Institut für Geographie
Abteilung Geoinformatik

Elections in a Spatial Context
A case study of Albanian Parliamentary Elections, 1991-2005

Dissertation

zur Erlangung des akademischen Grades
´doctor rerum naturalium´
(Dr. rer .nat)

in der Wissenschaftsdisziplin
´Geofernerkundung, Kartographie, Geoinformatik´

eingereicht an der
Mathematisch-Naturwissenschaftlichen Fakultät
der Universität Potsdam

von
Enkela Begu
geboren am 10.10.1972 in Tirana, Albanien

Potsdam, Oktober 2007

Acknowledgements

Summary

Exploring elections features from *a geographical perspective* is the focus of this study. Its primary objective is to develop a scientific approach based on geoinformation technology (GIT) that promotes deeper understanding how geographical settings affect the spatial and temporal variations of voting behaviour and election outcomes. For this purpose, the five parliamentary elections (1991-2005) following the political turnaround in 1990 in the South East European reform country Albania have been selected as a case study.

Elections, like other social phenomena that do not develop uniformly over a territory, inherit a spatial dimension. Despite of fact that elections have been researched by various scientific disciplines ranging from political science to geography, studies that incorporate their spatial dimension are still limited in number and approaches. Consequently, the methodologies needed to generate an integrated knowledge on many facets that constitute election features are lacking.

This study addresses characteristics and interactions of the essential elements involved in an election process. Thus, the baseline of the approach presented here is the exploration of relations between three entities: electorate (political and sociodemographic features), election process (electoral system and code) and place (environment where voters reside). To express this interaction the concept of *electoral pattern* is introduced. Electoral patterns are defined by the study as the final view of election results, chiefly in tabular and/or map form, generated by the complex interaction of social, economic, juridical, and spatial features of the electorate, which has occurred at a specific time and in a particular geographical location. GIT methods of *geoanalysis and geovisualization* are used to investigate the characteristics of electoral patterns in their spatial and temporal distribution. Aggregate-level data modelled in map form were used to analyse and visualize the spatial distribution of election patterns components and relations. The spatial dimension of the study is addressed in the following three main relations: One, the relation between *place and electorate* and its expression through the social, demographic and economic features of the electorate resulting in the profile of the electorate's context; second, the *electorate-election* interaction which forms the baseline to explore the perspective of local contextual effects in voting behaviour and election results; third, the relation between *geographical location and election outcomes* reflecting the implication of determining constituency boundaries on election results. To address the above relations, three types of variables: geo, independent and dependent, have been elaborated and two models have been created.

The *Data Model,* developed in a GIS environment, facilitates structuring of election data in order to perform spatial analysis. The peculiarity of electoral patterns – a multidimensional array that contains information on three variables, stored in data layers of dissimilar spatial units of reference and scales of value measurement – prohibit spatial analysis based on the original source data. To perform a joint spatial analysis it is therefore mandatory to restructure the spatial units of reference while preserving their semantic content. In this operation, all relevant electoral as well as socio-demographic data referenced to different administrative spatial entities are re-referenced to uniform grid cells as virtual spatial units of reference. Depending on the scale of data acquisition and map presentation, a cell width of 0.5 km has been determined. The resulting fine grid forms the basis of subsequent data analyses and correlations.

Conversion of the original vector data layers into target raster layers allows for unification of spatial units, at the same time retaining the existing level of detail of the data (variables, uniform distribution over space). This in turn facilitates the integration of the variables studied and the performance of GIS-based spatial analysis. In addition, conversion to raster format makes it possible to assign new values to the original data, which are based on a common scale eliminating existing differences in scale of measurement. Raster format operations of the type described are well-established data analysis techniques in GIT, yet they have rarely been employed to process and analyse electoral data.

The *Geovisualization Model*, developed in a cartographic environment, complements the Data Model. As an analog graphic model it facilitates efficient communication and exploration of geographical information through cartographic visualization. Based on this model, 52 choropleth maps have been generated. They represent the outcome of the GIS-based electoral data analysis. The analog map form allows for in-depth visual analysis and interpretation of the distribution and correlation of the electoral data studied. For researchers, decision makers and a wider public the maps provide easy-to-access information on and promote easy-to-understand insight into the spatial dimension, regional variation and resulting structures of the electoral patterns defined.

Zusammenfassung

Gegenstand der vorliegenden Studie ist die Erforschung der aus politischen Wahlen resultierenden Raumstrukturen mit Methoden und Techniken der Geoinformationsverarbeitung. Auf der Basis eines gemeinsamen räumlichen Bezuges wird es durch die Verknüpfung der Wahlergebnisse mit ausgewählten wirtschaftlichen, demographischen und sozialen Parametern möglich, die räumliche Verteilung, Kernräume (Hochburgen) und räumlich-strukturelle Verknüpfungen der Wahlergebnisse politischer Parteien zu untersuchen. Die Resultate tragen zu einem besseren Verständnis der Ergebnisse politischer Wahlen und deren räumliche Dimensionen auf nationaler bis lokaler Ebene bei. Die Studie wird am Beispiel der fünf Parlamentswahlen (1991-2005) des südosteuropäischen Reformstaates Albanien durchgeführt, die seit der politischen Wende 1990 stattgefunden haben.

Ausgangspunkt der Untersuchung ist die Tatsache, dass Wahlen, wie zahllose andere gesellschaftliche Phänomene auch, eine räumliche Dimension besitzen. Diese kommt in der territorialen Organisation politischer Wahlen in Wahlkreisen explizit zum Ausdruck. In der parlamentarischen Vertretung der politischen Parteien spiegelt sich dies allerdings nur indirekt wider. Zwar waren die parteipolitischen Aspekte politischer Wahlen als auch die parlamentarische Repräsentation sowie die soziodemographischen Strukturen der Wahlbevölkerung Gegenstand einer Vielzahl von Studien aus Politik- und Sozialwissenschaften. Dies auch gilt für die Geographie. Die erwähnte räumliche Dimension politischer Wahlen wurde bislang aber seltener in das Zentrum von Untersuchungen gestellt. Es mangelt insofern auch an spezifischen Methodologien, die eine integrierte Untersuchung aller relevanten Wahlparameter ermöglichen und eine umfassende Bewertung alle Aspekte des Wahlwahlverhaltens einer Wahlbevölkerung bei politischen Wahlen unterstützen.

