multiple Regression Model may be stated as follows:

$$Vote = B_0 + B_1X_1 + B_2X_2 + \dots B_nX_n + U_i \quad \text{Equation 5.8}$$

Where:

B_0 is a constant term;

$B_1 \dots B_n$ are coefficients of the parameters of the socio-economic factors of the voter;

$X_1 \dots X_n$ are the socio-economic factors or characteristics of the voter, and finally;

U_i is the error term. (Refer to chapter 6, for the results of standard multiple regression analysis of factors that influenced voter participation, spoilt ballot proportion and the share of votes of the winning party in the 2012 and 2000 Presidential elections in Ghana).

5.4.10.2 Analytical Model for Objective Two

The objective analysed and discussed elections and development nexus as measured by economic welfare of the population participating in voting based on survey data collected between the period April, 2016 and October, 2016. The analysis was conducted through (a) Frequency Analysis and Descriptive Statistics (b) Chi-square Analysis of Association between Participation in an Election and Socio-economic Characteristics of the Respondents (c) Standard Multiple Regression Analysis based on the survey data collected for this study from April to October, 2016, and (d) Binary Logistic regression.

5.4.10.2.1 Frequency Analysis and Descriptive Statistics

The frequency analysis and simple descriptive statistics include the mean, standard deviation and coefficient of variation.

5.4.10.2.2 Standard Multiple Regression

According to Key (1966); Fiorina (1978, 1981); Downs (1957); Kiewiet (1983); Lewis-Beck (1986, 1988, 2001, 2006), six very important dimensions are essential forming the ideal model for the analysis of elections and economic development nexus in the study.

In specifying the standard multiple regressions model for this analysis, a typical economic voter, before casting his or her vote considers how personal and family finances have been faring recently (**Personal Simple Retrospective Evaluation = X_1**).

The voter does not only think of his or her pocketbook, he or she also thinks about the community, district or the nation's development (**Collective Simple Retrospective**

Evaluation = X_2). Also, the rational voter also ponders over the role of government in these economic affairs or whether the economic policies of the incumbent administration helped or harmed him or her financially (**Personal Mediated Retrospective Evaluation** = X_3).

Apart from the personal concern of the voter, how have they been affected by the prosperity of the country (**Collective Mediated Retrospective Evaluation** = X_4). Further, the voter wants to know what the government policies are likely to bring to the economy in the future (**Collective Mediated Prospective Evaluation** = X_5). Finally, in another perspective, the voter economic reaction is often predicated by his or her anger or delight over how things are going on in the country (**Collective Mediated Retrospective Affective Evaluation** = X_6). The analysis was conducted to determine the influence of each of the six dimensions and how they influenced the respondents in the 2016 Ghanaian Presidential elections.

$$\text{Vote} = F(X_1 = X_n) \quad \text{Equation 5.9}$$

Thus, a plausible Multiple Regression Model may be stated as follows;

$$\text{Vote} = B_0 + B_1X_1 + B_2X_2 + \dots B_nX_n + U_i \quad \text{Equation 5.10}$$

5.4.10.2.3 Chi-square Analysis

The third method used in the analysis of objective one was the chi-square analysis to determine socio-economic characteristics that associated with voter participation in 2012 Presidential election. Chi-square analysis is basically a test of association between variables. It can offer a preliminary list of candidate socio-economic characteristics for use in multiple regression analysis. Babbie (2001: 459) indicates that chi-square analysis is based on the null hypothesis that there is no association between two variables based on grouped data.

The first step involved in undertaking chi-square analysis is to compute the expected frequencies of the cells in a contingency table of the two variables, for example the level of voter participation and the 2012 Presidential election. This is based on the assumption that there is no relationship between the two variables.

The chi-square value (**CSV**) is calculated by squaring the difference between the observed cell frequency and expected cell frequency (**E**) and then dividing this squared difference by the expected cell frequency. The **CSV** is simply the sum arrived by repeating these steps for all the cells in the contingency table. It is shown below with Σ denoting the summation symbol:

$$CSV = \Sigma \left(\frac{(O-E)^2}{E} \right) \quad \text{Equation 5.11}$$

The chi-square analysis used in the study involved tests of association between levels of voter participation in the 2012 Presidential election with a host of socio-economic characteristics. These socio-economic characteristics were made up of those used by Ghana Statistical Service in the population housing census in 2010, and were also reported from my field research observations for the period April to October, 2016.

5.4.10.2.4 Binary Logistic Regression Model

Another model employed by this study to analyse the determinants of voter participation and choice in the Ghanaian election is the logistic regression. In this case, the dependent variable is dichotomous, which has two answers (**i.e. Yes or No**). Thus, it is the exclusive reserve right of the respondent to say he or she would participate and vote in the elections or would not participate and vote in the 2016 elections (or have participated or have not participated) in the past Ghanaian elections.

Since, the dependent variable provides two answers; a binary logistic regression model was also applied in the analysis. However, for the logistic regression model, a person decision to vote in an election is assumed, and it depends on his or her socio-economic status or welfare conditions at the time of the election. It is also argued that the probability of the voter to participate in the elections is therefore largely related to his or her socio-economic welfare being in the democratic system.

However, this probability P_i is hidden or latent variable in the sense that it is not directly observed by the researcher. Hence, the observation is often represented by a dummy variable (Y_i) with a value of (1) if the person will vote or has voted in the elections regardless of his or her socio-economic status, and (0) if the person will not vote or has not voted in the election at all, due to his or her socio-economic status or for other reasons as explained by the voter. The relationship of the probability to participate or not in the elections is indicated below.

$$P_i = B_0 + B_1X_1 + \dots + B_nX_n + U_i \quad \text{Equation 5.12}$$

Where:

B_0 is constant;

$B_1 \dots B_n$ are the coefficient of the parameters of the socioeconomic characteristics;

$X_1 \dots X_n$ are the socio-economic characteristics of the householder and;

U_i is the error term.

Thus, as shown above, in order to ascertain the probability of event such person will vote or not in an election, a logistic regression procedure is often used to model the log odds as a linear equation or function of the explanatory variables. For the purpose of this analysis therefore the logistic regression used for the estimation is given in equation below.

$$\left\{ \log \left(\frac{P_i}{1-P_i} \right) \right\} = B_0 + B_1X_1 + \dots + B_nX_n + U_i \quad \text{Equation 5.13}$$

Where:

P_i is the probability that the person will vote in the Ghanaian elections;

$1 - P$ is the probability that the person will not vote in the Ghanaian elections.

As shown above, the left hand side of the model is the log odds ratio and it is a linear function of explanatory variables. The log odds ratio in the model thus describes the odds that favouring dependent variable. The right side of the model also contains the independent variables that are hypothesised to influence people to vote in the Ghanaian elections.

5.4.10.3 Analytical Model for Objective Three

The objective three of this study also examines the aggregate impact of elections on the macroeconomic performance of Ghana's Fourth Republic. The analysis was conducted through (a) simple statistical analysis (T-Test) and graphical analysis of macroeconomic variables for which there are limited data for detailed time-series econometric analysis, and (b) econometric analysis to determine statistical significance of election on quarterly performance on some selected macroeconomic indicators. This was done by specifying an autoregressive model that encompasses the occurrence of elections in Ghana as part of the model in the form of dummy independent variables.

5.4.10.3.1 Student T-Test

For the first part of the analysis of objective three, simple statistical analysis (using student t-test and graphical analysis) of macroeconomic variables was conducted to determine the effect of elections on macroeconomic performance in Ghana based on the performance of selected variables.

A t-test (also called Student's T-Test) was conducted to compare the averages (means) of macroeconomic variables in the 7 elections years and in the 18 non-election years to

determine if the averages (means) of the macro-economic variable in the two time periods were statistically different from each other in the two time periods.

In other words, it helps to explain if the difference between the averages of the variables in the two time periods was genuinely greater than zero and could not have occurred by chance. The study used the independent sample t-test model in the analysis, and this is specified below. The t-test model is specified as follows:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{(s_1^2 + s_2^2)/(n_1 + n_2 - 2)}} \quad \text{Equation 5.14}$$

Where:

t is the computed Student t value;

$\bar{x}_1$ and $\bar{x}_2$ are the means of the variable in the two time groups respectively;

s_1 and s_2 are the standard deviations of the variable in the two time groups respectively;

$n_1 + n_2 - 2$ is the degree of freedom (df) for the t statistic where n_1 is the number for the first group and n_2 is the number for the second group.

5.4.10.3.2 Autoregressive Model

An autoregressive model that encompasses the occurrence of elections in Ghana as part of the model in the form of dummy independent variables is specified as follows:

$$Y_t = B_0 + B_1X_1 + B_2B_2 + \dots B_pB_p + C_1Z_1 + C_2Z_2 + C_3Z_3 + U_t \quad \text{Equation 5.15}$$

Where:

Y_t is quarterly time-series observations on the dependent quarterly economic performance indicators;

B_0 is a constant variable;

$B_1 \dots B_p$ are coefficient of the parameters of the quarterly economic performance indicators;

$X_1 \dots X_p$ are the quarterly economic performance indicators;

$C_1 \dots C_2$ are coefficient of the parameters of the pre-election, election and post-election quarters $Z_1 \dots Z_3$ are the variables for pre-election, election and post-election quarters

Z_1 is PreQt which is the Fourth Republican pre-democratic election year quarter variable dealing with immediate quarter before the elections, measured as the dummy variable with **(1)** for 1992, 1996, 2000, 2004, 2008 , 2012 and 2016 and **(0)** for all other years between 1992 and 2016;

Z_2 is ElecQt which is also the Fourth Republican democratic election year quarter variable dealing with a quarter in which the election occurs, measured as the dummy variable with **(1)** for 1992, 1996, 2000, 2004, 2008 and 2012, and **(0)**for all other years between 1992 and 2016;

Z_3 is the PostQt, and the Fourth Republican democratic transition or post-election year quarter variable dealing with immediate quarter after the elections, measured as the dummy variable with **(0)** for 1993, 1997, 2001, 2005, 2009 and 2013 and **(0)** for all other years between 1992 and 2016.

U_t is the equation error term initially assumed to be normally distributed with zero mean and constant variance.

Table 5.6: Summary of Study Objectives Showing the Designs and Analytical Methods

Objective	Hypothesis	Study Design	Analytical Method
1.Examine how socio-economic factors influence voter turnout and share of votes in the 2000 and 2012 Ghanaian Presidential elections	The socioeconomic factors significantly explain voter turnout and choices in the 2000 and 2012 Ghanaian Presidential elections	Secondary Data and/ Desktop Study and Survey	Frequency, Descriptive Statistics Chi-square Analysis, Standard Multiple & Logistic Regressions
2.Determine the nexus between national elections and development outcomes in the 2016 Ghanaian Presidential elections	The state of the economy as measured by economic welfare of the population significantly explains voter participation and choices in the 2016 Ghanaian Presidential elections	Crossectional Survey	Descriptive Statistics, Chi-square Analysis, Standard Multiple Regression & Logistic Regression
3.Analyse whether the dynamic behaviour of economic growth, government budget deficits, inflation and Treasury bill rates is affected by the timing of national elections 1992 to 2016	The timing of elections in Ghana's Fourth Republic significantly affects the performance of real GDP, inflation, government budget deficits and Treasury bill rate, 1992 to 2016	Time Series Analysis	Student t-test, Graphical Analysis & Autoregressive model

Source: Author's Construction, 2016.

5.4.11 Methodological Issues of the Study

The study presents an analytical framework which considered ethnic factor (using .Asante and Ewe) and non-ethnic factors in the Ghanaian elections as well as the duo political system (i.e. only two political parties, have since alternated political power) under Fourth Republic. Though the country is practising multi-party democracy, it appears to be two-party zero-sum game of the Fourth Republican political system, with the minority third parties (i.e. all other parties put together with exception of NDC and NPP) in the seven presidential elections that have been convoked since 1992.

Again, at the level of electoral decisions, the economic and the non-economic factors, sometimes overlap. Methodologically, the challenge is the determination of which of the

factors prevails as key determinant of voting behaviour in Ghana. To check for this possibility therefore, the study first break up the data into economic and non-economic factors, and compute descriptive statistics and regression in order to determine their significance in influencing vote choice in Ghana. To do this, the study made use of both secondary (macroeconomic data, 2010 Population and Housing Data, and 2012 Presidential election results), and primary data (the survey data collected) for this study.

The study computed the Variance Inflation Factor (VIF) to investigate multicollinearity issue. The share of the variance unexplained after regressing each of the explanatory variables on the others is called the *tolerance index* for this variable (Gujarati, 2003). The VIF is the inverse of this tolerance index. It is straightforward that the more explanatory variables are introduced in a model, the higher the VIF. These indicators are to be computed on the largest set of variables used. It is upper bound for the multicollinearity in the econometric analytical models. It is generally accepted that multicollinearity is a matter of concern when the VIF indicator exceeds ten (10) as suggested by Gujarati (2003).

5.4.12 Reliability and Validity of the Study

To ensure accuracy, validity and reliability of the data, the information collected was compared with the responses and validated. The accuracy of research findings is very important for the purposes of policy recommendation for development. The argument is that if research is conducted in the same manner, then the errors and biases should be minimised in order to provide the same or similar research results.

The validity of research data helps ensure that the study findings really provide answers to the research problem. That is the accuracy of the data collection methods, the validity and reliability of the data collected should measure what they were intended to measure

in the study. In order to underscore the accuracy, validity and reliability, this study compared the data with sources and the responses, and truncated the data.

5.4.13 Limitations of the Study

This study, like any other research study encounters some limitations in both data collection and analysis. The study adopts macro-micro analytical approach. In the first place, the macro approach adopted for this study, though it sheds some light on the economy and election nexus using secondary data. The macro approach therefore is challenged due to the methodologies applied in collecting the data. The results may be inconclusive, and can be subjected to criticism of spuriousness, because of sample size, estimation and the model used. Another limitation with the macro approach is that it does not also explain direct link between welfare and electoral behaviour of the individual voter in an election.

In order to address the limitation associated with the macro-economic approach, this study the macro-micro analytical approach. The micro approach involves cross-sectional survey, using a randomised response technique with respect to questions for this study. This was to solicit information from the respondents that could best explain individual economic welfare and the vote.

However, the limitation with micro-study with respect to elections is the fear of political retribution. That is, for fear of political victimisations in countries without long history of democracy and elections such as Ghana, voters may not reveal their real vote intentions to the researcher. This situation may affect the significance of the study. Again, to address this limitation, the study adopts a randomised response technique in the administration of the questionnaire.

This technique gives probability response rather than a direct answer to a given question. In this case, the respondents were asked to select a single answer from one or more options, only one of the options is sensitive for the analysis of this study, without revealing to the respondents which of the options is being answered. In this case, the respondent privacy is also protected. The probability distribution of questionnaire adopted thus, help in unbiased estimates of the proportion of the population with the sensitive variables for the purpose of study.

Finally, there is no much evidence from this research study on the detailed voting patterns and behaviour of the population who are mainly indigenous people in the Eastern, Northern, Upper East and Upper West regions of the country as the survey was limited to electorally -swing regions of Central and Brong-Ahafo regions. Notwithstanding this limitation, the macro-analysis of voter behaviour using the district-level data for all 216 districts in the 2000 and 2012 presidential elections point to some general findings of factors which may be applicable to these four regions.

5.5 Conclusion and Summary of the Chapter

This chapter has discussed the research approach, methods, design and the process adopted for this research. It adopted the macro-micro analytical approach with the quantitative research survey design. The cross-sectional survey design with multi-stage cluster sampling approach is also adopted to collect micro level data from the respondents. This allows the needed flexibility to collect and analyse the needed data, which was mainly quantitative with some qualitative data to come up with the right conclusions in view of the research questions, aim and specific objectives.

CHAPTER SIX

MACRO-LEVEL ANALYSIS OF DETERMINANTS OF VOTER BEHAVIOUR AND CHOICES IN NATIONAL ELECTIONS

6.1 Introduction

This chapter analyses and discusses the macro-level determinants that influence voter behaviour and choices in Ghana based on aggregate district-level data. It focuses on the determinants that influence citizens' political participation and voting decisions in national presidential elections in the Fourth Republic of Ghana.

The unique approach of this chapter is that district-level aggregate data on economic characteristics compiled by the Ghana Statistical Service are synchronised with district-level national presidential election results compiled by the Electoral Commission of Ghana to ascertain the determinants of voter behaviour and choices. The analysis is based on the concept of the "Average District Voter." This average district voter is analysed using district-level census data combined with national election results.

Since the emergence of the Fourth Republican Era in Ghana, there have been two national censuses conducted in 2000 and 2010. The 2000 National Census was conducted in the same year as the 2000 National Presidential election allowing for the easy synchronisation of district-level census data with district-level national presidential election results. The 2010 National Census was conducted during the fourth week of September 2010 and the district-level data and information of the Census were finalised in the middle of 2011 around the same time as the new compilation of biometric registration of voters was undertaken by the Electoral Commission of Ghana for the December 2012 national presidential election.

Hence, the 2012 national presidential election results could be synchronised with the September 2010 National Census data for analysis of district-level macro determinants of voter behaviour and choices.

In Ghana, each politically administrative district has at least one electoral constituency. Over half of these districts have only one constituency each. The analysis begins with the compilation of data on constituency election results which are aggregated to district-level election results for districts with two or more constituencies. These compiled district-level national presidential results are then combined with detailed socioeconomic characteristics of the district for the particular census year in one Microsoft Excel file. The socio-economic variables compiled for each district include literacy rate, proportion of district rural/urban, sex ratio, religiosity, unemployment level, age-dependent ratio, disability proportion and marital status.

The district-level national presidential election results used for the analysis include turnout, total votes cast, total valid votes, spoilt ballots and results for each of the presidential candidates who took part in the election for that year. For the 2012 national presidential election, the results of the 275 constituencies were aggregated to the respective 216 politically-administrative districts. For the 2000 national presidential election, the results of the existing 200 constituencies at that time were aggregated to the respective 110 districts. The analysis was done separately for 2012 and 2000.

Following the introduction, further discussion in this chapter is divided into four sections. The first section of this chapter analyses the macro-level determinants of voter participation and choices in Ghana, based on district-level data and using the 2012 and 2000 Presidential elections. The second section deals with the factors influencing the intensity of spoilt ballots also based on district-level data and using the 2012 and 2000

Presidential elections; this analysis deals with the impairment of voter participation as a result of voting exercise that does not count in the determination of final outcomes because the ballots are spoilt. The third section ascertains the factors that influence the share of the total votes accruing to the winning presidential candidate in both the 2012 and 2000 elections. The fourth and final section summarises the major conclusions arising from the analyses reported in the chapter.

6.2 Determinants of Voter Participation in National Presidential Elections in Ghana based on the Degree of Voter Participation in the Election (The Voter Turnout Ratio or Rate)

The dependent variable tested for in this section is the voter turnout ratio. In the literature, the voter turnout ratio is normally assumed to be the total number of registered voters who actually voted in an election expressed in fraction or percentage terms. An alternative measure of the voter turnout ratio is expressed as the total number of people who actually voted in an election as a percentage of the voting age population (see Powell, 1982, 1986; Jackman, 1987; Jackman & Miller, 1995; Blais, 2000, Blais *et al.*, 2004). The alternative measure of the voter turnout rate arises partly from over bloated registers or registers that contain many people who are not qualified to vote, either by age or through other circumstances.

In Ghana, eligible voters (voting population) have been defined to include all citizens that are within, and above the legal voting age of 18 years and above as required by law

(Article 42, 1992 Constitution: 43) of the 1992 Fourth Republican constitution of Ghana.¹⁰

In the analysis adopted for this study, the social and economic characteristics that influence the voter turnout ratio are determined using the 2012 and 2000 national presidential elections, and the corresponding 2010 and 2000 Population Censuses. **The voter turnout ratio, like all ratios in mathematics, is defined as the numerator divided by the denominator.** The numerator for a voter turnout ratio is always the total number of votes actually cast in an election in a specific geographical area.

However, the denominator varies for voter turnout ratios due to the possibility of over-registration or bloating of registers, a common occurrence in Ghana especially during the Fourth Republican era from 1992 to 2016 (refer to Appendix 4 for data on statistical bloating of the voter register for the 2012 election). For this study, the voter turnout ratio is defined using two measures. These are (1) the total number of people who voted in the election at the district level (numerator) divided by the total number of people registered to vote at the district level based on data from the Electoral Commission of Ghana for district *i* (the first denominator) specified in this chapter as **TURNOUTA**; (2) the total number of people who voted in the election at the district level (numerator) divided by the total number of people aged 15 and over in the district based on the Census data (the

¹⁰ The official definition of voting age in Ghana is 18 years and above (i.e. citizens who are eighteen years and above are eligible to register and vote in all public elections in Ghana, and to be voted for) as stated in (Article 42, 1992 Constitution: 43) of the 1992 Fourth Republican constitution of Ghana.

second denominator) specified in this chapter as **TURNOUTB** (see Chan & Clayton, 2006).¹¹

6.2.1: Results of the Analysis Involving the First Voter Turnout Ratio Regression Model for the 2012 National Presidential Election in Ghana: First Equation

The first voter turnout ratio model is expressed as a multiple regression equation as follows in Equation 6.1 with 12 independent variables assumed to influence the dependent variable.

$$\begin{aligned} \text{TURNOUT2012A}_i = & B_0 + B_1 \text{LITERACY}_i + B_2 \text{EMPLOYPROP}_i + B_3 \\ & \text{URBANPROP}_i + B_4 \text{AGEDR}_i + B_5 \text{ASANTEPROP}_i + B_6 \text{EWEPROP}_i + \\ & B_7 \text{HOUSEHOLD SIZE}_i + B_8 \text{REGISTEREDVOTERS}_i + B_9 \text{MUSLIM}_i + B_{10} \\ & \text{CHRISTIAN}_i + B_{11} \text{SEXRATIO}_i + B_{12} \text{DISABILITYRATIO}_i + U_i \end{aligned} \quad \text{Equation 6.1}$$

Where

TURNOUT2012A_i is the dependent variable and is a ratio which is defined as the total number of people who voted in the 7 December 2012 national presidential election at the district level divided by the total number of people registered to vote at the district level based on data from the Electoral Commission of Ghana for district *i*;

¹¹ This study used aged 15 and over as an alternative ‘measure of turnout’ to deal with the over bloated electoral register as was observed in the 2012 General elections (refer to Appendix 4 for data on statistical bloating of the voter register for the 2012 General elections). See Chan & Clayton (2006). Should the voting age be lowered to sixteen? Normative and empirical consideration of voting age. *Political Studies*, (54) 533-558.

LITERACY_i is a continuous variable measuring the proportion of the population in district i who have formal educational qualifications based on data from the September 2010 National Population Census;

EMPLOYPROP_i is a continuous variable measuring the proportion of population in the district i who describe themselves as employed based on the September 2010 National Population Census data;

URBANPROP_i is a continuous variable measuring the proportion of the population in the district i who reside in urban areas, as defined by the Ghana Statistical Service as those towns and settlements with population of more than 5,000 people, using the September 2010 National Population Census data;

AGEDR_i is the dependency ratio for the district i defined as the number of people aged between zero to 14 plus the number of people aged 65 and above divided by the number of people aged between 15 to 64. The dependency measure is a useful measure of poverty with increasing age dependency signalling higher burden on the working population to take care of the very young and the very old people who are assumed not to be actively working;

ASANTEPROP_i is a continuous variable defined as the proportion of the population in district i who consider themselves to be Asantes based on the September 2010 National Population Census data. Asantes constitute about one third of all Akans and are modelled as a distinct voting group different from the other Akans;

EWEPROP_i is a continuous variable defined as the proportion of the population in district i who consider themselves to be Ewes based on the September 2010 National Population Census data;

HOUSEHOLD SIZE_i is the average number of members per household in district *i* based on the September 2010 National Population Census data;

REGISTERED VOTERS_i is a continuous variable indicating the number of people registered as voters in the district *i* for the December 2012 national presidential election, measured in thousands. The main registration of voters by biometric means was undertaken in mid-2011 just nine months after the start of the September 2010 National Population Census and around the time the Census data were being finalised;

MUSLIM_i is a continuous variable measuring the proportion of the population in district *i* who describe them as Muslims based on the September 2010 National Population Census data;

CHRISTIAN_i is a continuous variable measuring the proportion of the population in district *i* who describe them as Christians based on the September 2010 National Population Census data;

SEX RATIO_i is a continuous variable measuring the number of females divided by the number of males in district *i* based on the September 2010 National Population Census data;

DISABILITY PROP_i is a continuous variable measuring the proportion of population in district *i* classified as disabled based on the September 2010 National Population Census data;

U_i is the regression equation error term initially assumed to be normally distributed with zero mean and constant variance.

The summary of the results of the estimated regression of voter participation indicated by **TURNOUT2012A** are reported in Table 6.1. Overall, the model could be regarded as

modestly strong with statistically significant R^2 and F value. The estimated model was correctly specified based on the Ramsey Reset Test for correct specification with the p value of 0.193. This p value is well above the maximum critical p value of 5% used in this study. This meant that the null hypothesis that the model was correctly specified could not be rejected. The Langrange-Multiplier (LM) test for heteroscedasticity confirmed the absence of the problem of heteroscedasticity with p value of the test of 0.982 well above the critical 0.05 (5%) p value used in this study. The Langrange-Multiplier test of no heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation. Finally, the variance inflation factor (VIF), a measure of multicollinearity in the model, was below the critical value of 10, suggested by Gujarati (2003) for all the 12 independent variables, clearly indicating that the problem of multicollinearity did not exist in the model.

The estimated values of the specific parameters of the model are also reported in Table 6.1 for each of the 12 independent variables that were hypothesized to affect the voter participation defined by **TURNOUT2012A**. The general test of hypothesis is based on the framework that the independent variables significantly affect the variation in the dependent variable. The estimated parameters of the 12 independent variables and their Student t values and p values are reported in Table 6.1.

Using the maximum acceptable level of statistical significance level of 5 percent (0.05) for this study, only ASANTEPROP, EWEPROP and HOUSEHOLDSIZE have their estimated parameters statistically significantly different from zero (or statistically significant) meaning that these variables exert statistically significant influence on the dependent variable (**TURNOUT2012A**).

The result linked to ASANTEPROP indicates that the voter turnout ratio in a district increases with increasing proportion of the population being Asantes. This result suggests increasing interest and vigour of Asantes in voting in the 2012 national presidential election. In contrast, the voter turnout ratio declines in a district with increasing proportion of the population being Ewes.

The other significant independent variable is the household size. With a positive value, this suggests that households with bigger numbers tend to participate more in voting possibly due to intra-household voter mobilisation.

The other nine variables do not influence the dependent variable in a statistically-significant manner. Of these variables, two have absolute values greater than 1.0 suggesting that they could not be dropped from the model because that would cause specification bias. These two variables are LITERACY and SEXRATIO.

The positive parameter sign for LITERACY suggests that with increasing literacy, voter turnout rate rises. The negative parameter sign for SEXRATIO indicates that voter turnout rates appear to decline with relatively higher female-male ratios in a geographical area. So while these two variables are not statistically significant, their estimated parameters appear to be plausible.

Table 6.1: Summary of the results of the regression analysis of district-level socio-economic factors which influence voter participation as measured by TURNOUT2012A for the 2012 national presidential election in Ghana.

Dependent Variable is TURNOUT2012A defined as the total number of people who voted in the 2012 presidential election at the district level divided by the total number of people registered to vote at the district level based on data from Electoral Commission of Ghana.

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	Probability Level of Significance	Variance Inflation Factor
Constant	62.851	0.000	3.149	0.002***	0.000
Literacy	0.067	0.253	1.420	0.157	9.215
Employprop	0.118	0.054	0.533	0.594	2.963
Urbanprop	0.010	0.050	0.575	0.566	2.175
Agedr	0.014	0.040	0.319	0.750	4.657
Asanteprop	0.095	0.418	5.891	0.000***	1.463
Eweprop	-0.048	-0.244	-3.355	0.001**	1.538
Householdsize	0.834	0.256	2.428	0.016**	3.234
Registeredvoters	-0.002	-0.045	-0.654	0.514	1.348
Muslim	0.002	0.009	0.080	0.936	3.315
Christian	-0.001	-0.006	-0.034	0.973	7.827
Sexratio	-0.063	-0.081	-1.091	0.277	1.585
Disabilityprop	0.243	0.067	0.930	0.354	1.524

Notes on Table 6.1:

Source: Ghana Statistical Service and Electoral Commission of Ghana, 2016

Valid Sample Size used for the analysis was 216 Administrative Districts

R^2 0.302

F Value 7.307

Probability significance level of Ramsey Reset Test for correct model specification 0.193

Probability significance level of Langrange-Multiplier test of no heteroscedasticity 0.982

The Langrange-Multiplier test of no heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.

*** denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.

6.2.1 Results of the Analysis Involving the Second Voter Turnout Ratio Regression

Model for the 2012 National Presidential Election in Ghana: Second Equation

The second voter turnout ratio model is expressed as a multiple regression equation as follows in Equation 6.2 with 12 independent variables assumed to influence the dependent variable.

$$\begin{aligned} \text{TURNOUT2012B}_i = & B_0 + B_1 \text{LITERACY}_i + B_2 \text{EMPLOYPROP}_i + B_3 \text{URBANPROP}_i \\ & + B_4 \text{AGEDR}_i + B_5 \text{ASANTEPROP}_i + B_6 \text{EWEPROP}_i + B_7 \text{HOUSEHOLDSIZE}_i \\ & + B_8 \text{POP15ANDOVER}_i + B_9 \text{MUSLIM}_i + B_{10} \text{CHRISTIAN}_i + B_{11} \text{SEXRATIO}_i + B_{12} \\ & \text{DISABILITYRATIO}_i + U_i \end{aligned} \quad \text{Equation 6.2}$$

Where:

TURNOUT2012B_i is defined as the total number of people who voted in the 2012 presidential election at the district level divided by the total number of people in the district who are aged 15 and over. It is used as an alternative measure of turnout ratio for the purpose of this study to deal with the highly-bloated electoral register which was observed for the 2012 national presidential election (refer to Appendix 4 for data on statistical bloating of the voter register for the 2012 election);

LITERACY_i is a continuous variable measuring the proportion of the population in district *i* who have formal educational qualifications based on data from the September 2010 National Population Census;

EMPLOYPROP_i is a continuous variable measuring the proportion of population in the district *i* who describe themselves as employed based on the September 2010 National Population Census data;

URBANPROP_i is a continuous variable measuring the proportion of the population in the district i who reside in urban areas, as defined by the Ghana Statistical Service as those towns and settlements with population of more than 5,000 people, using the September 2010 National Population Census data;

AGEDR_i is the dependency ratio for the district i defined as the number of people aged between zero to 14 plus the number of people aged 65 and above divided by the number of people aged between 15 to 64; the dependency measure is a useful measure of poverty with increasing age dependency signalling higher burden on the working population to take care of the very young and the very old people who are assumed not to be actively working;

ASANTEPROP_i is a continuous variable defined as the proportion of the population in district i who consider themselves to be Akan-Asantes based on the September 2010 National Population Census data;

EWEPROP_i is a continuous variable defined as the proportion of the population in district i who consider themselves to be Ewes based on the September 2010 National Population Census data;

HOUSEHOLD SIZE_i is the average number of members per household in district i based on the September 2010 National Population Census data;

POP15ANDOVER_i is a continuous variable indicating the number of people in the district i who are aged 15 and over, measured in thousands, based on the September 2010 National Population Census data;

MUSLIM_i is a continuous variable measuring the proportion of the population in district i who describe them as Muslims based on the September 2010 National Population Census data;

CHRISTIAN_i is a continuous variable measuring the proportion of the population in district i who describe them as Christians based on the September 2010 National Population Census data;

SEXRATIO_i is a continuous variable measuring the number of females divided by the number of males in district i based on the September 2010 National Population Census data;

DISABILITYPROP_i is a continuous variable measuring the proportion of population in district i classified as disabled based on the September 2010 National Population Census data.

U_i is the regression equation error term initially assumed to be normally distributed with zero mean and constant variance.

The results of the estimated regression of voter participation rate, indicated by **TURNOUT2012B**, are summarized in Table 6.2. The model was correctly specified based on the Ramsey Reset Test with the p value of 0.052 just above the 5 percent maximum margin used for this study. The LM test for heteroscedasticity confirmed the non-existence of the problem. Multicollinearity did not exist in the model with all the 12 independent variables having VIFs below the critical value of 10.0 (see Gujarati, 2003). The estimated values of the specific parameters of the model are also reported in Table 6.2 for each of the 12 independent socio-economic variables that were hypothesized to affect the voter participation rate defined by **TURNOUT2012B**.

Only five of the 12 independent variables are significant. These are EMPLOYPROP, URBANPROP, AGEDR, ASANTEPROP and POP15ANDOVER. The negative parameter estimate linked to EMPLOYPROP indicates that the voter turnout ratio decreases with increasing proportion of the population employed. All things being equal, voter participation in the 2012 Presidential election tends to be lower with increasing proportion of people who are employed in a district. Again, there was an inverse relationship between the URBANPROP and voter participation in the 2012 Presidential election. This means that all things being equal, voter participation in 2012 Presidential election decreases with increasing proportion of registered voters in urban centres or districts in Ghana.

Further, the negative sign linked to AGEDR means that voter turnout tends to decrease with increasing proportion of age dependency ratio (AGEDR) which measures the ratio of proportion of people who are dependants on the workforce in a district in Ghana. This suggests that districts with higher age dependency ratios tend to participate less in voting, a plausible outcome which also suggests that increasing poverty burden discourages participation in voting.

Another significant independent variable is the Asante proportion in each district. The parameter estimate of this variable suggests that voter turnout tends to increase with increasing proportion of Asantes in a district in Ghana in the 2012 Elections.

Finally, there was also an inverse relationship between voter turnout and POP15ANDOVER. This means that all things being equal, the voter turnout ratio declines in a district with increasing proportion of the population POP15ANDOVER in each district in the 2012 elections in Ghana.

This result is largely consistent with the findings in literature which suggests that voter turnout declines with increasing population density in industrial democracies (see Gray & Caul, 2000).

The other seven variables do not influence the dependent variable in a statistically-significant manner. Of these variables, three have absolute values greater than 1.0 suggesting that they could not be dropped from the model because that would cause specification bias. These three DISABILITYPROP, EWEPROP and MUSLIM.

The most interesting finding related to the non-significant variables deals with DISABILITYPROP; this suggests a negative relationship between voter turnout rate and increasing disability ratio; this finding is clearly intuitive, though not significant, as disabled people find it more difficult to vote given the relatively less developed formal mechanisms and structures in Ghana that assist disabled people to vote.

Table 6.2: Summary of the results of the regression analysis of district-level socio-economic factors which influence voter participation as measured by TURNOUT2012B for the 2012 national presidential election in Ghana.

Dependent Variable is TURNOUT2012B defined as the total number of people who voted in the 2012 presidential election at the district level divided by the total number of people in the district who are aged 15 and over.

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	Probability Level of Significance	Variance Inflation Factor
Constant	310.312	0.000	4.063	0.000***	0.000
Literacy	0.078	0.081	0.432	0.666	9.217
Employprop	-1.930	-0.241	-2.283	0.023**	2.961
Urbanprop	-0.147	-0.209	-2.297	0.023**	2.198
Agedr	-0.346	-0.263	-2.003	0.046**	4.572
Asanteprop	0.160	0.192	2.591	0.010**	1.462
Eweprop	-0.069	-0.096	-1.261	0.209	1.537
Householdsize	-0.188	-0.016	-0.142	0.887	3.234
Pop15andover	-0.040	-0.252	-3.650	0.000***	1.269
Muslim	0.093	0.121	1.083	0.280	3.317
Christian	-0.070	-0.091	-0.531	0.596	7.818
Sexratio	-0.099	-0.035	-0.450	0.654	1.583
Disabilityprop	-1.234	-0.093	-1.233	0.219	1.525

Notes on Table 6.2:

Source: Ghana Statistical Service and Electoral Commission of Ghana, 2016
Valid Sample Size used for the analysis was 216 Administrative Districts

R^2 0.235

F Value 5.192

Probability significance level Ramsey Reset Test for correct model specification 0.052

Probability significance level of Langrange-Multiplier test of no heteroscedasticity 0.068

The Langrange-Multiplier test of no heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.

*** denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.

6.2.2 Results of the Analysis Involving the First Voter Turnout Ratio Regression

Model for the 2000 National Presidential Election in Ghana: First Equation

The first voter turnout ratio model is expressed as a multiple regression equation as follows in Equation 6.3 with 12 independent variables assumed to influence the dependent variable.

$$\begin{aligned} \text{TURNOUT2000A}_i = & B_0 + B_1 \text{LITERACY}_i + B_2 \text{EMPLOYPROP}_i + B_3 \text{URBANPROP}_i \\ & + B_4 \text{AGEDR}_i + B_5 \text{ASANTEPROP}_i + B_6 \text{EWEPROP}_i + \\ & B_7 \text{HOUSEHOLD SIZE}_i + B_8 \text{REGISTEREDVOTERS}_i + B_9 \text{MUSLIM}_i + B_{10} \\ & \text{CHRISTIAN}_i + B_{11} \text{SEXRATIO}_i + B_{12} \text{DISABILITYRATIO}_i + U_i \end{aligned} \quad \text{Equation 6.3}$$

where **TURNOUT2000A_i** is defined as the total number of people who voted in the 7 December 2000 national presidential election at the district level divided by the total number of people registered to vote at the district level based on data from the Electoral Commission of Ghana for district *i*. The definitions for the 12 independent variables are the same as in Section 6.2.1.

The summary of the results of the estimated regression of voter participation rate, indicated by **TURNOUT2000A**, are reported in Table 6.3. Overall, the model was not statistically significant using both the R^2 and *F* value measures of power. Not surprisingly, the estimated model was not correctly specified based on the Ramsey Reset Test for correct specification with the *p* value of 0.049 below the maximum critical *p* value of 5 percent used in this study. Further, the LM test of heteroscedasticity confirmed the presence of the problem of heteroscedasticity with *p* value of the test of 0.003 well below the critical 0.05 (5%) *p* value used in this study. Overall, the model was not good for analysis and this was confirmed again by the fact that no single independent variable in the model had their estimated parameters statistically significant.

The results from this section generally confirm the weakness of the turnout ratio defined based on the register of the Electoral Commission as a reliable measure of participation.

Table 6.3: Summary of the results of the regression analysis of district-level socio-economic factors which influence voter participation as measured by TURNOUT2000A for the 2000 national presidential election in Ghana.

Dependent Variable is TURNOUT2000A defined as the total number of people who voted in the 2000 presidential election at the district level divided by the total number of people registered to vote at the district level based on data from Electoral Commission of Ghana.

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	Probability Level of Significance	Variance Inflation Factor
Constant	120.416	0.000	4.237	0.000***	0.000
Literacy	-0.052	-0.077	-0.487	0.627	2.817
Employprop	-0.308	-0.279	-1.712	0.090	2.964
Urbanprop	-0.022	-0.038	-0.270	0.788	2.216
Agedr	0.003	0.003	0.020	0.984	2.593
Asanteprop	0.004	0.006	0.039	0.969	2.451
Eweprop	0.008	0.015	0.127	0.899	1.470
Householdsize	-0.289	-0.032	-0.252	0.801	1.758
Registeredvoters	-0.006	-0.065	-0.532	0.596	1.644
Muslim	-0.204	-0.298	-1.810	0.073	3.039
Christian	-0.124	-0.235	-1.216	0.227	4.178
Sexratio	-0.124	-0.117	-1.144	0.255	1.177

Notes on Table 6.3:

Source: Ghana Statistical Service and Electoral Commission of Ghana, 2016
Valid Sample Size used for the analysis was 110 Administrative Districts

R^2 0.123
F Value (Significant at 0.262 level) 1.255
Probability significance level of Ramsey Reset Test for correct model specification 0.049
Probability significance level of Langrange-Multiplier test of no heteroscedasticity 0.003
The Langrange-Multiplier test of no heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.
*** denotes statistical significance of the parameter at the 1% level.
** denotes statistical significance of the parameter at the 5% level.

6.2.3 Results of the Analysis Involving the Second Voter Turnout Ratio Regression Model for the 2000 National Presidential Election in Ghana: Second Equation

The second voter turnout ratio model is expressed as a multiple regression equation in Equation 6.4 with 12 independent variables assumed to influence the dependent variable.

$$\text{TURNOUT2000B}_i = B_0 + B_1 \text{LITERACY}_i + B_2 \text{EMPLOYPROP}_i + B_3 \text{URBANPROP}_i + B_4 \text{AGEDR}_i + B_5 \text{ASANTEPROP}_i + B_6 \text{EWEPROP}_i + B_7 \text{HOUSEHOLD SIZE}_i + B_8 \text{POP15ANDOVER}_i + B_9 \text{MUSLIM}_i + B_{10} \text{CHRISTIAN}_i + B_{11} \text{SEX RATIO}_i + B_{12} \text{DISABILITY RATIO}_i + U_i \quad \text{Equation 6.4}$$

Where;

TURNOUT2000B_i is defined as the total number of people who voted in the 2000 presidential election at the district level divided by the total number of people in the district who are aged 15 and over; alternative measure of turnout to deal with the highly-bloated electoral register which was observed for the 2000 national presidential election (refer to Appendix 5 for data on statistical bloating of the voter register for the 2000 election). **The definitions for the 12 independent variables are the same as in Section 6.2.2**

The results of the estimated regression of voter participation indicated by **TURNOUT2000B** are summarized in Table 6.4. The estimated turnout model was correctly specified based on the Ramsey Reset Test for correct specification with the p value of 0.073 above the 5% maximum margin used for this study. The LM test for heteroscedasticity confirmed the absence of the problem of heteroscedasticity with p value of the test of 0.085 well above the critical 0.05 (5%) p value used in this study. The

VIF values for all the independent variables were less than the critical value of 10.0 indicating absence of the problem of multicollinearity (refer to Table 6.4).

The estimated values of the specific parameters of the model are also reported in Table 6.4 for each of the 11 independent socio-economic variables that were hypothesized to affect the voter participation defined by **TURNOUT2000B**. Using the maximum acceptable level of statistical significance level of 5 percent (0.05), only four of the 11 independent variables have their estimated parameters statistically significant meaning that these four variables exert statistically significant influence on the dependent variable (**TURNOUT2000B**). These are: URBANPROP, HOUSEHOLDSIZE, POP15ANDOVER and CHRISTIAN.

The proven positive relationship between the URBANPROP and voter participation rate in the 2000 Presidential election suggests that all things being equal, voter participation in 2000 Presidential election increased with increasing proportion of registered voters in urban centres or districts in Ghana. This was directly opposite to the result observed for the 2012 Presidential election (see Table 6.2). The other proven positive link to voter participation rate in the 2000 Presidential election was through the variable, HOUSEHOLDSIZE. The other significant independent variable is the household size. Similar to the result reported in Table 6.1, households with bigger numbers tended to participate more in voting possibly due to intra-household voter mobilisation especially if the household was largely made up of close-connected cultural links.

Proven negative relationships were established for the variables, CHRISTIAN and POP15AND OVER and the dependent variable, turnout rate in the 2000 Presidential election. People who described themselves as Christians voted relatively less than non-Christians. Finally, there was also an inverse relationship between voter turnout and

POP15ANDOVER for the 2000 Presidential election, also shown for the 2012 Presidential election reported in Table 6.2; Section 6.2.2. This means that all things being equal, the voter turnout ratio declines in a district with increasing proportion of the population POP15ANDOVER in each district in the 2000 election.

Table 6.4: Summary of the results of the regression analysis of district-level socio-economic factors which influence voter participation as measured by TURNOUT2000B for the 2000 national presidential election in Ghana.

Dependent Variable is TURNOUT2000B defined as the total number of people who voted in the 2000 presidential election at the district level divided by the total number of people in the district who are aged 15 and over.

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	Probability Level of Significance	Variance Inflation Factor
Constant	35.458	0.000	1.033	0.304	0.000
Literacy	0.152	0.177	1.174	0.243	2.814
Employprop	0.399	0.285	1.839	0.069	2.973
Urbanprop	0.315	0.423	3.222	0.002**	2.132
Agedr	-0.084	-0.063	-0.435	0.665	2.583
Asanteprop	0.112	0.141	1.003	0.319	2.450
Eweprop	0.031	0.042	0.389	0.698	1.468
Householdsize	2.828	0.244	2.048	0.043**	1.755
Pop15andover	-0.032	-0.276	-2.473	0.015**	1.537
Muslim	-0.065	-0.076	-0.482	0.631	3.037
Christian	-0.255	-0.381	-2.079	0.040**	4.145
Sexratio	-0.166	-0.110	-1.130	0.261	1.179

Notes on Table 6.4:

Source: Ghana Statistical Service and Electoral Commission of Ghana, 2016
Valid Sample Size used for the analysis was 110 Administrative Districts

R² 0.208
F Value 2.339

Probability significance level Ramsey Reset Test for correct model specification 0.073
Probability significance level of Langrange-Multiplier test of no heteroscedasticity 0.085
The Langrange-Multiplier test of no heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.

*** denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.

6.3 Determinants of Factors Influencing the Disenfranchisement of Voters (Impairment of Voter Participation) in the Ghanaian Presidential elections

The proportion of spoiled ballots among the total number of votes cast in an election represents actual direct participation of voters, which is not used to decide electoral outcomes (referred to as impairment of voter participation).¹² Given the closeness of the results of the national presidential elections in Ghana, it is important to analyse the factors influencing the level and intensity of spoilt ballots in order to help advance democracy in Ghana. This section is devoted to the analysis of spoiled ballots of voters who actually cast their votes in the 2012 and 2010 national presidential elections in Ghana. Although Ghana's democracy is growing towards consolidation, the voting process is still an issue the Ghanaian electorates have to grapple with. This has led to the incidence of high number of spoilt or rejected ballots in all elections. Undoubtedly, the issue of spoilt or rejected ballots has become one of the key things that go to undermine the will of the electorate and ultimately affects the country's electoral processes. Clearly, high numbers of spoilt ballots affect the democratic choice of who becomes President or Members of Parliament.