Die vorliegende Studie untersucht strukturelle wie räumliche Merkmale und Zusammenhänge der wesentlichen Faktoren, die bei politischen Wahlen relevant sind. Ausgangspunkt ist die Untersuchung so genannter Wahlmuster, die durch das Zusammenwirken folgender Faktoren entstehen: Wahlprozess (Wahlsystem, Wahlcode), politische und soziodemographische Kenndaten der Wahlbevölkerung, räumliche Ausbreitung und regionale Struktur der Wahlbezirke sowie die räumliche Verteilung und Strukturierung der Wahlbevölkerung. Als Wahlmuster wird die endgültige Repräsentation von Wahlergebnissen, i.d.R. in Tabellen- und Kartenform, betrachtet. Wahlmuster entstehen durch komplexe Interaktion der sozialen, wirtschaftlichen, juristischen und räumlichen Merkmale der Wahlbevölkerung zu einer bestimmten Zeit (Wahltag) in einem bestimmten Raum (Wahlgebiet). Für die Untersuchung der räumlichen und zeitlichen Dimension der Wahlmuster werden Methoden und Techniken der Geoinformationsverarbeitung eingesetzt. Die räumliche Dimension wird dabei in drei Merkmalsgruppen untersucht:
Erstens, die Beziehungen zwischen Raum (Standort) und Wahlbevölkerung, wie sie sich in den demographischen, wirtschaftlichen und sozialen Kennwerten der Wahlbevölkerung manifestieren. Zweitens, die Interaktion zwischen Walbevölkerung und Wahl, die die Grundlage bildet, um regionale Kontexteffekte bei Wahlverhalten und Wahlergebnissen zu untersuchen. Drittens, die Verknüpfung von Wahlergebnissen und deren räumlichen Bezügen, wie sie sich in der stetigen Veränderung der Wahlkreisgrenzen niederschlägt. Um die genannten Merkmalsgruppen zu untersuchen, werden drei Variablengruppen gebildet: räumliche,

unabhängige, abhängige Variablen. Ihre raumzeitlichen Interaktionen werden mittels zweier raumbezogener Modelle untersucht.

Das *graphikfreie Datenmodell* wird in einem Geoinformationssystem erstellt und erlaubt die Strukturierung der Wahldaten. Dies bildet eine Voraussetzung für die nachfolgende räumliche Analyse. Das besondere Kennzeichen der Wahlmuster – eine mehrdimensionale Matrix der Variableninformation, die in unterschiedlichen, nicht aggregierbaren administrativen Raumbezugseinheiten vorliegt – behindert die räumliche Analyse der Originaldaten. Um dennoch räumliche Analysen durchzuführen, ist es erforderlich, den Raumbezug zu verändern bei gleichzeitiger Beibehaltung der thematischen Merkmale. Hierbei werden alle Wahldaten sowie die relevanten soziodemographischen Daten auf eine gemeinsame Raumbezugseinheit bezogen. Statt unterschiedlich administrativ abgegrenzter Raumeinheiten werden regelmäßige Rasterzellen gleicher Maschenweite als Raumbezugseinheiten definiert und den bisherigen, separaten Raummustern der Variablen überlagert. Auf diese Weise wird die räumliche Gleichverteilung aller Variablen in eine gemeinsame räumliche Bezugsbasis überführt, ohne dass die semantischen Merkmale verändert werden. Entsprechend dem Erfassungs- und Präsentationsmaßstab wurde eine Maschenweite von 0,5 km gewählt. Der hieraus resultierende feingranulare Raumgitter bildet die gemeinsame Basis für die nunmehr möglich integrierte räumliche Analyse aller Merkmalsgruppen. Die hier beschriebene rasterbasierte Raumanalyse stellt eine eingeführte Methode der GIS-basierten Geoinformationsverarbeitung dar. Sie wurde bislang jedoch selten zur Verarbeitung und Analyse von Wahldaten eingesetzt.

Das mit dem Datenmodell korrespondierende *graphikbezogene Visualisierungsmodell* wird in einer Kartenkonstruktionsumgebung erstellt und erlaubt die fachgerechte kartographische Veranschaulichung ausgewählter Analyseergebnisse des Datenmodells. Daten- und Kartenmodell sind durch einen Datenfilter verknüpft, der die erforderliche Datenkonversion ermöglicht. Auf Basis des Visualisierungsmodells wurden zweiundfünfzig Kartenmodelle des Kartogramm- bzw. Kartodiagrammtyps erzeugt. Sie ermöglichen die vertiefte visuelle Exploration, Analyse und Interpretation der räumlichen Verteilung und Korrelation der untersuchten Wahldaten. Komplementär zum graphikfreien Datenmodell eröffnet das Visualisierungsmodell Fachwissenschaftlern, politischen Entscheidungsträgern und - in begrenztem Umfang – einer interessierten Öffentlichkeit einen intuitiven Erkenntniszugang zur den räumlichen Dimensionen, der regionalen Variation der Wahlergebnisse und den resultierenden raumgebundenen Wahlmustern.

Përmbledhje

Në fokus të këtij punimi është studimi i zgjedhjeve politike nga këndvështrimi gjeografik.Qëllimi i tij kryesor është të krijojë një metodë shkencore bazuar në teknologjinë e gjeoinformacionit (GIT) e cila mundëson të kuptuarit e efekteve që veçantitë e hapësirës gjeografike kanë në dallimet hapësinore të sjelljës ndaj votës dhe rezultateve zgjedhore. Për këtë arsye janë analizuar pesë zgjedhje parlamentare të zhvilluara në Shqipëri gjatë periudhës 1991-2005.

Zgjedhjet politike, ashtu si edhe çdo fenomen tjetër shoqëror që zhvillohet jo uniform në një territor të caktuar, përmbajnë një dimension hapësinor. Pavarësisht nga fakti se ato kanë qenë në fokus të studiuesve nga disiplina të ndryshme shkencore, numri i studimeve të cilat perfshijnë aspektin hapësinor të zgjedhjeve është akoma i vogël në numër dhe në përqasje. Si rrjedhojë metodolologjia e nevojshme për të krijuar njohuri të integruara mbi të gjitha aspektet që formojnë tiparet zgjedhore ka munguar.

Ky studim analizon karakteristikat dhe bashkëveprimet e elementeve thelbësore që përfshihen në proçesin zgjedhor. Baza e metodologjisë së tij përbëhet nga eksplorimi i bashkëveprimit të tre elementëve: elektorati, proçesi zgjedhor (sistemi zgjedhor dhe kodi elektoral) dhe hapësira (mjedisi ku elektorati jeton). Për të shprehur këtë bashkëveprim termi „tipare zgjedhore" është prezantuar. Tiparet zgjedhore janë përcaktuar në këtë studim si pamja finale e rezultateve të zgjedhjeve, kryesisht në formë tabele dhe/ose harte, krijuar nga bashkëveprimi kompleks i karakteristikave sociale, ekonomike, juridike dhe hapësinore të elektoratit, e cila është formuar në një kohë dhë në një territor gjeografik të caktuar. Gjeoanaliza dhe gjeovizualizimi janë përdorur për të investiguar karakteristikat e tipareve zgjedhore në shpërndarjen e tyre hapësinore dhe kohore. Analiza të bazuara në harta të krijuara nga të dhëna të agreguara janë përdorur për të vizualizuar dhe studiuar shpërndarjen hapësinore dhe kohore të komponenteve dhe relacioneve të tipareve zgjedhore. Analiza e tre relacioneve përbën bazën e këndvështrimit gjeografik në këtë studim.Relacioni i parë është ai ndërmjet hapësires dhe elektoratit i cili shprehet nëpërmjet tipareve sociale,demografike dhe ekonomike të elektoratit dhe përbën profilin e kontekstit elektoral. Relacioni i dytë adreson bashkëveprimin ndërmjet elektoratit dhe zgjedhjeve dhe formon pikënisjen për të eksploruar perspektivën e "efekteve lokale kontekstuale" në sjelljen ndaj votës dhe rezultateve zgjedhore. Për të analizuar relacionet e sipërpërmendura tre variable (gjeografike, të pavarur dhe të varur) dhe dy modele janë prezantuar në këtë studim.

Modeli i parë, ai i bankës së të dhënave, i realizuar në GIS, mundëson strukturimin dhe organizimin e të dhënave në mënyrë që me to të realizohen më pas analizat hapësinore. Veçantia e tipareve zgjedhore – si elementë multidimensionalë që përmbajnë informacione në tre variable, të ruajtura në shtresa të dhënash që kanë njësi referencuese dhe shkallë matëse vlerash të ndryshme - pengon funksionimin e analizave hapësinore me të dhënat në statusin e tyre fillestar. Për këtë arsye manipulimi i gjeometrisë së të dhënave por duke ruajtur përmbajtjen e tyre është kusht për të studiuar tiparet zgjedhore. Në këtë kuadër metoda hapësinore që ky studim prezanton është një analizë e bazuar në teknologjinë GIS që punon me të dhëna në format raster. Konvertimi i të dhënave origjinale nga vektor në raster lehtëson integrimin e të dhënave në një njësi referencimi të përbashkët dhe ruan nivelin fillestar të detajimit të tyre. Ky konvertim mundëson procesin e integrimit të variableve dhe kreyrjen e

analizave hapësinore. Për më tepër, puna me format raster bën të mundur kalimin e vlerave të cilat janë të bazuara në një shkalle të përbashkët vlerash tek të dhënat fillestare duke eleminuar kështu diferencat në shkallën matëse mes tyre.

Modeli i dytë, ai i gjeovizualizimit i realizuar në një platformë grafike është i lidhur me modelin e bazës së të dhënave. Ai mbështet proçesin e komunikimit të informacionit duke përdorur vizualizimin hartografik të tij. Në këtë kuadër, 52 harta „choropleth" janë krijuar në këtë studim. Ato përfaqësojnë produktin final të analizave te kryera me të dhëna të integruara në GIS. Vizualizimi i të dhënave si rrjdhojë e paraqitjes së tyre në fomë harte ndihmon të kuptuarit e relacioneve që komponentët e tipareve zgjedhore shfaqin në shpërndarjen e tyre hapësinore dhe kohore duke u bërë kështu një burim i vlefshëm informacioni për publikun e gjerë dhe vendimmarrësit.

Contents

List of maps

List of figures

List of tables

Acronyms

GIT   Geoinformation Technology
GIS   Geographic Information Systems
DB   Data base
CEC   Central Election Commission
VCC   Voting Center Commissions
ZEC   Zone Election Commission
OSCE   Organization for Security and Co-operation in Europe
EOM   Election Observation Mission
ODIHR   Office for Democratic Institutions and Human Rights
CSCE   Commission on Security and Cooperation in Europe

Chapter 1

Introduction

In this chapter, the following issues are presented

- Motivation and framework of the study
- Objectives and research questions
- Overview of the study approach
- Outline of the thesis

Keywords: elections, electoral context, voting behavior

1.1 Motivation

In the history of any democratic country elections on national as well as regional levels are landmarks for the allocation of power within society and the political, societal and economic development of its population over space and time. The study of elections has been a continuing source of interdisciplinary debate, largely between political scientists and sociologists (Johnston and Taylor 1979). Geographers have contributed to these studies by introducing the role of place in the electoral process. However, although the roots of electoral geography as a sub-discipline of political geography can be traced to the early years of the 20th century, geographers have only recently shown greater interest in studying the spatial and non-spatial processes accompanying election events.

This study is motivated by the interest to explore the election features from a geographical perspective aiming to contribute in understanding of voter's behaviour by both public opinion and politicians. A number of factors that might influence the spatial and temporal distribution of election features are analysed for this reason in a spatial approach that make use of Geoinformation technology (GIT).

The study focuses on the five national parliamentary elections in Albania following the political turnaround of 1990 between 1991 and 2005. The spatial variations of voting behaviour in these elections repeatedly reveal a stable pattern - the north-south cleavage. Traditionally with regard to voting decision the electorate in the north-east part of the country have supported the right-wings parties, mainly Democratic Party and the opposite has occurred in the south where the electorate prefers almost always Socialist Party and other left-wing ones. This electoral behaviour has produced a spatial clustering of voting decision which in turn generates an important implication for understanding voters` behaviour: the electorate should not be studied as an homogeneous group across the nation (Flint 1995). It is therefore once more reinforced the necessity for a place-specific analysis that will reveal the underlying factors that are responsible for these spatial differences in voting decision. Hence, for an in-depth investigation into the results of an election event, it is important not only to understand how voters arrive at their choices when casting their votes but also to consider as well other factors that exert influence. This requires research beyond the results of an election process (van der Eijk 2002). In this framework and being consistent with the view of Agnew´s (1987) that *"we can never satisfactorily explain what drives individual choices and action unless we situate them in the social-geographical contexts of their lives"* this study introduces the concept of electoral patterns and applies a context-factor analysis to explore the voting behaviour in Albania. Spatial as well as non-spatial factors, which significantly contribute to the formation of election patterns and, eventually, to the allocation of political power are therefore explored. *The election patterns are defined in this study as the final view of election results, chiefly in tabular and/or map form, generated by the complex interaction of social, economic, juridical, and spatial features of the electorate, which has occurred at a specific time and in a particular geographical location.*

From a geographical perspective, two ways in which geographies interfere in formation of lectoral patterns have been investigated: a) the influence of local contextual factors in voters' behaviour and b) the influence of the constituency boundaries delineation in the election results. In this study, *voting behaviour* comprises two elements: 1*) voters participation in the election event and 2) their political preferences in casting the vote*. With regard to the

constituency boundaries delineation, geographical influences have been explored by looking at voter's allocation per constituency.