In 1992 presidential election, the rejected ballots were 64,354, accounted for 3.6 percent of the total votes cast. In the 1996 presidential election, the total rejected ballots were 111, 108 and represented 1.53 percent of the total votes cast. In the first round of 2000 General election, the rejected ballots were 119,362, and accounted for 1.8 percent of the total votes cast, and in the second round the rejected votes reduced to 77,616,

¹² This study operationalised 'impairment of voter participation' as rejected ballots (the rejected ballots is interchangeable referred to it as 'spoiled' or 'spoilt ballots' in this report (thesis).

representing 1.58 percent of the total votes cast. In the 2004 General elections, the spoilt ballots were up to 188,123, constituting 2.2 percent of the total votes cast.

The rejected ballots further went up to 205,438 in the 2008 General elections, recording an overall 2.4 percent of the valid votes cast; in an election that was decided by less than 1 percent of the total votes cast. The trend continued with the 2012 and 2016 General elections. In the 2012 election, the rejected or the spoilt ballots were 251,720 and accounted for the third position representing 2.23 percent of the total votes cast. However, the spoilt ballots reduced to 166,248 in the 2016 presidential election, representing 1.54 percent of the total votes cast. It is important to note that the number of rejected ballots in 2012 election was higher than the total votes of all other presidential candidates excluding those of the two main parties, NDC and the NPP.

Indeed, according to Electoral Commission of Ghana records, the number of rejected ballots recorded in the Ghanaian elections is unprecedentedly higher since the return to democratic rule in 1992 both in terms of percentages and in terms of figures. Many analysts are of the view that the "The Rejected Ballot" can adequately be referred to as the "Third Party" in the Presidential elections in Ghana since 1992, as it often placed third in the electoral contest like in the case of 2008 and 2012 Presidential elections.

The argument is that if the rejected ballots were a political party, it could boast a steady increase in popularity and could well be resonated with the Ghanaian voters ahead of the smaller parties since the return to multiparty democracy in the country. Although the number of rejected ballots as a percentage of the total votes cast reduced by 0.134 from the 2008 rate of 2.4 percent to 2.4 percent in 2012 election, and further to 1.54 percent in the 2016 election, the rate of spoilt ballot was still high well above the 1 percent threshold.

In this section, what are the factors influencing the disenfranchisement of voters who participate in the Ghanaian elections? The analysis based on models with the proportion of total votes cast designated as spoiled ballots proportion in a given district as the dependent variable and a number of independent variables. The specification of spoilt ballot proportion regression models for presidential elections in Ghana in 2012 and 2010 is specified in Equations 6.5, 6.6, 6.7 and 6.8.

6.3.1 Determinants of Factors Influencing the Disenfranchisement of Voters who participated in the 2012 National Presidential Election in Ghana based on the Intensity of Spoilt Ballots (Impairment of Voter Participation in the 2012 Election):

First Equation

The first spoilt ballots proportion model expressed as a multiple regression equation as follows in Equation 6.5.

$$\begin{aligned} \text{SPOILEDBALLOTSPROP2012}_i = & B_0 + B_1 \text{TURNOUT2012A}_i + B_2 \text{LITERACY}_i + B_3 \\ & \text{EMPLOYPROP}_i + B_4 \text{URBANPROP}_i + B_5 \text{AGEDR}_i + B_6 \text{ASANTEPROP}_i + B_7 \\ & \text{EWEPROP}_i + B_8 \text{HOUSEHOLDSIZE}_i + B_9 \text{MUSLIM}_i + B_{10} \text{CHRISTIAN}_i \\ & + B_{11} \text{SEXRATIO}_i + B_{12} \text{DISABILITYRATIO}_i + U_i \end{aligned} \quad \text{Equation 6.5}$$

Where:

SPOILEDBALLOTSPROP2012_i is the proportion of the total ballots cast declared as spoiled or invalid for the 7 December 2012 national presidential election for district i;

TURNOUT2012A_i is defined as the total number of people who voted in the 7 December 2012 national presidential election at the district level divided by the total number of people registered to vote at the district level based on data from the Electoral Commission of Ghana for district i ;

LITERACY_i is a continuous variable measuring the proportion of the population in district i who have formal educational qualifications based on data from the September 2010 National Population Census;

EMPLOYPROP_i is a continuous variable measuring the proportion of population in the district i who describe themselves as employed based on the September 2010 National Population Census data;

URBANPROP_i is a continuous variable measuring the proportion of the population in the district i who reside in urban areas, as defined by the Ghana Statistical Service as those towns and settlements with population of more than 5,000 people, using the September 2010 National Population Census data;

AGEDR_i is the dependency ratio for the district i defined as the number of people aged between zero to 14 plus the number of people aged 65 and above divided by the number of people aged between 15 to 64; the dependency measure is a useful measure of poverty with increasing age dependency signalling higher burden on the working population to take care of the very young and the very old people who are assumed not to be actively working;

ASANTEPROP_i is a continuous variable defined as the proportion of the population in district i who consider themselves to be Akan-Asantes based on the September 2010 National Population Census data;

EWEPROP_i is a continuous variable defined as the proportion of the population in district i who consider themselves to be Ewes based on the September 2010 National Population Census data;

HOUSEHOLD SIZE_i is a continuous variable indicating the average number per household in the district *i* based on the September 2010 National Population Census;

MUSLIM_i is a continuous variable measuring the proportion of the population in district *i* who describe them as Muslims based on the September 2010 National Population Census data;

CHRISTIAN_i is a continuous variable measuring the proportion of the population in district *i* who describe them as Christians based on the September 2010 National Population Census data;

SEX RATIO_i is a continuous variable measuring the number of females divided by the number of males in district *i* based on the September 2010 National Population Census data;

DISABILITY PROP_i is a continuous variable measuring the proportion of population in district *i* classified as disabled based on the September 2010 National Population Census data;

U_i is the regression equation error term initially assumed to be normally distributed with zero mean and constant variance.

The summary of the results of the estimated regression of spoilt ballots are reported in Table 6.5 using **TURNOUT2012A** as one of the 12 independent variables. As indicated earlier, **TURNOUT2012A** is defined as the total number of people who voted in the 7 December 2012 national presidential election at the district level divided by the total number of people registered to vote at the district level based on data from the Electoral Commission of Ghana.

Overall, the model could be regarded as modestly strong with significant R^2 and F value. The estimated model was correctly specified based on the Ramsey Reset Test for correct specification with the p value of 0.234. Significant multicollinearity did not exist in the model given that the VIF for each of the independent variables was less than the critical value of 10.0. However, significant heteroscedasticity existed in the model. The estimated values of the specific parameters of the model are also reported in Table 6.5 for each of the 12 independent socio-economic variables that were hypothesized to affect the spoilt ballots proportions. The general hypothesis testing is provided in the framework below:

The results of the analysis indicated that the TURNOUT2012A, LITERACY, EMPLOYPROP, AGEDR, ASANTEPROP, HOUSEHOLDSIZE and DISABILITYPROP significantly influenced the dependent variable, **(SPOILEDBALLOTSPROP2012)**, spoilt ballots index based on their estimated parameters being significantly different from zero. The spoilt ballot proportion declined with increasing proportion of registered voters termed as TURNOUT2012A. This result suggested an inverse relationship between spoilt ballot proportion and TURNOUT2012A. Also, the result linked to LITERACY indicates that there was an inverse relationship between spoilt ballot proportion and literacy levels. All things being equal, there was a decreasing proportion of spoilt ballot with increasing literacy levels among voters in a district.

In contrast, the spoilt proportion increases in a district with increasing proportion of the population being employed in the 2012 election, probably linked more with the very high informal labour force in Ghana. In other words, spoilt ballots proportion might actually be linked to the informal nature of the workforce. Also, the proportion of spoilt ballot increases with increasing proportion of AGEDR, an indicator of poverty. The standardised regression estimates indicate that literacy was the most important variable

influence spoilt ballots proportion, followed in order of importance by household size and AGEDR.

Overall, the above-mentioned results suggest that indicators such as illiteracy, informalisation of the work force, and age-dependent poverty, increase the level of spoilt ballot proportions in a district.

The negative value for the HOUSEHOLDSIZE parameter suggests that smaller-sized households tend to have less relatively less spoilt ballot proportion. The increased mobilisation in larger-sized households shown through increased turnout may also be characterised by increased within-household education on the proper method of voting. Districts with relatively higher disability proportions also tend to have lower spoiled ballots proportions. This result suggests that disabled people who are able to vote are more likely to have been trained in the methods of valid voting. The result dealing with ASANTEPROP indicates that the spoilt ballot proportion in a district decreases with increasing proportion of the population being Asantes. Finally, religiosity as measured by the CHRISTIAN and MUSLIM variables, SEXRATIO, EWEPROP and URBANPROP did not affect the intensity of spoilt ballots, reinforcing the earlier conclusion that spoilt ballots are largely an issue of poverty.

Table 6.5: Summary of the results of the regression analysis of district socio-economic factors which influence spoilt ballots with reference to the 2012 national presidential election in Ghana and using TURNOUT2012A as one of the 12 independent variables.

Dependent Variable is SPOILEDBALLOTSPROP2012 defined as the proportion of the total ballots cast declared as spoiled for the district i in the 2012 presidential election.

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	Probability Level of Significance	Variance Inflation Factor
Constant	-0.106	0.000	0.250	0.980	0.000
Turnout2012A	-0.038	-0.127	-2.624	0.009***	1.429
Literacy	-0.042	-0.525	-4.252	0.000***	9.303
Employprop	0.106	0.161	2.316	0.022**	2.965
Urbanprop	-0.004	-0.075	-1.275	0.204	2.114
Agedr	0.020	0.184	2.160	0.032**	4.440
Asanteprop	-0.012	-0.169	-3.207	0.002***	1.694
Eweprop	-0.005	-0.077	-1.496	0.136	1.620
Householdsize	-0.274	-0.279	-3.787	0.000***	3.323
Muslim	-0.005	-0.088	-1.189	0.236	3.310
Christian	-0.008	-0.128	-1.132	0.259	7.794
Sexratio	-0.003	-0.013	-0.246	0.806	1.589
Disabilityprop	-0.108	-0.099	-1.985	0.049**	1.527

Notes on Table 6.5:

Source: Ghana Statistical Service and Electoral Commission of Ghana, 2016

Valid Sample Size used for the analysis was 216 Administrative Districts

R^2 0.668

F Value 34.009

Probability significance level of Ramsey Reset Test for correct model specification 0.234

Probability significance level of Langrange-Multiplier test of no heteroscedasticity 0.000

The Langrange-Multiplier test of no heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.

*** denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.

6.3.2 Determinants of Factors Influencing the Disenfranchisement of Voters who participated in the 2012 National Presidential Election in Ghana based on the Intensity of Spoilt Ballots (Impairment of Voter Participation in the 2012 Election):

Second Equation

The second spoilt ballots proportion model expressed as a multiple regression equation as follows in Equation 6.6.

$$\begin{aligned} \text{SPOILEDBALLOTSPROP2012}_i = & B_0 + B_1 \text{TURNOUT2012B}_i + B_2 \text{LITERACY}_i + B_3 \\ & \text{EMPLOYPROP}_i + B_4 \text{URBANPROP}_i + B_5 \text{AGEDR}_i + B_6 \text{ASANTEPROP}_i + B_7 \\ & \text{EWEPROP}_i + B_8 \text{HOUSEHOLDSIZE}_i + B_9 \text{MUSLIM}_i + B_{10} \text{CHRISTIAN}_i \\ & + B_{11} \text{SEXRATIO}_i + B_{12} \text{DISABILITYRATIO}_i + U_i \end{aligned} \quad \text{Equation 6.6}$$

Where:

SPOILEDBALLOTSPROP2012_i is the proportion of the total ballots cast declared as spoiled for the 7 December 2012 national presidential election for district i;

TURNOUT2012B_i is defined as the total number of people who voted in the 2012 presidential election at the district level divided by the total number of people in the district who are aged 15 and over; alternative measure of turnout to deal with the highly-bloated electoral register;

LITERACY_i is a continuous variable measuring the proportion of the population in district i who have formal educational qualifications based on data from the September 2010 National Population Census;

EMPLOYPROP_i is a continuous variable measuring the proportion of population in the district i who describe themselves as employed based on the September 2010 National Population Census data;

URBANPROP_i is a continuous variable measuring the proportion of the population in the district i who reside in urban areas, as defined by the Ghana Statistical Service as those towns and settlements with population of more than 5,000 people, using the September 2010 National Population Census data;

AGEDR_i is the dependency ratio for the district i defined as the number of people aged between zero to 14 plus the number of people aged 65 and above divided by the number of people aged between 15 to 64; the dependency measure is a useful measure of poverty with increasing age dependency signalling higher burden on the working population to take care of the very young and the very old people who are assumed not to be actively working;

ASANTEPROP_i is a continuous variable defined as the proportion of the population in district i who consider themselves to be Akan-Asantes based on the September 2010 National Population Census data;

EWEPROP_i is a continuous variable defined as the proportion of the population in district i who consider themselves to be Ewes based on the September 2010 National Population Census data;

HOUSEHOLD SIZE_i is a continuous variable indicating the average number per household in the district i based on the September 2010 National Population Census;

MUSLIM_i is a continuous variable measuring the proportion of the population in district i who describe them as Muslims based on the September 2010 National Population Census data;

CHRISTIAN_i is a continuous variable measuring the proportion of the population in district *i* who describe them as Christians based on the September 2010 National Population Census data;

SEXRATIO_i is a continuous variable measuring the number of females divided by the number of males in district *i* based on the September 2010 National Population Census data;

DISABILITYPROP_i is a continuous variable measuring the proportion of population in district *i* classified as disabled based on the September 2010 National Population Census data;

U_i is the regression equation error term initially assumed to be normally distributed with zero mean and constant variance.

The results of the estimated regression model of spoilt ballots proportions, with **TURNOUT2012B** as one of the 12 independent variables, are summarized in Table 6.6. Overall, the model could be regarded as modestly strong with significant R^2 and *F* value. As indicated earlier, **TURNOUT2012B** is defined as the total number of people who voted in the 2012 presidential election at the district level divided by the total number of people in the district who are aged 15 and over. The model was correctly specified based on the *p* value of 0.262 from the Ramsey Reset Test. Significant multicollinearity did not exist in the model given that the VIF for each of the independent variables was less than the critical value of 10.0. However, significant heteroscedasticity existed in the model. The estimated values of the specific parameters of the model are also reported in Table 6.5 for each of the 12 independent socio-economic variables that were hypothesized to affect the spoilt ballots proportions

The estimated values of the specific parameters of the model are also reported in Table 6.6 for each of the 12 independent socio-economic variables that were hypothesized to affect the spoilt ballot proportion defined by **SPOILEDBALLOTSPROP2012**.

Using the maximum acceptable level of statistical significance level of 5 percent (0.05), only four of the 12 independent variables are significant. The results of the analysis indicated that only the parameters of LITERACY, ASANTEPROP, HOUSEHOLDSIZE and DISABILITYPROP are statistically significant in terms of influencing the dependent variable, **(SPOILEDBALLOTSPROP2012)** in the 2012 Presidential election. Based on the absolute values of the standardised regression estimates, the most important influential independent variable affecting spoilt ballots proportion was LITERACY followed in increasing importance by HOUSEHOLDSIZE, ASANTEPROP, and DISABILITYPROP.

The inverse relationship between spoilt ballots proportion and the level of LITERACY is shown similar to the previous section. Likewise the results for HOUSEHOLDSIZE, ASANTEPROP and DISABILITYPROP are all similar to those shown in the previous section. Spoilt ballot proportion for a district decreases with increasing literacy levels in a district and also decreases with increasing household size. Further, the higher the proportion of Asantes in a district, the lower the spoilt ballot proportion. Increasing disability proportion for a district is also related to decreasing intensity of spoilt ballots.

Table 6.6: Summary of the results of the regression analysis of district socio-economic factors which influence spoiled ballots with reference to the 2012 national presidential election in Ghana and using TURNOUT2012B as one of the 12 independent variables.

Dependent Variable is SPOILEDBALLOTSPROP2012 defined as the proportion of the total ballots cast declared as spoiled for the district i.

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	Probability Level of Significance	Variance Inflation Factor
Constant	-0.474	0.000	-0.110	0.912	0.000
Turnout2012B	-0.007	-0.083	-1.845	0.066	1.266
Literacy	-0.044	-0.549	-4.430	0.000***	9.222
Employprop	0.089	0.135	1.898	0.059	3.027
Urbanprop	-0.006	-0.103	-1.700	0.091	2.204
Agedr	0.017	0.162	1.874	0.062	4.475
Asanteprop	-0.014	-0.207	-4.173	0.000***	1.484
Eweprop	-0.003	-0.054	-1.057	0.292	1.545
Householdsize	-0.307	-0.314	-4.280	0.000***	3.232
Muslim	-0.005	-0.077	-1.037	0.301	3.334
Christian	-0.008	-0.133	-1.165	0.245	7.798
Sexratio	-0.001	-0.005	-0.091	0.928	1.581
Disabilityprop	-0.126	-0.116	-2.304	0.022**	1.535

Notes on Table 6.6:

Source: Ghana Statistical Service and Electoral Commission of Ghana, 2016

Valid Sample Size used for the analysis was 216 Administrative Districts

R^2 0.662

F Value 33.164

Probability significance level of Ramsey Reset Test for correct model specification 0.262

Probability significance level of Langrange-Multiplier test of no heteroscedasticity 0.000

The Langrange-Multiplier test of no heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.

*** denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.

6.3.3 Determinants of Factors Influencing the Disenfranchisement of Voters who participated in the 2000 National Presidential Election in Ghana based on the Intensity of Spoilt Ballots (Impairment of Voter Participation in the 2000 Election):

First Equation

The first spoilt ballots proportion model expressed as a multiple regression equation as follows in Equation 6.7.

$$\begin{aligned} \text{SPOILEDBALLOTSPROP2000}_i = & B_0 + B_1 \text{TURNOUT2012A}_i + B_2 \text{LITERACY}_i + B_3 \\ & \text{EMPLOYPROP}_i + B_4 \text{URBANPROP}_i + B_5 \text{AGEDR}_i + B_6 \text{ASANTEPROP}_i + B_7 \\ & \text{EWEPROP}_i + B_8 \text{HOUSEHOLDSIZE}_i + B_9 \text{MUSLIM}_i + B_{10} \text{CHRISTIAN}_i \\ & + B_{11} \text{SEXRATIO}_i + B_{12} \text{DISABILITYRATIO}_i + U_i \end{aligned} \quad \text{Equation 6.7}$$

where **SPOILEDBALLOTSPROP2000_i** is the proportion of the total ballots cast declared as spoiled for the 7 December 2012 national presidential election for district *i*.

The definitions for the 12 independent variables are the same as in Section 6.2.1.

The summary of the results of the estimated regression of spoilt ballot proportion indicated by **TURNOUT2000A** are reported in Table 6.7. As indicated earlier, **TURNOUT2000A_i** is defined as the total number of people who voted in the 7 December 2000 national presidential election at the district level divided by the total number of people registered to vote at the district level based on data from the Electoral Commission of Ghana. Overall, the model could be regarded as modestly strong with significant R^2 and *F* value. However, the estimated model was NOT correctly specified based on the Ramsey Reset Test for correct specification with the *p* value of 0.007. This *p* value is less than the maximum critical *p* value of 5 percent used in this study meaning that the model was not correctly specified. The Langrange-Multiplier (LM) test for

heteroscedasticity also confirmed the PRESENCE of the problem of heteroscedasticity with p value of the test of 0.040 below the critical 0.05 (5%) p value used in this study.

Given the improperly-specified nature of the model and the presence of significant heteroscedasticity, the results of the regression analysis dealing with parameters have to be treated with caution. The estimated values of the specific parameters of the model are also reported in Table 6.7 for each of the 11 independent variables that were hypothesised to affect the spoilt ballot proportion defined by (**SPOILEDBALLOTSPROP2000A**).

The estimated parameters of the 11 independent variables and their Student t values and p values are reported in Table 6.7. The parameters of four of the 11 independent variables were statistically significant in influencing the dependent variable based on the 5% level of significance used in this study. These four variables are LITERACY, EMPLOYPROP, MUSLIM and CHRISTIAN. The result linked to LITERACY indicates that spoilt ballot declines with increasing proportion of the voter population being educated. Also, the spoilt ballot proportion decreases with increasing proportion of voter population being EMPLOYED in a district in the 2000 Presidential election.

Finally, the negative values of MUSLIM and CHRISTIAN also indicate that the spoilt ballot proportion decreases with increasing proportion of the voter population being Muslim or Christian in a district in the 2000 Presidential election in Ghana. Hence while the religiosity was not exhibited in the 2012 Presidential election as indicated in the previous section, clearly it was shown to be an influential variable influencing the spoilt ballots proportion in the 2000 Presidential election.

Table 6.7: Summary of the results of the regression analysis of district socio-economic factors which influence spoilt ballots with reference to the 2000 national presidential election in Ghana and using TURNOUT2000A as one of the 11 independent variables.

Dependent Variable is SPOILEDBALLOTSPROP2000 defined as the proportion of the total ballots cast declared as spoiled for the district i.

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	Probability Level of Significance	Variance Inflation Factor
Constant	20.835	0.000	4.224	0.000***	0.000
Turnout2000A	-0.005	-0.027	-0.336	0.738	1.138
Literacy	-0.051	-0.368	-2.959	0.004***	2.816
Employprop	-0.072	-0.318	-2.463	0.016**	3.047
Urbanprop	-0.013	-0.106	-1.024	0.309	1.961
Agedr	-0.046	-0.212	-1.836	0.069	2.437
Asanteprop	-0.019	-0.145	-1.251	0.214	2.439
Eweprop	-0.010	-0.083	0.929	0.355	1.467
Householdsize	0.144	0.076	0.778	0.438	1.756
Muslim	-0.049	-0.346	-2.649	0.009***	3.117
Christian	-0.051	-0.465	-3.074	0.003***	4.173
Sexratio	-0.011	-0.044	-0.542	0.589	1.183

Notes on Table 6.7:

Source: Ghana Statistical Service and Electoral Commission of Ghana, 2016

Valid Sample Size used for the analysis was 110 Administrative Districts

R^2 0.462

F Value 7.666

Probability significance level of Ramsey Reset Test for correct model specification 0.007

Probability significance level of Langrange-Multiplier test of no heteroscedasticity 0.040

The Langrange-Multiplier test of no heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.

*** denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.

6.3.4 Determinants of Factors Influencing the Disenfranchisement of Voters who participated in the 2000 National Presidential Election in Ghana based on the Intensity of Spoilt Ballots (Impairment of Voter Participation in the 2000 Election):

Second Equation

The second spoilt ballots proportion model expressed as a multiple regression equation as follows in Equation 6.8.

$$\begin{aligned} \text{SPOILEDBALLOTSPROP2000}_i = & B_0 + B_1 \text{TURNOUT2012B}_i + B_2 \text{LITERACY}_i + B_3 \\ & \text{EMPLOYPROP}_i + B_4 \text{URBANPROP}_i + B_5 \text{AGEDR}_i + B_6 \text{ASANTEPROP}_i + B_7 \\ & \text{EWEPROP}_i + B_8 \text{HOUSEHOLD SIZE}_i + B_9 \text{MUSLIM}_i + B_{10} \text{CHRISTIAN}_i \\ & + B_{11} \text{SEX RATIO}_i + B_{12} \text{DISABILITY RATIO}_i + U_i \end{aligned} \quad \text{Equation 6.8}$$

where $\text{SPOILEDBALLOTSPROP2000}_i$ is the proportion of the total ballots cast declared as spoiled for the 7 December 2012 national presidential election for district i .

(Note: The definitions for the 12 independent variables are the same as in Section 6.2.1).

TURNOUT2000B_i is defined as the total number of people who voted in the 2012 presidential election at the district level divided by the total number of people in the district who are aged 15 and over; alternative measure of turnout to deal with the highly-bloated electoral register.

The results of the estimated regression model of spoilt ballots proportions, with TURNOUT2000B as one of the 11 independent variables, are summarized in Table 6.8. As indicated earlier, TURNOUT2000B is defined as the total number of people who voted in the 2012 Presidential election at the district level divided by the total number of people in the district who are aged 15 and over.

Overall, the model could be regarded as modestly strong with significant R^2 and F value. However, the model was NOT correctly specified based on the p value of 0.017 from the Ramsey Reset Test. Further, the LM test for heteroscedasticity confirmed the existence of the problem of heteroscedasticity with p value of the test of 0.029 well below the critical 0.05 (5%) p value used in this study. Given the improperly-specified nature of the model and the presence of significant heteroscedasticity, the results of the regression analysis dealing with parameters must be treated with caution.

The estimated values of the specific parameters of the model are reported in Table 6.8 for each of the 11 independent socio-economic variables that were hypothesised to affect the spoilt ballot proportion defined by **SPOILEDBALLOTSPROP2000**. Using the maximum acceptable level of statistical significance level of 5 percent(0.05), only four of the 11 independent variables are significant, and thus exert statistically significant influence on the dependent variable (**SPOILEDBALLOTSPROP2000**).

These are: LITERACY, EMPLOYPROP, MUSLIM and CHRISTIAN. The negative value parameter estimate of LITERACY in the model indicates that in the 2000 Presidential election, the spoilt ballots proportion decreases with increasing proportion of the voter population who are literate in a district. Also, with the negative value of EMPLOYPROP, it means that the spoilt ballot proportion declines with increasing proportion of voter population who are employed in a district. The results also show that the negative values of the parameter estimates of MUSLIM and CHRISTIAN present an inverse relationship between spoilt ballot proportion in a district and the two religiosity variables.

Table 6.8: Summary of the results of the regression analysis of district socio-economic factors which influence spoilt ballots with reference to the 2000 national presidential election in Ghana and using TURNOUT2000B as one of the 11 independent variables.

Dependent Variable is SPOILEDBALLOTSPROP2000 defined as the proportion of the total ballots cast declared as spoiled for the district.

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	Probability Level of Significance	Variance Inflation Factor
Constant	20.139	0.000	4.423	0.000***	0.000
Turnout2000B	0.002	0.013	0.164	0.870	1.188
Literacy	-0.051	-0.368	-2.946	0.004***	2.839
Employprop	-0.072	-0.315	-2.426	0.017**	3.075
Urbanprop	-0.013	-0.109	-1.017	0.312	2.086
Agedr	-0.047	0.213	-1.843	0.068	2.437
Asanteprop	-0.019	-0.146	-1.260	0.211	2.456
Eweprop	-0.010	-0.084	-0.940	0.349	1.470
Householdsize	0.139	0.074	0.741	0.460	1.822
Muslim	-0.047	-0.338	-2.624	0.010**	3.023
Christian	-0.049	-0.455	-2.974	0.004***	4.257
Sexratio	-0.009	-0.039	-0.479	0.633	1.188

Notes on Table 6.8:

Source: Ghana Statistical Service and Electoral Commission of Ghana, 2016

Valid Sample Size used for the analysis was 110 Administrative Districts

R^2 0.462

F Value 7.651

Probability significance level of Ramsey Reset Test for correct model specification 0.017

Probability significance level of Langrange-Multiplier test of no heteroscedasticity 0.029

The Langrange-Multiplier test of no heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.

*** denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.

6.4 Results of the Analysis of Factors Influencing Voter Choices Expressed through their Choice of the Winning Candidate: The Issue of Voter Choices in the 2012 and 2000 National Presidential Elections in Ghana

The dependent variable in the study of electoral behaviour is usually the popularity of the responsibility object (politician, individual party or coalition of parties), votes or changes in votes. Therefore, for the operationalisation of the variables for statistical analysis, it is important to decide what is the responsibility object and what attribute is being measured. A common formulation of a hypothesis is established using the party in government as a responsibility object.

For the purpose of this study, the concept is defined more precisely to mean a particular political party in power at the time of the national election. In the presidential elections that have been conducted in Ghana since 1992, the NDC and NPP have garnered about 97 percent of the total valid votes cast (see Anaman & Agyei-Sasu, 2012).

Hence, the analysis of the choice of voters for the winning political party in an election can give a generally good overall picture of determinants of voter choices in Ghana's Fourth Republic electoral politics using macro-level district-level data. The basic question this analysis seeks to answer is: What are the major factors that influenced the choice of the winning presidential candidate in the 2012 and 2000 national presidential elections in Ghana using district-level aggregate data?

The four models that are developed to answer this question are based on the winning party presidential candidate's share of the total valid votes cast as the dependent variable. A variety of independent variables are used to construct multivariate regression models. These models are specified in Equations 6.9, 6.10, 6.11 and 6.12.

6.4.1 Results of the Analysis of Factors Influencing Voter Choices Expressed through their Choice of the Winning Candidate in the 2012 National Presidential Election in Ghana: First Equation

The first winning party presidential candidate's share of the total valid votes cast model expressed as a multiple regression equation as follows in Equation 6.9.

$$\begin{aligned} \text{SHAREOFVOTESBYWINNINGPARTY2012}_i = & B_0 + B_1\text{TURNOUT2012A}_i + B_2 \\ & \text{SPOILEDBALLOTSPROP2012}_i + B_3\text{LITERACY}_i + B_4\text{EMPLOYPROP}_i + B_5 \\ & \text{URBANPROP}_i + B_6\text{AGEDR}_i + B_7\text{ASANTEPROP}_i + B_8\text{EWEPROP}_i + B_9 \\ & \text{HOUSEHOLDSIZE}_i + B_{10}\text{MUSLIM}_i + B_{11}\text{CHRISTIAN}_i + B_{12} \text{SEXRATIO}_i + \\ & B_{13}\text{DISABILITYRATIO}_i + B_{14}\text{BRONGAHAFO}_i + B_{15}\text{CENTRAL}_i + B_{16}\text{GREATER} \\ & \text{ACCRA}_i + B_{17} \text{WESTERNREGION} + U_i \end{aligned} \quad \text{Equation 6.9}$$

Where:

SHAREOFVOTESBYWINNINGPARTY2012_i is the share of the total number of valid votes cast won by the winning NDC party candidate in the 7 December 2012 national presidential election in district i;

TURNOUT2012A_i is defined as the total number of people who voted in the 7 December 2012 national presidential election at the district level divided by the total number of people registered to vote at the district level based on data from the Electoral Commission of Ghana for district i;

SPOILEDBALLOTSPROP2012_i is the proportion of the total ballots cast declared as spoiled for the 7 December 2012 national presidential election for district i ;

LITERACY_i is a continuous variable measuring the proportion of the population in district i who have formal educational qualifications based on data from the September 2010 National Population Census ;

EMPLOYPROP_i is a continuous variable measuring the proportion of population in the district i who describe themselves as employed based on the September 2010 National Population Census data ;

URBANPROP_i is a continuous variable measuring the proportion of the population in the district i who reside in urban areas, as defined by the Ghana Statistical Service as those towns and settlements with population of more than 5,000 people, using the September 2010 National Population Census data;

AGEDR_i is the dependency ratio for the district i defined as the number of people aged between zero to 14 plus the number of people aged 65 and above divided by the number of people aged between 15 to 64; the dependency measure is a useful measure of poverty with increasing age dependency signalling higher burden on the working population to take care of the very young and the very old people who are assumed not to be actively working;

ASANTEPROP_i is a continuous variable defined as the proportion of the population in district i who consider themselves to be Asantes based on the September 2010 National Population Census data;

EWEPROP_i is a continuous variable defined as the proportion of the population in district i who consider themselves to be Ewes based on the September 2010 National Population Census data;

HOUSEHOLD SIZE_i is a continuous variable indicating the average number per household in the district *i* based on the September 2010 National Population Census;

MUSLIM_i is a continuous variable measuring the proportion of the population in district *i* who describe them as Muslims based on the September 2010 National Population Census data;

CHRISTIAN_i is a continuous variable measuring the proportion of the population in district *i* who describe themselves as Christians based on the September 2010 National Population Census data.

SEX RATIO_i is a continuous variable measuring the number of females divided by the number of males in district *i* based on the September 2010 National Population Census data;

DISABILITY PROP_i is a continuous variable measuring the proportion of population in district *i* classified as disabled based on the September 2010 National Population Census data;

BRONG AHAFO_i is a dummy variable with a value of 1 if the district is located in the Brong Ahafo Region, one of the four regions considered to be politically-swing regions in national presidential elections in Ghana. A value of zero is assigned to a district if it is not located in the Brong Ahafo Region;

CENTRAL_i is a dummy variable with a value of 1 if the district is located in the Central Region, one of the four regions considered to be politically-swing regions in national presidential elections in Ghana. A value of zero is assigned to a district if it is not located in the Central Region;

GREATER ACCRA_i is a dummy variable with a value of 1 if the district is located in the Greater Accra Region, one of the four regions considered to be politically-swing regions in national presidential elections in Ghana. A value of zero is assigned to a district if it is not located in Greater Accra Region;

WESTERN_i is a dummy variable with a value of 1 if the district is located in the Western Region, one of the four regions considered to be politically-swing regions in national presidential elections in Ghana. A value of zero is assigned to a district if it is not located in Western Region;

U_i is the regression equation error term initially assumed to be normally distributed with zero mean and constant variance.

The results of the estimated voter choice regression model, with *TURNOUT2012A* as one of the 17 independent variables, are summarised in Table 6.9. The estimated model was correctly specified based on the Ramsey Reset Test p value of 0.291 well above the maximum critical level of 5% significance used in this study. Hence the null hypothesis of correct model specification could not be rejected. The LM test for heteroscedasticity confirmed the absence of the problem of heteroscedasticity with p value of the test of 0.795 well above the critical 0.05 (5%) p value used in this study. There was absence of significant multicollinearity in the models with the VIF values of all the independent variables being less than the critical value of 10, with the exception of the LITERACY variable. However, no significant multicollinearity existed with regards to the LITERACY variable given its very strong statistical significance. Overall, the model was a very good one to use to answer the question at hand.

The estimated values of the specific parameters of the model are also reported in Table 6.9 for each of the 17 independent variables that were hypothesised to affect the share of the total valid vote cast for the winning party presidential candidate in the 2012 election (**SHAREOFVOTESBYWINNINGPARTY2012**). The general test of hypothesis is based on the framework that the independent variables significantly affect the variation in the dependent variable.

The estimated parameters of the 17 independent variables and their Student t values and p values are reported in Table 6.9. Using the maximum acceptable level of statistical significance level of 5 percent (0.05) for this study, 11 independent variables have their estimated parameters statistically significantly different from zero meaning that their corresponding variables exert significant influence on the dependent variable (**SHAREOFVOTESBYWINNINGPARTY2012**). These variables are TURNOUT2012A, SPOILEDBALLOTSPROP2012, LITERACY, EMPLOYPROP, AGEDR, ASANTEPROP, EWEPROP, MUSLIM, CHRISTIAN, GREATER ACCRA AND WESTERN.

The results linked to **TURNOUT2012A** indicate that the share of votes by the winning NDC party candidate in the 2012 Presidential election in a district decreases with increasing turnout rate of voters. SPOILEDBALLOTSPROP2012 is particularly a unique variable as the winning NDC presidential candidate was placed number 1 on the vertical ballot paper and had some advantage in quick identification by some voters compared to his closest competitor, the NPP presidential candidate who was placed third on the ballot paper. Anaman (2012), in his correct prediction of the 7 December 2012 national presidential election released on 21 November 2012 and 6 December 2012, suggested that the placement of the NDC candidate as first on the vertical ballot paper

would be one of the ten major factors that could decide the 7 December 2012 election in favour of the NDC candidate; this turned out to be the case as shown in Table 6.9.

Another result that is gleaned from Table 6.10 is that the share of the total valid votes cast going to the winning party reduces with increasing proportion of district population being LITERATE. The results linked to EMPLOYPROP shows that the share of votes of the winning party increases with increasing proportion of employed voter population in a district. This particular result corroborates the findings by Lafay (1977) and Lewis-Beck (1980a, 2007) who suggests that employment is a statistically significant variable in influencing voter behaviour and choice in an election. The share of votes of the winning party reduces in a district with more proportion of AGEDR in the 2012 Presidential election. This result is intuitive in the sense that AGEDR measures relative poverty. With the winning party being the incumbent government at the time, it is fair to assume that increasing pressure of poverty would have had some effect on the electability of the candidate.

The strongly statistically-significant negative value for ASANTEPROP indicates that the share of votes of the winning party reduces with increasing proportion of population being Asantes in a district. In contrast, with the positive value of the EWEPROP shows that the share of votes of the winning party in a district increases with increasing proportion of the population being Ewes. Based on the standardised regression estimates, EWEPROP is the most important variable that influences the share of votes of the winning NDC presidential candidate in 2012 election. These results corroborate the finding of Gyimah-Boadi (2007) that electoral competitions in Africa tend to be swayed towards the mobilisation of ethnicity differences as a key source of seeking votes to win power by the major political parties in a country.

Anaman (2012, 2016b) suggest that ethnicity is a major determinant of electoral outcomes in Ghana's Fourth Republic, with Asantes and Ewes voting largely on ethnic lines for the respective parties that they dominate, that is NPP for Asantes, and NDC for Ewes. This particular phenomenon in the Fourth Republican era in Ghana of **Asante-Ewe countervailing voting patterns** is a clear manifestation of the countervailing power struggle paradigm first proposed by political economist, John Kenneth Galbraith (1952).¹³ The Asante-Ewe political power phenomenon is not always countervailing among their political class elites as Asante and Ewe military elites worked together to stage all the successful military coups in Ghana since 24 February 1966, with the exception of the 4 June 1979 revolution which was largely a revolt by junior officers and ranks of the Ghana Armed Forces.

The positive parameter estimate values of MUSLIM and CHRISTIAN respectively means that the share of votes of the winning party in 2012 Presidential election increases with proportion of voter population being Muslim or Christian in a district assuming all other things being equal. These results also corroborate the findings of Lazarsfeld et al.(1944) and Lipset (1960) that individual vote choice in an election is influenced to

¹³**'Countervailing Power'** is a **theory of political modification** of markets, formulated by American economist John Kenneth Galbraith in his 1952 book 'American Capitalism.' He argues among other things that in the 'classical liberal democracy,' goods and services are provided and prices set by free bargaining. Therefore, drawing from the '**Countervailing Power**' **theory of political modification** (Galbraith, 1952), this study argued that 'Ghana's Political Power' may be or can be balanced to either NDC or NPP by high voter turn of Ewes and Asantes, and respectively vote for their preferred political parties (i.e. NDC for Ewes, and NPP for Asantes as suggested in literature, see Jonah, 1998). That is the results of this study have confirmed and validated this claim (see Table 6.1 above, and Table 6.9. Table 6.10, Table 6.11 & Table 6.11 below).

some extent by religiosity. Finally, even though Greater Accra and Western regions are generally thought to be electorally-swing regions in Fourth Republican political era in Ghana, the specific results from Table 6.9 indicate that voters in those two regions leaned significantly towards the winning NDC Presidential candidate in the 2012 election.

However, there were no statistically significant differences concerning the share of total votes cast for the winning party candidate with respect to districts in the Brong Ahafo and Central regions, which are also considered to be electorally-swing regions.

Table 6.9: Summary of the results of the regression analysis of district socio-economic factors which influence the share of the total number of valid votes cast won by the winning party candidate with reference to the 2012 national presidential election in Ghana and using TURNOUT2012A as one of the 17 independent variables in the model.

Dependent Variable is SHAREOFVOTESBYWINNINGPARTY2012_i (NDC) defined as the share of the total number of valid votes cast won by the winning NDC party candidate in the 7 December 2012 national presidential election in district i.

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	Probability Level of Significance	Variance Inflation Factor
Constant	-0.036	0.000	-0.076	0.940	0.000
Turnout2012A	-0.005	-0.127	-2.842	0.005***	1.588
Spoiledballotsprop2012	0.026	0.211	3.413	0.001***	3.035
Literacy	-0.005	-0.471	-4.121	0.000***	10.380
Employprop	0.014	0.174	2.729	0.007***	3.222
Urbanprop	-0.000003	-0.005	-0.085	0.932	2.330
Agedr	-0.003	-0.261	-3.269	0.001***	5.054
Asanteprop	-0.002	-0.212	-4.056	0.000***	2.157
Eweprop	0.005	0.636	12.590	0.000***	2.030
Householdsize	-0.007	-0.063	-0.925	0.356	3.662
Muslim	0.001	0.189	2.905	0.004***	3.373
Christian	0.002	0.224	2.186	0.030**	8.345
Sexratio	-0.000	-0.015	-0.326	0.745	1.757
Disabilityprop	0.006	0.045	0.984	0.326	1.640
Brong Ahafo	0.037	0.069	1.558	0.121	1.541
Central	0.035	0.057	1.291	0.198	1.548
Greater Accra	0.071	0.104	2.229	0.027**	1.742
Western	0.057	0.097	2.104	0.037**	1.685

Notes on Table 6.9:

Source: Ghana Statistical Service and Electoral Commission of Ghana, 2016

Valid Sample Size used for the analysis was 216 Administrative Districts

R² 0.751

F Value 35.10

Probability significance level of Ramsey Reset Test for correct model specification 0.291

Probability significance level of Langrange-Multiplier test of no heteroscedasticity 0.795

The Langrange-Multiplier test of no heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.

*** denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.

6.4.2 Results of the Analysis of Factors Influencing Voter Choices Expressed through their Choice of the Winning Candidate in the 2012 National Presidential Election in Ghana: Second Equation

The second winning party share of the total votes cast model expressed as a multiple regression equation as follows in Equation 6.10.

$$\begin{aligned} \text{SHAREOFVOTESBYWINNINGPARTY2012}_i = & B_0 + B_1 \text{TURNOUT2012B}_i + B_2 \\ & \text{SPOILEDBALLOTSPROP2012}_i + B_3 \text{LITERACY}_i + B_4 \text{EMPLOYPROP}_i + B_5 \\ & \text{URBANPROP}_i + B_6 \text{AGEDR}_i + B_7 \text{ASANTEPROP}_i + B_8 \text{EWEPROP}_i + B_9 \\ & \text{HOUSEHOLD SIZE}_i + B_{10} \text{MUSLIM}_i + B_{11} \text{CHRISTIAN}_i + B_{12} \text{SEXRATIO}_i + \\ & B_{13} \text{DISABILITYRATIO}_i + B_{14} \text{BRONGAHAFO}_i + B_{15} \text{CENTRAL}_i + B_{16} \text{GREATER} \\ & \text{ACCRA}_i + B_{17} \text{WESTERN} + U_i \end{aligned} \quad \text{Equation 6.10}$$

Where:

SHAREOFVOTESBYWINNINGPARTY2012_i is the share of the total number of valid votes cast won by the winning NDC party candidate in the 7 December 2012 national presidential election in district *i* ;

TURNOUT2012B_i is defined as the total number of people who voted in the 2012 presidential election at the district level divided by the total number of people in the district who are aged 15 and over; alternative measure of turnout to deal with the highly-bloated electoral register;

SPOILEDBALLOTSPROP2012_i is the proportion of the total ballots cast declared as spoiled for the 7 December 2012 national presidential election for district *i*;

LITERACY_i is a continuous variable measuring the proportion of the population in district i who have formal educational qualifications based on data from the September 2010 National Population Census;

EMPLOYPROP_i is a continuous variable measuring the proportion of population in the district i who describe themselves as employed based on the September 2010 National Population Census data;

URBANPROP_i is a continuous variable measuring the proportion of the population in the district i who reside in urban areas, as defined by the Ghana Statistical Service as those towns and settlements with population of more than 5,000 people, using the September 2010 National Population Census data;

AGEDR_i is the dependency ratio for the district i defined as the number of people aged between zero to 14 plus the number of people aged 65 and above divided by the number of people aged between 15 to 64; the dependency measure is a useful measure of poverty with increasing age dependency signalling higher burden on the working population to take care of the very young and the very old people who are assumed not to be actively working;

ASANTEPROP_i is a continuous variable defined as the proportion of the population in district i who consider themselves to be Asantes based on the September 2010 National Population Census data;

EWEPROP_i is a continuous variable defined as the proportion of the population in district i who consider themselves to be Ewes based on the September 2010 National Population Census data;

HOUSEHOLDSIZE_i is a continuous variable indicating the average number per household in the district i based on the September 2010 National Population Census;

MUSLIM_i is a continuous variable measuring the proportion of the population in district i who describe them as Muslims based on the September 2010 National Population Census data;

CHRISTIAN_i is a continuous variable measuring the proportion of the population in district i who describe them as Christians based on the September 2010 National Population Census data;

SEXRATIO_i is a continuous variable measuring the number of females divided by the number of males in district i based on the September 2010 National Population Census data;

DISABILITYPROP_i is a continuous variable measuring the proportion of population in district i classified as disabled based on the September 2010 National Population Census data.;

BRONGAHAFO_i is a dummy variable with a value of 1 if the district is located in the Brong Ahafo Region, one of the four regions considered to be politically-swing regions in national presidential elections in Ghana. A value of zero is assigned to a district if it is not located in the Brong Ahafo Region;

CENTRAL_i is a dummy variable with a value of 1 if the district is located in the Central Region, one of the four regions considered to be politically-swing regions in national presidential elections in Ghana. A value of zero is assigned to a district if it is not located in the Central Region;

GREATERACCRA_i is a dummy variable with a value of 1 if the district is located in the Greater Accra Region, one of the four regions considered to be politically-swing regions in national presidential elections in Ghana. A value of zero is assigned to a district if it is not located in Greater Accra Region;

WESTERN_i is a dummy variable with a value of 1 if the district is located in the Western Region, one of the four regions considered to be politically-swing regions in national presidential elections in Ghana. A value of zero is assigned to a district if it is not located in Western Region;

U_i is the regression equation error term initially assumed to be normally distributed with zero mean and constant variance.

The results of the estimated regression model, with **TURNOUT2012B** as one of the 17 independent variables, are summarized in Table 6.10. The estimated model was correctly specified based on the Ramsey Reset Test p value of 0.149, well above the maximum critical level of 5% significance used in this study. Hence the null hypothesis of correct model specification could not be rejected.

The LM test for heteroscedasticity confirmed the absence of the problem of heteroscedasticity with p value of the test of 0.925 well above the critical 0.05 (5%) p value used in this study. Similar to the results of the previous section, there was absence of significant multicollinearity in the models with the VIF values of all the independent variables being less than the critical value of 10, with the exception of the LITERACY variable.

However, no significant multicollinearity existed with regards to the LITERACY variable given its very strong statistical significance. A very good model has therefore been constructed to allow for the testing of statistical significance of various independent variables on the dependent variable.

The estimated parameters of the 17 independent variables and their Student t values and p values are reported in Table 6.10. Using the maximum acceptable level of statistical significance level of 5% (0.05) for this study, 10 independent variable have their estimated parameters statistically significantly different from zero (or statistically significant), and exert statistically significant influence on the dependent variable **(SHAREOFVOTESBYWINNINGPARTY2012)**.

These are SPOILEDBALLOTSPROP2012, LITERACY, EMPLOYPROP, AGEDR, ASANTEPROP, EWEPROP, MUSLIM, CHRISTIAN, GREATER ACCRA AND WESTERN.

A major difference in the results assembled in Table 6.9 and those reported in Table 6.10 is related to the statistical significance of the turnout rate variable. While the turnout rate defined based on Electoral Commission data (TURNOUT2012A), is statistically significant in influencing the share of the total votes cast accrued by the winning party presidential candidate, an opposing result is shown in Table 6.10 which indicates that the alternative turnout rate (TURNOUT2012B) is not statistically significant and thus has no effect on the share of votes cast for the winning party candidate.

The result dealing with SPOILEDBALLOTSPROP2012 reported in Table 6.10 is similar to that established and reported in Table 6.9. The positive value of SPOILEDBALLOTSPROP2012 indicates that share of votes of the winning party in the 2012 Presidential election increases with increasing proportion of spoilt ballots.

In fact, this variable is the fourth most important out of the 17 identified independent variables in affecting the dependent variable, the share of the total votes cast garnered by the winning party presidential candidate in the 2012 national presidential election as indicated by the standardised regression estimates reported in Table 6.10.

The most important variable affecting the dependent variable is EWEPROP. The ethnicity variables related to Ewes and Asantes, as very important variables influencing electoral outcomes, have been confirmed in this analysis reported in Table 6.10 as indicated in the earlier section as evidence of the countervailing power struggle of Galbraith (1952).

The negative value of the LITERACY shows that the share of votes of the winning party in the 2012 Presidential election in a district decreases with increasing proportion of voter population being literate. Again, the positive value of EMPLOYPROP means that the share of votes in a district in the 2012 Presidential election increases with increasing proportion of voter population being employed in Ghana.

The results also show that the share of votes of the winning party in the 2012 Presidential election decreases in a district with increasing proportion of the AGEDR. The two religiosity variables do influence the dependent in a statistically positive manner, suggesting that with all things being equal, people who are Christians or Muslims voted for the winning party candidate in the 2012 Presidential candidate.

The positive parameter estimate values of MUSLIM and CHRISTIAN respectively means that the share of votes of the winning party in 2012 Presidential election increases with the increasing proportion of voter population being Muslim or Christian in a district assuming all other things being equal.

Finally, Table 6.10 shows similar results like those of Table 6.9 with regards to the impact of the electorally-swing regions, Brong Ahafo, Central, Greater Accra and Western regions. Again, the results from Table 6.10 indicate that voters in the Greater Accra and Western regions leaned significantly towards the winning NDC presidential candidate in the 2012 election.

However, there were no statistically significant differences concerning the share of total votes cast for the winning party candidate with respect to districts in the Brong Ahafo and Central regions, which are also considered to be electorally-swing regions.

Table 6.10: Summary of the results of the regression analysis of district socio-economic factors which influence the share of the total number of valid votes cast won by the winning party with reference to the 2012 national presidential election in Ghana and using TURNOUT2012B as one of the 17 independent variables in the model.

Dependent Variable is SHAREOFVOTESBYWINNINGPARTY2012_i (NDC) defined as the share of the total number of valid votes cast won by the winning candidate in the 7 December 2012 national presidential election in district i.

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	Probability Level of Significance	Variance Inflation Factor
Constant	-0.363	0.000	-0.748	0.455	0.000
Turnout2012B	-0.000	0.017	-0.396	0.692	1.343
Spoiledballotsprop2012	0.029	0.241	3.859	0.000***	2.974
Literacy	-0.005	-0.487	-4.185	0.000***	10.354
Employprop	0.013	0.169	2.580	0.011**	3.262
Urbanprop	0.000	0.000	0.003	0.998	2.394
Agedr	-0.003	-0.265	-3.261	0.001***	5.056
Asanteprop	-0.002	-0.243	-4.624	0.000***	2.118
Eweprop	0.005	0.674	13.564	0.000***	1.889
Householdsize	-0.010	-0.087	-1.265	0.207	3.615
Muslim	0.001	0.195	2.926	0.004***	3.394
Christian	0.002	0.221	2.106	0.037**	8.403
Sexratio	-0.000	-0.006	-0.115	0.909	1.750
Disabilityprop	0.006	0.042	0.901	0.369	1.646
Brong Ahafo	0.031	0.058	1.291	0.198	1.536
Central	0.042	0.068	1.516	0.131	1.559
Greater Accra	0.087	0.127	2.662	0.008***	1.744
Western	0.073	0.123	2.555	0.011**	1.758

Notes on Table 6.6: **Source:** Ghana Statistical Service and Electoral Commission of Ghana, 2016

Valid Sample Size used for the analysis was 216 Administrative Districts

R² 0.741

F Value 33.308

Probability significance level of Ramsey Reset Test for correct model specification 0.149

Probability significance level of Langrange-Multiplier test of no heteroscedasticity 0.925

The Langrange-Multiplier test of no heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.

*** denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.

6.4.3 Results of the Analysis of Factors Influencing Voter Choices Expressed through their Choice of the Winning Candidate in the 2000 National Presidential Election in Ghana: First Equation

The first winning party share of the total votes cast model expressed as a multiple regression equation as follows in Equation 6.11.

$$\begin{aligned} \text{SHAREOFVOTESBYWINNINGPARTY2000}_i = & B_0 + B_1 \text{TURNOUT2000A}_i + B_2 \\ & \text{SPOILEDBALLOTSPROP2000}_i + B_3 \text{LITERACY}_i + B_4 \text{EMPLOYPROP}_i + B_5 \\ & \text{URBANPROP}_i + B_6 \text{AGEDR}_i + B_7 \text{ASANTEPROP}_i + B_8 \text{EWEPROP}_i + B_9 \\ & \text{HOUSEHOLD SIZE}_i + B_{10} \text{MUSLIM}_i + B_{11} \text{CHRISTIAN}_i + B_{12} \text{SEXRATIO}_i + \\ & B_{13} \text{DISABILITYRATIO}_i + B_{14} \text{BRONGAHAFO}_i + B_{15} \text{CENTRAL}_i + B_{16} \text{GREATER} \\ & \text{ACCRA}_i + B_{17} \text{WESTERNREGION} + U_i \end{aligned} \quad \text{Equation 6.11}$$

Where:

SHAREOFVOTESBYWINNINGPARTY2000_i is the share of the total number of valid votes cast won by the winning NPP party candidate in the 7 December 2000 national presidential election in district *i* ;

TURNOUT2000A_i is defined as the total number of people who voted in the 2012 presidential election at the district level divided by the total number of people in the district who are aged 15 and over; alternative measure of turnout to deal with the highly-bloated electoral register (**Note that the definitions for the 17 independent variables are the same as in Section 6.4.1).**

The results of the estimated regression model, with **TURNOUT2000A** as one of the 16 independent variables, are summarised in Table 6.11. The estimated model was correctly specified based on the Ramsey Reset Test *p* value of 0.915, well above the maximum

critical level of 5% significance used in this study. Hence, the null hypothesis of correct model specification could not be rejected. The LM test for heteroscedasticity confirmed the absence of the problem of heteroscedasticity with p value of the test of 0.943, well above the critical 0.05 (5%) p value used in this study. There was no significant multicollinearity in the model with all 16 independent variables having VIF values below the critical value of 10.0. The high quality of the model as initially ascertained leads to the logical next step of hypothesis testing with regards to the effect of the 16 independent variables on the dependent variable, defined as the share of the winning party candidate of the total number of valid votes cast in the 2000 national election.

The estimated parameters of the 16 independent variables and their Student t values and p values are reported in Table 6.11. Using the maximum acceptable level of statistical significance level of 5 percent (0.05) for this study, only five (5) independent variables have their estimated parameters statistically significantly different from zero. These five variables that exert statistically significant influence on the dependent variable are: TURNOUT2000A, URBANPROP, ASANTEPROP, EWEPROP and CHRISTIAN. The result linked to TURNOUT2000A indicates that in the 2000 Presidential elections, the share of the votes of the winning NPP party candidate in a district increases with increasing voter turnout ratio. Also, the results linked to URBANPROP shows that in the 2000 election, the share of the winning NPP candidate increases with increasing proportion of urban-based voters within a district. This particular result appears to corroborate the suggestions of other researchers that NPP is urban friendly under the Fourth Republican era (see Bawumia, 1998; Nugent, 1999). But the results for URBANPROP related to the 2012 presidential election reported in the previous two sections (refer to Tables 6.9 and 6.10) suggest different results. The results dealing with the two ethnicity variables, ASANTEPROP and EWEPROP, are similar to those

obtained in the previous two sections dealing with the 2012 national presidential election. The virtually-identical results for the two ethnicity variables for both the 2012 and 2000 presidential election clearly confirm the Galbraith's countervailing power struggle hypothesis. In fact, EWEPROP and ASANTEPROP were the second and third most important influential variables out of the 16 identified independent variables on the share of total valid votes cast for the winning NPP candidate based on the standardised regression estimates reported (Table 6.11).

Concerning the religiosity variables, CHRISTIAN and MUSLIM, there were contrasting results. Districts with higher Christian population tended to vote for the winning NPP presidential candidate with the CHRISTIAN variable deemed the most important variable affecting the dependent variable. However, the MUSLIM variable was not statistically significant. Even the MUSLIM variable though statistically insignificant had a positive with a Student value over 1.0 suggesting some leaning of Muslims for the winning NPP presidential candidate in the 2000 presidential election. It is important to note that the 2000 presidential results with regards to the CHRISTIAN variable are similar to those obtained for the 2012 presidential election with the districts with increasing Christian flavour voting for the winning NDC presidential candidate.

Further, district with increasing Muslim concentrations also tended to vote for the NDC presidential candidate in 2012. Concerning the variables related to the electoral-swing regions of Brong-Ahafo, Central, Greater Accra and Western regions, all the respective four parameters were not statistically significant (refer to Table 6.

Table 6.11: Summary of the results of the regression analysis of district socio-economic factors which influence the share of the total number of valid votes cast won by the winning party with reference to the 2000 national presidential election in Ghana, and using TURNOUT2000A as one of the 16 independent variables in the model.

Dependent Variable is SHAREOFVOTESBYWINNINGPARTY2000_i (NPP) defined as the share of the total number of valid votes cast won by the winning NPP candidate in the 7 December 2000 national presidential election in district i.

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	Probability Level of Significance	Variance Inflation Factor
Constant	-0.262	0.000	-0.833	0.407	0.000
Turnout2000A	0.004	0.233	4.384	0.000***	1.184
Spoiledballotsprop2000	0.002	0.021	0.297	0.767	2.078
Literacy	0.000	0.030	0.218	0.828	8.181
Employprop	0.000	-0.024	-0.250	0.803	3.773
Urbanprop	0.002	0.216	2.978	0.004***	2.209
Agedr	0.000	-0.016	-0.192	0.848	2.957
Asanteprop	0.004	0.374	4.728	0.000***	2.619
Eweprop	-0.004	-0.422	6.605	0.000***	1.706
Householdsize	0.024	0.146	1.629	0.107	3.379
Muslim	0.002	0.137	1.388	0.168	4.063
Christian	0.005	0.536	3.448	0.001***	10.138
Sexratio	-0.001	-0.042	-0.771	0.443	1.235
BrongAhafo	0.056	0.080	1.164	0.247	1.979
Central	-0.001	-0.001	-0.009	0.993	4.241
Greater Accra	-0.102	-0.093	-1.587	0.116	1.449
Western	0.053	0.069	0.737	0.463	3.720

Notes on Table 6.11:

Source: Ghana Statistical Service and Electoral Commission of Ghana, 2016

Valid Sample Size used for the analysis was 110 Administrative Districts

R² 0.778
F Value 20.352

Probability significance level of Ramsey Reset Test for correct model specification 0.915

Probability significance level of Langrange-Multiplier test of no heteroscedasticity 0.943

The Langrange-Multiplier test of no heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.

*** denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.

6.4.4 Results of the Analysis of Factors Influencing Voter Choices Expressed through their Choice of the Winning Candidate in the 2000 National Presidential Election in Ghana: Second Equation.

The second winning party share of the total votes cast model expressed as a multiple regression equation as follows in Equation 6.12.

$$\begin{aligned} \text{SHAREOFVOTESBYWINNINGPARTY2000}_i = & B_0 + B_1 \text{ TURNOUT2000}_i + B_2 \\ & \text{SPOILEDBALLOTSPROP2000}_i + B_3 \text{ LITERACY}_i + B_4 \text{ EMPLOYPROP}_i + B_5 \\ & \text{URBANPROP}_i + B_6 \text{ AGEDR}_i + B_7 \text{ ASANTEPROP}_i + B_8 \text{ EWEPROP}_i + B_9 \\ & \text{HOUSEHOLD SIZE}_i + B_{10} \text{ MUSLIM}_i + B_{11} \text{ CHRISTIAN}_i + B_{12} \text{ SEXRATIO}_i + \\ & B_{13} \text{ DISABILITYRATIO}_i + B_{14} \text{ BRONGAHAFO}_i + B_{15} \text{ CENTRAL}_i + B_{16} \text{ GREATER} \\ & \text{ACCRA}_i + B_{17} \text{ WESTERNREGION} + U_i \end{aligned} \quad \text{Equation 6.12}$$

where **SHAREOFVOTESBYWINNINGPARTY2000_i** is the share of the total number of valid votes cast won by the winning party candidate in the 7 December 2000 national presidential election in district i. **TURNOUT2000_i** is defined as the total number of people who voted in the 2012 presidential election at the district level divided by the total number of people in the district who are aged 15 and over; alternative measure of turnout to deal with the highly-bloated electoral register (**Note that the definitions for the 16 independent variables are the same as in Section 6.4.2).**

The results of the estimated regression model, with **TURNOUT2000_i** as one of the 16 independent variables, are summarised in Table 6.12. The estimated model was correctly specified based on the Ramsey Reset Test p value of 0.767, well above the maximum critical level of 5% significance used in this study. Hence, the null hypothesis of correct model specification could not be rejected.

The Langrange-Multiplier (LM) test for heteroscedasticity confirmed the absence of the problem of heteroscedasticity with p value of the test of 0.235, well above the critical 0.05 (5%) p value used in this study.

There was no significant multicollinearity in the model with all 16 independent variables having VIF values below the critical value of 10.0. Hypothesis testing with regards to the effect of the 16 independent variables on the dependent variable, defined as the share of the winning party candidate of the total number of valid votes cast in the 2000 presidential election is described next.

The estimated parameters of the 16 independent variables and their Student t values and p values are reported in Table 6.12. Using the maximum acceptable level of statistical significance level of 5 percent (0.05) for this study six (6) of the 16 independent variables are statistically significant.

These are: URBANPROP, ASANTEPROP, EWEPROP, and CHRISTIAN. The result dealing with URBANPROP shows that in the 2000 Presidential election the share of the total votes cast garnered by the wining NPP party candidate increases with increasing proportion of the share of the wining votes in the urban districts or centres.

The results dealing with the two ethnicity variables, ASANTEPROP and EWEPROP, are similar to those obtained in the previous three sections dealing with both the 2012 and 2000 national presidential election. The identical results for the two ethnicity variables for both the 2012 and 2000 presidential election again confirm the Galbraith's countervailing power struggle hypothesis.

In fact, based on the standardised regression estimates reported in Table 6.2, EWEPROP was the most important variable influencing the dependent variable, albeit in a negative. ASANTEPROP was the third most important variable influencing the dependent variable, in this case in a positive manner (refer to Table 6.12).

The results on the religiosity variables, CHRISTIAN and MUSLIM, are similar to those reported in Table 6.11. Again, districts with higher Christian population tended to vote for the winning NPP presidential candidate with the CHRISTIAN variable assessed as the second most important variable affecting the dependent variable.

The MUSLIM variable was not statistically significant. Finally, concerning the variables related to the electoral-swing regions of Brong-Ahafo, Central, Greater Accra and Western regions, all the respective four parameters were not statistically significant. This result was the same as that obtained in the previous section (refer to Tables 6.11 and 6.12).

The results for these four regions appeared to show that these regions were not really favouring the winning NPP presidential candidate or the losing NDC candidate, when the other factors were accounted for. Without accounting for the other independent variables, it would seem that these regions were swinging for the NPP presidential candidate.

Table 6.12: Summary of the results of the regression analysis of district socio-economic factors which influence the share of the total number of valid votes cast won by the winning party with reference to the 2000 national presidential election in Ghana, and using TURNOUT2000B as one of the 16 independent variables in the model.

Dependent Variable is SHAREOFVOTESBYWINNINGPARTY2000_i (NPP) defined as the share of the total number of valid votes cast won by the winning candidate in the 7 December 2000 national presidential election in district i.

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	Probability Level of Significance	Variance Inflation Factor
Constant	0.291	0.000	0.916	0.362	0.000
Turnout2000B	-0.001	-0.088	-1.432	0.155	1.339
Spoiledballotsprop2000	-0.00005	-0.001	-0.008	0.993	2.067
Literacy	0.001	0.063	0.410	0.683	8.481
Employprop	-0.001	-0.063	-0.611	0.543	3.760
Urbanprop	0.002	0.216	2.680	0.009***	2.305
Agedr	-0.001	-0.040	-0.440	0.661	2.951
Asanteprop	0.004	0.391	4.531	0.000***	2.637
Eweprop	-0.004	-0.423	6.087	0.000***	1.711
Householdsize	0.031	0.190	1.889	0.062	3.593
Muslim	0.000	0.036	0.343	0.733	3.962
Christian	0.004	0.394	2.288	0.024**	10.534
Sexratio	-0.001	-0.071	-1.206	0.231	1.244
Brong Ahafo	0.048	0.068	0.909	0.365	1.985
Central	0.044	0.061	0.549	0.584	4.344
Greater Accra	-0.141	-0.130	-1.985	0.050	1.511
Western	0.052	0.069	0.666	0.507	3.762

Notes on Table 6.12:

Source: Ghana Statistical Service and Electoral Commission of Ghana, 2016

Valid Sample Size used for the analysis was 110 Administrative Districts

R² 0.738

F Value 16.349

Probability significance level of Ramsey Reset Test for correct model specification 0.767

Probability significance level of Langrange-Multiplier test of no heteroscedasticity 0.235

The Langrange-Multiplier test of no heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.

*** denotes statistical significance of the parameter at the 1% level.

6.5 Conclusion and Summary of Chapter

In this chapter, the determinants of voter participation, spoilt ballot and electoral choices were identified based on the use of macro-level analysis using aggregate district-level data on 2012 national presidential election results compiled by the Electoral Commission of Ghana and district-level data on the 2010 National Population Census compiled by the Ghana Statistical Service using the concept of the so-called “average district voter”. The macro-level determinants of voter participation and electoral choices were identified and discussed, and can be categorised into social, political and economic determinants. The determinants of electoral behaviour established in this chapter include among others as age, religion, ethnicity, level of education, locality (urban-rural), and disability factor.

The results of the analysis established two major points. First, ethnicity identification with regards to the two major ethnic groups in Ghana –Asantes and Ewes – clearly influences the choice of presidential candidate as well as other electoral variables such as turnout and spoiled ballots. Examples of ethnicity-based voting among Asantes and Ewes are provided in Appendices 6a, 6b, 6c and 6d based on formulae developed by Anaman (2013) using contingency tables analysis, the population of Asantes in selected districts of Ashanti region and Ewes in selected districts in the Volta region for both the 2000 and 2012 presidential elections. Asantes and Ewes constitute about 30 percent of the population of Ghana based on the 2010 National Population Census up from 27.5 percent of the population established in the 2000 National Population Census. These results documented in the Appendices 6a to 6d show a trend of Asantes and Ewes voting for their favourite parties, NPP and NDC respectively, within the range of 82 percent to 98 percent under realistic voting scenarios using actual data.

The regression analysis of voter choices in both the 2012 and 2000 national presidential elections showed that ethnicity, with regards to these two dominant groups, is a major determinant of electoral outcomes in Ghana's Fourth Republic. Asantes and Ewes vote largely on ethnic lines for the respective parties that they dominate, and they are NPP for Asantes and NDC for Ewes. This particular phenomenon in the Fourth Republican era in Ghana of **Asante-Ewe countervailing voting patterns** is a manifestation of the countervailing power struggle paradigm suggested by Galbraith (1952).

Second, the Brong Ahafo and Central Regions are two closest swing regions where ethnic identification is not a major factor in the choice of national presidential candidate. Throughout the Fourth Republican era of national elections starting in 1992, it is generally thought that Brong Ahafo and Central plus two other regions, Greater Accra and Western regions are electorally-swing regions. The 2012 national presidential election results confirmed that the Brong Ahafo and the Central Regions were the closest of the swing regions with Mr. John Dramani Mahama of the NDC winning the national presidential election by only 22,900 votes and 62,239 votes respectively in the two regions.

In this study, the results of voter choice regression analysis related to both Brong Ahafo and Central Regions reported in Tables 6.9, 6.10, 6.11 and 6.12 show that these two regions did not clearly favour any of the winning party candidates in both the 2000 and 2012 presidential candidates when other factors (independent variables) were taken into account. Given this background, Chapters 7 and 8 of this thesis explore the determinants of voter behaviour and choices in the Brong Ahafo and Central Regions based on a survey of 600 voting-age adults in the four most likely swing districts of the two regions.

CHAPTER SEVEN

MICRO-LEVEL ANALYSIS OF DETERMINANTS OF VOTER BEHAVIOUR AND CHOICES IN NATIONAL ELECTIONS

7.1 Introduction

This chapter analysis and discusses micro-level determinants of voter participation and choices in the Ghanaian elections based on a survey involving 600 respondents at the household level in four randomly selected electoral swing districts in the Brong Ahafo and Central Regions of Ghana. Survey data, unlike the macro-level district-level data such as those used in Chapter 6, allows for deeper investigation into reasons why individuals participate and vote in an election in ways that may not be easily captured by aggregate district-level data ascribed to the “average district voter.” Chapter 7 then analyses and discusses the determinants that influence people to vote in an election and the reasons for their choices of particular candidates and party.

The analysis and related discussion are based on a cross-sectional survey, involving a randomly-selected sample of 600 respondents in four districts of Central and Brong-Ahafo regions for a period of six months spanning from April to October, 2016 (refer to Chapter 5; section 5.4 for reasons for selecting these four electorally-swing districts). Detailed analysis of the survey data, obtained from the 600 people, is undertaken to establish socio-economic characteristics of the voter, the desired attributes of the presidential candidates as well as the political parties, and how these attributes influence voting decisions made by people from varying backgrounds.

The statistical analysis of the survey data undertaken to answer this question included the simple compilation of descriptive statistics of key socioeconomic variables and indicators, chi-square analysis for the test of association among the variables, and

logistic regression analysis of participation and voter choice decisions. This analysis is primarily concerned with how the individual's voting behaviour is influenced by his or her socio-economic status or attributes of the candidates contesting the elections. Some researchers contend that voting behaviour in Africa is largely not based on issues, but determined more by social factors such as ethnicity (see Gyimah-Boadi, 2007).

However, this study also evaluates the hypotheses developed by Donovan *et al.* (2012) who argue that the policy of a party in government or those of the opposition parties as well as the state of the economy do influence the choice of voters in an election. They also argue that in addition to the latter factors, party affiliation also drives voter choice. In Ghanaian elections of the Fourth Republic era, it is clear from the analysis reported in Chapter 6 that the countervailing ethnicity factor related to the two main ethnic groups, Asantes and Ewes is an important driver of electoral outcomes, voter choices and participation. However, this factor is not the only significant determinant of voter choices and electoral outcomes.

The analysis reported in this chapter (Chapter 7) allows for the establishment of other factors that influence voter choices ascertained directly from the “mouths” of voters themselves by eliciting preferences from people in electorally-swing districts where ethnicity appear not to be a major drive for the choice of presidential candidates as compared to other non-ethnicity factors. The discussion in the rest of the chapter is divided into nine sections. The first section is a report of the frequency analysis and mean values of socio-economic characteristics of the survey respondents. The second section deals with the analysis of the respondents' understanding of the roles and uses of democratic electoral processes. The third section provides results of simple descriptive analysis of voter participation in national presidential elections from 1992 to 2016. The fourth section presents the results of chi-square analysis of association between

participation in 2012 national presidential election and selected socioeconomic characteristics of survey respondents using grouped data. The fifth section compiles and discusses the main results of the logistic regression analysis explaining the determinants of voter participation in the 2012 national presidential election. The sixth section analyses voter choices of presidential candidates by party affiliation in national presidential elections since 1992 using simple descriptive statistics. The seventh and eighth sections report and discuss the results of the logistic regression analysis of voter choices in the 2012 and 2016 presidential elections respectively based on the data provided by the respondents. The ninth and final section summarises the major conclusions arising from the analysis reported in the chapter. The question this analysis intends to provide answer is: How do the socio-economic factors of the voter influence his or her participation and choice in national presidential elections? (*i.e. Who is voting, and for whom in the Ghanaian elections from 1992 to 2016?*)¹⁴

¹⁴ The rational choice theory of voting assumes that individual voter and his/her electoral choices constitute the principal influence on the fate of candidates and political parties in one election after other (see Dawn, 1957). In this regard, the individual voter is considered sovereign and determines what political parties and politicians should do to earn his or her vote. The individual voter thus, accordingly casts his or her in favour of the candidate or party who best approximates his/her political expectations and interests.

7.2 Results of Descriptive Statistical Analysis of Socio-Economic Characteristics of the Respondents

The socio-economic information is important in the determination of voter participation principally because, in the economics and election nexus research studies, such characteristics are treated as independent variables that influence citizens or voters' perception, attitudes and finally, the electoral behaviour which is the dependable variable in a given situation such as the current study.

The profile of the respondents was looked in terms of sex distribution, age distribution, educational background, occupational background, religious background, marital status, personal income, household income, and finally the location (urban-rural) of the respondents. Therefore, the information on the socio-economic characteristics of the respondents in the survey answers the conventional question: ***Who is voting in the Ghanaian election?***

The percentage frequencies of these socio-economic characteristics of the respondents in the survey are summarised on Table 7.1 below.

Based on percentage frequencies as shown on the (Table 7.1) below the majority of the respondents were males, 55.3 percent of the sample. The reason that accounted for the male-dominated sample was the fact that males were more willing to answer the questionnaire than females. This also confirms the local belief in the Ghanaian traditional society that females often defer talking to a stranger or an officer to their husbands or male counterparts (see Frempong, 2004).

The sample distribution, as indicated in Table 7.1, covered a wide spectrum of the different age groups from 18 and above, based on the universal adult suffrage principle of eligible registered voters of 18 years and above (Article 42, 1992 Constitution: 43).

Although youth aged between 18 and 40 dominated in the distribution, people from the middle-age groups and older age groups were also captured in the survey. Respondents aged between 18 to 60 years constituted about 96.2 percent of the sample with the remaining 3.8 percent being over 60. The proportion of the respondents above the age of 42 was 34.8 percent; this figure represented the proportion of the respondents who had turned 18 in 1992 at the start of the first presidential election in the Fourth Republic. Given that slightly over one third of the respondents were aged 18 and over in 1992, at the start of the Fourth Republican Constitutional System evolution, the views of the respondents represented fairly the entire Fourth Republican experience among respondents.

The classical structuralism theory of voting behaviour identifies social and group identities as the basic building blocks for party support and voting behaviour. One of the social factors identified by the theory is the religiosity (see Lipset & Rokkan, 1967). Other factors identified through the structuralism theory of voting behaviour include ethnicity (see Anaman, 2012, 2016b; Gyimah-Boadi, 2007).

This study collected information on religious affiliation of the respondents in the survey to determine whether religiosity is a factor that influences voter behaviour in Ghanaian elections. In all the four selected study districts, Christians were the biggest religious group accounting for 59 percent. This was followed by 37.2 percent of Muslims of the sample respondents in the survey, and 3.8 percent were adherents of various African traditional religions.

These religious identity figures were a reflection of the national picture revealed by the 2010 national census which indicated that 71.2 percent of Ghanaians were Christians; 17.6 percent were followers of Islam and about 5.2 percent being adherents of various African traditional religions (GSS, 2013).

With regards to ethnicity, Table 7.1 shows that the Akans formed the largest proportion of the respondents being almost two-thirds of the respondents (66.2%). This was followed by respondents originating from the three northern regions of Ghana who accounted for about 23.3 percent of the respondents. Ga/Ga-Dangbes constituted 0.9 percent of the respondents respectively. Other ethnic groups of the respondents in the survey constitute (0.3%). Given that the survey districts are largely inhabited by the larger Akan ethnic group, the ethnic representation was representative of the national picture. The relatively high proportion of people originating from the three northern regions in the four surveyed districts reflects fact that the Brong-Ahafo region is the closest region to the three northern regions.

The proportions of Asantes and Ewes in the total sample were only 2.2 percent and 1.3 percent respectively compared to their national averages of 16.0 percent and 13.9 percent respectively based on the 2010 National Census (GSS, 2013). Hence the two ethnic groups whose members were clearly shown to vote in an ethnicity-based countervailing manner, for their respective major political parties that they dominate, were represented only in very small numbers in the sample of respondents and were not likely to greatly influence the overall trend of results.

The proportions of other Akan groups in the sample were 15.5 percent for the Agonas, 14.2 percent for Bonos and 7.5 percent for Fantes. These three Akan subgroups, well represented in the sample of respondents, are known to vote largely on non-ethnic issues and tend to be swing voters based on the pattern of national presidential election results since 1992 (refer to Chapter 5 of this report; Anaman, 2012; Anaman, 2016b).

In terms of marital status, more than half of the sample respondents reported that they were married at the time of the survey (52.2%; refer to Table 7.1). The level of education has a bearing on individuals understanding of political issues, perception and the choices they make in an election. It was important to establish the educational attainment of the respondents in order to ascertain their level of understanding of democracy and elections, and related issues to Ghana democratic trajectory. In the survey, it emerged that roughly 17 out of every 20 of the respondents captured in the survey completed formal education up to primary, secondary and tertiary education levels. The respondents, who reported not to have had any formal education, even up to primary level, numbered 90 and represented 15.0 percent of the sample.

The relationship between voter turnout and voting decisions and that of occupation is well elaborated and documented in literature (see Almond & Verba, 1963; Verba & Nie, 1972; (Wolfinger & Rosenstone, 1980; Franklin, 1996; Blais, 2000; Blais *et al.*, 2004; Lewis-Beck, 2007). These authors argued that people who are gained fully employed tend to be politically active, and are likely to participate and vote in an election than the unemployed voter population in the democracies.

In the survey, the number of respondents who indicated that they were employed constituted 80.7 percent of the sample; the remaining 19.3 percent were unemployed. Closely related to a person's employment is the question of how much he or she earns.

The monthly income of the respondents ranged from no income (zero) to a maximum of GH¢3,000 (refer to Table 7.1).

More than two-thirds (69.5%) of the respondents earned monthly income of GH¢500.00 and below. Respondents who earned between GH¢500 and GH¢3,000 represented 29.8 percent of the sample (almost three out of 10 respondents). Only four respondents who constituted 0.7 percent of the sample earned more than GH¢3,000 per month (refer to Table 7.1).

Consumption-based-income classes in Ghana can be classified into four groups using data from the Ghana Living Standards Survey Six report published by the Ghana Statistical Service in 2014 and an article published by the Economist Magazine of London in 2015.

These four groups are (A) 24.2 percent living below poverty line of US\$1.83 per day (B) 61.5 percent low-income group earning between US\$1.83 and US\$10 per day, (C) 11.0 percent (roughly one in nine) lower middle class earning between US\$10 to US\$20 per day; (D) 3.3 percent (that is one in 30) middle and upper class earning above US\$20 per day (GSS, 2014; Economist Magazine, GSS, 2015). Given that the exchange rate at the time of the survey averaged 3.9 Ghana cedis per one United States dollar (Bank of Ghana, 2017); the amount of 500 Ghana cedis per month was equivalent to US\$128.21 or US\$4.27 per day.

From the survey of the four selected districts, 69.5 percent of the respondents with income of less than US\$4.27 per day and 88.0 percent of the sample earned less than 1,170 Ghana cedis per month, the equivalent of US\$10 per day definition of middle-income individual. So while for the survey sample, 88.0 percent could be classified as low-income individuals, the equivalent national proportion of people classified as low

income was 85.7 percent based on GSS (2014) and Economist Magazine (2015). These figures are clearly closely related.

Finally, the location of the respondents (rural or urban) is also important to establish urban and rural characteristics and their influence on voting behaviour (see Lazarsfeld *et al.*, 1944). From the results reported in Chapter 6 of this thesis report, the proportion of urban population (URBANPROP) was a statistically significant variable explaining turnout ratio in both the 2000 and 2012 presidential elections, and also a significant factor influencing the share of the total number of valid votes cast for the winning party presidential candidate in the 2012 election.

In the survey of the four selected districts reported in this chapter, 38.7 percent of the respondents reside in rural areas with the remaining 61.3 percent residing in urban areas. It must be noted that some areas classified as urban areas by GSS are essentially semi-rural due to the use of 5,000 population size as the threshold number for the classification of a settlement as urban by GSS.

Table 7.2 provides a summary of the socio-economic characteristics based on the average, standard deviation and range of the variables. The variables are age, personal monthly income, family monthly income and years of formal education attained. The results generally indicate a youthful population with relatively low personal and family income. The age range clearly indicates the full coverage of all willing people ready to take part in the survey.

Table 7.1: Summary of Socio-Economic Characteristics of Survey Respondents Based on Frequency Analysis

Socio-Economic Characteristic	Frequency (Number)	Percentage
Sex		
Male	332	55.3
Female	268	44.7
Age		
18-30	238	39.7
31-40	146	24.3
41-50	109	18.2
51-60	84	14.0
61 and above	23	3.8
Ethnicity		
Akan	397	66.2
Ethnic Groups Originating from Northern Ghana	140	23.3
Non-Gonja Guans	48	8.0
Ewe	8	1.3
Ga/Ga-Dangbe	5	0.9
Others	2	0.3
Educational Attainment		
None/No Schooling	90	15.0
Basic Education	146	24.3
Secondary/Technical/Vocational Education	169	28.2
Tertiary Education	195	32.5
Years of Education		
0-9	146	28.6
10-17	219	43.0
18-20	145	28.4
Locality		
Urban	368	61.3
Rural	232	38.7

Religion		
Christian	354	59.0
Islam	223	37.2
Traditional	23	3.8
Marital Status		
Married	313	52.2
Not Married	287	47.8
Employment Status		
Employed	484	80.7
Unemployed	116	19.3

Socio-Economic Characteristic cont.		
Personal Income Per Month (Ghana cedis)	Frequency(Number)	Percentage
Zero to 100	259	43.1
101-200	59	9.8
201-300	34	5.7
301-400	19	3.2
401-500	46	7.6
501-600	19	3.2
601-700	8	1.3
701-800	8	1.3
801-900	3	0.5
901-1000	69	11.5
1001-1200	4	0.7
1201-1400	9	1.5
1401-1600	26	4.3
1601-1800	0	0.0
1801-2000	16	2.7
2001-2200	1	0.2
2201-2400	1	0.2
2401-2600	0.0	0.0
2601-2800	0.0	0.0
2801-3000	15	2.5
Above 3000	4	0.7

Family/Household Income Per Month (Ghana cedis)	Frequency(Number)	Percentage
Zero to 100	255	42.5
101-200	50	8.3
201-300	25	4.2
301-400	25	4.2
401-500	44	7.3
501-600	19	3.2
601-700	8	1.3
701-800	7	1.2
801-900	2	0.3
901-1000	68	11.3
1001-1200	4	0.7
1201-1400	4	0.7
1401-1600	35	5.8
1601-1800	0	0.0
1801-2000	24	4.0
2001-2200	4	0.7
2201-2400	0	0.0
2401-2600	2	0.3
2601-2800	0	0.0
2801-3000	9	1.5
Above 3000	15	2.5

Source: Survey Data, 2016.

Table 7.2: Summary of Socio-Economic Characteristics of Survey Respondents Based on Average, Standard Deviation and Range

Socio-Economic Characteristic	Mean	Standard Deviation	Range
Age(years)	37.9	12.6	19 to 115
Monthly Personal Income(Ghana cedis)	477.4	700.3	0 to 4000
Monthly Household Income (Ghana cedis)	565.8	841.3	0 to 4000
Formal Education Attained (Years)	10.8	5.4	0 to 20

Source: Survey Data, 2016.

7.3 Results of Descriptive Statistical Analysis of Respondents' Understanding of the Democratic Electoral Processes and their Roles and Uses

Voter participation in elections depends heavily on citizens' understanding of the democratic processes of nation building. The acceptance of democracy in a country largely depends on the knowledge and the understanding of citizens of electoral issues and the appreciation of the exercise of voting in competitive democratic elections according to their preferences. Democratic consolidation requires an understanding of the multi-party political culture and socialisation through acquisition of knowledge on electoral issues.

Table 7.3 presents information on the respondents' knowledge on electoral issues in Ghana. Four out of five of the respondents (80.0%) indicated that they had a fair amount of knowledge of electoral issues in Ghana.

Table 7.4 provides more information on the understanding of the purpose and uses of democratic elections in Ghana by the sampled respondents based on their specific ranking of importance of selected questions dealing with electoral issues. The importance of elections for voters to comment on the state of economic development was ranked highly receiving a score of 4.41 out of a maximum of 5.0. The importance of

elections being an opportunity for the electorate to decide on development issues presented by political parties was also well appreciated receiving an average score of 4.27(refer to Table 7.4).

Respondents also appreciated the important role of elections as a mechanism for choosing among alternative policies of political parties and for voters to hold incumbent governments accountable for their performance. The role of election as a way for advancing the material interests of the voter and his/her family was considered as moderately important similar to the role of elections being a tool for the advancement of a particular social class (refer to Table 7.4).

In a summary, the results from Tables 7.3 and 7.4 generally indicate that political socialisation is well resonated in the body politics of the Ghanaian people. The indication from the survey respondents is that they could hold their elected leaders electorally accountable, if they fail to deliver the promises made to them during electioneering campaign. The results as reported by the respondents also indicated that elections do provide opportunity for the improvement of the welfare of citizens and their social class.

7.4 Results of the Descriptive Statistical Analysis of Voter Participation in Presidential Elections in Ghana since 1992

All 600 survey respondents indicated that they were registered voters at the time of the survey in 2016. Five hundred and forty six of the respondents, constituting 91.0 percent of the total sample, declared that they had voted in at least one national presidential election since the advent of the Fourth Republican democratic elections in 1992. The remaining nine percent who had never voted in an election at the time of the survey in 2016 were mostly first-time registered voters who had not got a chance to exercise their democratic franchise due to age.

Table 7.5 provides information on the extent of participation in the national presidential elections since 1992 as declared by the respondents. This excluded the December 2016 presidential election as the survey was fully completed in October 2016. The results showed a general increase in the rate of participation of election from 1992 to 2016 in a steady manner largely as a result of the aging of the sample population. For example, only 22.7 percent of sample respondents took part in the 1992 presidential election; this proportion increased steadily to 28.8 percent in 1996 to 49.3 percent in 2004 till the highest level of 91.3 percent in 2012. For the 2000 and 2008 presidential elections where a runoff took place, the results reported in Table 7.5 show that participation increased slightly from 36.3 percent to 37.8 percent in the 2000 election, and from 65.8 percent to 66.2 percent in the 2008 election.

Table 7.3: Respondents' Knowledge about Electoral issues in Ghana

Do you have fair knowledge about electoral issues in Ghana?	Frequency	Percent
No	111	20.0
Yes	452	80.0
Total	563	100.0

Source: Survey Data, 2016.

Table 7.4: Results of Descriptive Statistical Analysis of the Importance Attached to the Understanding of the Purpose and Use of Democratic Elections in Ghana by Survey Respondents

Relevance of Democratic Election		Valid Number	Average Mean Score of relevance	Standard Deviation
1	Election is a way to comment on the state of economic development	592	4.41	0.957
2	Election presents an opportunity for electorate to decide on development issues or alternatives presented by parties	592	4.27	1.066
3	Election is a way to choose among competitive or alternative policies	592	3.82	1.317
4	Election is a way to hold governments accountable for their past action	592	3.83	1.431
5	Election is a way to gain particular things for myself and my family	592	3.77	1.674
6	Election is a way to advance the interests of my social class	592	3.10	1.647

Source: Survey Data, 2016. **Notes:** The scoring is based on 5 denoting that item is very high agreement, 4 high agreement 3 moderate agreement, 2 fair agreement 1 least or relevant to the respondent.

Table 7.5: Results of Descriptive Analysis Indicating the Level of Voter Participation in National Presidential Elections 1992 to 2012 Based on Survey Data with the Scores Indicating the Level of Participation in the Particular Election

Type of Election	Valid Number	Average Mean Score	Standard Deviation
1992 Election	597	0.227	0.441
1996 Election	598	0.288	0.448
2000 (1 st) Election	598	0.363	0.481
2000 (2 nd) Election	598	0.378	0.483
2004 Election	598	0.493	0.500
2008 (1 st) Election	597	0.658	0.477
2008 (2 nd) Election	597	0.662	0.472
2012 Election	597	0.913	0.284

Source: Survey Data, 2016. **Notes:** The scoring was based on Yes or No.

7.5 Results of Chi Square Analysis of Association between Participation in the 2012 Presidential Election and Selected Socioeconomic Characteristics of Respondents

In order to advance an understanding of voter participation by the survey respondents, a chi-square statistical analysis was conducted to test the degree of association between a respondent's declared participation in the 2012 presidential election and his/her socio-economic characteristics using grouped data regarding those socio-economic characteristics. The null hypothesis was that there was no association between a respondent's participation in the 2012 presidential election and a particular socio-economic characteristic. The expected frequencies of the cells in a contingency table of the two variables were calculated as the initial step. The chi-square value (**CHISQUAREVALUE**) was derived by squaring the difference between the observed cell frequency (O) and expected cell frequency (E), and then dividing this squared difference by the expected cell frequency. The **CHISQUAREVALUE** is denoted below with Σ denoting the summation symbol:

$$\text{CHISQUAREVALUE} = \Sigma ((O-E)^2/E) \quad \text{Equation 7.1}$$

The chi-square analysis involved tests of association between participation in the 2012 election (PARTICIPATION2012) and 15 individual socio-economic characteristics with the analysis undertaken on one-by-one basis and based on the assumption that two variables are treated on an equal footing. The 15 socio-economic variables were (1) PINCOMEGROUP (2) URBAN, (3) AGEASAT2012, (4) SEX, (5) MARITALSTATUSIN2012, (6) YEARSOFEEDUCATIONASAT2012, (7) EMPLOYMENTSTATUSIN2012, (8) CHRISTIAN, (9) MUSLIM, (10) ASANTE, (11) EWE, (12) AGONA, (13) BONO, (14) FANTE and (15) EFFUTU. These variables are defined below:

PARTICIPATION2012_i is a dummy variable with the value of 1 if the respondent *i* voted in the 2012 national presidential election in Ghana and zero if he/she did not vote in that election;

PINCOMEGROUP_i is the relevant group for the reported monthly income in Ghana cedis indicated by respondent *i*;

URBAN_i is a dummy variable with a value of 1 if the respondent lives in a district considered urban, and zero if the district is not considered urban. Effutu and Sunyani East are considered to be urban districts, while Agona East and Techiman North are considered to be rural districts ;

AGEASAT2012_i is a variable indicating the biological age group that the respondent *i* belongs to at the time of the December 2012 national presidential election. This variable is classified into groups for the Chi square analysis;

SEX_i is a dummy variable for the sex of the respondent *i* with 1 denoting female respondents and zero for male respondents;

MARITALSTATUSIN2012 is a dummy variable with a value of 1 if the respondent *i* was married at the time of the 7 December 2012 national presidential election and zero if he/she was not married at that time ;

YEARSOFEDUCATIONASAT2012_i is a variable defined as the number of years of formal education acquired by the respondent *i* as at the time of the 7 December 2012 national presidential election. The number of years of formal educational attainment is classified into groups to allow for Chi square analysis;

EMPLOYMENTSTATUSIN2012_i is a dummy variable with a value of 1 if the respondent *i* was employed at the time of the 7 December 2012 national presidential election and zero if the respondent was not employed at that time ;

CHRISTIAN_i is a dummy variable if the respondent *i* was a Christian and zero if he/she was not a Christian ;

MUSLIM_i is a dummy variable if the respondent *i* was a Muslim and zero if he/she was not a Muslim ;

ASANTE_i is a dummy variable if the respondent *i* was an Akan-Asante and zero if he/she was not an Akan-Asante ;

EWE_i is a dummy variable if the respondent *i* was an Ewe and zero if he/she was not an Ewe;

AGONA_i is a dummy variable if the respondent *i* was an Akan-Agona and zero if he/she was not an Akan-Agona ;

BONO_i is a dummy variable if the respondent *i* was an Akan-Bono and zero if he/she was not an Akan-Bono ;

FANTE_i is a dummy variable if the respondent *i* was an Akan-Fante and zero if he/she was not an Akan-Fante;

EFFUTU_i is a dummy variable if the respondent *i* was a Guan-Effutu and zero if he/she was not a Guan-Effutu.