In a country like Albania, factors including ethnic or clan affiliation, post-turnaround migration and economic participation shape the distribution of population. The resulting patterns have both societal and spatial dimensions. It is obvious that these patterns affect the electorate's political attitudes, which, on one hand, influence turnout or party preference and the election outcome in general, thus generating a particular regional pattern of political representation. In addition, the spatial distribution of the electorate, i.e. the locations of voters, which determine the level of attention this group, will receive from the political parties and their candidates in the attempts to win their votes extend the impact of the geographical distribution of population on voting decision (Johnston and Taylor 1979).

Parliamentary representation of the electorate is on the other hand, determined by the geographical location of voters within the spatial system of constituencies. Depending on the electoral system prevailing – in Albania this is a combination of proportional and majoritarian systems – this representation is partly irrespective of the fact whether a candidate has attained the majority of votes in one constituency. Defined and delineated by state administration it is the constituencies that represent the basic organisational as well as spatial entity to which all electoral processes are referred. That is why the size and the boundaries of constituencies, in particular, play a vital role in the political and spatial representation of voting. There has not been one parliamentary election in Albania for which existing constituencies have not been subjected to spatial revisions resulting in changing boundaries driven by the interest of the political party in power to keep or extend its representational majority. This phenomenon is known by the term "Gerrymandering" and has constantly been observed in a large number of countries around the globe since the 19th century (Johnston and Taylor 1979). Thus the deliniation of constituencies can have a major influence on the overall result of an election, through the translation of votes into patterns of representation, which, in turn, produce a unique geographical influence on political power representation (Johnston and Taylor 1979). From the above it will be clear that the delineation of the constituency boundaries and the resulting size of constituencies does affect the political characteristics of the electoral zone, and hence the nature of its representation.

1.2   Framework of the study

The geographical perspective for studying elections features forms the baseline of this study (figure 1-1). The electorate represents that sub-group of population, which is directly engage with election process. In the framework of election rules the validity of the rights and responsibilities that electorate has is spatially limited. The concern of geographical perspective is therefore the triangle of interaction between the electorate, place and elections in order to understand how geographical settings affect voting behaviour and election outcomes. In this study, this interaction is investigated in a spatial approach by making use of geoinformation technology (GIT). Geoanalysis and geovisualization functionalities of GIT are used to explore spatial patterns of voting behaviour and portray the electoral mosaic of 1991-2005 parliamentary elections in Albania.
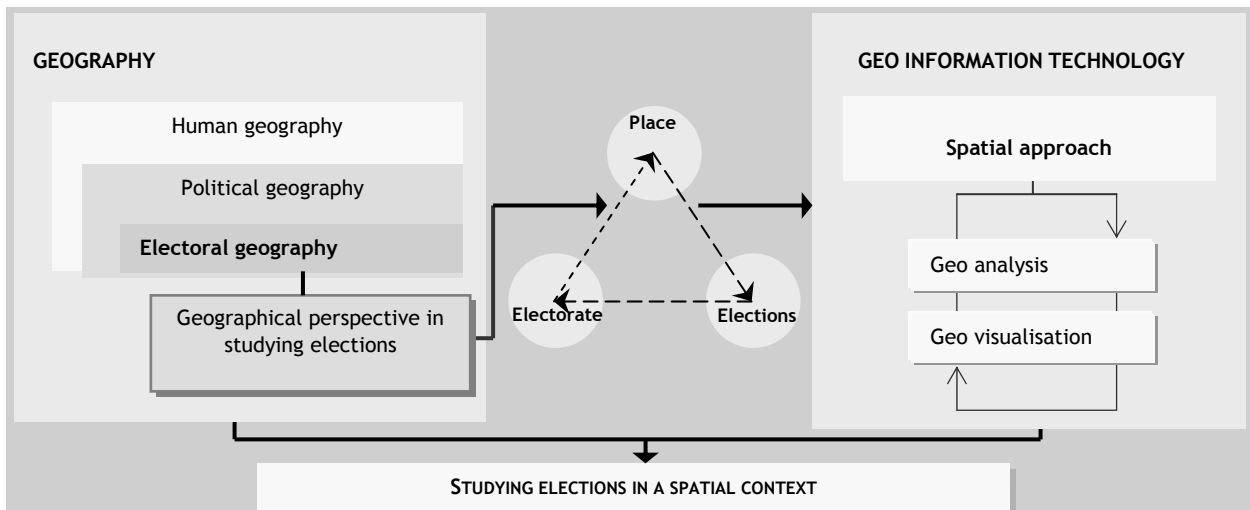
Figure 1-1 Framework of the study

Independent of the perspective from which they are tackled, there are three core elements in studying elections: 1) voting behaviour, 2) results of elections and 3) electoral code that specifies electoral rules. Since the framework of this study is the geographical perspective, these three elements will be discussed in the framework of the triangle: electorate, place and elections. Electorate is approached here as the target group with social, demographic and economical characteristics. To represent these characteristics the concept of *electoral context* is introduced. Place refers to *geographical location* where electorate reside and consequently electoral context is shaped. Election is the process at which electoral context, geographical location and electoral rules are linked and manifested through *voting behaviour*. This second triangle of electoral context, geographical location and voting behaviour is on the focus of this study (figure 1-2). The interaction between these three entities is defined here as a process that generates electoral patterns.

Exploring the characteristics and spatial and temporal variations of electoral patterns is the primary mandate of this study. It aims to demonstrate that only by understanding these patterns we can in fact understand the mechanism behind voting behaviour and meanings of election outcomes. The analysis of electoral patterns should guide us to generate electoral information that will be delivered to decision-makers and public opinion.
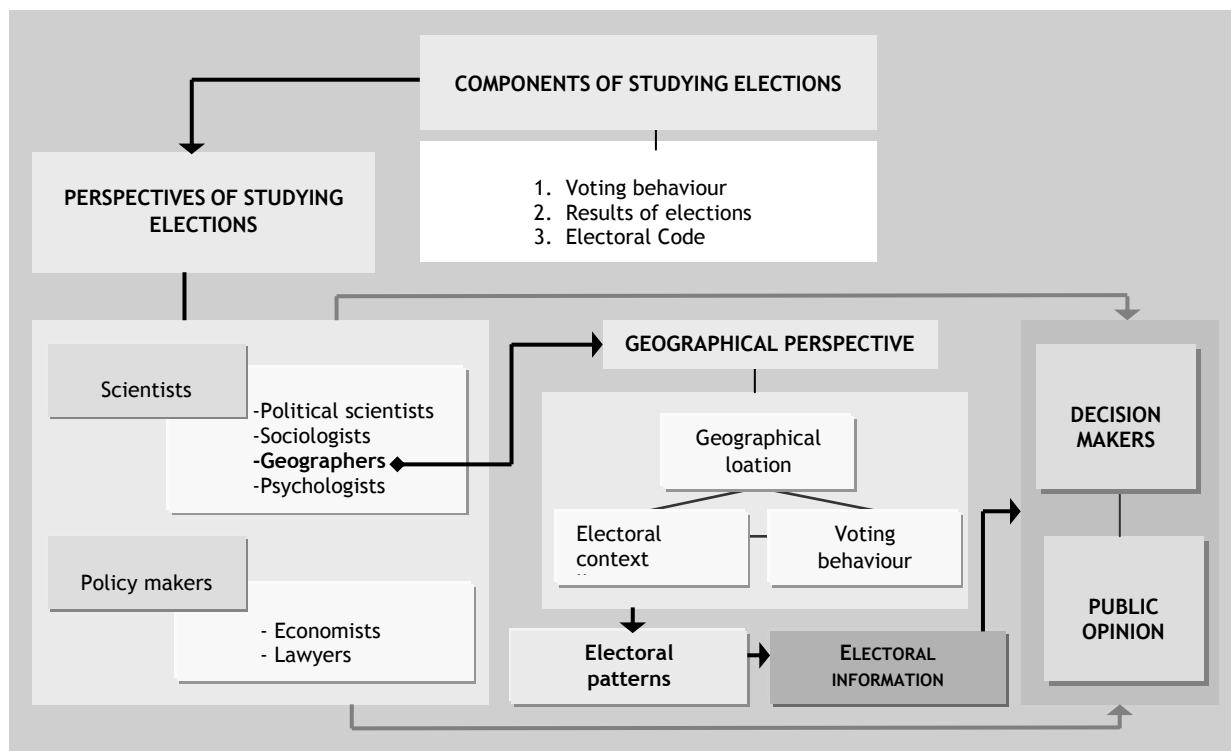
Figure 1-2 Focus of the study

1.3 Objectives of the study and research questions

The objectives of this study are:

1. To contribute to the current state-of-the-art in studying elections by:

- introducing the concept of electoral pattern as a multi dimensional element embodying the interaction of voting behaviour, electoral context and spatial location occurring at a specific time

- presenting an approach that combines spatial data modelling and geovisulaization modelling and demonstrate as their usefulness in exploring the characteristics of electoral patterns in their spatial and temporal distribution

2. To contribute to the knowledge of public opinion and decision makers for a better understanding of election's features by:

- analysing based on a GIT approach the characteristics of spatial and temporal distribution of electoral patterns in Albanian Parliamentary Elections during 1991-2005

- investigating the relation between the process of delineating constituency boundaries and election results

The research questions related to the above objectives are as follows:

1. What characterizes the spatial and temporal distribution of Albanian voting behaviour in parliamentary elections during 1991-2005?

2. Does the perspective of "local contextual effects" explain the characteristics of spatial and temporal distribution of voting behaviour?

3. What are the characteristics of the spatial and temporal distribution of electoral patterns that have emerged in these elections?

1.4   Methodological approach

This study constitutes of two major parts: a theoretical baseline and an applicative work. The main aspects of the methodological approach are briefly explained below.

The primary goals of theoretical baseline are to:

- investigate the state-of-art in election studies and the relevance of geographical perspective

- design a spatial approach for studying elections

- specify the case study requirements in terms of a)relationships that need to be explored in election patterns and b)related data requirements.

Applicative work represents the implementation of the designed approach and serves to:

- introduce the spatial approach for studying elections

- present the benefits of geovisualization in exploring electoral patterns and improving our understanding on voting behaviour and election outcomes

1.4.1 Limitations of the study

The limitations of this study are related to the availability of data concerning the electoral context. Until now the electorate has not been studied exclusively as a subgroup of Albanian population. Therefore data on social, demographic and economical features for this sub-group are lacking. Within the time frame allocated and scope of this research it was also not feasible to generate such data through survey methods (there are analysed five parliamentary elections from 1991-2005). Hence, census data for the whole population are used instead. The term "electorate" will be used as such in this study although the socio-demographic and economic characteristics refer to the whole population.

1.5   Outline of the thesis

This thesis is organized in six chapters. Their content is briefly described as below.

Chapter 1 provides an overview of the study framework, its aim and objectives. *Chapter 2* outlines the scientific framework of the study and its relation with other related scientific disciplines. *Chapter 3* introduce the case study area. *Chapter 4* introduces the electoral patterns components and their relations in the framework of geographical perspective. It presents the case study variables and describes their significance in the context analysis of electoral behaviour in Albania. *Chapter 5* elaborates the study approach and present the results of the analysis. *Chapter 6* present the findings and conclusions of the research.