Table 7.6 presents the results of association between voter participation in the 2012 presidential election and 15 individual socio-economic characteristics classified into groups. The results of the analysis revealed that the following socio-economic characteristics – **AGEASAT2012**, **MARITALSTATUS**, **YEARSOFEDUCATION**, **EMPLOYMENTSTATUSASAT2012**, **CHRISTIAN**, **MUSLIM** and **AGONA** - were statistically significantly associated with voter participation in the 2012 presidential election. The variable, **URBAN** was not statistically significant but its statistical significance level was just around the maximum threshold level of 0.05 used for this study; its computed p value was 0.055. In contrast, the analysis of the degree of association between the other five ethnic groups – **ASANTE**, **EWE**, **BONO**, **FANTE** and **EFFUTU** - versus participation in the 2012 presidential election in the study areas based on survey data was not statistically significant (refer to Table 7.6). Finally, the sex of the individual was not statistically associated with participation in the 2012 presidential election.

It is important to mention that the chi-square analysis is useful to provide possible candidate socio-economic characteristics of the respondents for use in a regression analysis to determine the factors influencing voter participation in presidential elections. However, it is worth mentioning that the chi-square analysis does not imply causation in this study. Causation requires the use of multiple regression analysis to determine the factors influencing participation. The multiple regression analysis of participation and related results using the survey data are discussed in the next section, Section 7.6.

Table 7.6: Statistical Significance of the Association between the Participation in the 2012 National Presidential Election (PARTICIPATION2012) and 15 Socio-Economic Characteristics Based on Chi-Square Analysis Using Grouped Data

No.	Items for Comparison	<i>Chi-square Significance Probability Level</i>	<i>Test</i>
1	PARTICIPATION2012 Versus PINCOMEGROUP	0.007***	
2	PARTICIPATION2012 Versus URBAN	0.055	
3	PARTICIPATION2012 Versus AGEASAT2012	0.000**	
4	PARTICIPATION2012 Versus SEX	0.439	
5	PARTICIPATION2012 Versus MARITALSTATUS2012	0.000**	
6	PARTICIPATION2012 Versus YEARSOFEUCATIONASAT2012	0.015**	
7	PARTICIPATION2012 Versus EMPLOYMENTSTATUS2012	0.000*	
8	PARTICIPATION2012 Versus CHRISTIAN	0.016**	
9	PARTICIPATION2012 Versus MUSLIM	0.030**	
10	PARTICIPATION2012 Versus ASANTE	0.883	
11	PARTICIPATION2012 Versus EWE	0.713	
12	PARTICIPATION2012 Versus AGONA	0.041**	
13	PARTICIPATION2012 Versus BONO	0.534	
14	PARTICIPATION2012 Versus FANTE	0.281	
15	PARTICIPATION2012 Versus EFFUTU	0.577	

Source: Survey Data, 2016

Notes:

** Significant at the 5% level.

7.6 Results of the Analysis of Participation in the 2012 National Presidential Election for Respondents in the Four Electoral Swing Districts in Brong Ahafo and Central Regions (Agona East, Effutu, Sunyani East and Techiman North).

As indicated in the previous section, Chi square analysis does not imply causation. Hence a regression analysis is undertaken to identify causal factors influencing participation in the 2012 presidential election. The multiple logistic regression voter participation equation, with 10 independent variables assumed to influence the dependent variable, **PARTICIPATION2012**, is denoted in Equation 7. 2 as follows:

$$\begin{aligned} \text{PARTICIPATION2012}_i = & B_0 + B_1 \text{PINCOME} + B_2 \text{URBAN}_i + B_3 \text{AGEASAT2012} + \\ & B_4 \text{SEX}_i + B_5 \text{MARITALSTATUSIN2012}_i + B_6 \text{YEARSOFEEDUCATIONASAT2012}_i \\ & + B_7 \text{EMPLOYMENTSTATUSIN2012}_i + B_8 \text{CHRISTIAN}_i + B_9 \text{MUSLIM}_i + B_{10} \\ & \text{ASANTE}_i + B_{11} \text{EWE}_i + B_{12} \text{AGONA}_i + B_{13} \text{BONO}_i + B_{14} \text{FANTE}_i + B_{15} \text{EFFUTU} + U_i \end{aligned}$$

Equation 7.2

Where:

PARTICIPATION2012_i is a dummy variable with the value of 1 if the respondent i voted in the 2012 national presidential election in Ghana and zero if he/she did not vote in that election;

PINCOME_i is the reported monthly income in Ghana cedis indicated by respondent i;

URBAN_i is a dummy variable with a value of 1 if the respondent lived in a district considered to be urban, and zero if the resident did not live in a district considered to be urban. Effutu and Sunyani East are considered to be urban districts while Agona East and Techiman North are considered to be rural;

AGEASAT2012_i is a continuous variable indicating the biological age of the respondent i in years as at the time of the December 2012 national presidential election ;

SEX_i is a dummy variable for the sex of the respondent i with 1 denoting female respondents and zero for male respondents ;

MARITALSTATUSIN2012 is a dummy variable with a value of 1 if the respondent i was married at the time of the 7 December 2012 national presidential election and zero if he/she was not married at that time ;

YEARSOFEDUCATIONASAT2012_i is a continuous variable defined as the number of years of formal education acquired by the respondent i as at the time of the 7 December 2012 national presidential election ;

EMPLOYMENTSTATUSIN2012_i is a dummy variable with a value of 1 if the respondent i was employed at the time of the 7 December 2012 national presidential election and zero if the respondent was not employed at that time ;

CHRISTIAN_i is a dummy variable if the respondent i was a Christian and zero if he/she was not a Christian;

MUSLIM_i is a dummy variable if the respondent i was a Muslim and zero if he/she was not a Muslim;

ASANTE_i is a dummy variable if the respondent i was an Akan-Asante and zero if he/she was not an Akan-Asante;

EWE_i is a dummy variable if the respondent i was an Ewe and zero if he/she was not an Ewe;

AGONA_i is a dummy variable if the respondent *i* was an Akan-Agona and zero if he/she was not an Akan-Agona;

BONO_i is a dummy variable if the respondent *i* was an Akan-Bono and zero if he/she was not an Akan-Bono;

FANTE_i is a dummy variable if the respondent *i* was an Akan-Fante and zero if he/she was not an Akan-Fante;

EFFUTU_i is a dummy variable if the respondent *i* was a Guan-Effutu and zero if he/she was not a Guan-Effutu;

U_i is the regression equation error term initially assumed to be normally distributed with zero mean and constant variance.

The results of the logistic regression analysis are reported in Table 7.7. The power of the model was very high as the percentage correctly classified was 91.2% suggested the very high predictive power of the model. Only three out of the 15 independent variables were statistically significant in influencing the likelihood of the respondent voting in the 2012 presidential election. These are AGEASAT2012, YEARSOFEDUCATIONASAT2012 and EMPLOYMENTSTATUSIN2012. None of the six ethnicity variables was statistically significant in influencing the dependent variable, participation in the 2012 presidential election.

In the previous section, it was established that based on grouped data seven of the 15 variables were significantly associated with participation in the 2012 presidential election.

However, based on regression analysis it can only be confirmed that only three have statistically-significant influence on participation. The likelihood of participation in the 2012 presidential election increased with the increasing age of the respondent, his level of educational attainment and whether he was employed during the year of the election. Increasing age of the respondent implied increased eligibility to vote due age-eligibility requirement of voting in Ghana.

The results linked to age are similar to those established in other countries (see for example works by Wolfinger & Rosenstone, 1980; Franklin, 1996; Blais, 2000; Blais *et al.*, 2004). Age is supposed to have positive effect on voter participation in democracies.

The formal educational attainment achieved by a respondent, the higher the likelihood of the person being more aware of his/her civic responsibilities and having improved understanding of the democratic processes in Ghana which would increase his/her likelihood to participate in voting. This assertion is line with the view of Milligan *et al.* (2004) who posit that “education generates positive externalities in the form of enhanced political behaviour by both increasing the quantity of citizens' involvement in the electoral process and the level of probability of voting and the quality of their involvement.” That is, higher educational attainment allows voters for access to information on candidates and political parties contesting the elections in the democratic politics. A respondent employed during the election year would be more satisfied with the democratic system than an unemployed person and was more likely to vote compared to an unemployed who might be more easily discouraged from voting.

Table 7.7: Results of the Logistic Regression Analysis of Participation in the 2012 National Presidential Results for the Respondents in the Four Electoral Swing Districts in Central and Brong Ahafo Regions of Ghana (Agona East, Effutu, Sunyani and Techiman North).

Explanatory Variable	Parameter Estimate	Standard Error	Probability level of Significance
INTERCEPT (CONSTANT)	-0.917	1.036	0.376
PINCOME	0.000	0.000	0.214
URBAN	-0.377	0.371	0.310
AGEASAT2012	0.043	0.020	0.031**
SEX	0.330	0.315	0.295
MARITALSTATUSIN2012	0.546	0.393	0.165
YEARSOFEDUCATIONASAT2012	0.080	0.033	0.016**
EMPLOYMENTSTATUSIN2012	0.873	0.379	0.021**
CHRISTIAN	0.716	0.696	0.304
MUSLIM	0.391	0.688	0.569
ASANTE	0.314	1.095	0.774
EWE	-0.733	1.135	0.518
AGONA	0.580	0.672	0.388
BONO	0.513	0.485	0.290
FANTE	0.256	0.781	0.743
EFFUTU	0.368	1.088	0.735

Source: Survey Data, 2016.

Notes

** Significant at the 5% level.

The valid sample size used for the analysis is 599 with 53 not participating and 546 participating in the 2012 national presidential election.

7.7 Results of Descriptive Statistical Analysis of Voter Choices of the Respondents in National Presidential Elections, 1992 to 2012

Table 7.8 provides the results of the simple descriptive statistical analysis of the choice of the political party candidate by the survey respondents from 1992 to 2012. Over this 20-year period, six national presidential elections were held and clearly the two dominant political parties based on preferences of the survey respondents were NPP and NDC. In the 1992 presidential election, four political parties contested the election. These were NPP, NDC, PNC and NIP. Over the entire 20-year period, the most preferred party by the respondents was NDC followed by NPP except in the 2000 second round election for which the NPP was convincingly the most preferred party and this development was in line with the national picture that year.

The two parties were chosen by 83.5 percent of the respondents in 1992. The combined NDC and NPP share of the preferences of the respondents increased from 83.3 percent in 1992 to 89.2 percent in 1996, dropped slightly to 87.8 percent in the 2000 first round election and further to 86.2 percent to 2004 and 85.5 percent in 2008 first round election and finally to 81.4 percent in the 2012 election. The drop in share of the respondents' preferred party for the two main parties, NPP and NDC was consistent throughout the period from 1996 to 2012. This development was against the backdrop at the national level where the two main parties had been increasing their share of the total votes cast to about 98 percent as in the last two national elections of 2012 and 2016. The results of the respondents' preferences of the political party in these electoral-swing districts seemed to suggest that the small parties might need to shift their resources and focus more on the electorally-swing regions to mobilise support rather than stretching themselves everywhere throughout the country given their limited resources.

Table 7.8: Results of the Simple Descriptive Analysis of the Choice of Political Party Candidate in National Presidential Elections from 1992 to 2012 Based on the Survey Data

Year	Party Voted	Frequency	Percent
1992 Election	NPP	45	28.7
	NDC	86	54.8
	NIP	12	7.8
	PNC	14	8.9
1996 Election	NPP	56	33.5
	NDC	93	55.7
	PNC	18	10.8
2000 (1st) Election	NPP	83	39.0
	NDC	104	48.8
	CPP	18	8.5
	PNC	8	3.8
2000 (2nd) Election	NPP	123	57.7
	NDC	93	44.3
2004 Election	NPP	108	38.0
	NDC	137	48.2
	CPP	29	10.2
	PNC	10	3.5
	NPP	122	31.6
2008 (1st) Election	NDC	208	53.9
	CPP	43	11.1
	PNC	13	3.4
2008 (2nd) Election	NPP	131	33.1
	NDC	265	66.9
	NPP	153	28.0
	NDC	292	53.4
2012 Election	CPP	41	7.5
	PNC	19	3.4
	GCPP	7	1.2
	UFP	6	1.0
	PPP	17	3.1
	INDEPENDENT	11	2.0

Source: Survey Data, 2016.

Table 7.9 indicates the respondents' preferred party for the 2016 national presidential election. The survey was completed at the beginning of October 2016, two full months before the 7 December 2016 presidential election. NDC was the most preferred party of the respondents with 41.3 percent share which was below the minimum 50.1 percent majority share. The NPP was the second most popular party with 35.0 percent share of the respondents' preferences. The combined share of the respondents' preferences for two main parties was 76.7 percent with 23.3 percent of the respondents preferring other parties or candidates beyond the two main parties.

It is also worth noting that as much as 13.7 percent of the respondents were rooting for other small parties or independent parties or had not made up their minds, two clear months before the national election date. The relatively share for the CPP of 13.2 percent at the time of the survey reflected the potential of that party to garner votes from respondents, many of whom appeared tired of the two-party domination of Ghana political power space since the evolution of the Fourth Republic in 1992.

Table 7.9: Preferred Party or Candidate for the December 2016 National Election

Political Parties and Independent Candidate	Frequency	Percent
NPP	210	35.0
NDC	250	41.7
CPP	79	13.2
PNC	34	5.7
PPP	5	0.8
INDEPENDENT	22	3.7
NDP	0	0.0
Total	600	100

Source: Survey Data, 2016.

Table 7.10 summarise the factors that respondents suggested motivated them most in making their electoral choice of a preferred candidate in the December 2016 presidential election based on a ranking of the **most preferred single factor**. Development issues were considered the most popular motivating factor with 41.8 percent declaring this factor as the most important. This was followed by party affiliation (31.6 %) and candidate orientation (17.6 %) in order of importance. Ethnicity was considered the most important motivating factor by only 4.2 percent of the respondents clearly downplaying the role of ethnicity in the electorally-swing districts that the survey was undertaken. Religious preferences, family ties and social class considerations were even considered less important motivating factors by the respondents (see Table 7.10).

The results summarised in Table 7.10 suggest that the dominant motivating factor dealing with development issues was connected to the collective development of the nation or district by the respondents. Kinder and Kiewiet (1977) consider potential voters or citizens who ascribe to such collective development of a community as sociotropic. In their view, such people would vote for the candidate or party that would ensure the development of their perceived community whether the nation state or community.

Dwivedi (2005: 35) supports this view and argues that some voters vote for the good of the whole community in the sense that the development programmes of their preferred candidate or party would benefit the greatest number of people within the community even though some people in that community may not necessarily benefit from such programmes. Party affiliation and identification placed second after the development issues in terms of the most important motivating factors. For voters who consider party affiliation the most important motivating factor, development issues are to be relegated to the second position for the greater good of the party winning political power.

Table 7.10: The Most Important Single Motivating Factor Influencing the Choice of a Presidential Candidate in the 2016 Election as Declared by Respondents Based on the Share of the Respondents Expressing the Factor as the Most Important Factor for Their Choice

Variable	Frequency	Percent
Articulation of Development Issues by Candidate	245	41.8
Party Affiliation of Candidate	185	31.6
Orientation of Candidate	103	17.6
Ethnic Background of Candidate	25	4.2
Religious Background of Candidate	15	2.5
Family Ties of Candidate	7	1.1
Social Class of Candidate	5	0.9
Total	585	100.0

Source: Survey Data, 2016.

Moving from a specific dominant motivating factor that moves a potential voter to choose a presidential candidate, a range of factors can also be considered through a ranking order. Table 7.11 provides information on the ranking of importance of factors that influence respondents in the choice of a candidate in the December 2016 Presidential election. As indicated in the table, the most important candidate personality factor that influences the respondent to choose him or her as their preferred presidential candidate was the perception of the ability of the candidate to develop and improve the national economy. This factor had the highest average score of 4.14, out of a maximum score of 5.0. This factor had a similar average score as the second most important factor, the party message carried by the candidate exemplified through the party manifesto. However,

because of the latter's higher standard deviation, it had to be ranked second in order of importance.

The third most important candidate attribute that would influence respondents' choice of a presidential candidate was the perceived personality of the candidate including his/her likeability. This was ranked by an average score of 3.97 out of a maximum score of 5.0. Party affiliation of the candidate and the perceived contribution of the person to his/her party were ranked as of moderately-important status. It is worth mentioning that the sex of the presidential candidate was not considered of much importance in the selection of a preferred candidate. Further, the ethnic background and the religious preferences of the candidate were regarded as less important attributes for the choice of a presidential candidate and were considered the lowest ranked attributes in order of importance of the 10 candidate attributes evaluated by the survey respondents.

Table 7.11: Results of Simple Descriptive Analysis of Factors That Influence Respondents in the Choice of a Presidential Candidate for the 2016 Election

Candidate Attribute	Valid Number	Average Mean Score	Standard Deviation
Perception of the Ability of Candidate to Develop and Improve the National Economy	567	4.14	1.496
Party Message of Candidate (Manifesto)	596	4.14	1.527
Personality of Candidate	597	3.97	1.755
Party Affiliation of Candidate	593	3.63	1.865
Educational Level of Candidate	597	3.07	2.038
Perceived Candidate Contribution to Party	597	2.81	2.167
Family Relationship or Ties to Candidate	583	2.51	2.139
Sex of Candidate	597	2.40	2.187
Ethnic Background of Candidate	597	2.38	2.172
Religious Background of Candidate	597	2.31	2.081

Source: Survey Data, 2016.

Notes:

The scoring is based on 5 denoting that item is extremely important, 4 very important, 3 moderately important, 2 less important, 1 least important, and zero (0) is not applicable or important to the respondent.

7.8 Results of the Analysis of the Choice of the Winning NDC Candidate in the 2012 Presidential Election for Respondents in the Four Electoral Swing Districts in Brong Ahafo and Central Regions (Agona East, Effutu, Sunyani East and Techiman North).

Moving from the simple descriptive analysis discussed in the earlier section to the use of advanced statistical analysis, a logistic regression analytic model is employed to ascertain the factors that are linked to the likelihood of a respondent choosing a particular presidential candidate. The logistic regression model employed is a single equation, with 15 independent variables assumed to influence the dependent variable, **CHOICENDC2012**. The single-equation logistic regression model is denoted in Equation 7.3 as follows:

$$\begin{aligned} \text{CHOICENDC2012}_i = & B_0 + B_1 \text{PINCOME}_i + B_2 \text{URBAN}_i + B_3 \text{AGEASAT2012}_i + B_4 \\ & \text{SEX}_i + B_5 \text{MARITALSTATUSIN2012}_i + B_6 \text{YEARSOFEDUCATIONASAT2012}_i + \\ & B_7 \text{EMPLOYMENTSTATUSIN2012}_i + B_8 \text{CHRISTIAN}_i + B_9 \text{MUSLIM}_i + B_{10} \\ & \text{ASANTE}_i + B_{11} \text{EWE}_i + B_{12} \text{AGONA}_i + B_{13} \text{BONO}_i + B_{14} \text{FANTE}_i + B_{15} \text{EFFUTU}_i + U_i \end{aligned}$$

Equation 7.3

Where:

CHOICENDC2012_i is a dummy variable with the value of 1 if the respondent *i* voted for the NDC Presidential candidate in the 2012 presidential election in Ghana, and zero if he/she did not vote for the NDC presidential candidate in that election;

PINCOME_i is the reported monthly income in Ghana cedis indicated by respondent *i*;

URBAN_i is a dummy variable with a value of 1 if the respondent lived in a district considered to be urban and zero if the respondent did not live in a district considered to

be urban. Effutu and Sunyani East are considered to be urban districts while Agona East and Techiman North are considered to be rural;

AGEASAT2012_i is a continuous variable indicating the biological age of the respondent i in years as at the time of the December 2012 national presidential election;

SEX_i is a dummy variable for the sex of the respondent i with 1 denoting female respondents and zero for male respondents;

MARITALSTATUSIN2012_i is a dummy variable with a value of 1 if the respondent i was married at the time of the 7 December 2012 national presidential election and zero if he/she was not married at that time;

YEARSOFEDUCATIONASAT2012_i is a continuous variable defined as the number of years of formal education acquired by the respondent i as at the time of the 7 December 2012 national presidential election;

EMPLOYMENTSTATUSIN2012_i is a dummy variable with a value of 1 if the respondent i was employed at the time of the 7 December 2012 national presidential election and zero if the respondent was not employed at that time;

CHRISTIAN_i is a dummy variable if the respondent i was a Christian and zero if he/she was not a Christian;

MUSLIM_i is a dummy variable if the respondent i was a Muslim and zero if he/she was not a Muslim;

ASANTE_i is a dummy variable if the respondent i was an Akan-Asante and zero if he/she was not an Akan-Asante;

EWE_i is a dummy variable if the respondent *i* was an Ewe and zero if he/she was not an Ewe;

AGONA_i is a dummy variable if the respondent *i* was an Akan-Agona and zero if he/she was not an Akan-Agona;

BONO_i is a dummy variable if the respondent *i* was an Akan-Bono and zero if he/she was not an Akan-Bono;

FANTE_i is a dummy variable if the respondent *i* was an Akan-Fante and zero if he/she was not an Akan-Fante;

EFFUTU_i is a dummy variable if the respondent *i* was a Guan-Effutu and zero if he/she was not a Guan-Effutu;

U_i is the regression equation error term initially assumed to be normally distributed with zero mean and constant variance.

The results of the logistic regression analysis are presented in Table 7.12. The power of the model was considered to be modest given that the percentage correctly classified was only 62.0 percent. All the independent variables in the model were not statistically significant at the 0.05 level used for this study with the exception of PINCOME. This result suggested that increasing personal income increased the likelihood of a respondent voting for the 2012 NDC presidential candidate in the 2012 presidential election.

The other 14 independent variables were not statistically significant. The computed signs of the parameters for ASANTE and EWE variables provide some information in relation to the conclusions drawn from Chapter 6 on the countervailing voting patterns of the Akan-Asantes and Ewes in elections in Ghana. The signs are of the expected direction but the parameters are not significant possibly to very small numbers of Akan-Asantes

and Ewes in the sample of 600 respondents in the four districts that the survey was undertaken.

Table 7.12: Results of the Logistic Regression Analysis of the Choice of the NDC (Winning) Presidential Candidate in the 2012 Presidential Election for the Respondents in the Four Electoral Swing Districts in Central and Brong Ahafo Regions of Ghana (Agona East, Effutu, Sunyani and Techiman North)

Explanatory Variable	Parameter Estimate	Standard Error	Probability level of Significance
INTERCEPT (CONSTANT)	-0.099	0.646	0.026**
PINCOME	0.000	0.000	0.026**
URBAN	-0.195	0.222	0.379
AGEASAT2012	-0.008	0.009	0.384
SEX	0.249	0.190	0.191
MARITALSTATUSIN2012	0.230	0.230	0.318
YEARSOFEDUCATIONASAT2012	-0.027	0.020	0.187
EMPLOYMENTSTATUSIN2012	0.281	0.197	0.155
CHRISTIAN	0.544	0.497	0.274
MUSLIM	0.261	0.504	0.605
ASANTE	-0.848	0.739	0.251
EWE	1.512	1.102	0.170
AGONA	0.338	0.305	0.268
BONO	0.005	0.285	0.985
FANTE	-0.215	0.351	0.540
EFFUTU	-0.953	0.544	0.080

Source: Survey Data, 2016.

Notes

** Significant at the 5% level.

The valid sample size used for the analysis is 596.

7.9 Results of the Analysis of the Likely Choice of the NPP Candidate in the 2016 Presidential Election for Respondents in the Four Electoral Swing Districts in Brong Ahafo and Central Regions (Agona East, Effutu, Sunyani East and Techiman North).

The analysis of this chapter is concluded with the development of a logistic regression analytic model to establish the factors that are linked to the likelihood of a respondent choosing the (winning) NPP presidential candidate in the 7 December 2016 national elections. At the time of the survey, the election had not been held and so the analysis here was more of a predictive analysis of the outcome of that election in the four districts. The logistic regression model employed is a single equation, with 15 independent variables assumed to influence the dependent variable; **CHOICENPP2016** is denoted in Equation 7.4 as follows:

$$\begin{aligned} \text{CHOICENPP2016}_i = & B_0 + B_1 \text{PINCOME}_i + B_2 \text{URBAN}_i + B_3 \text{AGEASAT2012}_i + B_4 \\ & \text{SEX}_i + B_5 \text{MARITALSTATUSIN2012}_i + B_6 \text{YEARSOFEDUCATIONASAT2012}_i + \\ & B_7 \text{EMPLOYMENTSTATUSIN2012}_i + B_8 \text{CHRISTIAN}_i + B_9 \text{MUSLIM}_i + B_{10} \\ & \text{ASANTE}_i + B_{11} \text{EWE}_i + B_{12} \text{AGONA}_i + B_{13} \text{BONO}_i + B_{14} \text{FANTE}_i + B_{15} \text{EFFUTU}_i + U_i \end{aligned}$$

Equation 7.4

Where:

CHOICENPP2016_i is a dummy variable with the value of 1 if the respondent *i* indicated at that time of the survey in 2016 that he/she was likely to vote for the NPP Presidential candidate in the 7 December 2016 presidential election in Ghana and zero if he/she was not likely to vote for the NPP presidential candidate in that election;

PINCOME_i defined as monthly income in Ghana cedis as indicated by respondent *i*;

URBAN_i is a dummy variable with a value of 1 if the respondent lived in a district considered to be urban and zero if the respondent lived in a district not considered to be urban. Effutu and Sunyani East are considered to be urban districts while Agona East and Techiman North are considered to be rural;

AGEASAT2016_i is a continuous variable indicating the biological age of the respondent *i* in years as at the time of the survey in 2016;

SEX_i is a dummy variable for the sex of the respondent *i* with 1 denoting female respondents and zero for male respondents;

MARITALSTATUSIN2016_i is a dummy variable with a value of 1 if the respondent *i* was married at the time of the survey in 2016 and zero if he/she was not married at that time;

YEARSOFEDUCATIONASAT2016_i is a continuous variable defined as the number of years of formal education acquired by the respondent *i* as at the time of the survey in 2016;

EMPLOYMENTSTATUSIN2016_i is a dummy variable with a value of 1 if the respondent *i* was employed at the time of the survey in 2016 and zero if the respondent was not employed at that time;

CHRISTIAN_i is a dummy variable if the respondent *i* was a Christian and zero if he/she was not a Christian;

MUSLIM_i is a dummy variable if the respondent *i* was a Muslim and zero if he/she was not a Muslim;

ASANTE_i is a dummy variable if the respondent *i* was an Akan-Asante and zero if he/she was not an Akan-Asante;

EWE_i is a dummy variable if the respondent *i* was an Ewe and zero if he/she was not an Ewe;

AGONA_i is a dummy variable if the respondent *i* was an Akan-Agona and zero if he/she was not an Akan-Agona;

BONO_i is a dummy variable if the respondent *i* was an Akan-Bono and zero if he/she was not an Akan-Bono;

FANTE_i is a dummy variable if the respondent *i* was an Akan-Fante and zero if he/she was not an Akan-Fante;

EFFUTU_i is a dummy variable if the respondent *i* was a Guan-Effutu and zero if he/she was not a Guan-Effutu;

U_i is the regression equation error term initially assumed to be normally distributed with zero mean and constant variance.

The results of the logistic regression analysis are presented in Table 7.13. The power of the model was modest given that the percentage correctly classified was 65.0 percent. Out of the 15 independent variables in the model, none was statistically significant in influencing the dependent variable at the maximum 5 percent level used for this study. Nevertheless, two variables, **SEX** and **MARITALSTATUSIN2016**, were statistically significant in influencing the dependent variable, the choice of the NPP presidential candidate in the 7 December 2016 election, **but only at the 10 percent level of significance.**

This particular result suggested a possibility of married women less likely to vote for the NPP presidential candidate in the December 2016 election. The other 13 independent variables were not statistically significant even at the 10 percent statistical significance level.

Again, the computed signs of the parameters for the ASANTE and EWE variables provide some information in relation to the conclusions drawn from Chapter 6 on the countervailing voting patterns of the Akan-Asantes and Ewes in presidential elections in Ghana. The signs are of the expected direction but the parameters are not significant possibly to very small numbers of Akan-Asantes and Ewes in the sample of 600 respondents.

Table 7.13: Results of the Logistic Regression Analysis of the Likely Choice of the NPP (Winning) Presidential Candidate in the 2016 Presidential Election for the Respondents in the Four Electoral Swing Districts in Central and Brong Ahafo Regions of Ghana (Agona East, Effutu, Sunyani and Techiman North)

Explanatory Variable	Parameter Estimate	Standard Error	Probability level of Significance
INTERCEPT (CONSTANT)	0.395	0.650	0.543
PINCOME	0.000	0.000	0.720
URBAN	0.273	0.212	0.198
AGEASAT2016	-0.006	0.008	0.508
SEX	-0.327	0.183	0.074*
MARITALSTATUSIN2016	-0.356	0.208	0.087*
YEARSOFEDUCATIONASAT2016	-0.019	0.020	0.350
EMPLOYMENTSTATUSIN2016	-0.126	0.258	0.626
CHRISTIAN	-0.314	0.452	0.487
MUSLIM	-0.449	0.458	0.327
ASANTE	0.667	0.588	0.257
EWE	-0.596	0.842	0.479
AGONA	-0.337	0.305	0.270
BONO	0.114	0.265	0.667
FANTE	0.350	0.344	0.309
EFFUTU	0.687	0.496	0.167

Source: Survey Data, 2016.

Notes

* Significant at the 10% level.

The valid sample size used for the analysis is 596.

7.10 Conclusion and Summary of Chapter

This chapter was devoted to the analysis and discussion of the determinants of factors which influence people to vote in an election and the reasons for their choices of particular candidates and party. The analysis and related discussions are based on a cross-sectional survey, involving a randomly-selected sample of 600 respondents in four districts of Central and Brong-Ahafo regions for a period of six months spanning from April to October 2016. The established socio-economic determinants of voter participation were the age, the level of formal educational attainment and the employment status of the respondents. This result was ascertained from a logistic regression analysis.

The single most important motivating factor that would attract people to vote for a presidential candidate was identified to be related to the clear articulation of development-oriented issues by the candidate. Factors influencing the choice of presidential candidates by voters included the perception of the ability of the candidate to develop and improve the economy, political party affiliation and the orientation and likeability of the candidate

A logistic regression analysis confirmed that the personal income of a respondent was the significant factor that influenced the likelihood of the choice of the NDC presidential candidate in the 7 December 2012 national election.

CHAPTER EIGHT

THE NEXUS BETWEEN ELECTIONS AND DEVELOPMENT

BASED ON RESPONDENTS' PERSPECTIVE

8.1 Introduction

This chapter analyses and discusses the nexus between elections and development as measured by both individual and aggregate welfare of the population based on a survey of 600 respondents at the household level in randomly four selected swing districts of Brong Ahafo and Central regions of Ghana. The analysis and discussions of the economic development and electoral behaviour is based on the survey data, gathered from the cross-sectional survey for the period April 2016 to October, 2016.

The aggregate macro-level analysis which involves the use of time-series or pooled cross-sectional data essentially regressed voting share in national elections or polling station data against socio-economic variables, though shed some light on socio-economic conditions and electoral behaviour, the individual micro-economic level survey allows an investigation into the reasons why citizens participate and vote in national elections in a particular way in elections, explaining the direct link between economic welfare and electoral behaviour.

The analysis is divided into three sections. The first section is the results of descriptive statistics explaining the direct link between participation in elections and development. The second section is the results of the Chi square analysis explaining association between participation in elections and individual welfare. The third and final section presents results of the standard-multiple regression explaining the link between elections and economic welfare of the respondents.

The chapter therefore provide answers to the conventional question: *Why do people participate and vote in an election in Ghana, 1992 to 2016 in the swing regions, the way they do?*¹⁵

8.2 Results of Descriptive Statistics Explaining the Direct Link between Participation in Elections and Development

The vast majority of the respondents (91.6%) thought that their participation in elections and choices of the candidates could lead to improvement in their individual socio-economic status. This group of individual citizens are referred to as self-centred and egocentric voters (Sanders, 1994). This view of the respondents is to be expected among the urban and rural poor voters in Ghana; whose interests are basic needs of life (see Bluwey, 1998). Only 8.4 percent of the respondents disagreed with this view. Moving beyond individual socio-economic status, the majority of the respondents (86.1%) indicated that election outcomes promoted the development of their communities and districts. A dissenting view was provided by a minority of 13.9 percent of the respondents.

¹⁵ Voters are believed to support politicians whom they perceive as having improved their personal economic situation in the context of improved community and national development. The political arena is perceived as a reflection of the individual voter's electoral choices and preferences in the same way that the market is a reflection of the individual consumer's preferences. Hence, it is the voter participating in an election and choosing a candidate of his/her choice that influences the political process and socio-economic development. Thus, it is argued that non-participation in the electoral process has no effect on socio-economic development.

In an election situation, voters or citizens who ascribe to such collective development of a community, district or nation are termed as sociotropic voters in literature (see Kinder & Kiewiet, 1977; Sanders, 1994). Thus, such people would vote for the candidate or party that would ensure the development of their perceived development whether the nation state or community. This view was also supported by Dwivedi (2005), who argues that such voters vote for the good of the whole community in the sense that the development programmes of their preferred candidate or party would benefit the greatest number of people not only in their community, but the country as a whole. Respondents were requested during the survey to provide more detailed information in terms of the direct links between elections and socio-economic development.

Table 8.1 provides information on the respondents' assessment of the direct link between participation in voting and actually-felt socio-economic development expressed through indicators using a ranking of importance based on a zero-to-five Likert scale. From Table 8.1, the most highly-ranked development indicator resulting from participation in voting that is felt by the respondents was improved road network. This indicator had an average ranking of 4.39 out of a maximum of 5.0 on the zero-to-five Likert scale of actually felt development. This was followed by the provision of potable water (average score of 4.34) and improved electricity supply (4.06) in ranking order of importance.

These three development indicators are all directly associated with physical community and country infrastructure and these were all ranked highly. For development indicators associated with individual and household welfare, the results are different from those related to physical infrastructure. Table 8.1 reveals that advancement in personal and household education, improvement in personal and household health status, gaining employment and improvement in personal income were all ranked below 2.5 in the zero-to-five Likert continuum scale of importance. The figure 2.5 is exactly the average of a

zero-to-five Likert scale. This results means that all these four indicators were not regarded as important, but largely more in the category of less important.

The results of Table 8.1 are explained in more details using Table 8.2; the latter table provides respondents' assessment of the direct link between participation in voting and actually-felt socio-economic development using frequency analysis. Of particular relevance to this study is the proportion of respondents who indicated zero linkage value between participation in voting and actually-felt socio-economic development for particular or specific development indicators.

Gaining employment was regarded as the worst indicator of linkage in terms of declared zero value with 43.0 percent of the respondents indicating no direct linkage between participation in voting and gaining employment. This was followed by improvement in personal income which had 41.3 percent of respondents declaring absolutely no linkage between participation in voting and improvement in personal income. The other two indicators – improvement in personal and household health status, and advancement in personal and household education – also had relatively high zero values of linkages of 38.9 percent and 36.4 percent of the respondents respectively.

However, with the three physical community and national infrastructure development indicators, the expressed zero linkage values were all below 6 percent with the lowest score of 1.9 percent for provision of potable water and 5.6 percent for improved electricity supply (refer to Table 8.2). Further for the four individual and household welfare indicators, even though they were ranked lowly and relatively large proportions of respondents considered them to have zero voting participation linkage value, in each case over 20 percent of the respondents gave these indicators the very high scores of 4.0 and the maximum score of 5.0. This proportion of respondents ranged from 38.8 percent

for improvement in personal income to 42.8 percent for both gaining employment and improvement in personal and household health status development indicators.

Table 8.1: Respondents' Overall Average Assessment of the Direct Link between Participation in Voting and Actually Felt Socio-economic Development

Variable	Number	Mean Score of Importance	Standard deviation	Coefficient of Variation
Improved Road Network	590	4.39	1.062	0.242
Provision of Potable water	591	4.34	1.039	0.239
Improved Electricity Supply	591	4.06	1.372	0.338
Advancement in Personal and Household Educational Opportunities	591	2.43	2.094	0.862
Improvement in Personal and Household Health Status	591	2.39	2.150	0.900
Gaining Employment	591	2.34	2.204	0.942
Improvement in Personal Income	586	2.15	2.102	0.978

Source: Survey Data, 2016.

Notes:

The scoring is based on 5 denoting that item is extremely important, 4 very important, 3 moderately important, 2 less important, 1 least important, and zero (0) is not considered as a factor at all.

Table 8.2: Respondents' Assessment of the Direct Link between Participation in Voting and Actually Felt Socio-economic Development based on Frequency Analysis (Percent)

Variable\Scoring Intensity	0	1	2	3	4	5	Total
Improved Road Network	2.2	1.5	2.3	6.1	24.9	62.9	100.0
Provision of Potable water	1.9	1.0	3.4	7.8	27.1	58.9	100.0
Improved Electricity Supply	5.6	2.4	4.1	8.8	26.6	52.6	100.0
Advancement in Personal and Household Educational Opportunities	36.4	4.1	6.9	12.0	14.2	26.4	100.0
Improvement in Personal and Household Health Status	38.9	4.1	6.6	7.6	15.2	27.6	100.0
Gaining Employment	43.0	2.0	4.7	7.4	14.0	28.8	100.0
Improvement in Personal Income	41.3	8.2	5.3	6.5	17.1	21.7	100.0

Source: Survey Data, 2016.

Notes:

The scoring is based on 5 denoting that item is extremely important, 4 very important, 3 moderately important, 2 less important, 1 least important, and zero (0) is not considered as a factor at all.

8.3 Results of the Chi-Square Analysis Explaining the Links between Participation in Elections and Development

The previous section clearly established the position that for measures of personal and household economic welfare, there was considerable variation in the answers provided by respondents to the direct link between participation in elections and the specific individual and household welfare indicators. Hence a chi square analysis was undertaken to identify the statistical significance of the association between respondents' assessment of direct link between participation in voting and specific economic welfare of the individual/household and 15 socio-economic characteristics of respondents. The results

of the chi square analysis are presented in Tables 8.3, 8.4, 8.5 and 8.6. The 15 socio-economic characteristics are defined as follows:

PINCOMEGROUP_i is defined as monthly income group in Ghana cedis indicated by respondent *i* for in particular income classified into groups for chi square analysis;

AGEGROUP_i is a continuous variable indicating the biological age of the respondent *i* in years classified into groups for chi square analysis;

SEX_i is a dummy variable for the sex of the respondent *i* with 1 denoting female respondents and zero for male respondents;

YEARSOFEDUCATIONGROUP_i is a variable defined as the number of years of formal education acquired by the respondent *i* classified into groups for chi square analysis;

URBAN_i is a dummy variable with a value of 1 if the respondent lived in a district considered to be urban, and zero if the resident did not live in a district considered to be urban. Effutu and Sunyani East are considered to be urban districts while Agona East and Techiman North are considered to be rural;

MARRIED_i is a dummy variable with a value of 1 if the respondent *i* was married at the time of the survey and zero if he/she was not married at that time;

EMPLOYMENTSTATUS_i is a dummy variable with a value of 1 if the respondent *i* was employed at the time of the survey and zero if the respondent was not employed at that time;

CHRISTIAN_i is a dummy variable if the respondent *i* was a Christian and zero if he/she was not a Christian;

MUSLIM_i is a dummy variable if the respondent *i* was a Muslim and zero if he/she was not a Muslim;

ASANTE_i is a dummy variable if the respondent *i* was an Akan-Asante and zero if he/she was not an Akan-Asante;

EWE_i is a dummy variable if the respondent *i* was an Ewe and zero if he/she was not an Ewe;

AGONA_i is a dummy variable if the respondent *i* was an Akan-Agona and zero if he/she was not an Akan-Agona;

BONO_i is a dummy variable if the respondent *i* was an Akan-Bono and zero if he/she was not an Akan-Bono;

FANTE_i is a dummy variable if the respondent *i* was an Akan-Fante and zero if he/she was not an Akan-Fante;

EFFUTU_i is a dummy variable if the respondent *i* was a Guan-Effutu and zero if he/she was not a Guan-Effutu.

For the score of the direct link between participation in voting and improved personal income (PVLPI) and its association with 15 socio-economic characteristics, the results are summarised in Table 8.3. The statistically-significant level of association was identified between PVLPI and eight out of the 15 selected socio-economic characteristics. These variables are YEARSOFEUCATIONGROUP, MARRIED, EMPLOYMENTSTATUS, CHRISTIAN, MUSLIM, AGONA, FANTE and EFFUTU. No statistically-significant association was observed between PVLPI and PINCOMEGROUP, AGEGROUP, SEX and URBAN variables; further there was also

no significant association between PVLPI and the following ethnicity variables: ASANTE, EWE and BONO.

Table 8.4 provides the summary of the results of the statistical significance of the association between the respondents' assessment of direct link between participation in voting and gaining employment (PVGEMP) and the 15 socio-economic characteristics. Statistically-significant association was established between PVGEMP and only six out of the 15 selected socio-economic characteristics. These variables are EMPLOYMENTSTATUS, PINCOMEGROUP, URBAN, CHRISTIAN, MUSLIM and BONO. The very strong statistically significant association between PVPHEO and EMPLOYMENTSTATUS is intuitive for the fact that employed people are more likely to appreciate a democratic political system that has allowed them to be employed. This finding is also similar to the result for PINCOMEGROUP with higher-income persons appreciating more the link between participation in voting and increased employment opportunities.

The results of the analysis of the association between the respondents' assessment of direct link between participation in voting and personal and household educational opportunities (PVPHEO) and 15 socio-economic characteristics based on chi-square analysis are reported in Table 8.5. Statistically-significant association was established between PVPHEO and seven out of the 15 selected socio-economic characteristics. These variables are AGEGROUP, YEARSOFEEDUCATIONGROUP, URBAN, EMPLOYMENTSTATUS, CHRISTIAN, MUSLIM and AGONA. Table 8.6 shows the results of the statistically-significant association between the respondents' assessment of direct link between participation in voting and personal and household health status (PVPHHS) and the 15 socio-economic characteristics. Statistically-significant level of association was identified between PVPHHS and 10 out of the 15 selected socio-

economic characteristics. These variables are PINCOMEGROUP, AGEGROUP, YEARSOFEEDUCATIONGROUP, URBAN, MARRIED, EMPLOYMENTSTATUS, MUSLIM EWE, AGONA and BONO.

8.3.1 Summary of Chi Square Analysis Results

The results of the analysis reported in Table 8.3, 8.4, 8.5 and 8.6 have a few resonating points. The first one is the overwhelming evidence in favour of people who were unemployed having a statistically-significant scoring value for a link between participation in elections and all the four individual and household economic welfare indicators. This suggested that unemployed people did not particularly see a direct link between participation in voting and individual/household economic welfare. The second resonating point was that there were no statistically significant differences between the direct voting participation-development linkage scoring values expressed by men or women for all four development indicators analysed in this section.

Table 8.3: Statistical Significance of the Association between the Respondents' Assessment of Direct Link between Participation in Voting and Improved Personal Income (PVLIP) and 15 Socio-Economic Characteristics Based on Chi-Square Analysis Using Grouped Data (v124)

No.	Items for Comparison	<i>Chi-square Test</i>
		<i>Significance</i>
		<i>Probability Level</i>
1	PVLIP Versus PINCOMEGROUP	0.091
2	PVLIP Versus AGEGROUP	0.761
3	PVLIP Versus SEX	0.677
4	PVLIP Versus YEARSOFEEDUCATIONGROUP	0.004***
5	PVLIP Versus URBAN	0.115
6	PVLIP Versus MARRIED	0.002***
7	PVLIP Versus EMPLOYMENTSTATUS	0.003***
8	PVLIP Versus CHRISTIAN	0.020**
9	PVLIP Versus MUSLIM	0.015**
10	PVLIP Versus ASANTE	0.356
11	PVLIP Versus EWE	0.259
12	PVLIP Versus AGONA	0.000***
13	PVLIP Versus BONO	0.073
14	PVLIP Versus FANTE	0.048**
15	PVLIP Versus EFFUTU	0.027**

Source: Survey Data, 2016.

Notes

** Significant at the 5% level.

*** Significant at the 1% level.

Table 8.4: Statistical Significance of the Association Between the Respondents' Assessment of Direct Link between Participation in Voting and Gaining Employment (PVGEMP) and 15 Socio-Economic Characteristics Based on Chi-Square Analysis Using Grouped Data (v127)

No.	Items for Comparison	<i>Chi-square</i>	<i>Test</i>
		<i>Significance</i>	
		<i>Probability Level</i>	
1	PVGEMP Versus PINCOMEGROUP	0.015**	
2	PVGEMP Versus AGEGROUP	0.623	
3	PVGEMP Versus SEX	0.664	
4	PVGEMP Versus YEARSOFEEDUCATIONGROUP	0.098	
5	PVGEMP Versus URBAN	0.011**	
6	PVGEMP Versus MARRIED	0.350	
7	PVGEMP Versus EMPLOYMENTSTATUS	0.000***	
8	PVGEMP Versus CHRISTIAN	0.029**	
9	PVGEMP Versus MUSLIM	0.009***	
10	PVGEMP Versus ASANTE	0.241	
11	PVGEMP Versus EWE	0.931	
12	PVGEMP Versus AGONA	0.133	
13	PVGEMP Versus BONO	0.027**	
14	PVGEMP Versus FANTE	0.234	
15	PVGEMP Versus EFFUTU	0.724	

Source: Survey Data, 2016.

Notes

** Significant at the 5% level.

*** Significant at the 1% level.

Table 8.5: Statistical Significance of the Association Between the Respondents' Assessment of Direct Link between Participation in Voting and Personal and Household Education Opportunities (PVPHEO) and 15 Socio-Economic Characteristics Based on Chi-Square Analysis Using Grouped Data (v126)

No	Items for Comparison	<i>Chi-square Test Significance Probability Level</i>
1	PVPHEO Versus PINCOMEGROUP	0.083
2	PVPHEO Versus AGEGROUP	0.003***
3	PVPHEO Versus SEX	0.996
4	PVPHEO Versus YEARSOFEEDUCATIONGROUP	0.034**
5	PVPHEO Versus URBAN	0.000***
6	PVPHEO Versus MARRIED	0.608
7	PVPHEO Versus EMPLOYMENTSTATUS	0.002***
8	PVPHEO Versus CHRISTIAN	0.001***
9	PVPHEO Versus MUSLIM	0.002***
10	PVPHEO Versus ASANTE	0.325
11	PVPHEO Versus EWE	0.623
12	PVPHEO Versus AGONA	0.002***
13	PVPHEO Versus BONO	0.085
14	PVPHEO Versus FANTE	0.533
15	PVPHEO Versus EFFUTU	0.580

Source: Survey Data, 2016.

Notes

** Significant at the 5% level.

*** Significant at the 1% level.

Table 8.6: Statistical Significance of the Association Between the Respondents' Assessment of Direct Link between Participation in Voting and Personal and Household Health Status (PVPHHS) and 15 Socio-Economic Characteristics Based on Chi-Square Analysis Using Grouped Data (v125)

No.	Items for Comparison	<i>Chi-square Test</i>
		<i>Significance</i>
		<i>Probability Level</i>
1	PVPHHS Versus PINCOMEGROUP	0.000***
2	PVPHHS Versus AGEGROUP	0.043**
3	PVPHHS Versus SEX	0.442
4	PVPHHS Versus YEARSOFEEDUCATIONGROUP	0.000***
5	PVPHHS Versus URBAN	0.025**
6	PVPHHS Versus MARRIED	0.000***
7	PVPHHS Versus EMPLOYMENTSTATUS	0.000***
8	PVPHHS Versus CHRISTIAN	0.064
9	PVPHHS Versus MUSLIM	0.027**
10	PVPHHS Versus ASANTE	0.883
11	PVPHHS Versus EWE	0.037**
12	PVPHHS Versus AGONA	0.000***
13	PVPHHS Versus BONO	0.040**
14	PVPHHS Versus FANTE	0.107
15	PVPHHS Versus EFFUTU	0.509

Source: Survey Data, 2016.

Notes

** Significant at the 5% level.

*** Significant at the 1% level.

8.4 Results of the Standard Multiple Regression Analysis of the Assessed Direct Link Scoring Value between Participation in Elections and Development by the Respondents Versus their Socio-economic Characteristics in the Four Electoral Swing Districts in Brong Ahafo and Central Regions (Agona East, Effutu, Sunyani East and Techiman North).

It is well known that Chi square analysis does not imply causation. Hence, a regression analysis is undertaken to identify causal factors influencing the assessed direct link scoring value provided by the individual respondents between elections and relevant development indicators versus their socio-economic characteristics. The four development indicators which are analysed in this section are (1) improvement in personal income, (2) improvement in personal and household status, (3) advancement in personal and household educational opportunities, and (4) gaining employment opportunities. The first standard multiple regression voter participation equation, with 15 independent variables assumed to influence the dependent variable, the respondent's score of the direct link between participation in voting and improved personal income (**PVLIPI_i**) is denoted in Equation 8.1 as follows:

$$\begin{aligned} \text{PVLIPI}_i = & B_0 + B_1 \text{PINCOME} + B_2 \text{AGE}_i + B_3 \text{SEX}_i + B_4 \text{YEARSOFEDUCATION} + \\ & B_5 \text{URBAN}_i + B_6 \text{MARRIED}_i + B_7 \text{EMPLOYMENTSTATUS}_i + B_8 \text{CHRISTIAN}_i \\ & + B_9 \text{MUSLIM}_i + B_{10} \text{ASANTE}_i + B_{11} \text{EWE}_i + B_{12} \text{AGONA}_i + B_{13} \text{BONO}_i + B_{14} \text{FANTE}_i \\ & + B_{15} \text{EFFUTU}_i + U_i \end{aligned} \quad \text{Equation 8.1}$$

Where:

PVLIPI_i is the respondent's score of the direct link between participation in voting and improved personal income based on the zero-to-five Likert scoring scale;

PINCOME_i is the reported monthly personal income in Ghana cedis indicated by respondent i ;

AGE_i is a continuous variable indicating the biological age of the respondent i in years;

SEX_i is a dummy variable for the sex of the respondent i with 1 denoting female respondents and zero (0) for male respondents;

YEARSOFEDUCATION_i is a continuous variable defined as the number of years of formal education acquired by the respondent i ;

URBAN_i is a dummy variable with a value of 1 if the respondent lived in a district considered to be urban, and zero if the resident did not live in a district considered to be urban. Effutu and Sunyani East are considered to be urban districts while Agona East and Techiman North are considered to be rural;

MARRIED_i is a dummy variable with a value of 1 if the respondent i was married at the time of the survey and zero if he/she was not married at that time;

EMPLOYMENTSTATUS_i is a dummy variable with a value of 1 if the respondent i was employed at the time of the survey and zero if the respondent was not employed at that time;

CHRISTIAN_i is a dummy variable if the respondent i was a Christian and zero if he/she was not a Christian;

MUSLIM_i is a dummy variable if the respondent i was a Muslim and zero if he/she was not a Muslim;

ASANTE_i is a dummy variable if the respondent i was an Akan-Asante and zero if he/she was not an Akan-Asante;

EWE_i is a dummy variable if the respondent *i* was an Ewe and zero if he/she was not an Ewe;

AGONA_i is a dummy variable if the respondent *i* was an Akan-Agona and zero if he/she was not an Akan-Agona;

BONO_i is a dummy variable if the respondent *i* was an Akan-Bono and zero if he/she was not an Akan-Bono;

FANTE_i is a dummy variable if the respondent *i* was an Akan-Fante and zero if he/she was not an Akan-Fante;

EFFUTU_i is a dummy variable if the respondent *i* was a Guan-Effutu and zero if he/she was not a Guan-Effutu;

U_i is the regression equation error term initially assumed to be normally distributed with zero mean and constant variance.

The three other equations use the same 15 independent variables. The dependent variables are (1) the respondent's assessment of direct link between participation in voting and gaining employment (PVGEMP), (2) the respondent's assessment of direct link between participation in voting and personal and household educational opportunities (PVPHEO), and (3) the respondent's assessment of direct link between participation in voting and personal and household health status (PVPHHS). The results of the regression analysis involving these four dependent variables are reported in Tables 8.7, 8.8, 8.9 and 8.10.

The results dealing with the linkage of participation in elections and improved personal income are reported in Table 8.7. The power of the estimated model is modest given the R^2 of 0.109; yet the R^2 is statistically significant at the 0.01 level. The estimated model is

correctly specified based on the Ramsey Reset Test with a computed p value of 0.882 well above the maximum 0.05 statistical significance level adopted in this study meaning that the null hypothesis that the model is correctly specified cannot be rejected.

Further, the estimated does not have any significant problem of heteroscedasticity; the latter econometric problem is tested with the LM heteroscedasticity test which has a p value of 0.499 above the critical 0.05 level used in this study. The variance inflation factor for all the 15 independent variables is considerably below the critical level of 10.0 suggesting that the problem of multicollinearity does not exist in the model. The results show that EMPLOYED, AGONA and FANTE are the only statistically significant variables that influence the dependent variable (refer to Table 8.7). Employed people are more likely to appreciate and value the direct link between participation in voting and the improvement of personal income. Respondents who were Agonas and Fantes are also more likely than others to value the direct link between participation in voting and improvement in personal income. Based on the standardised regression estimates, AGONA is the most important independent variable influencing the dependent variable.

The results of the regression analysis of the score value of the direct link between participation in voting and gaining employment opportunities are reported in Table 8.8. The power of the estimated model is modest but higher than the one reported in Table 8.7. Similar to the earlier result reported in Table 8.7, the estimated model is also correctly specified based on the Ramsey Reset test.

There is no significant multicollinearity in the model given the low variance inflation factor figures for all the 15 independent variables in the model. However, there is significant heteroscedasticity in the estimated model with the computed p value of 0.012 below the critical maximum statistical significance value of 0.05 used in this study.

Hence the results of this particular regression analysis should be treated with some caution. Once again, the statistically-significant variables that affect the dependent variable are EMPLOYED, AGONA and FANTE.

However, PINCOME is also a statistically-significant variable and based on the standardised regression estimates, it is the second most important influential variable (refer to Table 8.8). The result dealing with PINCOME suggests that people with higher incomes appreciate and value the direct link between participation in voting and improved or increased employment opportunities. This probably is related to higher-income individuals benefitting more from the democratic system due to increased income and wealth and the protection that a democratic system plays in protecting that income and wealth.

Table 8.9 summarises the regression analysis results of the value attached to the direct link between participation in voting and increased personal and household educational opportunities. The estimated model is correctly specified and has no problem of heteroscedasticity based on the Ramsey Reset test and the LM heteroscedasticity test respectively. There is no significant multicollinearity in the model given the low variance inflation factor figures for all the 15 independent variables in the model. The power of the model is modest with R^2 of 0.10; however it is highly significant at the 0.01 level.

The five statistically-significant variables are EMPLOYED, PINCOME, URBAN, AGONA and BONO. Not surprisingly, employed people and those with higher incomes appreciate much more the direct link between participation in voting and increased personal and household educational opportunities given the positive significant values of the parameters of the EMPLOYED and PINCOME variables.

The positive results for AGONA and BONO related to increased personal and household educational opportunities could be due to the establishment of a community day senior secondary school in the Agona East district and a University in the Brong Ahafo region plus several newly-constructed community day senior high schools. The statistically-significant estimated parameter value for URBAN suggests that urban residents appreciate less the direct link between participation in voting and increased educational opportunities; this result indicates the presence of higher levels of unemployment in urban areas *vis a vis* rural areas.

Table 8.10 provides results of the regression analysis dealing with the direct link between participation in voting and personal and household health status. The estimated is correctly specified based on the Ramsey Reset test and there is no significant heteroscedasticity based on the LM test for heteroscedasticity. There is no significant multicollinearity in the model given the low variance inflation factor figures for all the 15 independent variables in the model. The power of the model as measured by the R^2 is both modest and statistically significant at the 0.01 level. The five statistically-significant variables in the model are EMPLOYED, PINCOME, URBAN, AGONA and FANTE. All the five variables also have positive estimated parameter values indicating a positive link between the variables and the dependent variable.

The results reported in Table 8.10 are intuitive given the increased levels of health care facilities in the survey areas that have been opened in the last five years. Respondents who were employed or earned higher incomes are expected to enjoy the improved health care facilities available in the survey areas. Urban areas tend to have more and better health care facilities than rural areas and this factor underlies the positive link attached to participating in voting and increased personal and household health status. Finally, the respondents who were Agonas and Fantes are also more likely than others to value the

direct link between participation in voting and increased personal and household health status.

Table 8.7: Results of the Standard Multiple Regression Analysis of the Respondent's Score Value of the Direct Link between Participation in Voting and Improved Personal Income (PVLPI) Versus 15 Independent Variables Related to Respondent's Socio-economic Characteristics in Four Electoral Swing Districts in Central and Brong Ahafo Regions of Ghana (Agona East, Effutu, Sunyani and Techiman North).

Explanatory Variable	Parameter Estimate	Standardised Regression Estimate	Probability level of Significance	Variance Inflation Factor
INTERCEPT	0.528	0.000	0.404	0.000
PINCOME	0.000	0.072	0.155	1.645
AGE	0.013	0.077	0.110	1.484
FEMALE	0.032	0.008	0.855	1.078
YEARSOFEDUCATION	0.006	0.015	0.766	1.524
URBAN	-0.115	-0.027	0.567	1.392
MARRIED	0.253	0.060	0.201	1.414
EMPLOYED	0.571	0.107	0.023**	1.412
CHRISTIAN	0.360	0.084	0.420	6.995
ISLAM	0.189	0.044	0.675	6.912
ASANTE	-0.616	-0.043	0.289	1.058
EWE	0.216	0.011	0.781	1.033
AGONA	1.021	0.176	0.000***	1.404
BONO	-0.169	-0.028	0.511	1.157
FANTE	0.713	0.087	0.040**	1.127
EFFUTU	-0.648	-0.053	0.199	1.096

Source: Survey Data, 2016

Notes:

Valid sample size used for the Analysis was 596

R^2 0.109

Probability significance level of Ramsey Reset Test for correct model specification 0.882

Probability significance level of Langrange-Multiplier test of no heteroscedasticity 0.499

*** denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.

Table 8.8: Results of the Standard Multiple Regression Analysis of the Respondent's Score Value of the Direct Link between Participation in Voting and Gaining Employment (PVGEMP) Versus 15 Independent Variables Related to Respondent's Socio-economic Characteristics in Four Electoral Swing Districts in Central and Brong Ahafo Regions of Ghana (Agona East, Effutu, Sunyani and Techiman North)

Explanatory Variable	Parameter Estimate	Standardised Regression Estimate	Probability level of Significance	Variance Inflation Factor
INTERCEPT	0.666	0.000	0.293	0.000
PINCOME	0.000	0.140	0.005***	1.648
AGE	0.013	0.079	0.093	1.471
FEMALE	0.087	0.020	0.616	1.076
YEARSOFEDUCATION	0.007	0.019	0.693	1.528
URBAN	0.137	0.031	0.496	1.399
MARRIED	0.249	0.058	0.208	1.414
EMPLOYED	0.582	0.107	0.020**	1.416
CHRISTIAN	0.052	0.012	0.907	7.031
ISLAM	-0.162	-0.036	0.721	6.944
ASANTE	-0.047	-0.003	0.936	1.058
EWE	0.971	0.049	0.214	1.032
AGONA	1.194	0.201	0.000***	1.409
BONO	-0.162	-0.026	0.530	1.159
FANTE	0.895	0.108	0.009***	1.128
EFFUTU	-0.131	-0.011	0.789	1.090

Source: Survey Data, 2016.

Notes

Valid sample size used for the Analysis was 596

R^2 0.142

Probability significance level of Ramsey Reset Test for correct model specification 0.879

Probability significance level of Langrange-Multiplier test of no heteroscedasticity 0.012

*** denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.

Table 8.9: Results of the Standard Multiple Regression Analysis of the Respondent's Score Value of the Direct Link between Participation in Voting and Personal and Household Educational Opportunities (PVPHEO) Versus 15 Independent Variables Related to Respondent's Socio-economic Characteristics in Four Electoral Swing Districts in Central and Brong Ahafo Regions of Ghana (Agona East, Effutu, Sunyani and Techiman North)

Explanatory Variable	Parameter Estimate	Standardised Regression Estimate	Probability level of Significance	Variance Inflation Factor
INTERCEPT	1.996	0.000	0.002***	0.000
PINCOME	0.001	0.181	0.000***	1.648
AGE	0.002	0.014	0.766	1.471
FEMALE	0.042	0.010	0.810	1.076
YEARSOFEDUCATION	-0.005	-0.013	0.792	1.528
URBAN	-0.566	-0.131	0.005***	1.399
MARRIED	-0.113	-0.027	0.565	1.414
EMPLOYED	0.553	0.104	0.027**	1.416
CHRISTIAN	0.024	0.006	0.956	7.031
ISLAM	-0.315	-0.073	0.485	6.944
ASANTE	0.407	0.029	0.483	1.058
EWE	-0.051	-0.003	0.948	1.032
AGONA	0.561	0.097	0.039**	1.409
BONO	0.571	0.095	0.026**	1.159
FANTE	0.352	0.044	0.298	1.128
EFFUTU	-0.656	-0.055	0.181	1.090

Notes

Valid sample size used for the Analysis was 596

R^2 0.100

Probability significance level of Ramsey Reset Test for correct model specification 0.338

Probability significance level of Langrange-Multiplier test of no heteroscedasticity 0.439

*** denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.

Table 8.10: Results of the Standard Multiple Regression Analysis of the Respondent's Score Value of Direct Link between Participation in Voting and Personal and Household Health Status (PVPHHS) Versus 15 Independent Variables Related to Respondent's Socio-economic Characteristics in the Four Electoral Swing Districts in Central and Brong Ahafo Regions of Ghana (Agona East, Effutu, Sunyani and Techiman North).

Explanatory Variable	Parameter Estimate	Standardised Regression Estimate	Probability level of Significance	Variance Inflation Factor
INTERCEPT	0.456	0.000	0.490	0.000
PINCOME	0.000	0.157	0.002***	1.648
AGE	0.007	0.040	0.405	1.471
FEMALE	0.172	0.039	0.341	1.076
YEARSOFEDUCATION	-0.012	-0.029	0.554	1.528
URBAN	0.844	0.186	0.000***	1.399
MARRIED	-0.215	-0.049	0.297	1.414
EMPLOYED	0.758	0.136	0.004***	1.416
CHRISTIAN	0.147	0.033	0.752	7.031
ISLAM	0.171	0.038	0.717	6.944
ASANTE	0.349	0.023	0.565	1.058
EWE	-0.328	-0.016	0.686	1.032
AGONA	1.129	0.176	0.000***	1.409
BONO	0.195	-0.028	0.468	1.159
FANTE	0.764	0.087	0.031**	1.128
EFFUTU	-0.079	-0.053	0.877	1.090

Notes

Valid sample size Used for the Analysis was 596

R^2 0.114

Probability significance level of Ramsey Reset Test for correct model specification 0.392

Probability significance level of Langrange-Multiplier test of no heteroscedasticity 0.176

*** denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level

8.5 A Cohort Analysis for Respondents who voted in the 1992 Presidential Election

Elections could provide incentives for citizens to participate more intensively in the democratic process through increased participation in voting if voters feel that the electoral outcomes produce responsible governments that act in the interest of the nation and enact and implement policies that improve their individual and household welfare. In this section, an analysis is undertaken to establish a relationship between government economic policies and participation in voting and their feedback effects. This is undertaken by a cohort analysis of the assessment of respondents who first voted in Fourth Republican elections in 1992. Their responses are tracked for every national election from 1992 to 2012.

The results of the analysis indicating the proportions of this cohort of respondents and their reasons for voting that are related to the impact of government economic policies on their personal and household welfare are summarised in Table 8.11. The results clearly show that proportions of respondents who vote in elections because they expect improved personal and household economic wellbeing in the future after the election are much higher than the proportions of respondents who use the impact of government policies before the election as a key yardstick to decide whether to participate in the election. This result reflects an optimism of this cohort of respondents that things could get better despite lower than expected impact of government economic policies on their personal and household wellbeing during the years preceding the election. It is important to note the consistency of the results expressed over all the six election years and the fact that for each year there are clear differences between the proportions of people participating due to expected future improvements compared to the observed impacts preceding the election.

Table 8.11: Results of Simple Descriptive Statistical Analysis Indicating the Proportions of the Cohort of Respondents who voted in the First Fourth Republican Presidential Election in 1992 who indicated a Reason for Voting Related to the Impact of Government Economic Policies on their Personal and Household Welfare (1992 Cohort)

Type of Election	Valid Number	Voted in the Election Because Government Economic Policies in the Preceding Years Improved Personal and Household Wellbeing	Voted in the Election Because of Expectation of Improvement in Personal and Household in the Future Period due to Government Economic Policies
1992 Election	129	0.519 (0.502)	0.884 (0.322)
1996 Election	129	0.519 (0.502)	0.884 (0.322)
2000 (1st) Election	128	0.516 (0.502)	0.883 (0.323)
2000 (2nd) Election	128	0.516 (0.502)	0.883 (0.323)
2004 Election	124	0.500 (0.502)	0.879 (0.327)
2008 (1st) Election	123	0.496 (0.502)	0.878 (0.329)
2008 (2nd) Election	122	0.500 (0.502)	0.885 (0.320)
2012 Election	123	0.504 (0.502)	0.886 (0.319)

Source: Survey Data, 2016..

Notes

The size of the cohort of the sample respondents who participated in the 1992 election was 136 out of the total number of respondents of 600. But, 129 is the valid number used for the 1992 cohort analysis.

Figures in parenthesis are the standard deviations of the variables.

The valid number used for the analysis of 1992 cohort was 129.

8.6 Conclusion and Summary of the Chapter

The analysis of this chapter moved beyond the establishment of factors influencing participation in voting and electoral choices undertaken in Chapter 7 to ascertain the direct and indirect links between participation in voting and human development. The types of human development analysed in this chapter involves both physical and social infrastructure, and personal and household wellbeing as ascertained from the respondents. Clearly, there is a close to consensus expression that participation in voting brings about increased levels of improved electricity supply, improved water supply and expanded road infrastructure. However, for individual and household economic welfare related to personal income, personal employment opportunities, personal and household educational opportunities and personal and household health status, the results of the analysis of voting participation and its links to these four measures of economic welfare are varied.

Based on the several types of analysis conducted, the expression of actually-felt direct link between participation in voting and personal and household economic welfare is dependent on key socio-economic characteristics such as personal income, employment status and access to public facilities. The overwhelming evidence provided by the analysis in this section suggests that employed people appreciate much more the linkage between participation in voting and personal and household economic welfare as compared to unemployed people. It appears that we have two groups of people: (1) relatively happy group enjoying the fruits of democracy with increased personal and household welfare; and (2) another group struggling to appreciate the essence of democracy as a tool for improved human development.

Unemployed people are clearly in this second or latter group of people. It is also clear that this dual classification cuts across the sex lines as there was no evidence found in the analysis in this chapter of sex-based differences in scores or parameter estimates of variables.

The enhancement of democracy through participation in the voting process would need to emphasise increased inclusive access of citizens to income and employment opportunities. The dichotomy of these expressed feelings of linkages between participation in voting and actually-felt socio-economic development appears to be reflected in the widening income distribution in Ghana which has been documented by the Ghana Statistical Service in 2014 based on the results of the GLSS6 which confirmed the rapidly growing income inequality in Ghana.

The development of democracy goes beyond the provision and use of physical and social infrastructure and facilities enjoyed by citizens in the local economy to the wider macro-economy which can impact on everyone in the country through indicators such as economic growth, widening government budget deficits (which increase the stock of national debts), inflation and interest rates. The impact of national elections on the macro-economy is discussed in the next chapter, Chapter 9.

CHAPTER NINE

RESULTS OF THE MACRO-ANALYSIS OF EFFECTS OF ELECTIONS ON THE ECONOMY OF GHANA FROM 1992 TO 2016

9.1 Introduction

In this chapter, an analysis of the seven successive democratic elections in 1992, 1996, 2000, 2004, 2008, 2012 and 2016, is undertaken to tackle the third major objective of this study which is the aggregate impact of elections on macro-economic performance of Ghana in the Fourth Republic? ¹⁶

In the study of political economic cycles, an important objective is to establish the existence or otherwise of these cycles by statistical analysis using the effects on macroeconomic outcomes such as economic growth and inflation. It is often suggested that incumbent governments often stimulate and manage selected policy variables to give direct benefits to the voters like the reduction or removal of taxes, government transfers, and provision of subsidized inputs and facilities to sections of the population.

Two approaches are used in this chapter to discuss the effects of elections on the macro-economy of Ghana. Data on aggregate macroeconomic variables such as economic

¹⁶ The conventional wisdom is that politicians manage the economy with the aim of maximising gains largely for electoral purposes and retention by voters. In this view, governments make attempt to improve economic conditions before elections in order to enhance their re-election chances. This means that the relationship between government economic policies and elections rests on the willingness and ability of government to manage the national economy, and the willingness and ability of voters to reciprocate (political economy of elections in this regard explains the intricate 'relationship between national economy performance and the competitive democratic elections).

growth, government expenditures and government revenues are only available on an annual basis and for only 25 years in the Fourth Republican era. Hence for the first stage work in this chapter, the focus is on the use of graphical analysis and statistical analysis including the use of Student t test to ascertain the differences between the values of macroeconomic variables during election years and also during non-election years.

However, for some variables such as inflation rate and government 91-day Treasury bond rates, there are available monthly and quarterly data that can allow for credible time-series econometric analysis. For the 25-year period from 1992 to 2016, there are 300 monthly data pieces and 100 quarterly data pieces for this 25-year period. These sample sizes can provide credible time-series econometric analysis in the form of unit roots of time series and autoregressive analysis.

This chapter is divided into three sections for purpose of discussions and analysis. The first section deals with simple statistical analysis and graphical analysis of macroeconomic variables for which there are limited data for detailed time-series econometric analysis. The variables analysed in this section are economic growth, money supply, government expenditures, government revenues and related fiscal deficits. The second section deals with econometric analysis to determine statistical significance of election on quarterly performance on macroeconomic indicators as measured by inflation, exchange rate and 91-day Treasury bill rates. The third section is the conclusion and summary of the chapter.

9.2 Macroeconomic Impacts of Elections in Ghana Using Annual Data from 1992 to 2016 for Economic Growth and Government Budget Deficits

9.2.1 Economic Growth

The annual economic growth of Ghana from 1992 to 2016 is reported in Table 9.1 and illustrated in Figure 9.1. Annual economic growth has been positive for each of the 25 years over the period with a low of 3.27 percent in 1994 and a high of 14.05 percent in 2011. The highest economic growth rate recorded in 2011 was due to the start of exports of commercially-produced oil from Ghana which impacted heavily on the industrial sector and the economy. The positive economic growth over the 1992 to 2006 period also led to positive real per capita GDP as the economic growth outweighed the population growth rate. In Ghana, economic growth generally slows down due to economic shocks such as the El-Nino weather phenomenon (Anaman, 2006). Over this period, the El Nino weather phenomenon was partly responsible for reduced growth during 1999, 2007, 2014 and 2015.

The annual growth rates jumped significantly in the election years of 2008 and 2012 but in the other five election years, growth was positive but largely mainly due to economic shocks, for example, the economic shock of 2016 due to the damage to oil production equipment in offshore fields reduced economic growth by one percent from 4.5 percent to 3.5 percent. In 2000, severe recession involving low commodity prices also affected economic growth considerably. Table 9.1 presents information on both per capita GDP and the growth of per capita GDP and these are important indicators of the general welfare of the population. Over the 25-year period of the Fourth Republic, there has been consistently positive per capita real GDP. Nevertheless, the growth of per capita real GDP fluctuated throughout the period with peaks and troughs. For election years, there are no discernible patterns in growth of per capita real GDP.

Discerning the specific impact of elections on economic growth, it is noted that election years were 1992, 1996, 2000, 2004, 2008, 2012 and 2016. Hence there were seven election years and 18 non-election years. The average economic growth over the entire 25-year period from 1992 to 2016 was 5.51 percent. For the seven election years, the average annual economic growth was 5.67 percent while the annual economic growth rate for the 18 non-election years was 5.45 percent. Hence there was 0.22 percent difference between the average for the election years and the average for the non-election years. Based on the Student t test analysis, the difference in the average growth rates for the two periods was not statistically significant. The computed Student t value for the test of the difference in the mean economic growth figures for the two time periods (seven election years and 18 non-election years) was 0.295 compared to the critical t value for 23 degrees of freedom of 2.069. Hence, one can conclude that even though on average election years produced higher growth rates, those average growth rates were not statistically different from those in the non-election years.

Table 9.1: Nominal GDP, GDP Deflator, Real GDP, Economic Growth, Population, Per Capita Real GDP and Growth of Per Capita GDP in Ghana from 1992 to 2016.

Year	ngdp	gdpdeflator	rgdp	growth	pop	Pcrgdp	gpcrgdp
1992	482.1	4.899	9840.4	3.86	15.22	646.67	
1993	620.6	6.008	10329.6	4.97	15.63	660.97	2.21
1994	834.2	7.820	10667.3	3.27	16.05	664.64	0.55
1995	1242.4	11.196	11096.5	4.02	16.48	673.20	1.29
1996	1817.2	15.656	11606.5	4.60	16.93	685.63	1.85
1997	2261.7	18.702	12093.8	4.20	17.39	695.63	1.46
1998	2771.7	21.891	12661.4	4.69	17.85	709.14	1.94
1999	3298.0	24.943	13222.1	4.43	18.34	721.07	1.68
2000	4351.4	31.724	13716.1	3.74	18.91	725.26	0.58
2001	6101.0	42.695	14289.8	4.18	19.38	737.16	1.64
2002	7830.5	52.414	14939.7	4.55	19.87	751.89	2.00
2003	10602.1	67.428	15723.7	5.25	20.37	772.05	2.68
2004	12802.4	77.119	16600.8	5.58	20.88	795.23	3.00
2005	15586.5	88.686	17575.0	5.87	21.40	821.36	3.29
2006	18705.1	100.000	18705.1	6.43	21.93	852.86	3.83
2007	23154.0	118.629	19518.0	4.35	22.48	868.22	1.80
2008	30179.0	141.659	21304.0	9.15	23.04	924.55	6.49
2009	36598.0	163.852	22336.0	4.84	23.62	945.70	2.29
2010	46042.0	191.038	24101.0	7.90	24.66	977.33	3.35
2011	59816.0	217.624	27486.0	14.05	25.24	1088.99	11.42
2012	75315.0	250.716	30040.0	9.29	25.82	1163.44	6.84
2013	93415.9	289.779	32237.0	7.31	26.43	1219.71	4.84
2014	113343.0	338.115	33522.0	3.99	27.04	1239.72	1.64
2015	136957.0	393.463	34808.1	3.84	27.67	1257.97	1.47
2016	167315.5	464.559	36016.0	3.47	28.31	1272.20	1.13

Notes

Ngdp denotes nominal GDP in million Ghana cedis.

GDPDefl denotes the GDP deflator with the base period of 2006 with a value of 100.0.

Rgdp denotes real GDP in million Ghana cedis with the base period of 2006.

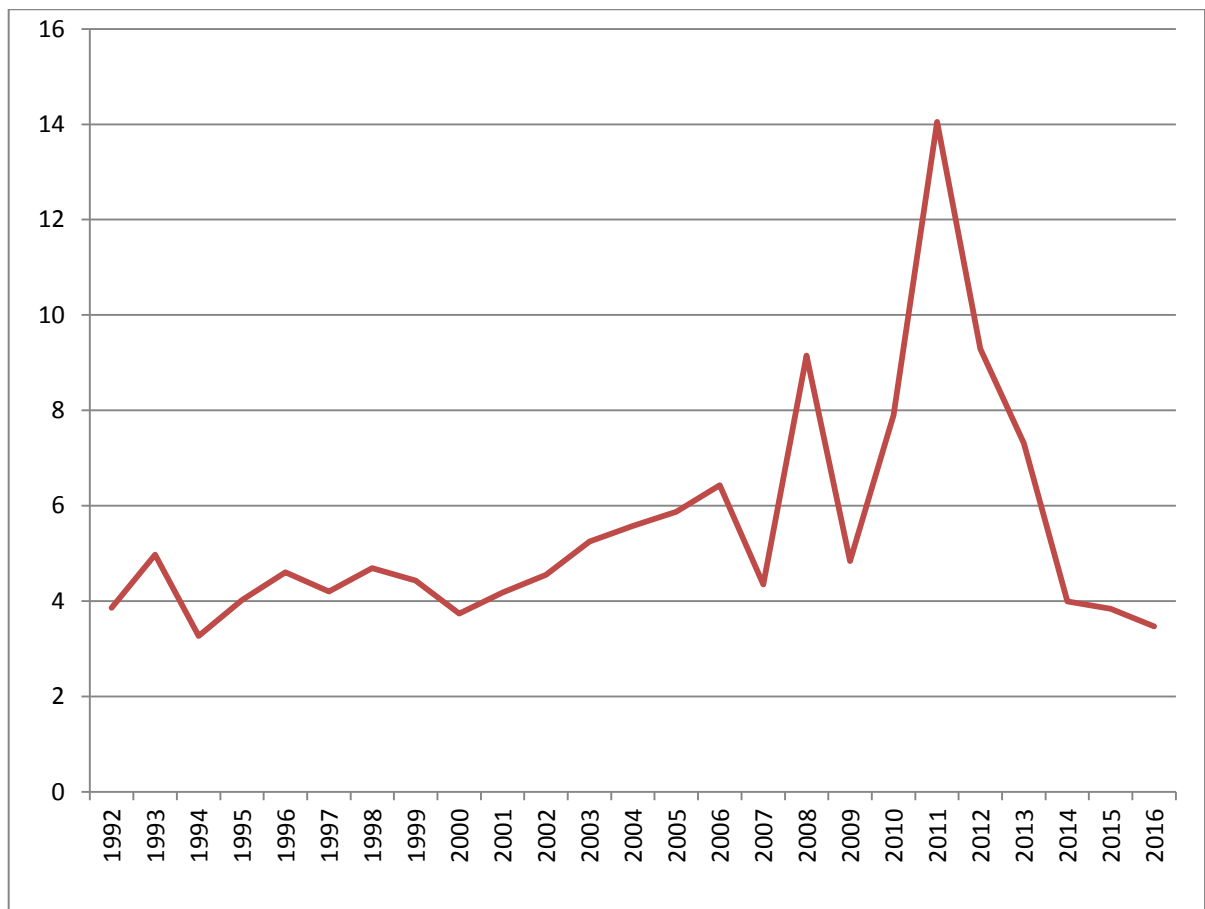
Growth is annual economic growth based on the changes in real GDP in percent.

Pop denotes the estimated population of Ghana in millions.

Pcrgdp is the per capita GDP in Ghana cedis per person

Gpcrgdp is the growth of per capita GDP in percent.

Source: Data are compiled from the Ghana Statistical Service website, 2017.

Figure 9.1: Illustration of Economic Growth Rates from 1992 to 2016

Source: Data are compiled from the Ghana Statistical Service website, 2017.

9.2.2 Government Budget Deficits

Government budget deficits are the amounts of money that the government spends beyond the level of the total revenues and grants that it receives. Government budget deficits add to the total debts stock of the country leading to crowding out the private sector as government borrows from the money and capital markets to finance its expenditures. Table 9.2 summarises government budget deficits as ratio of GDP and the growth of this budget deficit to GDP ratio over the period from 1992 to 2016. These figures are illustrated graphically in Figure 9. Budget deficit to GDP ratios are high during years of national presidential elections. The highest budget deficit ratios recorded

in the Fourth Republican period were 11.8 percent and 11.5 percent in 2012 and 2008 respectively; both years were election years. Table 9.2 also shows that the growth of government budget deficit to GDP ratios is highest during years of national elections.

Ascertaining the specific impact of elections on government budget deficit to GDP ratios, it is noted that there were seven election years and 18 non-election years over the 1992 to 2016 period. The average budget deficit to GDP ratio over the entire 25-year period from 1992 to 2016 was 5.89 percent of GDP. For the seven election years, the average annual budget deficit to GDP ratio was 8.03 percent of GDP. The average annual budget deficit to GDP ratio in the 18 non-election years was 5.06 percent of GDP. Hence there was 2.967 percent of GDP difference between the average deficit to GDP ratio for the two time periods. The computed Student t value for the difference in the mean values of the budget deficit to GDP ratio between the two time periods was 3.484; this figure was much higher than the critical Student t value for 23 degrees of freedom of 2.069. Hence, given the limited sample size of 25 years, one can conclude cautiously that election years produced statistically higher budget deficit to GDP ratios than during non-election years in the Fourth Republican era in Ghana.

Table 9.2: Nominal GDP, GDP Deflator, Real GDP, Government Budget Deficits as Percentage of GDP, and Growth in Budget Deficits to GDP Ratios in Ghana, 1992 to 2016.

Year	Nominal GDP (NGDP)	GDP Deflator	RGDP	Deficit to GDP ratio	Growth in deficit to GDP ratio percent of GDP
				4.80	
1992	482.1	4.899	9840.4	2.70	-43.75
1993	620.6	6.008	10329.6	2.50	-7.41
1994	834.2	7.820	10667.3	0.90	-64.00
1995	1242.4	11.196	11096.5	7.70	755.56
1996	1817.2	15.656	11606.5	8.60	11.69
1997	2261.7	18.702	12093.8	6.30	-26.74
1998	2771.7	21.891	12661.4	6.50	3.17
1999	3298.0	24.943	13222.1	8.50	30.77
2000	4351.4	31.724	13716.1	4.40	-48.24
2001	6101.0	42.695	14289.8	5.60	27.27
2002	7830.5	52.414	14939.7	3.40	-39.29
2003	10602.1	67.428	15723.7	3.20	-5.88
2004	12802.4	77.119	16600.8	1.70	-46.88
2005	15586.5	88.686	17575.0	4.70	176.47
2006	18705.1	100.000	18705.1	4.80	2.13
2007	23154.0	118.629	19518.0	11.50	139.58
2008	30179.0	141.659	21304.0	9.70	-15.65
2009	36598.0	163.852	22336.0	7.90	-18.56
2010	46042.0	191.038	24101.0	2.00	-74.68
2011	59816.0	217.624	27486.0	11.80	490.00
2012	75315.0	250.716	30040.0	8.40	-28.81
2013	93415.9	289.779	32237.0	5.90	-29.76
2014	113343.0	338.115	33522.0	5.10	-13.56
2015	136957.0	393.463	34808.1	8.70	70.59
2016	167315.5	464.559	36016.0		

Notes

Ngdp denotes nominal GDP in million Ghana cedis.

GDPdeflator denotes the GDP deflator with the base period of 2006 with a value of 100.0.

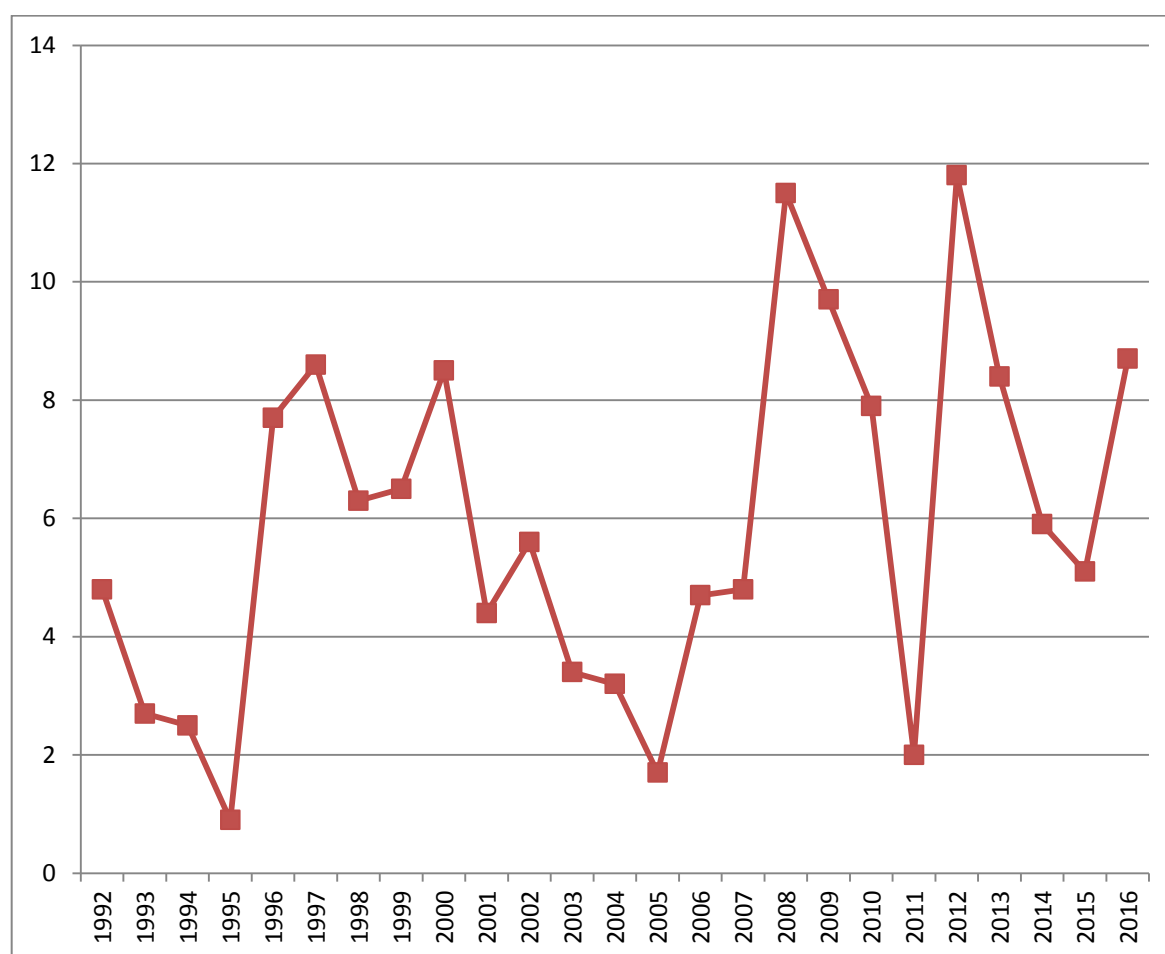
Rgdp denotes real GDP in million Ghana cedis with the base period of 2006.

Deficit to DP ratio denotes the government budget deficit as percentage of nominal GDP.

Growth in deficit ratio is the annual growth in the government budget deficit.

Source: Data are compiled from the Ghana Statistical Service website, 2017.

Figure 9.2: Illustration of Government Budget Deficits to GDP Ratios from 1992 to 2016



Source: Data are compiled from the Ghana Statistical Service website, 2017.

9.3 Macroeconomic Impacts of Presidential Elections in Ghana Using Quarterly Data from 1992 to 2016 for Inflation and Interest Rates

9.3.1 Methodology

A hypothesis of this study, given the availability of a relatively large sample of quarterly data for some macroeconomic variables, is whether the occurrences of elections in Ghana can help to improve the forecasting of a macro-economic variable, for example, inflation?. In other words, do presidential elections in Ghana worsen or improve inflationary outcomes within the context of the Fourth Republic?

A way for addressing this question in time-series econometrics is to specify an autoregressive model that encompasses the occurrence of elections in Ghana as part of the model in the form of dummy independent variables. The model used in this study that deals with inflation is outlined in Equation 9.1 as follows:

$$\begin{aligned} \text{LINFLATION}_t = & B_0 + B_1 \text{LINFLATION}_{t-1} + B_2 \text{LINFLATION}_{t-2} \\ & + \dots + B_p \text{LINFLATION}_{t-p} + C_1 \text{PREELECQ}_t + C_2 \text{ELECQ}_t + C_3 \\ & \text{POSTELECQ}_t + U_t \end{aligned} \quad \text{Equation 9.1}$$

where LINFLATION_t is the natural logarithm of INFLATION in quarter t ;

PREELECQ is a dummy variable for the quarter during the year just before the election;

ELECQ is a dummy variable for the quarter during the election year;

POSTELECQ is a dummy variable for the quarter just after the election year;

U_t is the equation error term initially assumed to be normally distributed with zero mean and constant variance.

The second model deals with the quarterly Treasury bond rate (TBR) and is outlined in Equation 9.2 as follows:

$$\text{LTBR}_t = D_0 + D_1 \text{LTBR}_{t-1} + D_2 \text{LTBR}_{t-2} + \dots + D_p \text{LTBR}_{t-p} + E_1 \text{PREELECQ}_t + E_2 \text{ELECQ}_t + E_3 \text{POSTELECQ}_t + V_t \quad \text{Equation 9.2}$$

where LTBR is the natural logarithmic forms of TBR and V_t is the equation error term initially assumed to be normally distributed with zero mean and constant variance.

The ordinary least squares estimation method is employed in this study. The correct use of the autoregressive equations requires that the regression models be based on stationary variables. The test of stationarity was therefore conducted for both LINFLATION and LTBR based on the analysis of unit roots. The unit root test results are reported in Table 9.3.

The study used two well-known unit root tests known as Augmented Dickey-Fuller (ADF) test (Dickey and Fuller, 1979; Dickey and Fuller, 1981) and the Phillip Perron (PP) test (Phillips and Perron, 1988). The null hypothesis for both tests was that there was a unit root in the time series. The PP test of stationarity is generally preferred to the ADF test partly because the former test is more efficient in distinguishing between non-stationary and stationary time-series with high degree of autocorrelation (Culvell and Papell, 1997; Hall and Cummins, 2009).