The outline of the thesis is illustrated by figure 1-3.
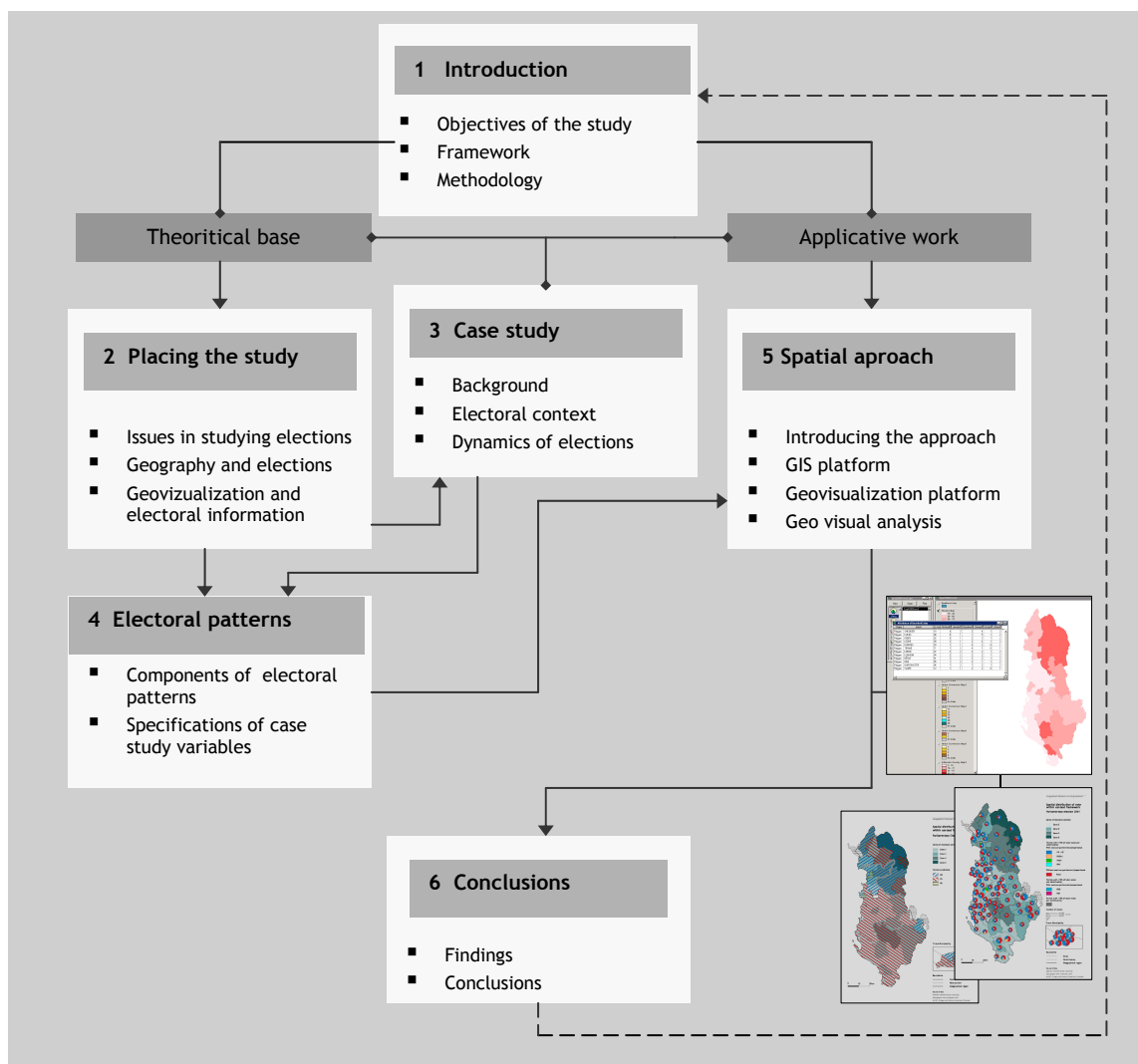
Figure 1-3 Outline of the study

Chapter 2

The study settings

This chapter presents

- Key concepts related to the study of elections
- The scientific framework in which this study comprises

Keywords: electoral geography, geovisualization

2.1 Core issues in studying elections

The importance of studying elections is primarily linked to traditional democratic theory that elections provide a key opportunity to assess the performance of the democracy in a country. In addition, it is the elections that give the ultimate power to the citizens and engage them with the political processes. Election studies are the primary example of "big science" in modern political research (Knight et al 2002).Their focus of investigation is on different facets that constitute the electoral process with the aim to understand election results in general and voter's behaviour in particular.

From the organizational viewpoint, election studies can be conducted on a national or cross-national level. National-level studies have been focusing on regional differences inside a country in terms of culture, religion, ethnic issues etc. The first election study was undertaken in 1952 in Michigan, USA. Cross-national electoral research on the other hand emphasizes differences in institutional arrangements such as election systems, timing of elections etc. One example would be the European Election Studies (EES) dated back from 1979. Over time, the complexity and high cost of conducting election studies necessitated the collaboration between academic institutions, research centres or universities and governmental bodies. These collaborations have proved to be very successful and have produced in turn a real wealth of electoral academic studies and data nationwide. This is the case of the American National Election Studies (ANES), originated in 1948 and Canadian Election Study (CES) in 1997 that have had great influence also on European studies in this field. With regard to cross-national electoral studies, a significant example is a collaborative program of cross-national research in election studies conducted in over fifty states around the world called Comparative Study of Electoral Systems (CSES), Michigan USA.

The classic design of an election study is the pre-election interview followed by an immediate post-election assessment, hence providing insights for testing the hypothesis prior to the election outcomes. However predicting the winners is not the core concern of election studies. Their purpose is in general to explain:

- electoral behaviour
- influences on voter's decisions
- performances of political parties

From the perspective of the study`s objective, a distinction can be made for studies which focus on explaining the outcome of elections and those that focus on voter's behaviour. Because of the complexity of the election as a process, scholars have studied the many facets that accompany these events from different angles in spite of the primary objective. In this context four main theoretical approaches can be distinguished.

The sociological approach had focused on exploring social cleavages and partisan dynamics of electorate.

The social-psychological perspective added to the first approach issues regarding the level of citizen's political knowledge and preferences, ideological orientation and party images.

The third approach, *political communication,* investigates the impact of media effects in conveying information along with the level of its processing by voters.

The p*olitical economy* approach generally explores the impact of economic conditions on electoral decision-making process.

Considering this wide range of approaches in studying elections a cooperation between national election studies and other related scientific disciplines is required in order to fully understand election events

2.2   Geography and electoral research

Like all other social processes that develop not uniformly over space, election processes are no exception as well. Geography keeps getting in the way while trying to explain the spatial aspects of election's outcome and electorate's behaviour. This is why election studies and geography interact in the field of electoral geography.

During the 1970`s electoral geography developed as a major sub-field of political geography.

There are quite of a number of approaches that give different definitions to the field of political geography. To some political geographers it is a field of studying political territorial units, borders and administrative subdivisions (Alexander 1963 Globlet 1955). For others t is the study of political processes, differing from political science only in the emphasis given to geographical influences and outcomes and in the application of spatial analysis techniques (Burnett and Taylor 1981, Karperson and Minghi 1969). Essentialist definitions of political geography have tended to conceive politics in very formal terms, as being about the state, elections and international relations (Jones et al. 2004).

Along the way a fourth approach has been taken by scholars who have tried to define political geography in a much more open and inclusive manner. John Agnew as one of them defines political geography simply as "*the study of how politics is informed by geography*".

One of the latest publication in political geography by Jones et al. 2004, describes political geography as a cluster of work within the social sciences that engages with the multiple intersections of "politics" and "geography", where these two terms are imagined as triangular configurations illustrated by figure 2-1. In the first triangle the interaction between power, politics and policy is the main domain of political science. In this framework policy is the intended outcome, the things that power allows one to achieve and that politics is being in a position to do. Political geography deals with the interaction of this triangles and a second one of space, place and territory. Following Jones et al further explanations, political geography recognises that the above six entities – power, politics and policy, space, place and territory – are intrinsically linked, but a piece of political geographical research does not need to explicitly address them all. As such two research examples would be spatial variations in policy implementation or influence of territorial identity on voting behaviour.

Political geography therefore embraces an innumerable multitude of interactions, some of which may have a cultural dimension which makes them also of interest to cultural geographers, some of which may have an economic dimension also of interest of economic geographers, some of which occurred in the past and are also studied by historical geographers. As such the metaphor used by Jones et al (2004) that "political geography has only frontier zones no borders" would be an appropriate one.
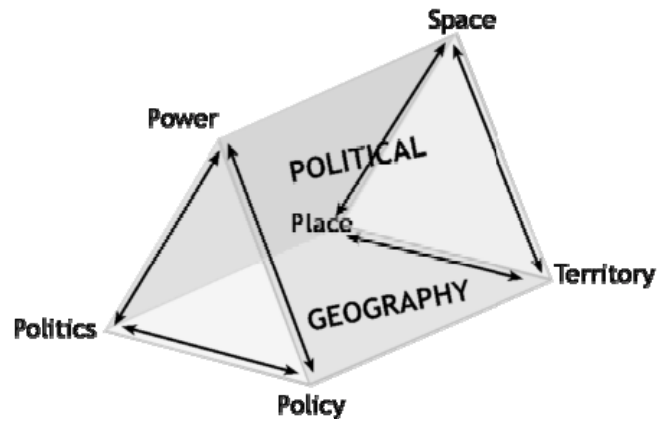
Figure 2-1 Political geography as the interaction of "politics" and "geography" (after Jones et al, 2004)

In reaching the actual prominence as an academic discipline, electoral geography went through different development phases to crystallize its objectives. In this regard the challenge for it has always been "to become more geographical".

In exploring the geographical dimension of elections, electoral geographers focus in three major courses: the geography of voting, the geography of translating votes into seats and the geography of electoral power. There are two central ideas in which these courses are based. First, voters are mobilized in places where they learn to interpret their social and political positions. Second, elections results are determined in these places and by strategies used to design electoral systems (Johnston et al 1990). Within this framework, Clark (1990) groups the types of electoral research in three main categories: *a) performance oriented b) design oriented and c) regulation-oriented*. He describes the first category as mainly empirical research that focuses on "the performance of classes, groups, coalitions of voters in elections at various geographical scales". Therefore the estimation of the relative contribution of place-specific variables is in the centre of performance-oriented approach. The second major type of research, design-oriented focuses on electoral system and is more theoretical. Some examples of this type of research are the study of voting rights and constituency boundary definition. The third type of electoral research, regulation oriented, focuses upon the conduct of elections. The work in this direction includes investigation on the regulation of campaigns and regulation of the conduct of the elections.

Reviewing the development of electoral geography as a scientific discipline (figure 2-2), Agnew (1990) has distinguished four main objectives of research in this field: 1) geography of electoral behaviour 2) the effect of geography of interpersonal information flow on individual voting behaviour 3) geography of electoral systems and 4) the geography of electoral performance and the geography of organization and mobilization exhibited by political parties.

The first two objectives were predominant in electoral research during the 1950s. They reflect the behaviouralist paradigm that dominated the political science at this period. In this framework the analysis was based on survey data focusing on relation between voter's attitude and their demographic characteristics. The third and fourth objectives deal mainly with the influences of electoral districting, parties' performance and partisanship in the outcomes of elections.

		Objectives		
Geography of Electoral behaviour	Geography of Interpersonal information flow and Voting behaviour	Geography of Electoral systems	Geography of Political parties and Electoral geography
1	2	3	4
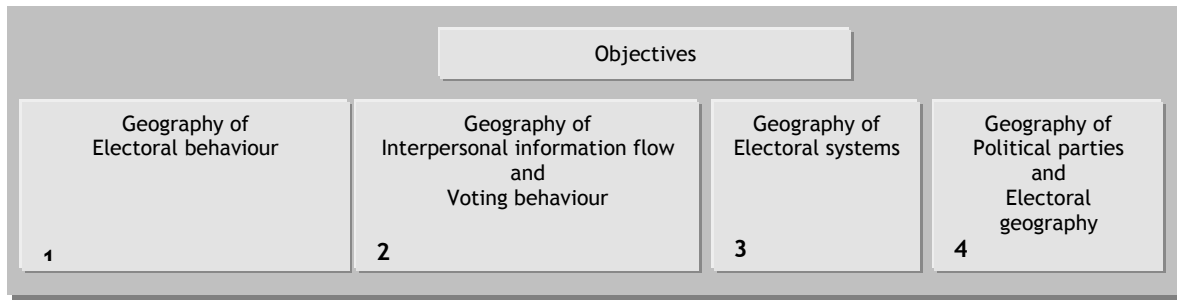
Figure 2-2 The objectives of research in electoral geography (after J.Agnew, 1990)

The above objectives have been examined from one or other of the following four perspectives as illustrated by figure 2-3. From the modernization-nationalization perspective, the most significant work is that of Cox (1969). In explaining electoral behaviour, he emphasises two aspects: the "neighbourhood effects" in terms of the effects of distance on information flow and the "partisan cues" which is related to the information about political parties. According to him, the modernization (industrialization and urbanization) produce a nationalization of electoral behaviour. Other scholars e.g Agnew (1990) have argued that this impact on election features is important only at early stages of historical development, then increasingly unimportant.The "demographic welfare" perspective is elaborated by scholars as Cox (1973), Brunn (1974) and Johnston (1979) in terms of the influences in electoral outcomes of the spatial distribution of social groups and their access to public goods and services. More related to social theory are the perspectives of uneven development and micro-sociological place context. These two perspectives are seen as major areas for intellectual development in electoral geography and examine the electoral geography in terms of daily experience with social context of particular places (Agnew 1990 Reynolds 1990).

The four perspectives are based on respective assumptions (figure 2-3). All of the above described objectives and perspectives intersect with each other. As such in determining the methodology of electoral research, two elements play a crucial role (1) the scale of analysis and (2) the selection of causes for political behaviour.