9.3.2 Results

As indicated earlier, the unit root test results are reported in Table 9.3. The unit root test results indicated that for both the ADF and PP tests, the two variables, LINFLATION and LTBR were non-stationary at their levels, but became stationary using their first differences. The only exception was for the PP test value for LINFLATION which was both stationary at the level and at the first difference (refer to Table 9.3). Hence the autoregressive model analysis outlined in Equations 9.1 and 9.2 was undertaken based on the first differences of the variables denoted as DLINFLATION and DLTBR respectively. The lag length of the autoregressive analysis was deemed to be two for both models based on the absence of four major econometric problems with this lag length. The four problems tested were (1) model mis-specification, (2) non-normality of the equation error term, (3) heteroscedasticity, and (4) multicollinearity.

The results of the autoregressive model analysis for inflation (INFLATION) are reported in Table 9.4. The dependent variable is **DLINFLATION**, which is the first difference of LINFLATION. DLINFLATION is equivalent to the quarterly growth of the inflation rate because the first difference of a natural logged variable represents the growth rate of the level variable (refer to Gujarati, 2003, p. 176). The power of the model was modestly strong based on the relatively high R^2 of 50.3%. The model was correctly specified based on the Ramsey Reset test of specification with the p value for the null hypothesis of correct model specification being 0.669 which is much higher than the statistical significance level adopted in this study. Given the relatively modest sample size of 100 used for the analysis, the test for the normality of the error term was important. The Shapiro-Wilk test for normality of the equation error term clearly confirmed the normality of the error term with a p value of 0.187.

Further, the Glejser's test, which involved regression of the square of the error term against all the independent variables, indicated that there was no significant heteroscedasticity with the computed p value for rejection of the null hypothesis of no heteroscedasticity being 0.254 above the 5% level used for this study. The problem of multicollinearity was assessed as being absent based on the computed maximum condition index being only 3.930 far below the critical value of 30.0 suggested by Gujarati (2003, p. 362); further the variance inflation factors of all the independent variables were low and less than the critical value of 10.0 as shown in Table 9.4.

The results of the analysis reported in Table 9.4 confirmed that all the parameters of the three election variables were positive and statistically significant at the 5% level suggesting an increase in inflation during the year before the election year, and then during the election year, and also during the year after the presidential election in Ghana as compared to other years. The lagged dependent variables were also statistically significant and positive. The lagged dependent variables therefore are directly linked to the dependent variable in a positive forward manner.

The results of the autoregressive model analysis for Treasury bond rate (TBR) are reported in Table 9.5. The dependent variable is **DLTBR**, which is the first difference of LTBR. Hence DLTBR is the quarterly growth rate of TBR. The power of the model was modestly high with R^2 of 57.5% which was higher than the corresponding R^2 of the previous model dealing with inflation. Similar to the results involving inflation, all the independent variables, with the exception of PREELECQ were statistically significant at the 5% level. The parameter for PREELECQ was statistically significant at the 10% level (see Table 9.5). In a summary the impact of elections on TBR is essentially the same as that of inflation. There is an increase in Treasury bond rates during the year

before the election year, during the election year, and during the year after the presidential election in Ghana when compared to other years.

Table 9.3: Unit Root Tests of the Variables at the Levels and First Differences

Variable	ADF Statistic	P Value	PP Statistic	P Value
LINFLATION	-4.672	0.0008**	-16.703	0.135
LTBR	-2.716	0.230	-12.064	0.313
DLINFLATION	-4.443	0.002**	-60.204	0.00001**
DLTBR	-5.123	0.0001**	-60.375	0.00001**

Notes

Sample size 100

DLINFLATION and DLTBR are the first differences of the variables, LINFLATION and LTBR respectively.

LINFLATION and LTBR are the natural logarithmic forms of the linear variables, INFLATION and TBR respectively.

** denotes 5 percent statistical significance.

Table 9.4: Results of autoregressive analysis between quarterly inflation rate in Ghana and national election variables (PREELECQ, ELECQ, POSELECQ) during the Fourth Republican era from 1992 to 2016.Dependent Variable is $DLINFLATION_t$

Explanatory Variable	Parameter Estimate	T-statistics	P Value	Variance Inflation Factor
INTERCEPT	-0.065	-2.358	0.021**	0.000
$DLINFLATION_{t-1}$	0.655	9.128	0.000***	3.487
$DLINFLATION_{t-2}$	0.367	5.142	0.000***	3.446
$PREELECQ_t$	0.114	2.937	0.004***	1.509
$ELECQ_t$	0.086	2.218	0.029**	1.541
$POSELECQ_t$	0.086	2.191	0.031**	1.552

Notes

Sample size	100
R^2	0.503
F value	18.392
Probability level of significance of correct specification of the model using Ramsey	
Reset test with null hypothesis of adequately-correct specification	0.669
Probability level of significance of the normality of the error term of the model	
using Shapiro-Wilk test with null hypothesis of normal error term	0.187
Probability level of significance of the heteroscedasticity in the model	
using the Glejser's test with null hypothesis of no heteroscedasticity	0.254

The lagged dependent variables, used for the two independent variables, were proxied by instrumental variables, using the first and second differences of the dependent variable.

* denotes 5 percent statistical significance.

Table 9.5: Results of autoregressive analysis between quarterly Treasury bond rate in Ghana and national election variables (PREELECQ, ELECQ, POSELECQ) during the Fourth Republican era from 1992 to 2016.

Dependent Variable is $DLTBR_t$

Explanatory Variable	Parameter Estimate	T-statistics	P Value	Variance Inflation Factor
INTERCEPT	-0.063	-3.133	0.002***	0.000
$DLTBR_{t-1}$	0.659	9.873	0.000***	3.180
$DLTBR_{t-2}$	0.384	5.655	0.000***	3.121
$PREELECQ_t$	0.055	1.941	0.055*	1.509
$ELECQ_t$	0.125	4.477	0.000***	1.521
$POSTELECQ_t$	0.071	2.457	0.016**	1.582

Notes

Sample size	100
R^2	0.575
F value	24.659

Probability level of significance of correct specification of the model using

Ramsey Reset test with null hypothesis of adequately correct specification 0.111

Probability level of significance of the normality of the error term of the

model using Shapiro-Wilk test with null hypothesis of normal error term 0.311

The lagged dependent variables, used for the two independent variables, were proxied by instrumental variables, using the first and second differences of the dependent variable.

*** denotes 5 percent statistical significance.

* denotes 10 percent statistical significance.

9.4 Conclusion and Summary of Chapter

This chapter analyses the impact of elections on the macro-economy using several indicators of the health of the macro-economy the growth of the real GDP growth, government revenues, government expenditures, government budget deficits, inflation and government 91-day Treasury bond interest rates.

The analysis and discussion were undertaken using data from 1992 to 2016. These four indicators of the health of the macro-economy are also those directly related to the welfare of the ordinary Ghanaians. For example, the deterioration in inflation due to presidential elections directly hurt ordinary Ghanaians through reduced purchasing power from rising inflation and depreciation of the Ghana cedi.

The evidence gathered from our analysis using annual data and based on the seven national presidential elections held in Ghana from 1992 to 2016 showed that there were no statistically significant differences between economic growth rates in election years and those in non-election years.

However, using the same annual data, it was clearly established that there were significant increases in the government budget deficits in election years compared to those of non-election years largely as a result of excessive government spending during election years. Using quarterly data and autoregressive models, it was established that elections, since 1992 in Ghana, had led to increased inflation and increased interest rates.

Hence, combining the evidence from the analysis using annual data and quarterly data, it is clear that national presidential elections in Ghana had led to deterioration in the health of the economy as a whole and hurt ordinary Ghanaians especially those living on fixed incomes such as pensioners and small and medium scale businessmen whose borrowing costs had increased. This observation corroborated earlier work established by Anaman (2016a) using descriptive statistical and graphical analysis.

CHAPTER TEN

SUMMARY OF THE STUDY, CONCLUSIONS AND RECOMENDATIONS

10.1 Introduction to the Chapter

The driving purpose of this study has been theoretical and empirical based analysis of political economy of elections in the Fourth Republican era in Ghana from 1992 to 2016. It aims to provide answers to theoretical research questions that are mirrored by a complementary major enquiry that asks the conventional question: *Who is voting, and for whom and why?*

This final chapter provide answers to this conventional question. These answers are contained in the overview of the study, the summary of the rationale of the study, the main findings of the study, conclusions, contributions the study makes to knowledge, policy recommendations' and recommendations' for further research. The components of this chapter are now discussed one by one.

10.2 Overview of the Study

This study analysed the determinants of participation in voting and electoral choices by citizens, and established the relationship between national presidential elections and the performance of the economy in Ghana's Fourth Republican era from 1992 to 2016. It also examined the nexus between elections and development assessed both at the individual/household welfare level, and at the level of the community as perceived by respondents through improvements in water supply, electricity supply and road infrastructure that served their communities.

The study also utilises macro-level data (secondary district-level based data) to establish the determinants of voter participation, impairment of voter participation through spoiled ballots, and voter choices, using the 2000 and 2012 national presidential elections results synchronised with the 2000 and 2010 population and housing censuses respectively, and involving all 216 districts in Ghana.

Further, the study analysed the determinants of voter participation and electoral choices based on micro-level data (survey data) from a relatively large random sample of 600 respondents in four electorally-swing districts in the Brong Ahafo and Central regions to examine several hypotheses concerning electoral behaviour within the multi-party democratic framework where ethnicity is not a dominant factor influencing voter choice in order to unravel the other key factors influencing voter choices beyond the ethnicity factor.

Finally, the effect of national presidential elections on the national economy was analysed based on the linkage of elections to the performance of the economy as measured by the performance of key macroeconomic variables which are directly linked to the welfare of Ghanaians. These macroeconomic variables investigated are economic growth, government budget deficits, inflation and Treasury bill interest rates.

10.3 Summary of Rationale and Motivation of the Study

Although, the outcome of an election is important in democracy, the relationship between elections and the economy and general development is even more important as it can be argued that the main purpose of democracy is to improve the welfare of citizens.

Based on literature review, and for the purpose of this study, three important research questions have been asked and answered. These are: *What determines voters' participation and choices in competitive democratic elections in Ghana's Fourth Republic? How do voters' perceived the nexus between elections and development outcomes as measured by welfare of the population? What is the aggregate effect of elections on macroeconomic performance in Ghana's Fourth Republic?*

A large body of literature on electoral politics has provided analysis of the past Ghanaian elections, but could not provide adequate answers to such research questions. The available studies on Ghanaian elections focus on explaining democratic process often largely based on qualitative and descriptive analysis.

Also, available aggregate election data provided by the Electoral Commission have limited information on the explanatory factors that determine voter turnout and the shares of the total votes cast that are obtained by various candidates. The existing micro-level studies in Ghana are also inadequate, as often they do not provide a direct link between voting behaviour and economic welfare (both individual welfare and aggregate or community welfare). The effect of the opportunistic behaviour of governments/politicians, in terms of excessive use of the power of incumbency during election years, on economic outcomes, has not been adequately investigated in Ghana.

Therefore, a major motivation of the study is to emphasise: The theoretical difference between political desires and economic outcomes as measured by economic welfare of the population.

10.4 Summary of Main Findings of the Study

10.4.1 Achievements of the Study Objectives

This sub-section documents how this study sought to address its objectives. The main objective of the study as captured Section 1.4 of this report was: *To analyse the determinants of electoral behaviour, and to establish the relationship between elections and the economy in Ghana during the Fourth Republican era (1992 to 2016)*. In order to achieve the main purpose, the study set itself three specific objectives identified as stated in Section 1.4 of this thesis. These objectives are again captured in Section 4.7 and (Table 4.12) which summarises the hypotheses, study design and analytical method for each of them. Below is a discussion on the objectives and their outcomes.

Objective 1: The first objective of this study seeks to examine how socio-economic factors influence voter turnout and share of votes in the 2000 and 2012 National presidential elections; elections. First, an analysis of district-level electoral results was undertaken to establish socio-economic characteristics which influence voter participation, impairment of voter participation arising from spoilt ballots, and choices in the national presidential elections in all 216 districts of Ghana.

This analysis of voter behaviour is outlined in Chapter 6 using aggregate district-level data. District-level aggregate data on socio-economic characteristics used are those compiled by the Ghana Statistical Service which are synchronised with district-level national presidential election results compiled by the Electoral Commission of Ghana. The determinants of voting participation revealed that the locality factor (urban-rural) was a significant factor. However, the results were mixed with increasing urban share of the population in a district leading to increasing turnout rate of voters for the 2000 election while the opposite result held for the 2012 election.

Further, voter turnout tended to decrease with increasing proportion of age dependency ratio in a district. This suggested that districts with higher age dependency ratios tended to participate less in voting, a plausible outcome which also suggested that increasing poverty burden discouraged participation in voting. Another significant independent variable is related to the ethnicity factor of the two main groups in Ghana – Asantes and Ewes. Voter turnout tended to increase with increasing proportion of Asantes in a district in Ghana and decreased with increasing proportion of Ewes in a district. This particular result was specific for the 2012 election; the 2000 election did not produce clear results for this category. Finally, for both the 2000 and 2010 elections, voter turnout ratio tended to decline in a district with increasing proportion of the population 15 and above largely consistent with the results established in the international literature.

The second component of the analysis in Chapter 6 focussed on the impairment of voter participation through the phenomenon of spoiled ballots, common in Ghanaian elections. The proportion of spoiled ballots among the total number of votes cast in an election represents actual direct participation of voters, which is not used to decide electoral outcomes.

This analysis confirmed that for both the 2000 and 2012 national presidential elections, the most important factor influencing the relative intensity of spoiled ballots in a district was its literacy level with increasing levels of literacy linked significantly to reduced levels of spoiled ballots. The particular results for the proportion of people employed in a district were mixed. In the 2000 election, the increasing level of proportion of people in a district employed led to decreased spoiled ballots intensity while the opposite result held for the 2012 election.

Other results related to spoiled ballots were clearly established for the 2012 election but not for the 2000 election. These results dealing with the 2012 election suggested that increasing age-dependency ratio in a district increased spoiled ballot intensity levels revealing once again the possible effect of poverty on voter participation as was shown for its effect on reduced overall participation also reported in Chapter 6. Further, increasing proportion of disabled people in a district corresponded with decreasing spoiled ballots intensity level. This result suggested that extra efforts were probably made during the 2012 election to allow disabled people to vote properly when they turned up to vote during the 2012 election.

The turnout results for disabled people in 2012 election did not reveal any significant effect on their voting participation. These results could not be ascertained for the 2000 election as disabled people were not counted in the 2000 census as a particular category. For the ethnicity-related issue in the 2012 election, the increasing proportion of Asantes in a district led to decreased spoiled ballots intensity level. The result for the proportion of Ewes in a district was not conclusive though the statistical analysis suggested a similar effect of decreasing effect of spoiled ballots intensity level with increasing proportion of Ewes but was not statistically significant at the level used for the study.

With regards to voter choices also analysed in Chapter 6, using district-level aggregate data, several points were established by the study and they are worth mentioning again in the summary chapter (Chapter 10). First, ethnicity identification with regards to the two major ethnic groups in Ghana – Asantes and Ewes – influences the choice of the presidential candidate in national elections (as well as other electoral variables such as turnout and spoiled ballots as indicated earlier).

Akan-Asantes and Ewes constitute about 30% of the population of Ghana based on the 2010 National Population Census up from 27.5% of the population established in the 2000 National Population Census. The regression analysis of voter choices for both the 2012 and 2000 national presidential elections clearly showed that ethnicity, with regards to these two dominant groups in Ghana, is a major determinant of electoral outcomes in Ghana's Fourth Republic. Asantes and Ewes vote largely on ethnic lines for the respective parties that they dominate, they are NPP for Asantes and NDC for Ewes. This particular phenomenon in the Fourth Republican era in Ghana of **Asante-Ewe countervailing voting patterns** is a manifestation of the countervailing power struggle paradigm suggested by Galbraith (1952).

Secondly, the other factors, beyond the Asante-Ewe ethnicity factor, which influenced the share of the total valid votes cast for the winning NDC presidential candidate in the 2012 election, included the spoiled ballots intensity. This factor favoured the NDC presidential candidate who was placed first on the vertical voting ballot sheet. Districts which had people who were relatively more employed favoured the NDC candidate while districts with favoured higher age-dependency ratio burden favoured the NDC candidate.

The share of the total valid votes cast for the NDC presidential candidate declined with increasing proportion of literacy in a district. For the 2000 presidential election, the share of the total number of valid votes cast attributed to the winning NPP presidential candidate was influenced positively by the increasing proportion of a district that was urban. In simple terms, urban-based voters tended to favour the winning NPP presidential candidate during the 2000 election.

It was also shown that the Brong Ahafo and Central Regions are two closest swing regions where ethnic identification is not a major factor in the choice of national presidential candidate. Throughout the Fourth Republican era of national elections starting in 1992, it is generally thought that Brong Ahafo and Central plus two other regions, Greater Accra and Western regions are electorally-swing regions. From this study, Brong Ahafo and Central Regions appeared to be more of electorally-swing regions than the Greater Accra and Western region with regards to the analysis for both the 2000 and 2012 presidential elections undertaken in this study.

Chapter 7, unlike the Chapter 6 is the micro-level analysis of determination of elections in Ghana. Thus, survey allows for deeper investigation into reasons why individuals participate and vote in an election in ways that may not be easily captured by aggregate district-level data ascribed to the "Average District Voter". The analysis and related discussion are therefore based on a cross-sectional survey, involving a randomly-selected sample of 600 respondents in four districts of Central and Brong-Ahafo regions for a period of six months spanning from April to October, 2016.

The four randomly selected districts were those which had been voting for the two major political parties, NDC and NPP, in an almost equal pattern changing their voting patterns every four or eight years. Without a serious link with either of the major political parties, and with an apparent absence of ethnicity influencing voter choices, the four districts, two rural and two urban, provided a means of investigating more deeply factors other than ethnicity that influenced voter participation and choices.

Logistic regression analysis used in Chapter 7 established that the major socio-economic determinants of voter participation in the 2012 national presidential election were the age, the level of formal educational attainment and the employment status of the

respondent; participation increased with increasing age and formal education attainment. Employed people were more likely to vote than unemployed people. The single most important motivating factor that would attract people to vote for a presidential candidate was his/her articulation of development-oriented issues.

Other factors influencing the choice of presidential candidates by voters included the perception of the ability of the candidate to develop and improve the economy, political party affiliation and the orientation and likeability of the candidate. In terms of actual voter choices, a logistic regression analysis showed that the personal income of a respondent was the significant factor that influenced the likelihood of the choice of the NDC presidential candidate in the 7 December 2012 national election while female married respondents were more likely to have voted for the winning NPP presidential candidate in the 7 December 2016 election.

Chapter 6 and 7 of this study both involve analysis on the determinants of voter participation and electoral choices made by citizens for candidates through the electoral process. Chapter 6 uses data from both the 2000 and 2012 national presidential elections synchronised with the appropriate census data at the district level using the concept of the average district voter. Chapter 7 uses a direct survey technique of interviewing 600 randomly-selected individual citizens in four electorally-swing districts. So what are the some of the common answers and also different viewpoints that emerge from two approaches to electoral behaviour used in this study?

First, for the participation in voting and voter choices, the Akan-Asante-Ewe countervailing patterns that emerged strongly in the analysis documented in Chapter 6 using district-level data are virtually absent from the results of the analysis using data from the four electorally-swing districts. This was largely due to the very small number

of Akan-Asantes and Ewes in the sample numbering around 20 for a total sample size of 600.

Second, in Chapter 6, for both the 2000 and 2012 elections, the relevant results from the analysis pointed to the increasing size of the household leading to an increase in the turnout rate or voter participation. Increasing household size would be equivalent to increasing numbers of people of adult age who would be eligible to vote. Hence this finding corroborated that established in the survey analysis reported in Chapter 7 that a key determinant of voter participation in the 2012 presidential election was the age of the respondent with increasing age increasing the likelihood of voting in the 2012 election.

Third, voting participation, as expressed by turnout rates decreased in the 2012 presidential election with increasing proportion of people in a district being employed based on the national analysis for the 216 districts, for the survey-based results from the four electorally-swing districts, the opposite finding was observed. For the latter case, likelihood of participation in the 2012 presidential election increased for people who were employed as compared to those who were unemployed. The difference in finding was probably due to the nature of the models used with one estimating a probability outcome for voting based on a logistic regression while the other estimated the actual outcome of voter participation. Finally, with regards to educational attainment, the survey-based study established that the likelihood of participating in the 2012 presidential election in the four electorally-swing districts increased with increasing attainment of the respondent.

The result from the macro-analysis reported in Chapter 6 with regards to formal educational attainment was slightly different. While the positive link between the participation in voting and educational attainment was generally shown, this linkage was not statistically significant at the significance level used for this study.

Objective 2: The second objective of this study is to determine the nexus between national presidential elections and development outcomes in the 2016. This objective was tackled based on a survey of respondents in four electorally-swing districts in the Brong Ahafo and Central regions. It established the nexus between elections and development as measured by socio-economic welfare based on a survey of 600 respondents. The survey ascertained the reasons why citizens participated and voted in national elections in particular ways and established the perceived links between elections and personal individual and household welfare and societal welfare. The results of the analysis showed that the vast majority of the respondents (91.6%) thought that their participation in elections and choices of the candidates could lead to improvement in their individual socio-economic status.

Second, there was almost unanimous expression that participation in voting brings about increased levels of improved electricity supply, improved water supply and expanded road infrastructure. However, for individual and household economic welfare related to personal income, personal employment opportunities, personal and household educational opportunities and personal and household health status, the results of the analysis of voting participation and its links to these four measures of economic welfare were varied. The employed appreciated much more the linkage between participation in voting and personal and household economic welfare as compared to unemployed people.

The study established the existence of two groups of people with respect to the links between participation in elections and the perceived development dividends from democratic development: (1) relatively happy group enjoying the fruits of democracy with increased personal and household welfare; and (2) another group struggling to appreciate the essence of democracy as a tool for improved human development.

In essence, the two groups naturally mirror the national picture of about one in eight persons being of middle income status and above and seven out eight people being in the low-income and below poverty-income groups. This dual classification cuts across the sex lines as there was no evidence found of sex-based differences in scores related to the valuation of the links between participation in elections and development.

Objective 3: The third objective of this study was whether the dynamic behaviour of economic growth and government budget deficits is affected by the timing of national elections from (1992 to 2016). This objective was tackled based on the use of macro-economic data over the entire Fourth Republican period in Ghana from 1992 to 2016. The analysis was reported in Chapter 9 of this thesis report. This chapter analysed the effect of elections on the macro-economy using indicators of the health of the macro-economy specifically the growth of the real economy as measured by annual increases in real GDP, government budget deficits, inflation and government 91-day Treasury bond interest rates. These four indicators of the health of the macro-economy are directly related to the welfare of the ordinary Ghanaians. The evidence gathered from our analysis using annual data and based on the seven national presidential elections held in Ghana from 1992 to 2016 showed that there were no statistically significant differences between economic growth rates in election years and those in non-election years.

However, using the same annual data, it was clearly established that there were significant increases in the government budget deficits in election years compared to those of non-election years largely as a result of excessive government spending during election years. Using quarterly data and statistical autoregressive models, it was clearly established that elections in Ghana from 1992 to 2016 had led to increased inflation and increased interest rates. Hence, combining the evidence from the analysis using annual data and quarterly data, it is clear that national presidential elections in Ghana had led to deterioration in the health of the economy as a whole and hurt ordinary Ghanaians especially those living on fixed incomes such as pensioners and small and medium scale businessmen whose borrowing costs had increased.

10.5 Contribution of the Study

The study has contributed to political economy of elections and electoral behaviour in Ghana, as well as to the academic knowledge of democracy and electoral politics. These contributions are in four fold: philosophical contribution, theoretical contribution, contributions to knowledge, and contributions to democratic practice in Ghana (practical contribution). These contributions are summarised in the following subsections.

10.5.1 Philosophical Contribution

The philosophical contribution of this study is the underlining belief to the entire study. It is that guiding principle which served as the basis of the study as well as the development of the theoretical and analytical frameworks to ensure that the study achieve its objectives. The philosophical assumption of this study is that of postpositivism. The study therefore, holds a deterministic philosophy view that cause probably determines the effects or outcomes (electoral outcomes).

Based on this philosophy, the study reflected on the need to identify and analyse the factors that influence electoral outcomes in Ghana. Thus this study supports the view that an understanding of the “true” human behaviour can be based on probability-based measures rather than absolutely certain principles and measures which are devoid of testing and must be accepted as facts.

10.5.2 Theoretical Contribution

There are several theoretical contributions of this study to the literature in political economy of elections. First, this research study contributes to the validation of structuralism theories (like the psychological theory) of political economy by applying a framework that builds on ideas from various schools of structuralism thoughts which generally identify human-formed groups such as ethnic groups and income classes as the underlying dominant blocks in society which determine and/or significantly shape human behaviour including voting behaviour.

This study does not focus on only theories of structuralism, but synchronises them with other theories of human behaviour namely institutionalism and public choice theory and rational voter choice embedded in neoclassical economics in order to understand voting behaviour in Ghana which could not be undertaken by using only one strand of political economy theories. The theoretical contribution is therefore not a case of accepting or rejecting one strand of theory, but applies careful integration of the various theories to analyse and understand voting behaviour. This is similar to the preparation of the Ghanaian staple food, fufu through the mixture of various components such as cassava and plantain instead of using only one input.

This study contributes to the literature on elections and their effects on the macro-economy using the specific case of the Fourth Republican era in Ghana from 1992 to 2016. It has contributed to existing literature on political business cycle model by showing the existence of political business cycles in an emerging democracy like Ghana as exemplified by the excessive spending by the incumbent government in an election.

In a nutshell, the theoretical contribution of the study is the use of theoretical framework of political economy. The study conceptualised political economy as an approach focusing on the application of economic tools to the study of economy and electoral behaviour. Based on this analytical framework, the study proceeds on assumption that voters' are economically rational beings and the evaluate government's economic policies and performance in elections. The framework further assumes that government expenditure typically increases on activities with short-term payoffs during elections to influence voters to vote.

10.5.3 Contribution to Knowledge

Based on the results, the study has contributed to the political economy of elections and voting behaviour literature in the following ways which contribute to the body of knowledge. First, the major contribution to knowledge of this study is the area of methodology. The study introduced behavioural approach to the economy and electoral studies in Ghana. That is, the econometric modelling approach adopted by the study is new in the Ghanaian electoral studies, and it is therefore a major contribution to economy and electoral study literature in Ghana's Fourth Republic. The study is distinguished by its grounding in empirical research undergirded by the use and interpretation of statistical data. Specifically, the use of the political economy analytical approach is additional credit.

secondly, this study contributes to the general knowledge of the political economy of electoral behaviour by demonstrating that the use of the specific Asante-Ewe ethnic classification produces superior results in understanding voting behaviour in Ghana than the use of Akans for (Ashanti) and Ewe for (Volta region), the two geographical regions where these two ethnic groups largely reside and are considered indigenous to these two regions respectively. Due to increasing and widespread migratory patterns by various indigenous groups across the country, this research study contributes to knowledge through its emphasis on specific dominant ethnic cleavages across the country rather than the use of geographical regions.

A third contribution to knowledge made by this research study is the need to use several types of voter turnout definitions in order to understand voting behaviour given the extensive over-registration of Ghanaians partly due to the use of voter cards as identity cards by some people and the incidence of under-age voting. Specifically, it was shown by this study, the use of the official turnout figures released by the Electoral Commission of Ghana restricts enhanced analysis of voter behaviour related to participation. This study directly contributes to knowledge by proposing and carrying out analysis using an alternative measure of turnout ratio based on the use of people aged 15 and over as the denominator for the derivation of “true” turnout ratios within the electoral context in Ghana. The use of this turnout ratio produced much better and more credible results than the use of the official turnout figures released by the Electoral Commission of Ghana.

Another contribution to knowledge made by this research study concerns the establishment of election-related political business cycles in Ghana with regards to the general and specific impacts of elections on macro-economic performance in the country. Rather than a sweeping suggestion that elections do produce unfavourable outcomes on the national economy, this study has clearly identified some of the key

macroeconomic variables which are affected by elections within the experience of the Fourth Republican era in Ghana. Specifically, this study identified inflation, Treasury bill rates and government budget deficits as the main macro-economic outcomes that are negatively affected by national presidential elections in Ghana. This is because economic context of elections is a key (economic and election nexus)/political business cycles in the contemporal electoral studies.

The study also contributes to knowledge in the macro-economic analysis of elections on the national economy by the incorporation of three different dummy independent variables in statistical models to capture the effect of elections. Specifically, the inclusion of a variable to investigate the impact of elections on the year before the election is held with the use of a specific dummy variable is innovative. Much of the literature has focussed on the election year and the subsequent after the election and not the year before the election.

This study contributes to the literature by adopting a macro-micro analytical approach to examine the nexus between elections and development as measured by both individual and aggregate economic welfare. The study has also contributed to knowledge for using the 2000 and 2010 Population Census and Housing data to analyse voter behaviour and choices in the 2000 and 2012 Presidential election. This helps to ascertain the socio-economic factors influencing voter participation, voter impairment and the share of votes of the wining part in all the 2016 districts in Ghana. To the best of my information, no study has used the census data to examine voter behaviour based on the "average district voter concept" in Ghana. Therefore, the study makes substantial contribution to knowledge on the relation between economy and elections in this regard.

10.5.4 Practical Contribution

There are a few findings of this study which are of direct practical value to policy makers, politicians and the general community at large. First, this study clearly shows that citizens appreciate a direct link between participation in voting and development opportunities that accrue to their communities in the form of physical infrastructure such as roads, improved water supply and increased energy supply and availability. Further, citizens are aware that it is their participation in voting and their varied voter choices that push politicians and government to supply these facilities and services.

Hence, the often reported stories of the lack of political will and neglect by politicians of voters and citizens in sections of the local and foreign mass media are not valid. Citizens are generally aware that politicians do some useful things. However, the position that clearly emerges from this study and which is of practical contribution to policy makers and politicians is that provision of physical infrastructure and electricity and water services while appreciated by many citizens is not regarded as enough; citizens want more support and services that can improve their individual and household economic welfare in the areas of personal incomes, personal employment opportunities, personal and household educational and health services and facilities including improved environmental sanitation services.

But there is some disconnect between the surveyed citizens and policy makers. This is because physical infrastructure in roads, water and energy and others is a basic requirement to provide sustainable medium term to long term public services that can improve personal and individual incomes, employment opportunities and health facilities. So policy makers and politicians should endeavour to explain the linkage of publicly-provided infrastructure and long-term provision of income and employment opportunities to their constituents.

Second, this research study which was completed in October 2016 showed that around that time, the 7 December 2016 election outcomes in the four electorally-swing districts were not clearly in favour of any of the two main opposition parties even though the NDC appeared to be leading in the areas. In fact, support for the CPP and ideologically-similar parties were around 25 percent of the respondents who intended to vote in the 7 December 2016 election. This particular result was similar to that reported by Mr. Benjamin Ephson, the Managing Editor of the Daily Dispatch who had completed his survey in mid-October 2016 that predicted the outcome of the 7 December 2016 presidential election.

A practical contribution of this study is the desire for a third viable political party in these electorally-swing districts. The opportunity needs to be seized by the different political small parties to form a grand CPP alliance or left-wing alliance.

Third, the unique approach of this study of a macro-micro is a novelty in the study of Ghanaian elections. The macro-micro approach is potentially useful to analyse many societal problems beyond a study on electoral behaviour. This study started with a district-level based macro-analysis; that analysis then informed the decision to employ a detailed micro-level survey-based method to unearth the determinants of voter participation and voter choices and also establish the direct and indirect links between participation in national presidential elections and development outcomes from the perspectives of the individual/household, the community and the wider society. The macro-micro methodological cyclical approach was then completed with the determination of elections on macroeconomic performance which affected all citizens of the country.

10.6 Final Conclusion: Who is Voting and for whom and Why

This study report now concludes by presenting a summary answer to this conventional question which is outlined at the beginning of the report in Chapter one and at the beginning of this chapter, Chapter ten that is *who is voting and for whom and why?*

The study examined the nexus between variables determining voting patterns, electoral choices and the performance of the economy in Ghana during the Fourth Republic (1992-2016). In doing so, it first established the key determinants of voter participation and voter choices using 2000 and 2012 national presidential election results as references. These were analysed using 2000 and 2010 population and housing census involving all the 216 districts in the country.

The study also examined voter behaviours and choices using randomly selected 600 respondents from four swing electoral districts from Brong Ahafo and Central regions. The information allowed for deeper investigation into reasons why individuals participate and vote in an election in ways that could not be easily captured by aggregate district-level data ascribed to the "average district voter".

Based on macro-level and district level data, the study found that locality (rural or urban) was significant in the participation of voting, although the result was not very clear cut when considering the urban population. It was further found that a strong inverse correlation existed between age and dependency on one hand and voting on the other hand. In other words, districts with higher age dependency had lesser voter participation.

In addition, a relation was found to exist between ethnicity, and voter participation and choices in both the 2000 and 2012 Presidential elections. The evidence is clear that Asantes and Ewes vote in countervailing patterns for the NPP and NDC respectively;

these are the two political parties that they have dominated in the Fourth Republican era and this behaviour is largely driven by the ethnicity-based political power struggle identification. These two groups constitute 30 percent of the current population of Ghana, and are therefore minority of the population of the country. Now what about the other 70 percent of the population? This study does not provide complete answers to the voting pattern of these 70 percent of the population.

However, based on the macro-micro analysis adopted in this study, in the electorally-swing areas, citizens appear to largely vote on issues related to personal and household economic welfare and perceptions of community development and the larger country. These electorally-swing districts probably represent about 30 percent of the population indicating the indigenous people living in Brong Ahafo, Central, Greater Accra and Western regions.

There is not much evidence from this research study on the detailed voting patterns, and behaviour of the remaining 40 percent of the population who are mainly indigenous people in the Eastern, Northern, Upper East and Upper West regions of the country.

But, notwithstanding this limitation of this study on detailed voter behaviour from these four regions, the macro-analysis of voter behaviour using the district-level data for all 216 districts in the 2000 and 2012 presidential elections point to some general findings of factors which may be applicable to these four regions. Based on the macro- analysis reported in Chapter 6, the factors influencing voter behaviour beyond ethnicity identification may include the urban/rural locality, employment status and literacy levels of citizens. As suggested in the previous section, this research study does not provide all the answers to the question who is voting and for whom and why; however it has pointed

several areas of further research work to unearth some more answers to this complex question.

A further finding of interest was the correlation between development and voter choice. Importantly, the key determinants of voting in Ghana have been identified. Specifically, the results of simple descriptive analysis of factors that influence respondents in the choice of presidential candidates were identified. These include perceptions of the ability of the candidate to improve on the economy, the manifesto of the candidate and party, the personality of the candidate, the educational level of the candidate, the ethnic background of the candidate, religious background of the candidate and family ties of the candidate. These determinants based on the 2016 Presidential elections are set out in Table 7.10 and Table 7.11 on pages 289 and 290 of this report.

Further, analysis of the survey data, from the electoral swing areas, indicates that participation in voting is perceived to bring about increased levels of improved electricity supply, improved water supply and expanded road infrastructure. However, participation in national elections does not lead to much improvement in individual economic welfare related to employment and incomes. Citizens in the electoral swing areas surveyed for the study tend to largely vote on issues related to personal and household economic welfare and perceptions of community development and development in the country at large.

Finally, analysis of the annual data from 1992 to 2016 established that elections do not lead to increased economic growth rates. However elections do produce higher government budget deficits. Hence, the relatively large government expenditures in election years in Ghana are not growth enhancing. Moreover, elections in Ghana Fourth

Republic led to increased inflation and increased interest rates. The findings discussed in the thesis are based on statistical analysis.

10.7 Policy Recommendations of the Research Study

Based on the findings and conclusion of the study, some policy recommendations have been suggested for policy makers, politicians, researchers, citizens and government. These are:

First, improvement of the individual socio-economic welfare of the citizens should be a focus of elected office holders as it constitutes a significant factor in voter turnout and share of votes in electoral swing areas. This is because the study has established a concrete link between elections and the economic development as measured by both individual and aggregate economic welfare as revealed by the results (refer to Chapter 8 and Chapter 9).

The dichotomy of the expressed feelings of linkages between participation in voting and actually-felt socio-economic development appears to be reflected in the widening income distribution in Ghana as reported the Ghana Statistical Service in 2014 based on the results of the GLSS6 which confirmed the rapidly growing income inequality in Ghana. This reinforces that the enhancement of democracy through participation in the voting process would need to emphasize increased inclusive access of citizens to income and employment opportunities in the country. Based on this finding, it is recommended that the growth of Ghana's Fourth Republican Constitutional Democracy must be linked to economic prospects; guarantee justice and equity for all citizens in the country;

Secondly, ethnicity constitutes an important consideration in voting behaviour of a considerable number of Ghanaians. The NCCE and other relevant institutions should undertake a vigorous continuous public education to de-emphasize ethnicity in the choice

of candidates in elections and rather shift focus on issues and competencies of candidates;

Thirdly, a major conclusion of this study was that spoiled ballots, which constituted impairment of voter participation, was directly related to the level of literacy of citizens in a particular district and also the level of poverty in the district as proxied by the age-dependency ratio. It is therefore recommended that the National Council of Civic Education (NCCE) intensifies its work programmes in the area of voter education on a sustained basis based on verifiable annual programmes especially targeting districts with lower literacy levels and high age-dependency ratios. The NCCE should not wait till election years to execute such programmes but need to undertake these programmes annually with higher efforts put into them during election years.

Fourth, independent agencies of state should be empowered to monitor and check excessive budget spending and abuse of incumbency in election years.

Finally, the two-party zero-sum game of the Fourth Republican political system can be reduced by the use of more economically-competitive mechanisms such as the direct election of District Chief Executives and Mayors. The direct election of DCEs and Mayors can help to improve local governance by moving away from politically motivated development programmes and projects (i.e. opportunistic policies with the sole aim to win elections) to pragmatic district development programmes and projects in order to reduce socio-economic development problems at the local levels in the country.

10.8 Recommendations for Further Research

First, a major recommendation arising from this research study is the need for further studies on voter participation that establish alternative formulae for turnout rates in Ghana given the statistically-bloated registers compiled by the Electoral Commission of Ghana. That is, further study is needed on voter participation to establish alternative statistical models for predicting turnout rates in Ghana. This area is a difficult research topic as found by the inconclusive evidence from many studies around the world.

Second, this study suggested an alternative turnout rate which was used for analysis, but more work is needed in this area to establish alternative turnout rates. Second, given the dramatic decline of the average turnout rate from 79.4 percent in the December 2012 election to 68.6 percent in the December 2016 election, further research is warranted to analyse factors related to sentiments of voters, for the voter volatility. Third, the voter link between voter participation to development outcomes need to be explored using GLSS data which can be linked to presidential election results from the Electoral Commission of Ghana.

Third, this research study which focussed on electorally-swing districts in the Central and Western Regions established that ethnicity is not a major driver of electoral participation and choices for the indigenes in these areas. This result is consistent with the voting patterns of the general population in these two regions who seem to change parties and government regularly every eight years or sometimes every four years in the Fourth Republican era from 1992 to 2016. However, for the Eastern Region and the three northern regions – Northern, Upper East and Upper West Regions, there is a consistent majority, though not overwhelming, support for one political party in each election year in the Fourth Republican era; though the overall victory margin is not as high as in the Ewe-dominated Volta region or the Asante-dominated Ashanti region.

Overall, the majority of voters in Eastern region have consistently supported the NPP in all seven elections in the Fourth Republican era. Conversely, the majority of voters in the three northern regions have consistently supported the NDC in all seven elections. Hence further research study is needed to understand the electoral behaviour including voter participation and choices in these four regions through random sampling surveys to understand the degree of ethnicity involved in voter choices in these four regions, and the other non-ethnicity factors which influence voter choices in these four regions.

Finally, further analysis of the voting patterns of the relatively big six ethnic groups in Ghana will be useful to establish any countervailing patterns. These groups are Akyems, Akuapems, Dagombas, Fantes, Gas and Ga Adangbes. The data on these groups are available from the census data produced by the Ghana Statistical Service.

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APPENDICES

Appendix 1: Questionnaire used for the Survey

INVESTIGATOR'S INTRODUCTION AND STATEMENT OF INFORMED CONSENT

This research study is strictly confidential for academic work only, under the topic: "POLITICAL ECONOMY OF ELECTIONS AND VOTING BEHAVIOUR IN GHANA'S FOURTH REPUBLIC"

REGION:

DISTRICT/CONSTITUENCY:

ADDRESS OF RESPONDENT (NAME NOT REQUIRED):

TELEPHONE NUMBER:

SURVEY CODE NUMBER:

DATE OF SURVEY:

TIME OF STARTING THE INTERVIEW:

My name is Mr. Gbensuglo Alidu Bukari, a PhD candidate of the Institute of Statistical, Social and Economic Research (ISSER), University of Ghana, Legon, Accra. My phone number is 0208722408, email: gbensuglo@yahoo.com.

The objective of this study is to analyse the determinants of voting behaviour and the relationship between elections and economy in Ghana since 1992. The study is purely an academic work and it is a contribution to the on-going debate over the relationship between elections and the economy in the electoral politics. This survey is an academic study and is not linked to any political party or government agency. Whatever information you provide will be kept strictly confidential. Participation in this survey is voluntary and it is entirely up to you to answer or not answer any question that I ask. I hope that you will take part in this survey since your participation is important and it is voluntary but, spare your time to answer the following questions as best as you can. It will take you 30 to 40 minutes to complete this interview. Please spare some time for the interview. and help me in successfully completing the survey.

May I begin the interview now? 1. Respondent **agrees** to be interviewed..... 2. Respondent does not **agree** to be interviewed.....

Section A: Introduction - Democracy and Elections in Ghana

1. Do you have fair knowledge about electoral issues in Ghana? a. Yes [] b. No []

c. Indifferent []

Explain

2. In your view, how important is it to vote in an election?.....

3. On a scale of **1 to 5**, **1** (least agreement), **2** (fair agreement), **3** (moderate agreement), **4** (high agreement) and **5** (very high agreement), please rate in your view, what elections mean to you? (*Please circle the most appropriate number in each case*).

Relevance of Democratic Election		Rating scale				
1	Election is a way to choose among competitive policies	1	2	3	4	5
2	Election is a way to hold governments accountable for their past action	1	2	3	4	5
3	Election is a way to advance the interests of my social class	1	2	3	4	5
4	Election is a way to gain particular things for myself and my family	1	2	3	4	5
5	Election is a way to comment on the state of economic development	1	2	3	4	5
6	Election presents an opportunity for electorates to decide on development issues or alternatives presented by parties	1	2	3	4	5

4. So, in what ways do elections contribute to shaping democratic development ?

Section B: Determinants of Participation and Choice in an Election

5. Are you a registered voter?

a. Yes [] b. No []

6. Have you ever voted in any Presidential Elections in the Fourth Republic?

a. Yes [] b. No []

7. Did you vote in the following Presidential elections in the Fourth Republic?

Presidential Elections	Response	
	Yes	No
1992		
1996		
2000 (first)		
2000(runoff)		
2004		
2008(first)		
2008 (runoff)		
2012		

8. What key issues informed your voting decision?.....

9. Of the issues identified above, which one influenced you most?.....

10. If you could not vote in a particular year, give reasons for not been able to vote

Year	Reasons for Not Voting
1992	
1996	
2000(first)	
2000 runoff	
2004	
2008(first)	
2008 runoff	
2012	

11. Using the political party key presented below, indicate the political party that you voted for, in the presidential elections

Presidential Elections		
	Political Party	Reason(s) for voting for that party
1992		
1996		
2000(first)		
2000 runoff		
2004		
2008(first)		
2008 runoff		
2012		

Notes:

(1) NPP(2) NDC (3) CPP (4) PNC (5) DPP (6) GCPP (7) NIP (8) PHP, (9) NRP (10) UGM (11) DFP (12)PPP (13) Independent candidate (14) No Party at all.

12. If you are asked to justify your voting motivation further, which of the following factors motivated you most to vote?

a. Party affiliation/ Party Ideology [] b. Religion [] c. Ethnicity [] e. Issue Orientation [] Candidate orientation [] Social class [] Family ties []

13. Which Party will you vote for in the 2016 Presidential elections, and why?

.....

14. On a scale of **0 to 5**, **0** (not considered as a factor at all), **1** (least important), **2** (less important), **3** (moderately important), **4** (important) and **5** (extremely important), please rate how important the following factors have influenced your choice of the presidential candidate in the national election (*please circle the most appropriate number in each case*).

No	Influencing Factors	Rating Scale					
1	Personality and orientation of the candidate	0	1	2	3	4	5
2	Ethnic background of the candidate	0	1	2	3	4	5
3	Sex of candidate	0	1	2	3	4	5
4	Educational background of the candidate	0	1	2	3	4	5
5	Religious affiliation of the candidate	0	1	2	3	4	5
6	Campaign message/Manifesto of his/her party	0	1	2	3	4	5
7	Peer or group influence	0	1	2	3	4	5
8	Party of Presidential candidate contribution (funerals, wedding, jobs, etc)	0	1	2	3	4	5
Others							
9	Party affiliation	0	1	2	3	4	5
10	Family ties	0	1	2	3	4	5
11	How the person can develop the economy	0	1	2	3	4	5

15. Is the state of the economy a key determinant of your vote choice in an election in Ghana?

a) Yes ☐ (b) No ☐ (c) Indifferent ☐

16. What economic variables/issues have influence your voting choice?.....

17. On a scale of **0 to 5**, **0** (not considered as a factor at all), **1** (least important), **2** (less important), **3** (moderately important), **4** (important) and **5** (extremely important), please rate how important the following economic factors have /will influence your choice of vote during elections in Ghana (**Please circle the most appropriate number in each case**).

No	Economic Factors/Conditions	Rating Scale					
1	Inflation(price increase in the level of goods and services)	0	1	2	3	4	5
2	Unemployment	0	1	2	3	4	5
3	Poor economic growth	0	1	2	3	4	5
4	High Interest Rates	0	1	2	3	4	5
5	Depreciation of Cedi	0	1	2	3	4	5
6	Poor infrastructural development	0	1	2	3	4	5
7	Low personal income	0	1	2	3	4	5
8	Lack of financial assistance	0	1	2	3	4	5

Section C: Socio-Economic wellbeing and the Vote Choice

18. Do your socio-economic status or individual economic wellbeing influence your vote choice ? a. Yes ☐ b. No ☐ c. Indifferent ☐

(If your response is either Yes or No, then respond to question 19 below)

19. Rank in an ascending order of importance (1-5) the matters that affect you most in making decisions on whom to vote for?

☐ Ability to meet the cost of education

☐ Ability to meet the cost of health

☐ Ability to meet general economic commitments (e.g. food, shelter, transport, etc.)

☐ All the above put together

☐ None of the above

20. Do election outcomes promote socio-economic development of your community/district?

a. Yes ☐ b. No ☐ c. Indifferent ☐

Provide reason.....

21. In what ways do you think your voting in an election has contributed to Ghana's development?

22. Please respond to the following statements **(YES or NO)**. I voted in the previous election **(1992, 1996, 2000, 2004, 2008, 2012)** primarily because;

Elections	Statements	Response
1992	a. In the years preceding the elections, government economic policies had improved my household and personal wellbeing	
	b. I expected an improvement in my households and personal wellbeing if I vote due to expected improved government's economic policies	
	c. In the years preceding the elections, the government economic policies had improved Ghana's economy	
1996	a. In the years preceding the elections, government economic policies had improved my household and personal wellbeing	
	b. I expected an improvement in my households and personal wellbeing if I vote due to expected improved government's economic policies	
	c. In the years preceding the elections, the government economic policies had improved Ghana's economy	
2000	a. In the years preceding the elections, government economic policies had improved my household and personal wellbeing	
	b. I expected an improvement in my households and personal wellbeing if I vote due to expected improved government's economic policies	
	c. In the years preceding the elections, the government economic policies had improved Ghana's economy	
2004	a. In the years preceding the elections, government economic policies had improved my household and personal wellbeing	
	b. I expected an improvement in my households and personal wellbeing if I vote due to expected improved government's economic policies	
	c. In the years preceding the elections, the government economic policies had improved Ghana's economy	
2008	a. In the years preceding the elections, government economic policies had improved my household and personal wellbeing	
	b. I expected an improvement in my households and personal wellbeing if I vote due to expected improved government's economic policies	
	c. In the years preceding the elections, the government economic policies had improved Ghana's economy	
2012	a. In the years preceding the elections, government economic policies had improved my household and personal wellbeing	
	b. I expected an improvement in my households and personal wellbeing if I vote due to expected improved government's economic policies	
	c. In the years preceding the elections, the government economic policies had improved Ghana's economy	

23. Please respond to the following statements **(YES or NO)**. I did not vote in any of the previous elections (1992, 1996, 2000, 2004, 2008, and 2012) primarily because;

Elections	Statements	Response
1992	a. In the years preceding the elections, government economic policies led to a deterioration in my households' and personal well being	
	b. I expected a deterioration in my households and personal wellbeing if I vote due to bad government economic policies	
	c. In the years preceding the elections, the government economic policies led to a deterioration of Ghana's economy	
1996	a. In the years preceding the elections, government economic policies led to a deterioration in my households' and personal well being	
	b. I expected a deterioration in my households and personal wellbeing if I vote due to bad government economic policies	
	c. In the years preceding the elections, the government economic policies led to a deterioration of Ghana's economy	
2000	a. In the years preceding the elections, government economic policies led to a deterioration in my households' and personal well being	
	b. I expected a deterioration in my households and personal wellbeing if I vote due to bad government economic policies	
	c. In the years preceding the elections, the government economic policies led to a deterioration of Ghana's economy	
2004	a. In the years preceding the elections, government economic policies led to a deterioration in my households' and personal well being	
	b. I expected a deterioration in my households and personal wellbeing if I vote due to bad government economic policies	
	c. In the years preceding the elections, the government economic policies led to a deterioration of Ghana's economy	
2008	a. In the years preceding the elections, government economic policies led to a deterioration in my households' and personal well being	
	b. I expected a deterioration in my households and personal wellbeing if I vote due to bad government economic policies	
	c. In the years preceding the elections, the government economic policies led to a deterioration of Ghana's economy	
2012	a. In the years preceding the elections, government economic policies led to a deterioration in my households' and personal well being	
	b. I expected a deterioration in my households and personal wellbeing if I vote due to bad government economic policies	
	c. In the years preceding the elections, the government economic policies led to a deterioration of Ghana's economy	

24. In general, on a scale of **0 to 5**, **0** (not considered as a factor at all), **1** (least important), **2** (less important), **3** (moderately important), **4** (important) and **5** (extremely important), please rate your assessment of the link between participation in voting and socioeconomic development (***please circle the most appropriate number in each case***).

No	Influencing Factors	Rating Scale					
1	Participation in national presidential elections helps me to improve my personal and household income	0	1	2	3	4	5
2	Voting in an elections help better my personal and household and personal health	0	1	2	3	4	5
3	Participation in elections enabled me to advance in personal and household education	0	1	2	3	4	5
4	Through elections, I have gained employment	0	1	2	3	4	5
5	Improved electricity supply	0	1	2	3	4	5
6	Provision of potable water	0	1	2	3	4	5
7	Improved road network	0	1	2	3	4	5

25. Looking back over the past four (4) years, would you say your personal economic situation has gotten worse, better, or stayed the same? **a.** Better [] **b.** Worse [] **c.** Stayed the same []

26. Looking ahead to the next year, do you think your personal economic situation will be worse, better, or stayed the same? **a.** Better [] **b.** Worse [] **c.** Stayed the same []

27. So, looking back over the past four years, would you say that national economic situation has gotten worse, better, or stayed the same? **a.** Better [] **b.** Worse [] **c.** Stayed the same []

28. Would you say that at the present time, economic conditions are better, worse or stayed the same than four years ago? **a.** Better [] **b.** Worse [] **c.** Stayed the same []

29. How about a year from now, do you expect that in the country as a whole, economic conditions would be better or worse than they are at present or just about the same?

a. Better [] **b.** Worse [] **c.** Stayed the same []

30. Will the general economic conditions affect your voting choice in the 2016 elections?

(a) Yes [] (b) No [] (c) Indifferent []

Explain.....

Section D: Socio-Economic Information of Respondents

31. Sex: Male [] Female []

32. Age:

33. Marital Status in 2016 (current marital status): Married [] Single [] Divorced [] Widowed [] Engaged [] Separated [] Consensus []

34. Marital Status in 2012 (four years ago): Married [] Single [] Divorced [] Widowed [] Engaged [] Separated [] Consensus []

35. Level of Education (current level of education)

Level of Education	Length(Years)	Level of Education	Length(Years)
No Schooling		Technical Institute	
Incomplete Primary		College of Education	
Complete Primary		Bachelor's Degree	
Junior High		Postgraduate Degree	
Senior High		Others	

36. Level of Education in 2012 (four years ago)

Level of Education	Length(Years)	Level of Education	Length(Years)
No Schooling		Technical Institute	
Incomplete Primary		College of Education	
Complete Primary		Bachelor's Degree	
Junior High		Postgraduate Degree	
Senior High		Others	

37. Employment Status of the Respondent in 2016 (current employment status)

Agriculture: Farming [] Fishing []

Business: Seller in Food [] Trading [] Produce Markets []

Employed by the state [] Specify.....

Employed by Private Business [] Specify.....

Artisan [] Specify.....

Self-employed /Own Business []

Unemployed /Looking for Work []

Housewife/House husband []

Disabled/Cannot Work []

Pensioner []

Others [] Specify.....

38. Employment Status of the Respondent in 2012 (four years ago)

Agriculture: Farming [] Fishing [] Business: Seller in Food [] Trading [] Produce Markets []

Employed by the state [] Specify.....

Employed by Private Business [] Specify.....

Artisan [] Specify.....

Self-employed /Own Business []

Unemployed /Looking for Work []

Housewife/House husband []

Disabled/Cannot Work []

Pensioner ☐ [☐]

Others ☐ [☐] Specify.....

39. Which of the following religious groups do you identify with?

Traditional ☐ [☐] Christian ☐ [☐] Islam ☐ [☐] Christian-Traditional ☐ [☐] Islam-Traditional ☐ [☐]

Others ☐ [☐] Specify.....

40. Which of the following ethnic groups do you identify with? **(Refer to Appendix A)**

41. Location of your District. Urban ☐ [☐] Rural ☐ [☐]

42.Region where you come from	WR	CR	GAR	VR	ER	AR	BAR	NR	UER	UWR
Regional Code	1	2	3	4	5	6	7	8	9	10

43. Your approximate total **Personal Income per Month** (please tick the appropriate box).

1. Zero (0) GH¢ 00.0 ☐
2. Less than GH¢100 ☐
3. GH¢100-GH¢200 ☐
4. GH¢201- GH¢300 ☐
5. GH¢301-GH¢400 ☐
6. GH¢401-GH¢500 ☐
7. GH¢501-GH¢600 ☐
8. GH¢601- GH¢700 ☐
9. GH¢701-GH¢800 ☐
10. GH¢801-GH¢900 ☐
11. GH¢901-GH¢1000 ☐
12. GH¢1001-GH¢1100 ☐
13. GH¢1101-GH¢1200 ☐
14. GH¢ 1201-GH¢1300 ☐
15. GH¢1301-GH¢1400 ☐
16. GH¢1401-GH¢1500 ☐

17. GH¢1501-GH¢1600 ☐
18. GH¢1601-GH¢1700 ☐
19. GH¢1701- GH¢1800 ☐
20. GH¢1801-GH¢1900 ☐
21. GH¢1901-GH¢2000 ☐
22. GH¢2001-GH¢2100 ☐
23. GH¢2101-GH¢2200 ☐
24. GH¢2201- GH¢2300 ☐
25. GH¢2301-GH¢2400 ☐
26. GH¢2401-GH¢2500 ☐
27. GH¢2501-GH¢2600 ☐
28. GH¢2601-GH¢2700 ☐
29. GH¢2701-GH¢2800 ☐
30. GH¢2801-GH¢2900 ☐
31. GH¢2901-GH¢3000 ☐
32. GH¢3000- GH¢4000 ☐

44. Your approximate total **Family Income (Self and Spouse)** per month (please tick the appropriate box).

- | | | | |
|----------------------|--------------------------|-----------------------|--------------------------|
| 1. Zero (0) GH¢00.0 | ☐ | 17. GH¢1501-GH¢1600 | ☐ |
| 2. Less than GH¢100 | ☐ | 18. GH¢1601-GH¢1700 | ☐ |
| 3. GH¢100-GH¢200 | ☐ | 19. GH¢1701- GH¢1800 | ☐ |
| 4. GH¢201- GH¢300 | ☐ | 20. GH¢ 1801-GH¢1900 | ☐ |
| 5. GH¢301-GH¢400 | ☐ | 21. GH¢1901-GH¢2000 | ☐ |
| 6. GH¢401-GH¢500 | ☐ | 22. GH¢2001-GH¢2100 | ☐ |
| 7. GH¢501-GH¢600 | ☐ | 23. GH¢2101-GH¢2200 | ☐ |
| 8. GH¢601- GH¢700 | ☐ | 24. GH¢2201- GH¢2300 | ☐ |
| 9. GH¢701-GH¢800 | ☐ | 25. GH¢ 2301-GH¢2400 | ☐ |
| 10. GH¢801-GH¢900 | ☐ | 26. GH¢2401-GH¢2500 | ☐ |
| 11. GH¢901-GH¢1000 | ☐ | 27. GH¢2501-GH¢2600 | ☐ |
| 12. GH¢1001-GH¢1100 | ☐ | 28. GH¢ 2601-GH¢2700 | ☐ |
| 13. GH¢ 1101-GH¢1200 | ☐ | 29. GH¢ 2701-GH¢ 2800 | ☐ |
| 14. GH¢ 1201-GH¢1300 | ☐ | 30. GH¢ 2801-GH¢ 2900 | ☐ |
| 15. GH¢1301-GH¢1400 | ☐ | 31. GH¢ 2901-GH¢3000 | ☐ |
| 16. GH¢1401-GH¢1500 | ☐ | 32. GH¢3000-GH¢4000 | ☐ |

45. Please do you have anything to tell me concerning elections in Ghana?

THANK YOU VERY MUCH
END OF SURVEY QUESTIONNAIRE

(APPENDIX A) ETHNICITY CLASSIFICATION

AKAN	GA/ DANGBE	EWE	GUAN	GRUMA	MOLE- DABANI	GRUSI	MANDE	All Others
Agona	Ga		Akpafu, Lolobi, Likpe, Bowiri, Buem, Santrokofi, Akposo	Bimoba	Builsa (Kangyaga or Kanjaga)	Kasena (Paga)	Busanga	
Ahafo	Dangbe		Avatime, Tafi, Nyongbo, Logba	Kokomba	Dagarte (Dagaba), Lobi, Wali (Wala)	Mo	Wangara	
Ahanta	Other Ga- Dangbe		Awutu, Efutu, Senya, Breku	Basare(Kyam ba)	Dagomba	Sissala	Others	
Akuapem			Cherepong, Larteh, Anum-Boso	Pilapila	Kusasi	Vagala		
Akwamu			Gonja	Salfalba (Sabulaba)	Mamprusi	Other Grusi (e.g. Lela, Templens i, Birifor, Yangala, Miwo)		
Akyem			Nkonya	Kotokoli	Namnam (Nabdom)			
Aowin			Yeji, Nchumuru, Krachi, Nawuri, Bassa Achode Nkomi, Wiase, Dwan	Chamba (Kyamba)	Nankansi, Talensi & Gurense (Frafra)			
Asante			Other Guan	Other Gurma	Nanumba			
Asen (Assin)					Mosi			
Bono (Banda)					Other Mole- Dagbani			
Bawle								
Chokosi (Anufor)								
Denkyira								
Twifo								
Evalue								
Fante								
Kwahu								
Nzema								
Sefwi								
Wasa								
Other Akan								

Appendix 2: Spss Programme Written to Analyse Survey Data

GET DATA

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 crosstabs tables=participation2012 by female/cells=row column/statistics=chisq corr.
 crosstabs tables=participation2012 by age2012/cells=row column/statistics=chisq corr.
 crosstabs tables=participation2012 by urban/cells=row column/statistics=chisq corr.
 crosstabs tables=participation2012 by mstatus2012/cells=row column/statistics=chisq corr.
 crosstabs tables=participation2012 by edustatus2012/cells=row column/statistics=chisq corr.
 crosstabs tables=participation2012 by employstatus2012/cells=row column/statistics=chisq corr.

crosstabs tables=participation2012 by christian/cells=row column/statistics=chisq corr.
 crosstabs tables=participation2012 by islam/cells=row column/statistics=chisq corr.
 crosstabs tables=participation2012 by asante/cells=row column/statistics=chisq corr.
 crosstabs tables=participation2012 by ewe/cells=row column/statistics=chisq corr.
 crosstabs tables=participation2012 by agona/cells=row column/statistics=chisq corr.
 crosstabs tables=participation2012 by bono/cells=row column/statistics=chisq corr.
 crosstabs tables=participation2012 by fante/cells=row column/statistics=chisq corr.
 crosstabs tables=participation2012 by effutu/cells=row column/statistics=chisq corr.
 logistic regression participation2012 with pincome urban age2012 female mstatus2012
 yearsofeducationat2012 employstatus2012 christian islam asante ewe agona bono fante effutu.
 logistic regression choicendc2012 with pincome urban age2012 female mstatus2012
 yearsofeducationat2012 employstatus2012 christian islam asante ewe agona bono fante effutu.
 logistic regression choicenpp2016 with pincome urban age female married yearsofeducation
 employed christian islam asante ewe agona bono fante effutu.
 frequencies variables=v124 to v130.
 frequencies variables=agegroup.
 frequencies variables=urban unemployed married islam christian v147.
 descriptives variables=v021 to v028.
 descriptives variables=v088 to v105.
 descriptives variables=v106 to v123.
 if v021=1 voted1992=1.
 if v021=0 voted1992=0.
 if v022=1 voted1996=1.
 if v022=0 voted1996=0.
 if v023=1 voted2000firstround=1.
 if v023=0 voted2000firstround=0.
 if v024=1 voted2000secondround=1.
 if v024=0 voted2000secondround=0.
 if v025=1 voted2004=1.
 if v025=0 voted2004=0.
 if v026=1 voted2008firstround=1.
 if v026=0 voted2008firstround=0.
 if v027=1 voted2008secondround=1.
 if v027=0 voted2008secondround=0.
 if v028=1 voted2012=1.
 if v028=0 voted2012=0.
 descriptivesvariables=voted1992voted1996voted2000firstroundvoted2000secondroundvoted200
 4 voted2008firstround voted2008secondround voted2012.
 if voted1992=1 and v088=1 voted1992hpwimprovedpast=1.
 if voted1992=1 and v089=1 voted1992hpwimprovedfuture=1.
 if voted1992=1 and v090=1 voted1992economyimprovedpast=1.
 if voted1992=1 and v088=0 voted1992hpwimprovedpast=0.
 if voted1992=1 and v089=0 voted1992hpwimprovedfuture=0.
 if voted1992=1 and v090=0 voted1992economyimprovedpast=0.
 descriptivesvariables=voted1992hpwimprovedpastvoted1992hpwimprovedfuture
 voted1992economyimprovedpast.
 if voted1996=1 and v088=1 voted1996hpwimprovedpast=1.
 if voted1996=1 and v089=1 voted1996hpwimprovedfuture=1.
 if voted1996=1 and v090=1 voted1996economyimprovedpast=1.
 if voted1996=1 and v088=0 voted1996hpwimprovedpast=0.
 if voted1996=1 and v089=0 voted1996hpwimprovedfuture=0.
 if voted1996=1 and v090=0 voted1996economyimprovedpast=0.
 descriptivesvariables=voted1996hpwimprovedpastvoted1996hpwimprovedfuture
 voted1996economyimprovedpast.
 if voted2000firstround=1 and v088=1 voted2000firstroundhpwimprovedpast=1.
 if voted2000firstround=1 and v089=1 voted2000firstroundhpwimprovedfuture=1.
 if voted2000firstround=1 and v090=1 voted2000firstroundeconomyimprovedpast=1.
 if voted2000firstround=1 and v088=0 voted2000firstroundhpwimprovedpast=0.
 if voted2000firstround=1 and v089=0 voted2000firstroundhpwimprovedfuture=0.
 if voted2000firstround=1 and v090=0 voted2000firstroundeconomyimprovedpast=0.

descriptivesvariables=voted2000firstroundhpwimprovedpastvoted2000firstroundhpwimprovedfuture
voted2000firstroundeconomyimprovedpast.
if voted2000secondround=1 and v088=1 voted2000secondroundhpwimprovedpast=1.
if voted2000secondround=1 and v089=1 voted2000secondroundhpwimprovedfuture=1.
if voted2000secondround=1 and v090=1 voted2000secondroundeconomyimprovedpast=1.
if voted2000secondround=1 and v088=0 voted2000secondroundhpwimprovedpast=0.
if voted2000secondround=1 and v089=0 voted2000secondroundhpwimprovedfuture=0.
if voted2000secondround=1 and v090=0 voted2000secondroundeconomyimprovedpast=1.
descriptivesvariables=voted2000secondroundhpwimprovedpastvoted2000secondroundhpwimprovedfuture
voted2000secondroundeconomyimprovedpast.
if voted2004=1 and v088=1 voted2004hpwimprovedpast=1.
if voted2004=1 and v089=1 voted2004hpwimprovedfuture=1.
if voted2004=1 and v090=1 voted2004economyimprovedpast=1.
if voted2004=1 and v088=0 voted2004hpwimprovedpast=0.
if voted2004=1 and v089=0 voted2004hpwimprovedfuture=0.
if voted2004=1 and v090=0 voted2004economyimprovedpast=0.
descriptivesvariables=voted2004hpwimprovedpastvoted2004hpwimprovedfuture
voted2004economyimprovedpast.
if voted2008firstround=1 and v088=1 voted2008firstroundhpwimprovedpast=1.
if voted2008firstround=1 and v089=1 voted2008firstroundhpwimprovedfuture=1.
if voted2008firstround=1 and v090=1 voted2008firstroundeconomyimprovedpast=1.
if voted2008firstround=1 and v088=0 voted2008firstroundhpwimprovedpast=0.
if voted2008firstround=1 and v089=0 voted2008firstroundhpwimprovedfuture=0.
if voted2008firstround=1 and v090=0 voted2008firstroundeconomyimprovedpast=0.
descriptivesvariables=voted2008firstroundhpwimprovedpastvoted2008firstroundhpwimprovedfuture
voted2008firstroundeconomyimprovedpast.
if voted2008secondround=1 and v088=1 voted2008secondroundhpwimprovedpast=1.
if voted2008secondround=1 and v089=1 voted2008secondroundhpwimprovedfuture=1.
if voted2008secondround=1 and v090=1 voted2008secondroundeconomyimprovedpast=1.
if voted2008secondround=1 and v088=0 voted2008secondroundhpwimprovedpast=0.
if voted2008secondround=1 and v089=0 voted2008secondroundhpwimprovedfuture=0.
if voted2008secondround=1 and v090=0 voted2008secondroundeconomyimprovedpast=0.
descriptivesvariables=voted2008secondroundhpwimprovedpastvoted2008secondroundhpwimprovedfuture
voted2008secondroundeconomyimprovedpast.
if voted2012=1 and v088=1 voted2012hpwimprovedpast=1.
if voted2012=1 and v089=1 voted2012hpwimprovedfuture=1.
if voted2012=1 and v090=1 voted2012economyimprovedpast=1.
if voted2012=1 and v088=0 voted2012hpwimprovedpast=0.
if voted2012=1 and v089=0 voted2012hpwimprovedfuture=0.
if voted2012=1 and v090=0 voted2012economyimprovedpast=0.
descriptivesvariables=voted2012hpwimprovedpast
voted2012hpwimprovedfuture
voted2012economyimprovedpast.
if voted1992=0 and v106=1 didntvote1992hpwimprovedpast=1.
if voted1992=0 and v107=1 didntvote1992hpwimprovedfuture=1.
if voted1992=0 and v108=1 didntvote1992economyimprovedpast=1.
if voted1992=0 and v106=0 didntvote1992hpwimprovedpast=0.
if voted1992=0 and v107=0 didntvote1992hpwimprovedfuture=0.
if voted1992=0 and v108=0 didntvote1992economyimprovedpast=0.
descriptivesvariables=didntvote1992hpwimprovedpastdidntvote1992hpwimprovedfuture
didntvote1992economyimprovedpast.
if voted1996=0 and v106=1 didntvote1996hpwimprovedpast=1.
if voted1996=0 and v107=1 didntvote1996hpwimprovedfuture=1.
if voted1996=0 and v108=1 didntvote1996economyimprovedpast=1.
if voted1996=0 and v106=0 didntvote1996hpwimprovedpast=0.
if voted1996=0 and v107=0 didntvote1996hpwimprovedfuture=0.
if voted1996=0 and v108=0 didntvote1996economyimprovedpast=0.
descriptivesvariables=didntvote1996hpwimprovedpastdidntvote1996hpwimprovedfuture
didntvote1996economyimprovedpast.
if voted2000firstround=0 and v106=1 didntvote2000firstroundhpwimprovedpast=1.
if voted2000firstround=0 and v107=1 didntvote2000firstroundhpwimprovedfuture=1.
if voted2000firstround=0 and v108=1 didntvote2000firstroundeconomyimprovedpast=1.

if voted2000firstround=0 and v106=0 didnotvote2000firstroundhpwimprovedpast=0.
 if voted2000firstround=0 and v107=0 didnotvote2000firstroundhpwimprovedfuture=0.
 if voted2000firstround=0 and v108=0 didnotvote2000firstroundeconomyimprovedpast=0.
 descriptivesvariables=didnotvote2000firstroundhpwimprovedpast
 didnotvote2000firstroundhpwimprovedfuture didnotvote2000firstroundeconomyimprovedpast.
 if voted2000secondround=0 and v106=1 didnotvote2000secondroundhpwimprovedpast=1.
 if voted2000secondround=0 and v107=1 didnotvote2000secondroundhpwimprovedfuture=1.
 if voted2000secondround=0 and v108=1 didnotvote2000secondroundeconomyimprovedpast=1.
 if voted2000secondround=0 and v106=0 didnotvote2000secondroundhpwimprovedpast=0.
 if voted2000secondround=0 and v107=0 didnotvote2000secondroundhpwimprovedfuture=0.
 if voted2000secondround=0 and v108=0 didnotvote2000secondroundeconomyimprovedpast=0.
 descriptivesvariables=didnotvote2000secondroundhpwimprovedpast
 didnotvote2000secondroundhpwimprovedfuture
 didnotvote2000secondroundeconomyimprovedpast.
 if voted2004=0 and v106=1 didnotvote2004hpwimprovedpast=1.
 if voted2004=0 and v107=1 didnotvote2004hpwimprovedfuture=1.
 if voted2004=0 and v108=1 didnotvote2004economyimprovedpast=1.
 if voted2004=0 and v106=0 didnotvote2004hpwimprovedpast=0.
 if voted2004=0 and v107=0 didnotvote2004hpwimprovedfuture=0.
 if voted2004=0 and v108=0 didnotvote2004economyimprovedpast=0.
 descriptivesvariables=didnotvote2004hpwimprovedpastdidnotvote2004hpwimprovedfuture
 didnotvote2004economyimprovedpast.
 if voted2008firstround=0 and v106=1 didnotvote2008firstroundhpwimprovedpast=1.
 if voted2008firstround=0 and v107=1 didnotvote2008firstroundhpwimprovedfuture=1.
 if voted2008firstround=0 and v108=1 didnotvote2008firstroundeconomyimprovedpast=1.
 if voted2008firstround=0 and v106=0 didnotvote2008firstroundhpwimprovedpast=0.
 if voted2008firstround=0 and v107=0 didnotvote2008firstroundhpwimprovedfuture=0.
 if voted2008firstround=0 and v108=0 didnotvote2008firstroundeconomyimprovedpast=0.
 descriptivesvariables=didnotvote2008firstroundhpwimprovedpast
 didnotvote2008firstroundhpwimprovedfuture didnotvote2008firstroundeconomyimprovedpast.
 if voted2008secondround=0 and v106=1 didnotvote2008secondroundhpwimprovedpast=1.
 if voted2008secondround=0 and v107=1 didnotvote2008secondroundhpwimprovedfuture=1.
 if voted2008secondround=0 and v108=1 didnotvote2008secondroundeconomyimprovedpast=1.
 if voted2008secondround=0 and v106=0 didnotvote2008secondroundhpwimprovedpast=0.
 if voted2008secondround=0 and v107=0 didnotvote2008secondroundhpwimprovedfuture=0.
 if voted2008secondround=0 and v108=0 didnotvote2008secondroundeconomyimprovedpast=0.
 descriptivesvariables=didnotvote2008secondroundhpwimprovedpast
 didnotvote2008secondroundhpwimprovedfuture
 didnotvote2008secondroundeconomyimprovedpast.
 if voted2012=0 and v106=1 didnotvote2012hpwimprovedpast=1.
 if voted2012=0 and v107=1 didnotvote2012hpwimprovedfuture=1.
 if voted2012=0 and v108=1 didnotvote2012economyimprovedpast=1.
 if voted2012=0 and v106=0 didnotvote2012hpwimprovedpast=0.
 if voted2012=0 and v107=0 didnotvote2012hpwimprovedfuture=0.
 if voted2012=0 and v108=0 didnotvote2012economyimprovedpast=0.
 descriptivesvariables=didnotvote2012hpwimprovedpastdidnotvote2012hpwimprovedfuture
 didnotvote2012economyimprovedpast.
 crosstabs tables=v124 by pincome/cells=row column/statistics=chisq corr.
 crosstabs tables=v124 by age/cells=row column/statistics=chisq corr.
 crosstabs tables=v124 by female/cells=row column/statistics=chisq corr.
 crosstabs tables=v124 by yearsofeducation/cells=row column/statistics=chisq corr.
 crosstabs tables=v124 by urban/cells=row column/statistics=chisq corr.
 crosstabs tables=v124 by married/cells=row column/statistics=chisq corr.
 crosstabs tables=v124 by employed/cells=row column/statistics=chisq corr.
 crosstabs tables=v124 by christian/cells=row column/statistics=chisq corr.
 crosstabs tables=v124 by islam/cells=row column/statistics=chisq corr.
 crosstabs tables=v124 by asante/cells=row column/statistics=chisq corr.
 crosstabs tables=v124 by ewe/cells=row column/statistics=chisq corr.
 crosstabs tables=v124 by agona/cells=row column/statistics=chisq corr.
 crosstabs tables=v124 by bono/cells=row column/statistics=chisq corr.
 crosstabs tables=v124 by fante/cells=row column/statistics=chisq corr.


```

crosstabs tables=v124 by effutu/cells=row column/statistics=chisq corr.
crosstabs tables=v127 by pincome/cells=row column/statistics=chisq corr.
crosstabs tables=v127 by age/cells=row column/statistics=chisq corr.
crosstabs tables=v127 by female/cells=row column/statistics=chisq corr.
crosstabs tables=v127 by yearsofeducation/cells=row column/statistics=chisq corr.
crosstabs tables=v127 by urban/cells=row column/statistics=chisq corr.
crosstabs tables=v127 by married/cells=row column/statistics=chisq corr.
crosstabs tables=v127 by employed/cells=row column/statistics=chisq corr.
crosstabs tables=v127 by christian/cells=row column/statistics=chisq corr.
crosstabs tables=v127 by islam/cells=row column/statistics=chisq corr.
crosstabs tables=v127 by asante/cells=row column/statistics=chisq corr.
crosstabs tables=v127 by ewe/cells=row column/statistics=chisq corr.
crosstabs tables=v127 by agona/cells=row column/statistics=chisq corr.
crosstabs tables=v127 by bono/cells=row column/statistics=chisq corr.
crosstabs tables=v127 by fante/cells=row column/statistics=chisq corr.
crosstabs tables=v127 by effutu/cells=row column/statistics=chisq corr.
crosstabs tables=v126 by pincome/cells=row column/statistics=chisq corr.
crosstabs tables=v126 by age/cells=row column/statistics=chisq corr.
crosstabs tables=v126 by female/cells=row column/statistics=chisq corr.
crosstabs tables=v126 by yearsofeducation/cells=row column/statistics=chisq corr.
crosstabs tables=v126 by urban/cells=row column/statistics=chisq corr.
crosstabs tables=v126 by married/cells=row column/statistics=chisq corr.
crosstabs tables=v126 by employed/cells=row column/statistics=chisq corr.
crosstabs tables=v126 by christian/cells=row column/statistics=chisq corr.
crosstabs tables=v126 by islam/cells=row column/statistics=chisq corr.
crosstabs tables=v126 by asante/cells=row column/statistics=chisq corr.
crosstabs tables=v126 by ewe/cells=row column/statistics=chisq corr.
crosstabs tables=v126 by agona/cells=row column/statistics=chisq corr.
crosstabs tables=v126 by bono/cells=row column/statistics=chisq corr.
crosstabs tables=v126 by fante/cells=row column/statistics=chisq corr.
crosstabs tables=v126 by effutu/cells=row column/statistics=chisq corr.
crosstabs tables=v125 by pincome/cells=row column/statistics=chisq corr.
crosstabs tables=v125 by age/cells=row column/statistics=chisq corr.
crosstabs tables=v125 by female/cells=row column/statistics=chisq corr.
crosstabs tables=v125 by yearsofeducation/cells=row column/statistics=chisq corr.
crosstabs tables=v125 by urban/cells=row column/statistics=chisq corr.
crosstabs tables=v125 by married/cells=row column/statistics=chisq corr.
crosstabs tables=v125 by employed/cells=row column/statistics=chisq corr.
crosstabs tables=v125 by christian/cells=row column/statistics=chisq corr.
crosstabs tables=v125 by islam/cells=row column/statistics=chisq corr.
crosstabs tables=v125 by asante/cells=row column/statistics=chisq corr.
crosstabs tables=v125 by ewe/cells=row column/statistics=chisq corr.
crosstabs tables=v125 by agona/cells=row column/statistics=chisq corr.
crosstabs tables=v125 by bono/cells=row column/statistics=chisq corr.
crosstabs tables=v125 by fante/cells=row column/statistics=chisq corr.
crosstabs tables=v125 by effutu/cells=row column/statistics=chisq corr.
regression variables=v124 pincome age female yearsofeducation urban married employed
christian islam asante ewe agona bono fante effutu/descriptives=corr/statistics=coeff r tol collin
anova/dependent=v124/method=
enter pincome age female yearsofeducation urban married employed christian islam asante ewe
agona bono fante effutu/residuals/save=pred(pred1) resid(resid1).
descriptives variables=resid1/statistics=all.
examine variables=resid1/plot=npplot.
compute absresid1=abs(resid1).
compute resid1sq=resid1*resid1.
compute pred1sq=pred1*pred1.
regression variables=v124 pred1sq pincome age female yearsofeducation urban married
employed christian islam asante ewe agona bono fante effutu/descriptives=corr/statistics=coeff r
tol collin anova/dependent=v124/method=
enter pred1sq pincome age female yearsofeducation urban married employed christian islam
asante ewe agona bono fante effutu.

```

```

regression variables=resid1sq pred1sq/descriptives=corr/statistics=coeff r tol collin
anova/dependent=resid1sq/method=enter pred1sq.
regression variables=v125 pincome age female yearsofeducation urban married employed
christian islam asante ewe agona bono fante effutu/descriptives=corr/statistics=coeff r tol collin
anova/dependent=v125/method=
enter pincome age female yearsofeducation urban married employed christian islam asante ewe
agona bono fante effutu/residuals/save=pred(pred2) resid(resid2).
descriptives variables=resid2/statistics=all.
examine variables=resid2/plot=npplot.
compute absresid2=abs(resid2).
compute resid2sq=resid2*resid2.
compute pred2sq=pred2*pred2.
regression variables=v125 pred2sq pincome age female yearsofeducation urban married
employed christian islam asante ewe agona bono fante effutu/descriptives=corr/statistics=coeff r
tol collin anova/dependent=v125/method=
enter pred2sq pincome age female yearsofeducation urban married employed christian islam
asante ewe agona bono fante effutu.
regression variables=resid2sq pred2sq/descriptives=corr/statistics=coeff r tol collin
anova/dependent=resid2sq/method=enter pred2sq.
regression variables=v126 pincome age female yearsofeducation urban married employed
christian islam asante ewe agona bono fante effutu/descriptives=corr/statistics=coeff r tol collin
anova/dependent=v126/method=
enter pincome age female yearsofeducation urban married employed christian islam asante ewe
agona bono fante effutu/residuals/save=pred(pred3) resid(resid3).
descriptives variables=resid3/statistics=all.
examine variables=resid3/plot=npplot.
compute absresid3=abs(resid3).
compute resid3sq=resid3*resid3.
compute pred3sq=pred3*pred3.
regression variables=v126 pred3sq pincome age female yearsofeducation urban married
employed christian islam asante ewe agona bono fante effutu/descriptives=corr/statistics=coeff r
tol collin anova/dependent=v126/method=
enter pred3sq pincome age female yearsofeducation urban married employed christian islam
asante ewe agona bono fante effutu.
regression variables=resid3sq pred3sq/descriptives=corr/statistics=coeff r tol collin
anova/dependent=resid3sq/method=enter pred3sq.
regression variables=v127 pincome age female yearsofeducation urban married employed
christian islam asante ewe agona bono fante effutu/descriptives=corr/statistics=coeff r tol collin
anova/dependent=v127/method=
enter pincome age female yearsofeducation urban married employed christian islam asante ewe
agona bono fante effutu/residuals/save=pred(pred4) resid(resid4).
descriptives variables=resid4/statistics=all.
examine variables=resid4/plot=npplot.
compute absresid4=abs(resid4).
compute resid4sq=resid4*resid4.
compute pred4sq=pred4*pred4.
regression variables=v127 pred4sq pincome age female yearsofeducation urban married
employed christian islam asante ewe agona bono fante effutu/descriptives=corr/statistics=coeff r
tol collin anova/dependent=v127/method=
enter pred4sq pincome age female yearsofeducation urban married employed christian islam
asante ewe agona bono fante effutu.
regressionvariables=resid4sqpred4sq/descriptives=corr/statistics=coeffrtolcollin
anova/dependent=resid4sq/method=enter pred4sq.

```

APPENDIX 3a: SPSS Programme to Analyse Inflation Data

```

GET DATA
/TYPE=XLS
/FILE='C:\ALIDU BUKARI\macrodatquarterly.xls'
/READNAMES=ON.
compute linfave=ln(infave).
compute dlinfave=linfave-lag(linfave,1).
create dlinfav1=diff (dlinfave,1).
create dlinfav2=diff(dlinfave,2).
regression      variables=dlinfave      dlinfav1      dlinfav2      preelecq      elecq
poselecq/descriptives=corr/statistics=coeff      r      tol      collin
anova/dependent=dlinfave/method=enter      dlinfav1      dlinfav2      preelecq      elecq
poselecq/residuals/save=pred(pred1) resid(resid1).
descriptives variables=resid1/statistics=all.
examine variables=resid1/plot=npplot.
compute absresid1=abs(resid1).
compute resid1sq=resid1*resid1.
compute pred1sq=pred1*pred1.
regression      variables=dlinfave      pred1sq      dlinfav1      dlinfav2      preelecq      elecq
poselecq/descriptives=corr/statistics=coeff      r      tol      collin
anova/dependent=dlinfave/method=enter      pred1sq      dlinfav1      dlinfav2      preelecq      elecq
poselecq.
regression      variables=pred1sq      resid1sq/descriptives=corr/statistics=coeff      r      tol      collin
anova/dependent=resid1sq/method=enter      pred1sq.
regression      variables=resid1sq      dlinfav1      dlinfav2      preelecq      elecq
poselecq/descriptives=corr/statistics=coeff      r      tol      collin
anova/dependent=resid1sq/method=enter      dlinfav1      dlinfav2      preelecq      elecq      poselecq.

```


APPENDIX 3b: SPSS Programme to Analyse Treasury Bill Interest Rates Data

GET DATA

/TYPE=XLS

/FILE='C:\ALIDU BUKARI\macrodatquarterly.xls'

/READNAMES=ON.

compute ltbr=ln(tbr91day).

compute dltbr=ltbr-lag(ltbr,1).

create dltbr1=diff (dltbr,1).

create dltbr2=diff(dltbr,2).

regression	variables=dltbr	dltbr1	dltbr2	preelecq	elecq
poselecq/descriptives=corr/statistics=coeff			r	tol	collin
anova/dependent=dltbr/method=enter	dltbr1	dltbr2		preelecq	elecq
poselecq/residuals/save=pred(pred1) resid(resid1).					

descriptives variables=resid1/statistics=all.

examine variables=resid1/plot=npplot.

compute absresid1=abs(resid1).

compute resid1sq=resid1*resid1.

compute pred1sq=pred1*pred1.

regression	variables=dltbr	pred1sq	dltbr1	dltbr2	preelecq	elecq
poselecq/descriptives=corr/statistics=coeff			r		tol	collin
anova/dependent=dltbr/method=enter	pred1sq	dltbr1	dltbr2	preelecq	elecq	poselecq.

regression	variables=pred1sq	resid1sq/descriptives=corr/statistics=coeff	r	tol	collin
anova/dependent=resid1sq/method=enter	pred1sq.				

regression	variables=resid1sq	dltbr1	dltbr2	preelecq	elecq
poselecq/descriptives=corr/statistics=coeff			r	tol	collin
anova/dependent=resid1sq/method=enter	dltbr1	dltbr2	preelecq	elecq	poselecq.

Appendix 4: Identification of bloated Registers based on National Population and Housing Census registered Voters for 2012 Election and Population of People 15 and over for the district based on the 2010 National

No.	District	regvoters	pop15andover	overreg	bloateddistrict
1	Adansi South	40607	65,974	-25,367	FALSE
2	Adansi North	61,923	61,886	37.00	TRUE
3	Obuasi Municipal	131,725	107,374	24,351	TRUE
4	Bekwai	66165	69,765	-3,600	FALSE
5	Bosome Freho	30029	35,029	-5,000	FALSE
6	Amansie Central	41,961	51,777	-9,816	FALSE
7	Amansie West	89,763	78,881	10,882	TRUE
8	Atwima Nwabiagya	118754	91,163	27,591	TRUE
9	Awima Mponua	72259	68,172	4,087	TRUE
10	Bosomtwe	60331	55,796	4,535	TRUE
11	AwimaKwanwoma	69915	53,760	16,155	TRUE
12	Kumasi Metropolitan	762069	1,156,647	-394,578	FALSE
13	Kwabre East	96,282	70,139	26,143	TRUE
14	AfigyaKwabre	96,226	80,441	15,785	TRUE
15	Ejisu-Juaben Municipal	109,773	86,521	23,252	TRUE
16	Asante Akim South	61,326	68,431	-7,105	FALSE
17	Asante Akim Central	42,061	43,496	-1,435	FALSE
18	Asante Akim North	40,451	41,611	-1,160	FALSE
19	Asokore Mampong	95,155	198,052	-102,897	FALSE
20	Sekyer East	34,622	36,962	-2,340	FALSE
21	Sekyer Kumawu	31,316	37,611	-6,295	FALSE
22	Sekyer Afram Plains	12,193	15,422	-3,229	FALSE
23	Sekyer Central	36,590	41,364	-4,774	FALSE
24	Manpong Municipal	55,958	52,473	3,485	TRUE
25	Ejura Sekyeredumasi Municipal	55,459	50,315	5,144	TRUE
26	Sekyer South	57,628	55,975	1,653	TRUE
27	Offinso Municipal	61,346	44,721	16,625	TRUE
28	Offinso North	42,593	31,780	10,813	TRUE
29	Ahafo Ano South	59,553	69,334	-9,781	FALSE
30	Ahafo Ano North	45,766	55,590	-9,824	FALSE
31	Asunafo South	47,116	54,805	-7,689	FALSE
32	Asunafo North Municipal	67,673	72,492	-4,819	FALSE
33	Asutifi South	34,515	33,013	1,502	TRUE
34	Asutifi North	35,255	31,494	3,761	TRUE
35	Tano South	44,851	45,001	-150	FALSE
36	Tano North	41,858	48,075	-6,217	FALSE
37	Sunyani Municipal	90,766	84,213	6,553	TRUE
38	Sunyani West	59,512	52,592	6,920	TRUE
39	Dormaa West	19,563	28,488	-8,925	FALSE
40	Dormaa Municipal	53,281	70,010	-16,729	FALSE
41	Dormaa East	29,386	30,439	-1,053	FALSE

42	Berekum Municipal	74,042	80,443	-6,401	FALSE
43	Jaman South	51,325	55,122	-3,797	FALSE
44	Jaman North	40,721	49,951	-9,230	FALSE
45	Banda	13,575	11,949	1,626	TRUE
46	Tain	42,696	52,602	-9,906	FALSE
47	Wenchi Municipal	53,486	53,446	40	TRUE
48	Techiman Municipal	94,718	90,070	4,648	TRUE
49	Kintampo North	53,995	54,974	-979	FALSE
50	Kintampo South	36,113	46,703	-10,590	FALSE
51	Nkranza North	26,014	38,708	-12,694	FALSE
52	Nkranza South	53,961	59,169	-5,208	FALSE
53	AtebubuAmantin	47,352	60,355	-13,003	FALSE
54	Pru	62,767	71,697	-8,930	FALSE
55	Sene West	26,192	32,461	-6,269	FALSE
56	Sene East	20,580	33,661	-13,081	FALSE
57	Techiman North	37,428	36,359	1,069	TRUE
58	Komenda-Edina-Abrem	77,789	86,603	-8,814	FALSE
59	Cape Coast	106,234	121,654	-15,420	FALSE
60	Abura-Asebu-Kwamankese	59,841	69,661	-9,820	FALSE
61	Mfantseman	80,235	87,959	-7,724	FALSE
62	Ekumfi	33,557	30,158	3,399	TRUE
63	AjumakoEnyanEsiam	60,784	80,122	-19,338	FALSE
64	Gomoa West	67,117	79,731	-12,614	FALSE
65	Gomoa East	85,533	124,105	-38,572	FALSE
66	Effutu	47,582	45,920	1,662	TRUE
67	Awutu Senya West	63,472	50,923	12,549	TRUE
68	Awutu Senya East Municipal	82,223	66,878	15,345	TRUE
69	Agona West	73,188	70,699	2,489	TRUE
70	Agona East	50,583	50,552	31	TRUE
71	Asikuma-Odobea-Brakwa	59,523	63,800	-4,277	FALSE
72	Assin North	74,004	93,673	-19,669	FALSE
73	Assin South	49,578	59,405	-9,827	FALSE
74	Twifo AttiMortkwaa	50,638	35,957	14,681	TRUE
75	Hemang Lower Denkyira	33,576	32,077	1,499	TRUE
76	Upper Denkyira Municipal	50,154	45,230	4,924	TRUE
77	Upper Denkyira West	34,828	34,922	-94	FALSE
78	Asuogyaman	51,884	61,425	-9,541	FALSE
79	Lower Manya Krobo Municipal	61,105	57,930	3,175	TRUE
80	Upper Manya Krobo	35,832	43,100	-7,268	FALSE
81	Yilo Krobo Municipal	55,811	55,307	504	TRUE
82	New Juaben Municipal	114,791	127,186	-12,395	FALSE
83	Akwapem North Municipal	85,914	86,454	-540	FALSE
84	Akuapem South	32,339	23,420	8,919	TRUE
85	Nsawam-Adoagyiri Municipal	59,580	56,493	3,087	TRUE
86	Suhum Municipal	60,896	56,190	4,706	TRUE

87	Ayensuono	47,081	45,960	1,121	TRUE
88	West Akim Municipal	58,007	65,869	-7,862	FALSE
89	Upper West Akim	44,923	51,605	-6,682	FALSE
90	Birim Central Municipal	76,496	88,354	-11,858	FALSE
91	Birim South	47,843	71,750	-23,907	FALSE
92	Akyemansa	43,867	56,341	-12,474	FALSE
93	Kwabiebirem	63,005	68,854	-5,849	FALSE
94	Denkyembour	47,435	47,686	-251	FALSE
95	Birim North	39,545	47,456	-7,911	FALSE
96	East Akim Municipal	84,842	107,575	-22,733	FALSE
97	Atiwa	56,017	66,511	-10,494	FALSE
98	Fanteakwa	24,487	66,152	-41,665	FALSE
99	KwahuWest	65,663	58,183	7,480	TRUE
100	Kwahu South	42,023	42,262	-239	FALSE
101	Kwahu East	41,925	46,670	-4,745	FALSE
102	Kwahu Afram Plains North	37,782	56,839	-19,057	FALSE
103	Kwahu Afram Plains South	33,164	66,528	-33,364	FALSE
104	Ga South Municipal	177,193	262,844	-85,651	FALSE
105	Ga Central	105,663	76,919	28,744	TRUE
106	Ga West	175,064	146,553	28,511	TRUE
107	Ga East	126,925	101,419	25,506	TRUE
108	La Nkwantanang-Madina Municipal	106,803	79,841	26,962	TRUE
109	Accra Metropolitan	1,091,180	1,187,509	-96,329	FALSE
110	Dadekotopon Municipal	117,054	129,386	-12,332	FALSE
111	Ledzokuku krowor Municipal	216,279	156,422	59,857	TRUE
112	Tema Metropolitan	246,478	206,840	39,638	TRUE
113	KponeKatamanso	80,000	71,954	8,046	TRUE
114	Ashiaman Municipal	126,246	130,109	-3,863	FALSE
115	Adenta Municipal	91,434	53,631	37,803	TRUE
116	Shai Osudoku	41,141	32,218	8,923	TRUE
117	Ningo Prampram Municipal	52,121	43,824	8,297	TRUE
118	Ada West	31,552	33,826	-2,274	FALSE
119	Ada East	34,545	43,127	-8,582	FALSE
120	Bole	35,059	35,126	-67	FALSE
121	Sawla-Tuna-Kalba	41,217	52,319	-11,102	FALSE
122	West Gonja	21,459	23,506	-2,047	FALSE
123	North Gonja	20,607	22,680	-2,073	FALSE
124	Central Gonja	48,769	47,149	1,620	TRUE
125	East Gonja	57,533	75,854	-18,321	FALSE
126	Kpandai	47,234	57,160	-9,926	FALSE
127	Nanumba North	67,433	74,132	-6,699	FALSE
128	Nanumba South	36,926	49,136	-12,210	FALSE
129	Zabzugu	30,390	34,168	-3,778	FALSE
130	TataleSanguli	27,332	32,437	-5,105	FALSE
131	Yendi	59,814	67,243	-7,429	FALSE

132	Mion	32,278	43,644	-11,366	FALSE
133	Saboba	30,450	32,931	-2,481	FALSE
134	Chereponi	27,194	26,542	652	TRUE
135	Gushegu	44,947	58,989	-14,042	FALSE
136	Karaga	38,504	41,267	-2,763	FALSE
137	Savelugu-Nanton	66,613	78,633	-12,020	FALSE
138	Tamale Metropolitan	173,819	142,096	31,723	TRUE
139	Sagnarigu Municipal	88,655	92,564	-3,909	FALSE
140	Tolon	48,785	41,109	7,676	TRUE
141	Kumbungu	39,804	21,706	18,098	TRUE
142	West Mamprusi	56,676	65,209	-8,533	FALSE
143	Mamprugu Moagduri	20,429	25,339	-4,910	FALSE
144	East Mamprusi	58,513	63,386	-4,873	FALSE
145	BunkpuruguYunyoo	55,600	64,523	-8,923	FALSE
146	Builsa South	16,945	21,671	-4,726	FALSE
147	Builsa North	28,106	34,184	-6,078	FALSE
148	Kasena Nankana East Municipal	45,421	66,855	-21,434	FALSE
149	Kasena Nankana West	46,494	43,850	2,644	TRUE
150	Bolgatanga Municipal	80,163	82,913	-2,750	FALSE
151	Bongo	49,662	48,470	1,192	TRUE
152	Talensi	38,794	47,755	-8,961	FALSE
153	Nandam	19,132	19,725	-593	FALSE
154	Bawku West	53,174	51,580	1,594	TRUE
155	Binduri	32,081	34,518	-2,437	FALSE
156	Bawku Municipal	59,734	58,829	905	TRUE
157	Pusiga	36,091	31,494	4,597	TRUE
158	GaruTempane	65,146	70,082	-4,936	FALSE
159	Wa Minicipal	76,481	69,747	6,734	TRUE
160	Wa West	41,123	44,301	-3,178	FALSE
161	Wa East	33,047	38,476	-5,429	FALSE
162	Nadoli- Kaleo	36,026	36,656	-630	FALSE
163	Daffiama-Bussie-Issa	17,317	18,947	-1,630	FALSE
164	Jirapa	36,087	50,530	-14,443	FALSE
165	Lambussie-Karni	20,860	29,492	-8,632	FALSE
166	Lawra	25,736	32,360	-6,624	FALSE
167	Nandom	24,501	28,868	-4,367	FALSE
168	Sissala West	27,313	27,143	170	TRUE
169	Sissala East	30,538	32,892	-2,354	FALSE
170	Keta Municipal	97,832	96,558	1,274	TRUE
171	Ketu South Municipal	127,576	100,044	27,532	TRUE
172	Ketu North	61,368	62,790	-1,422	FALSE
173	Akatsi	43,565	61,600	-18,035	FALSE
174	Akatsi North	18,918	18,459	459	TRUE
175	South Tongu	52,533	52,893	-360	FALSE
176	Central Tongu	39,433	36,426	3,007	TRUE

177	North Tongu	48,711	55,610	-6,899	FALSE
178	Adaklu	18,066	23,133	-5,067	FALSE
179	AgotimeZiope	26,611	17,502	9,109	TRUE
180	Ho Municipal	88,269	122,375	-34,106	FALSE
181	Ho west	48,891	60,069	-11,178	FALSE
182	South Dayi	26,783	28,483	-1,700	FALSE
183	Kpando Municipal	33,039	34,352	-1,313	FALSE
184	North Dayi	24,365	25,384	-1,019	FALSE
185	Hohoe Municipal	68,286	107,085	-38,799	FALSE
186	Afadjato South	34,436	58,457	-24,021	FALSE
187	Jasikan	37,644	36,802	842	TRUE
188	Biakoye	40,402	39,417	985	TRUE
189	Kadjebi	39,135	36,125	3,010	TRUE
190	Krachi East	41,007	64,589	-23,582	FALSE
191	Krachi West	23,128	28,011	-4,883	FALSE
192	Krachi Nchumuru	29,097	40,027	-10,930	FALSE
193	Nkwanta South	52,816	64,832	-12,016	FALSE
194	Nkwanta North	44,892	34,404	10,488	TRUE
195	Jomoro	79,424	90,061	-10,637	FALSE
196	Nzema East	41,370	35,868	5,502	TRUE
197	Ellembele	58,701	53,036	5,665	TRUE
198	Ahanta West	64,092	62,201	1,891	TRUE
199	Secondi Takoradi Metropolitan	238,306	376,874	-138,568	FALSE
200	Shama	49,798	48,197	1,601	TRUE
201	Wassa East	43,402	46,430	-3,028	FALSE
202	Mpohor	23,427	25,774	-2,347	FALSE
203	Tarkwa Nsuaem Municipal	99,228	56,013	43,215	TRUE
204	PreteaHuni- Valley	101,268	94,339	6,929	TRUE
205	Wassa Amenfi East	67,376	48,423	18,953	TRUE
206	Wassa Amenfi Central	51,222	39,637	11,585	TRUE
207	Amenfi West	60,255	53,977	6,278	TRUE
208	Aowin	71,925	69,832	2,093	TRUE
209	Suaman	21,123	12,321	8,802	TRUE
210	Sefwi Bibiani-Anhwiaso-Bekwai	74,471	74,148	323	TRUE
211	Sefwi Wiawso Municipal	72,521	81,867	-9,346	FALSE
212	Sefwi Akontombra	38,482	47,389	-8,907	FALSE
213	Juaboso	50,728	34,253	16,475	TRUE
214	Bodi	35,213	30,913	4,300	TRUE
215	Bia West	64,877	52,071	12,806	TRUE
216	Bia East	27,903	15,883	12,020	TRUE

Appendix 5: Identification of bloated Registers based on National Population and Housing Census registered Voters for 2000 Election and Population of People 15 and over for the district based on the 2000 National Population data

Number	District	regvoters	pop15and above	overreg	bloateddistrict
1	Jirapa-Lambussie	53401	54,746	-1345	FALSE
2	Lawra District	55278	58,112	-2834	FALSE
3	Nadowli	43684	46508	-2824	FALSE
4	Sissala	42906	47813	-4907	FALSE
5	Wa	107995	125,132	-17137	FALSE
6	Shama Ahanta East	236774	239,990	-3216	FALSE
7	Ahanta West	44914	54,608	-9694	FALSE
8	Wassa Amenfi	123531	128,208	-4677	FALSE
9	Aowin Suaman	70266	76,357	-6091	FALSE
10	Nzema East	70970	81,294	-10324	FALSE
11	Juabeso- Bia	143826	135,014	8812	TRUE
12	Bibiani-Anhwiaso-Bekwai	53516	58,546	-5030	FALSE
13	Jomoro	74740	85,361	-10621	FALSE
14	Mpohor Wassa East	53410	69,389	-15979	FALSE
15	Wassa West	126573	136,827	-10254	FALSE
16	Sefwi Wiawso	78258	83,263	-5005	FALSE
17	Abura/Asebu/Kwamankese	50277	59,281	-9004	FALSE
18	Agona	74541	98,353	-23812	FALSE
19	Ajumako-Enyan-Esiam	53052	59,316	-6264	FALSE
20	Asikuma-Odoben-Brakwa	45960	48,363	-2403	FALSE
21	Assin	95565	98,822	-3257	FALSE
22	Awutu-Efutu-Senya	80728	98,244	-17516	FALSE
23	Cape Coast Municipal	81265	95,470	-14205	FALSE
24	Gomoa	97726	110,447	-12721	FALSE
25	Komenda-Edina-Eguafo- Abirem	61426	64,539	-3113	FALSE
26	Mfantseman	90531	96,363	-5832	FALSE
27	Twifu-Hemang-Lower Denkyira	55358	60,583	-5225	FALSE
28	Upper Denkyira	62739	70,295	-7556	FALSE
29	Accra Metropolitan Assembly	1221592	1,337,982	-116390	FALSE
30	Ga District	229360	256,000	-26640	FALSE
31	Tema Municipal	286229	343,720	-57491	FALSE
32	Dangme East	49352	140,462	-91110	FALSE
33	Dangme West	59377	101,877	-42500	FALSE
34	Kadjebe	33311	62,480	-29169	FALSE
35	Keta	87510	47,133	40377	TRUE
36	Akatsi	53243	60,565	-7322	FALSE
37	Jasikan	34684	38,378	-3694	FALSE
38	Ho	154587	275,306	-120719	FALSE
39	Hohoe	97687	45,455	52232	TRUE

40	Ketu	137726	148,164	-10438	FALSE
41	Krachi	76671	67,272	9399	TRUE
42	Nkwanta	60417	94,658	-34241	FALSE
43	Kpandu	57732	84,340	-26608	FALSE
44	South Tongu	34871	39,064	-4193	FALSE
45	North Tongu	85558	88,469	-2911	FALSE
46	Kwahu South	131720	156,152	-24432	FALSE
47	East Akim	68782	88,321	-19539	FALSE
48	Afram Plains	62973	114,723	-51750	FALSE
49	Birim North	127648	90,004	37644	TRUE
50	Birim South	39442	122,272	-82830	FALSE
51	Akwapim North	65472	83,385	-17913	FALSE
52	Akwapim South	61920	62,244	-324	FALSE
53	Kwaebibrem	94126	107,346	-13220	FALSE
54	Asuogyaman	44481	40,884	3597	TRUE
55	Fanteakwa	93715	139,874	-46159	FALSE
56	Suhum-Krabo-Coaltar	83283	92,725	-9442	FALSE
57	New Juaben	95639	83,428	12211	TRUE
58	Manyo Krobo	84410	94124	-9714	FALSE
59	West Akim	82079	61,819	20260	TRUE
60	Yilo Krobo	49834	58,528	-8694	FALSE
61	Adansi West	160743	167,329	-6586	FALSE
62	Afigya Sekyere	70977	85,254	-14277	FALSE
63	Ahafo-Ano North	53625	69,387	-15762	FALSE
64	Ahafo-Ano South	43150	71,005	-27855	FALSE
65	Amansie West	88746	98,985	-10239	FALSE
66	Asante Akim South	50036	54,224	-4188	FALSE
67	Asante Akim North	68347	71734	-3387	FALSE
68	Kumasi Metropolitan	750979	737,387	13592	TRUE
69	Atwima	153261	292,999	-139738	FALSE
70	Amansie East	82477	122,592	-40115	FALSE
71	Bosomtwe/Atwima /Kwanwoma	38672	82,129	-43457	FALSE
72	Sekyere East	37443	85,117	-47674	FALSE
73	Ejisu-Juaben	57316	71,680	-14364	FALSE
74	Ejura-Sekyedumasi	88276	85,925	2351	TRUE
75	Adansi East	18228	79,147	-60919	FALSE
76	Sekyere West	73386	79,562	-6176	FALSE
77	Kwabre	72845	92,964	-20119	FALSE
78	Offinso	78439	86,701	-8262	FALSE
79	Asunafo	90904	86,370	4534	TRUE
80	Asutifi	48432	82,372	-33940	FALSE
81	Atebubu	85176	83,665	1511	TRUE
82	Berekum	61401	49,954	11447	TRUE
83	Dormaa	92715	81,002	11713	TRUE

84	Jaman	96581	77,460	19121	TRUE
85	Kintampo	80028	72,475	7553	TRUE
86	Nkoranza	70319	67,159	3160	TRUE
87	Sene	36682	45,893	-9211	FALSE
88	Sunyani	116167	103,411	12756	TRUE
89	Tano	75711	64,866	10845	TRUE
90	Techiman	94246	96,316	-2070	FALSE
91	Wenchi	94558	86,845	7713	TRUE
92	Nanumba	76386	76612	-226	FALSE
93	Bole	59305	68278	-8973	FALSE
94	East Mamprusi	89383	88,131	1252	TRUE
95	Saboba-Chereponi	46165	47862	-1697	FALSE
96	Tamale	212484	174,271	38213	TRUE
97	West Gonja	27382	73,008	-45626	FALSE
98	Gushiegu-Karaga	57609	67,105	-9496	FALSE
99	East Gonja	71750	92,311	-20561	FALSE
100	Tolon-Kumbungu	68866	71,995	-3129	FALSE
101	Savelugu-Nanton	50181	48,763	1418	TRUE
102	West Mamprusi	32265	60,273	-28008	FALSE
103	East Dagomba	67808	71,908	-4100	FALSE
104	Zabzugu-Tatale	41300	41,343	-43	FALSE
105	Bawku West	39993	43,205	-3212	FALSE
106	Bawku East	222451	166,891	55560	TRUE
107	Bolgatanga	178596	153,230	25366	TRUE
108	Bongo	14733	42,993	-28260	FALSE
109	Builsa	29122	43,491	-14369	FALSE
110	Kasena-Nankana	84339	88,947	-4608	FALSE

Appendix 6a: Illustration of the estimation of ethnicity-based voting by Akan-Asantes using the 2000 presidential election results and 2000 National Population Census figures for four districts in the Ashanti region in percentages.

ITEM/DISTRICT	Amansie East (Bekwai)	Ejisu-Juaben	Amansie West	Agona Effiduase Nsuta
Proportion of the district population who are Asantes	67.66	76.43	87.48	70.09
Proportion of the total valid votes cast in the district attributed to NPP	82.43	82.75	81.47	74.67
Proportion of the total valid votes cast in the district attributed to non-NPP parties	17.53	17.25	18.53	25.33
Derived maximum proportion of asantes who voted for NPP based on total valid votes cast assuming every asante voted for npp	100.00	100.00	93.13	100.00
Derived minimum proportion of asantes who voted for npp based on total valid votes cast assuming only asantes voted for the non-NPP parties	50.09	59.18	68.94	44.76
Average of Asantes who voted for npp based on total valid votes cast based on arithmetic mean of the variable	75.05	79.59	81.03	72.38
Average of Asantes who voted for npp based on total valid votes cast based on simple beta distribution of the variable	87.52	89.80	87.08	86.19

Notes:

The estimation is based on an analysis suggested by Anaman (2013) for Asante-Ewe countervailing voting patterns in Ghana from 1992 to 2016. It is based on the concept that in an electoral stronghold where the vast majority of indigenes vote for one dominating party, the indigenes can be analysed as two groups: (1) either all the indigenes (Asantes) voted for their preferred party, in this case NPP; and (2) all the votes acquired by other parties outside the preferred party (non-NPP parties) came from the Asante indigenes. The actual percentage of indigenes who voted for the preferred party (NPP) would lie somewhere between these two extremes. The arithmetic average of the derived maximum and the derived minimum percentages is the simple average of the two figures, which is the sum of the two figures divided by 2. The simple beta distribution approach derives the average by giving a weight of three to the maximum percentage and a weight of one to the minimum percentage.

Appendix 6b: Illustration of the estimation of ethnicity-based voting by Ewes using the 2000 Presidential election results and 2000 National Population Census figures for four districts in the Volta Region in percentages

ITEM/DISTRICT	Keta	Ketu (Denu)	Akatsi	South Tongu
Proportion off the district population who are Ewes	91.80	87.60	91.70	90.50
Proportion of the total valid votes cast In the district attributed to NDC	95.85	91.02	88.97	93.54
Proportion of the total valid votes cast in the district attributed to non-NDC parties	4.15	8.98	11.03	6.46
Derived maximum proportion of Ewes who voted for NDC based on total valid votes aast assuming every ewe voted for NDC	100.00	100.00	97.03	100.00
Derived minimum proportion of Ewes who voted for ndc based on total valid votes cast assuming only ewes voted for the non-NDC parties	87.65	78.62	80.67	84.04
Average of ewes who voted for NDC based on total valid votes cast based on arithmetic mean of the variable	93.82	89.31	88.85	92.02
Average of Ewes who voted for NDC based on total valid votes cast based on simple beta distribution of the variable	96.91	94.65	92.94	96.01

Notes:

The estimation is based on an analysis suggested by Anaman (2013) for Asante-Ewe countervailing voting patterns in Ghana from 1992 to 2016. It is based on the concept that in an electoral stronghold where the vast majority of indigenes vote for one dominating party, the indigenes can be analysed as two groups: (1) either all the indigenes (Ewes) voted for their preferred party, in this case NDC; and (2) all the votes acquired by other parties outside the preferred party (non-NDC parties) came from the Ewe indigenes. The actual percentage of the Ewe indigenes who voted for the preferred party (NDC) would lie somewhere between these two extremes. The arithmetic average of the derived maximum and the derived minimum percentages is the simple average of the two figures, which is the sum of the two figures divided by 2. The simple beta distribution approach derives the average by giving a weight of three to the maximum percentage and a weight of one to the minimum percentage.

Appendix 6c: Illustration of the estimation of ethnicity-based voting by Akan-Asantes using the 2012 presidential election results and 2010 National Population Census figures for four districts in the Ashanti region in percentages.

ITEM/DISTRICT	Bekwai	Amansie Central	Amansie West	Sekyere Kumasi
Proportion of the district population who are Asantes	82.80	85.75	81.42	80.96
Proportion of the total valid votes cast in the district attributed to NPP	85.39	83.32	79.96	78.57
Proportion of the total valid votes cast in the district attributed to non-NPP parties	14.61	16.68	20.04	21.43
Derived maximum proportion of Asantes who voted for npp based on total valid votes cast assuming every asante voted for NPP	100.00	97.17	98.20	97.04
Derived minimum proportion of Asantes who voted for npp based on total valid votes cast assuming only asantes voted for the non-npp parties	68.19	69.07	61.39	59.53
Average of Asantes who voted for npp based on total valid votes cast based on arithmetic mean of the variable	84.10	83.12	79.80	78.29
Average of Asantes who voted for npp based on total valid votes cast based on simple beta distribution of the variable	92.05	90.14	89.00	87.66

Notes:

The estimation is based on an analysis suggested by Anaman (2013) for Asante-Ewe countervailing voting patterns in Ghana from 1992 to 2016. It is based on the concept that in an electoral stronghold where the vast majority of indigenes vote for one dominating party, the indigenes can be analysed as two groups: (1) either all the indigenes (Asantes) voted for their preferred party, in this case NPP; and (2) all the votes acquired by other parties outside the preferred party (non-NPP parties) came from the Asante indigenes. The actual percentage of indigenes who voted for the preferred party (NPP) would lie somewhere between these two extremes. The arithmetic average of the derived maximum and the derived minimum percentages is the simple average of the two figures, which is the sum of the two figures divided by 2. The simple beta distribution approach derives the average by giving a weight of three to the maximum percentage and a weight of one to the minimum percentage.

Appendix 6d: Illustration of the estimation of ethnicity-based voting by Ewes using the 2012 Presidential election results and 2010 National Population Census figures for four districts in the Volta Region in percentages

ITEM/DISTRICT	Keta Municipal	Ketu South Municipal	Akatsi	Akatsi North
Proportion of the district population who are ewes	98.7	96.9	98.6	98.6
Proportion of the total valid votes cast in the district attributed to ndc	94.92	93.15	90.73	90.08
Proportion of the total valid votes cast in the district attributed to non-ndc parties	5.08	6.85	9.27	9.92
Derived maximum proportion of Ewes who voted for ndc based on total valid votes cast assuming every ewe voted for ndc	96.17	96.13	92.02	91.36
Derived minimum proportion of Ewes who voted for ndc based on total valid votes cast assuming only ewes voted for the non-ndc parties	93.62	90.05	89.33	88.68
Average of Ewes who voted for ndc based on total valid votes cast based on arithmetic mean of the variable	94.90	93.09	90.68	90.02
Average of Ewes who voted for ndc based on total valid votes cast based on simple beta distribution of the variable	95.54	94.61	91.35	90.69

Notes:

The estimation is based on an analysis suggested by Anaman (2013) for Asante-Ewe countervailing voting patterns in Ghana from 1992 to 2016. It is based on the concept that in an electoral stronghold where the vast majority of indigenes vote for one dominating party, the indigenes can be analysed as two groups: (1) either all the indigenes (Ewes) voted for their preferred party, in this case NDC; and (2) all the votes acquired by other parties outside the preferred party (non-NDC parties) came from the Ewe indigenes. The actual percentage of the Ewe indigenes who voted for the preferred party (NDC) would lie somewhere between these two extremes. The arithmetic average of the derived maximum and the derived minimum percentages is the simple average of the two figures, which is the sum of the two figures divided by 2. The simple beta distribution approach derives the average by giving a weight of three to the maximum percentage and a weight of one to the minimum percentage.

**Appendix 7: Chapter Six Regression Results For The 2012 Presidential Election
Using Ashanti And Volta Region As Independent Variables Instead Of Asanteprop
And Eweprop**

Appendix Table 6.1b: Summary of the results of the regression analysis of district socio-economic factors which influence *voter participation* as measured by TURNOUT2012A for the 2012 national presidential election in Ghana.

Dependent Variable is TURNOUT2012A defined as the total number of people who voted in the 2012 presidential election at the district level divided by the total number of people registered to vote at the district level based on data from Electoral Commission of Ghana using *Ashanti Region and Volta Region instead of Asanteprop and Eweprop respectively*.

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	Probability Level of Significance	Variance Inflation Factor
Constant	59.171	0.000	2.763	0.006**	0.000
Literacy	0.082	0.310	1.737	0.084*	8.198
Employprop	0.110	0.501	0.463	0.644	3.044
Urbanprop	0.013	0.070	0.774	0.440	2.081
Agedr	0.038	0.105	0.777	0.438	4.703
Ashanti	4.525	0.319	4.557	0.000***	1.262
Volta	-3.185	-0.208	-2.919	0.004**	1.303
Householdsize	0.844	0.259	2.295	0.023*	3.283
Registeredvoters	-0.002	-0.040	-0.550	0.583	1.358
Muslim	0.000	0.001	0.011	0.991	3.328
Christian	-0.002	-0.011	-0.063	0.950	7.738
Sexratio	-0.042	-0.054	-0.691	0.490	1.578
Disabilityprop	0.086	0.024	0.311	0.756	1.515

Notes on Table 6.1b:

R^2 0.211***

F Value4 .521**

Probability significance level of Ramsey Reset Test for model specification 0.0000***

Probability significance level of LM test of no heteroscedasticity 0.689

The LM test of heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.

***denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.

Appendix Table 6.2b: Summary of the results of the regression analysis of district socio-economic factors which influence voter participation as measured by TURNOUT2012B for the 2012 national presidential election in Ghana

Dependent Variable is TURNOUT2012B defined as the total number of people who voted in the 2012 presidential election at the district level divided by the total number of people in the district who are aged 15 and over using Ashanti Region and Volta Region instead of Asanteprop and Eweprop respectively

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	ProbabilityLevel of Significance	Variance Inflation Factor
Constant	310.627	0.000	3.959	0.000***	0.000
Literacy	0.127	0.131	0.730	0.466	8.204
Employprop	-2.053	-0.257	-2.355	0.019**	3.043
Urbanprop	-0.144	-0.206	-2.273	0.024**	2.105
Agedr	-0.280	-0.213	-1.584	0.115	2.105
Ashanti	5.914	0.114	1.618	0.107	4.625
Volta	-3.960	-0.070	-0.990	0.324	1.286
Householdsize	-0.155	-0.013	-0.115	0.909	1.300
Pop15andover	-0.039	-0.248	-3.505	0.001	1.284
Muslim	0.095	0.125	1.095	0.275	3.332
Christian	-0.071	-0.093	-0.533	0.595	7.726
Sexratio	-0.057	-0.020	-0.254	0.800	1.576
Disabilityprop	-1.610	-0.122	-1.584	0.115	1.517

Notes on Table 6.2b:

R^2 0.208***
F Value 4.445***

Probability significance level of Ramsey Reset Test for model specification 0.022**

Probability significance level of LM tesof no heteroscedasticity 0.014**

The LM test of heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.

***denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.

Appendix Table 6.5b: Summary of the results of the regression analysis of district socio-economic factors which influence *spoilt ballots* with reference to the 2012 national presidential election in Ghana and using TURNOUT2012A as one of the 12 independent variables using *Ashanti Region and Volta Region instead of Asanteprop and Eweprop respectively for the 2012 national presidential election in Ghana.*

Dependent Variable is SPOILEDBALLOTSPROP2012_i defined as the proportion of the total ballots cast declared as spoiled for the district i.

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	Probability Level of Significance	Variance Inflation Factor
Constant	-0.357	0.000	-0.083	0.934	0.000
Turnout2012A	-0.044	-0.145	-3.141	0.002***	1.265
Literacy	-0.048	-0.606	-5.133	0.000***	8.317
Employprop	0.116	0.176	2.468	0.014**	3.046
Urbanprop	-0.003	-0.050	-0.866	0.388	2.018
Agedr	0.019	0.176	2.035	0.043**	4.481
Ashanti	-0.491	-0.115	-2.404	0.017***	1.368
Volta	-0.155	-0.034	-0.706	0.481	1.351
Householdsize	-0.282	-0.288	-3.836	0.000***	3.363
Muslim	-0.004	-0.071	0.0956	0.340	3.320
Christian	-0.006	-0.097	-0.851	0.396	7.700
Sexratio	-0.003	-0.015	-0.287	0.774	1.577
Disabilityprop	-0.105	-0.097	-1.921	0.056**	1.513

Notes on Table 6.5b:

R^2 0.660***

F Value 32.818***

Probability significance level of Ramsey Reset Test for model specification 0.493

Probability significance level of LM test of no heteroscedasticity 0.000***

The LM test of heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.

***denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.

Appendix Table 6.6b: Summary of the results of the regression analysis of district socio-economic factors which influence spoilt ballots with reference to the 2012 national presidential election in Ghana and using TURNOUT2012B as one of the 12 independent variables using Ashanti Region and Volta Region instead of Asanteprop and Eweprop respectively for the 2012 national presidential election in Ghana.

Dependent Variable is SPOILEDBALLOTSPROP2012_i defined as the proportion of the total ballots cast declared as spoiled for the district_i.

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	Probability Level of Significance	Variance Inflation Factor
Constant	-0.465	0.000	-0.106	0.916	0.000
Turnout2012B	-0.008	-0.101	-2.231	0.027*	1.191
Literacy	-0.051	-0.636	-5.354	0.000***	8.221
Employprop	0.094	0.143	1.960	0.051*	3.119
Urbanprop	-0.005	-0.087	-1.442	0.151*	2.102
Agedr	0.016	0.146	1.668	0.097*	4.481
Ashanti	-0.651	-0.153	-3.295	0.001**	1.251
Volta	-0.045	-0.010	-0.209	0.835	1.302
Householdsize	-0.321	-0.328	-4.372	0.000***	3.280
Muslim	-0.004	-0.057	-0.753	0.452	3.346
Christian	-0.006	-0.102	-0.886	0.377	7.704
Sexratio	-0.002	-0.008	-0.157	0.875	1.574
Disabilityprop	-0.123	-0.114	-2.217	0.028**	1.534

Notes on Table 6.6b:

R² 0.652***
 F Value 31.676
 Probability significance level of Ramsey Reset Test for model specification 0.554
 Probability significance level of LM test of no heteroscedasticity 0.000***
 The LM test of heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.
 ***denotes statistical significance of the parameter at the 1% level.
 ** denotes statistical significance of the parameter at the 5% level.

Appendix Table 6.9b: Summary of the results of the regression analysis of district socio-economic factors which influence the share of the total number of valid votes cast won by the winning party with reference to the 2012 national presidential election in Ghana and using TURNOUT2012A as one of the 17 independent variables in the model using Ashanti Region and Volta Region instead of Asanteprop and Eweprop respectively for the 2012 national presidential election in Ghana.

Dependent Variable is SHAREOFVOTESBYWINNINGPARTY2012_i defined as the share of the total number of valid votes cast won by the winning candidate in the 7 December 2012 national presidential election in district i.

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	Probability Level of Significance	Variance Inflation Factor
Constant	0.734		1.358	0.176	
Turnout2012A	-0.008	-0.228	-4.783	0.000***	1.441
Spoiledballotsprop2012	0.024	0.200	2.924	0.004***	2.968
Literacy	-0.003	-0.300	-2.440	0.016**	9.581
Employprop	0.009	0.107	1.475	0.142	3.320
Urbanprop	-0.001	-0.099	-1.679	0.095**	2.209
Agedr	-0.003	-0.259	-2.899	0.004***	5.060
Ashanti	-0.113	-0.219	-4.070	0.000***	1.830
Volta	0.293	0.523	10.300	0.000***	1.634
Householdsize	-0.001	-0.008	-0.110	0.913	3.762
Muslim	0.002	0.198	2.712	0.007***	3.397
Christian	0.002	0.227	1.973	0.050**	8.365
Sexratio	-0.001	-0.038	-0.715	0.476	1.749
Disabilityprop	0.009	0.065	1.286	0.200	1.635
BrongAhafo	0.025	0.045	0.872	0.384	1.718
Central	0.009	0.014	0.290	0.772	1.523
Greater Accra	0.085	0.124	2.288	0.023**	1.854
Western	0.030	0.051	0.971	0.333	1.724

Notes on Table 6.9b:

R² 0.688***

F Value 25.661**

Probability significance level of Ramsey Reset Test for correct model specification 0.000***

Probability significance level of LM test of heteroscedasticity 0.015**

The LM test of heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.

*** denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.

Appendix Table 6.10b: Summary of the results of the regression analysis of district socio-economic factors which influence the share of the total number of valid votes cast won by the winning party with reference to the 2012 national presidential election in Ghana and using TURNOUT2012B as one of the 17 independent variables in the model using Ashanti Region and Volta Region instead of Asanteprop and Eweprop respectively for the 2012 national presidential election in Ghana.

Dependent Variable is SHAREOFVOTESBYWINNINGPARTY2012_i defined as the share of the total number of valid votes cast won by the winning candidate in the 7 December 2012 national presidential election in district i.

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	Probability Level of Significance	Variance Inflation Factor
Constant	0.310		0.549	0.584	
Turnout2012B	-0.001	0.080	-1.683	0.94	1.302
Spoiledballotsprop2012	0.031	0.251	3.539	0.001***	2.903
Literacy	-0.003	-0.316	-2.453	0.015**	9.574
Employprop	0.007	0.085	1.108	0.296	3.376
Urbanprop	-0.001	-0.110	-1.740	0.083**	2.292
Agedr	-0.004	-0.276	-2.949	0.004***	5.052
Ashanti	-0.133	-0.256	-4.585	0.000***	1.794
Volta	0.325	0.579	11.148	0.000***	1.553
Householdsize	-0.006	-0.051	-0.637	0.525	3.726
Muslim	0.002	0.217	2.814	0.005***	3.414
Christian	0.002	0.211	1.744	0.083**	8.427
Sexratio	-0.001	-0.026	-0.469	0.640	1.746
Disabilityprop	0.008	0.063	1.175	0.242	1.649
BrongAhafo	0.014	0.025	0.462	0.644	1.710
Central	0.024	0.038	0.741	0.460	1.532
Greater Accra	0.122	0.178	3.153	0.002***	1.844
Western	0.065	0.103	1.956	0.052**	1.794

Notes on Table 6.10b

R² 0.657***

F Value 22.275***

Probability significance level of Ramsey Reset Test for correct model specification 0.000***

Probability significance level of LM test of no heteroscedasticity 0.000***

The LM test of heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.

*** denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.

**Appendix 8: Chapter Six Regression Results For The 2000 Presidential Election
Using Ashanti And Volta Region As Independent Variables Instead Of Asanteprop
And Eweprop**

Appendix Table 6.3b: Summary of the results of the regression analysis of district socio-economic factors which influence voter participation as measured by TURNOUT2000A for the 2000 national presidential election in Ghana.

Dependent Variable is TURNOUT2000A defined as the total number of people who voted in the 2000 presidential election at the district level divided by the total number of people registered to vote at the district level based on data from Electoral Commission of Ghana *using Ashanti Region and Volta Region instead of Asanteprop and Eweprop respectively.*

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	Probability Level of Significance	Variance Inflation Factor
Constant	120.061	0.000	4.212	0.000	0.000
Literacy	-0.042	-0.062	-0.390	0.697	2.804
Employprop	-0.316	-0.286	-1.706	0.091	3.140
Urbanprop	-0.024	-0.041	-0.295	0.768	2.196
Agedr	0.008	0.008	0.050	0.960	2.767
Ashanti	-0.572	-0.017	-0.112	0.911	2.601
Volta	-0.340	-0.008	-0.074	0.941	1.383
Householdsize	-0.249	-0.027	-0.221	0.826	1.705
Registeredvoters	-0.006	-0.064	-0.530	0.597	1.649
Muslim	-0.209	-0.306	-1.851	0.067	3.061
Christian	-0.125	-0.236	-1.203	0.232	4.314
Sexratio	-0.137	-0.115	-1.100	0.274	1.221

Notes on Table 6.3b:

R^2 0.124***

F Value 1.255***

Probability significance level of Ramsey Reset Test for model specification 0.040**

Probability significance level of LM test of no heteroscedasticity 0.002***

The LM test of heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.

***denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.

Appendix Table 6.4b: Summary of the results of the regression analysis of district socio-economic factors which influence voter participation as measured by TURNOUT2000B for the 2000 national presidential election in Ghana.

Dependent Variable is TURNOUT2000B defined as the total number of people who voted in the 2000 presidential election at the district level divided by the total number of people in the district who are aged 15 and over using Ashanti Region and Volta Region instead of Asanteprop and Eweprop respectively.

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	ProbabilityLevel of Significance	Variance Inflation Factor
Constant	38.832	0.000	1.123	0.264	0.000
Literacy	0.157	0.183	1.213	0.228	2.803
Employprop	0.234	0.167	1.046	0.298	3.144
Urbanprop	0.313	0.421	3.211	0.002	2.109
Agedr	-0.023	-0.017	-0.112	0.911	2.765
Ashanti	-0.768	-0.018	-0.125	0.901	2.603
Volta	2.958	0.056	0.532	0.596	1.381
Householdsize	2.518	0.217	1.844	0.068	1.703
Pop15andover	-0.030	-0.265	-2.363	0.020	1.546
Muslim	-0.070	-0.080	-0.509	0.612	3.060
Christian	-0.196	-0.292	-1.564	0.121	4.282
Sexratio	-0.130	-0.086	-0.865	0.389	1.222

Notes on Table 6.4b:

R^2 0.201**

F Value 2.248**

Probability significance level of Ramsey Reset Test for model specification 0.054**

Probability significance level of LM test of no heteroscedasticity 0.039**

The LM test of heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.

***denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.

Appendix Table 6.7b: Summary of the results of the regression analysis of district socio-economic factors which influence *spoilt ballots* with reference to the 2000 national presidential election in Ghana and using TURNOUT2000A as one of the 11 independent variables using *Ashanti Region and Volta Region instead of Asanteprop and Eweprop respectively for the 2000 national presidential election in Ghana.*

Dependent Variable is SPOILEDBALLOTSPROP2000, defined as the proportion of the total ballots cast declared as spoiled for the district.

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	Probability Level of Significance	Variance Inflation Factor
Constant	19.945	0.000	4.089	0.000	0.000
Turnout2000A	-0.006	-0.030	-0.390	0.698	1.138
Literacy	-0.048	-0.344	-2.812	0.006	2.801
Employprop	-0.083	-0.364	-2.772	0.007	3.232
Urbanprop	-0.012	-0.100	-0.977	0.331	1.942
Agedr	-0.034	-0.158	-1.337	0.184	2.597
Ashanti	-1.531	-.223	-1.896	.061	2.580
Volta	-0.723	-0.085	-0.990	0.324	1.377
Householdsize	0.129	0.069	0.720	0.473	1.703
Muslim	-0.051	-0.363	-2.795	0.006	3.145
Christian	-0.051	-0.467	-3.080	0.003	4.299
Sexratio	-0.004	-0.017	-0.211	0.833	1.228

Notes on Table 6.7b:

R^2 0.476***
 F Value 8.091***
 Probability significance level of Ramsey Reset Test for model specification 0.030***

Probability significance level of LM test of no heteroscedasticity 0.019**
 The LM test of heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.
 ***denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.

Appendix Table 6.8b: Summary of the results of the regression analysis of district socio-economic factors which influence spoilt ballots with reference to the 2000 national presidential election in Ghana and using TURNOUT2000B as one of the 11 independent variables using Ashanti Region and Volta Region instead of Asanteprop and Eweprop respectively for the 2000 national presidential election in Ghana.

Dependent Variable is SPOILEDBALLOTSPROP2000, defined as the proportion of the total ballots cast declared as spoiled for the district.

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	Probability Level of Significance	Variance Inflation Factor
Constant	19.195	0.000	4.254	0.000	0.000
Turnout2000B	0.000	0.003	0.034	0.973	1.185
Literacy	-0.048	-0.343	-2.783	0.006	2.829
Employprop	-0.081	-0.356	-2.730	0.008	3.178
Urbanprop	-0.012	-0.098	-0.935	0.352	2.068
Agedr	-0.035	-0.159	-1.344	0.182	2.602
Ashanti	-1.525	-0.222	-1.886	0.062	2.582
Volta	-0.723	-0.085	-0.988	0.325	1.383
Householdsize	0.130	0.069	0.712	0.478	1.754
Muslim	-0.050	-0.353	-2.766	0.007	3.046
Christian	-0.050	-0.460	-3.022	0.003	4.316
Sexratio	-0.003	-0.013	-0.163	0.871	1.226

Notes on Table 6.6b:

R ²	0.475***
F Value	8.065***
Probability significance level of Ramsey Reset Test for model specification	0.065**
Probability significance level of LM test of no heteroscedasticity	0.013**

The LM test of heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.

***denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.

Appendix Table 6.11b: Summary of the results of the regression analysis of district socio-economic factors which influence the share of the total number of valid votes cast won by the winning party with reference to the 2000 national presidential election in Ghana and using TURNOUT2000A as one of the 16 independent variables in the model using Ashanti Region and Volta Region instead of Asanteprop and Eweprop respectively for the 2000 national presidential election in Ghana.

Dependent Variable is SHAREOFVOTESBYWINNINGPARTY2000_i(NPP) defined as the share of the total number of valid votes cast won by the winning candidate in the 7 December 2000 national presidential election in district i.

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	Probability Level of Significance	Variance Inflation Factor
Constant	-0.279	0.000	-0.849	0.398	0.000
Turnout2000A	0.004	0.229	4.100	0.000	1.186
Spoiledballotsprop2000	0.003	0.038	0.512	0.610	2.109
Literacy	0.000	0.016	0.107	0.915	8.176
Employprop	0.000	0.015	0.140	0.889	4.217
Urbanprop	0.002	0.236	3.104	0.003	2.196
Agedr	0.000	-0.014	-0.156	0.877	3.053
Ashanti	0.247	0.421	4.837	0.000	2.870
Volta	-0.290	-0.399	-6.102	0.000	1.622
Householdsize	0.020	0.121	1.292	0.199	3.345
Muslim	0.002	0.139	1.335	0.185	4.120
Christian	0.005	0.486	2.973	0.004	10.147
Sexratio	-0.001	-0.049	-0.837	0.405	1.282
BrongAhafo	0.053	0.075	1.039	0.302	1.980
Central	0.008	0.011	0.102	0.919	4.173
Greater Accra	-0.126	-0.116	-1.859	0.066	1.469
Western	0.071	0.094	0.952	0.343	3.716

Notes on Table 6.11b:

R^2 0.755***
 F Value 17.916***
 Probability significance level of Ramsey Reset Test for correct model specification 0.309
 Probability significance level of LM test of heteroscedasticity 0.898
 The LM test of heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.
 *** denotes statistical significance of the parameter at the 1% level.
 ** denotes statistical significance of the parameter at the 5% level.

Appendix Table 6.12b: Summary of the results of the regression analysis of district socio-economic factors which influence the share of the total number of valid votes cast won by the winning party with reference to the 2000 national presidential election in Ghana and using TURNOUT2000B as one of the 16 independent variables in the model using Ashanti Region and Volta Region instead of Asanteprop and Eweprop respectively for the 2000 national presidential election in Ghana.

Dependent Variable is SHAREOFVOTESBYWINNINGPARTY2000_i (NPP) defined as the share of the total number of valid votes cast won by the winning candidate in the 7 December 2000 national presidential election in district i.

Explanatory Variable	Parameter Estimate	Standardised Parameter Estimate	Student t Value	Probability Level of Significance	Variance Inflation Factor
Constant	0.255	0.000	0.770	0.443	0.000
Turnout2000B	-0.001	-0.053	-0.826	0.411	1.332
Spoiledballotsprop2000	0.001	0.014	0.171	0.865	2.095
Literacy	0.000	0.032	0.198	0.844	8.442
Employprop	-0.001	-0.038	-0.336	0.738	4.152
Urbanprop	0.002	0.226	2.689	0.008	2.296
Agedr	-0.001	-0.033	-0.341	0.734	3.044
Ashanti	0.245	0.417	4.423	0.000	2.877
Volta	-0.299	-0.411	-5.807	0.000	1.622
Householdsize	0.024	0.148	1.424	0.158	3.512
Muslim	0.001	0.044	0.395	0.694	4.012
Christian	0.003	0.373	2.089	0.039	10.344
Sexratio	-0.001	-0.071	-1.135	0.259	1.285
BrongAhafo	0.040	0.057	0.726	0.470	1.985
Central	0.041	0.056	0.492	0.624	4.247
Greater Accra	-0.160	-0.147	-2.133	0.036	1.539
Western	0.063	0.083	0.773	0.441	3.746

Notes on Table 6.12b

R^2 0.713***

F Value 14.430***

Probability significance level of Ramsey Reset Test for correct model specification 0.460

Probability significance level of LM test of no heteroscedasticity 0.361

The LM test of heteroscedasticity regresses the square of the error term of the model equation against the square of the predicted value of the model equation.

*** denotes statistical significance of the parameter at the 1% level.

** denotes statistical significance of the parameter at the 5% level.