		Perspectives		
Modernization -nationalization	Demographic welfare	Uneven Development	Micro- sociological place
I	II	III	IV
Spatial diffusion of political consensus; the effects of contagion and information flow	The effects of population composition; spatial access to public services and goods	Spatial relation between core and periphery; uneven development and cultural division of labour	Economic-cultural context of places; historical development of places; active socialization in place; party organization and place
		Assumptions		

Fig. 2-3 Perspectives and related assumptions of research in electoral geography (after J.Agnew 1990)

2.3   Spatial analysis in electoral geography

Thinking spatially is the core commodity of geographers. That is why the spatial variation of voting behaviour is in the focus of electoral geography. From the theoretical perspective, the debate in explaining these variations has until toady developed as a controversy between two perspectives: compositional effects vs. local contextual effects. According to compositional effects perspective "similar people vote similarly, independent of their location"(McAllister 1987).This approach is based on the modernization-nationalization perspective described in section 2.2 and support the theory of studying electorate as a national unit, not necessarily regionally (Perdomo 2003). The local contextual perspective on the other hand argues that social and political interests in specific places can be different from national trends (Agnew 1987). These are exactly the interests that shape voters political perceptions and produce local specific electoral patterns. Based on this approach "people in similar socio-economic conditions may vote differently depending on where they live" (Perdomo 2003). This is possible because additional local factors influence their voting decision. Among these factors are the so called "neighbourhood effects". These effects are first manifested through the role that the living environment plays for the electorate when it comes to conducting and interpreting political issues. Via local discussions individuals, regardless of different backgrounds, tend to join the dominant opinion in their neighbourhood. This attitude is valid for both political choice and decision to participate in the election process. Another example of this neighbourhood effect is manifested in those cases when candidates poll strongly in their area of origin. Further more, variations in the level of political campaign from candidates and political parties in different electoral constituencies prove to exert a great influence in voting decision.

2.4   Communicating electoral information

Providing statistical data on votes and turnout values fulfils only partly the aim of understanding election events, why people voted the way they did and why political parties and/or candidates performed better in certain regions. Elections are complex phenomena that involve, on one side people with their societal, cultural, political and spatial background, and on the other side electoral rules that lead and frame their behaviour. Hence, to communicate information on elections should go beyond publishing raw statistical data that focus only on "winners and losers" of the event.

This complexity of electoral information necessities the use of methods and tools beyond publications of statistical figures in order to cover the whole spectrum of meanings embodied at this information and to facilitate the transfer of knowledge. To enable this, a creative manipulation of data is required, which will support both analysis of electoral information and a deeper understanding of election process and its outcomes. As already stated in Chapter 1, electoral information, derived from exploration of electoral pattern inherits a spatial dimension. Therefore, the exploration and communication of electoral information is addressed in this study by making use of spatial analysis and geovisualization techniques offered by geoinformation technology.

The following sections provide an overview of basic concepts related to the technology of handling geoinformation and its role in exploring and analyzing electoral information.

2.4.1 Geoinformation Technology – a gateway to science and problem solving

Geographic location is an important attribute of activities and decisions in which people are engaged in their everyday life. Hence, data on geographical location of objects and/or phenomenon linked with human living environment are required in different forms and contexts. These kinds of data are referred to as *geodata*. They represent raw geographic facts collected for different purposes within the problem domain.

Information instead, differentiates from data in general terms by implying some degree of selection, organization and preparation for particular purposes. Therefore information is data serving some purposes or data that have been given some degree of interpretation (Longley et al 2005). Information derived from geodata can be considered as a different type of information, due to their inherent structure (location, attributes and time), the semantics, and the geographic scale used (MacEachren and Kraak 2001).This information is referred to as geoinformation.

Geoinformation technology (GIT) refers to the group of technologies designed and used to collect, store, process and visualize geoinformation. It therefore includes both systems for data capture such as remote sensing or terrestrial surveying and tools with a broader functionality such as Geographic Information Systems (GIS) (Sliuzas 2004). GISs are defined as a technology designed for capturing, storing, transforming, analysing and displaying spatial data. They are both specialised database management systems for handling this kind of information and toolboxes of methods to manipulate it. These systems help us to manage what we know by making it easy to organize and store, manipulate and synthesize, and apply knowledge to the solution of the problem (Longley et al. 2005).

Since linking location to information is a process that applies to many aspects of decision-making, handling geoinformation is therefore vital to make sound decisions at the local, regional, and global levels (Morales 2004). Hence, decision making is the main goal of spatial analysis. The power of GIS in supporting human decisions lays in its capabilities to combine data from different sources and add values to them through processes of data manipulation and analysis (figure 2-4).

Decision-making support infrastructure	Ease of sharing with everyone	GIS example
Wisdom ↑	Impossible	Policies developed and accepted by stakeholders
Knowledge ↑	Difficult	Personal knowledge about places and issues
Evidence ↑	Often not easy	Results of GIS analysis of many datasets or scenarios
Information ↑	Easy	Contents of a database assembled from raw facts
Data	Easy	Raw geographic facts

Figure 2-4 A ranking of the support infrastructure for decision making (after Longley et al. 2005)

The above illustration differentiates between the ease of sharing data, information and knowledge as it ranks them in the framework of GIS processes that support decision-making infrastructure. According to this schema, evidence arises from retrieved information and it is a result of different forms of analysis that have been performed. In order to share it and communicate the results special means are needed as for e.g visualization tools. Knowledge is described here as "difficult to share" since it does not simply arise from having access to information rather then it requires interpretation and a profound understanding of phenomenon that was researched. Wisdom represents the top level of decision making infrastructure and it is highly individualized (Longley et al. 2005).

GISs serve both as a science and technology for solving spatial problems. Some of the main definitions of GIS and the groups who profit from its use are illustrated in figure 2-5.

■ A container of maps in digital form	The general public
■ A computerized tool for solving geographic problems	Decision makers, planers, community groups
■ A spatial decision support system	Management scientists, operations researchers
■ A mechanized inventory of geographically distributed features and facilities	Utility managers, transportation officials, resource managers
■ A tool for revealing what is otherwise invisible in geographic information	Scientists, investigator
■ A tool for performing operations on geographic data that are too tedious, expensive or inaccurate if performed by hand	Resource management, planners

Figure 2-5 Definitions of GIS and the groups who find them useful (after Longley et al, 2005)

2.4.2 (Geo)Visualization of (geo)Information

It is recognized that the use of maps and visual representations derived from geospatial analysis operations leads to decisions (Kraak et al. 1995). That is why providing information through visualization enriches the power of data exploration and information communication.

Visualisation (with an s) is used for the mental process through which an internal representation of information is formed or adopted, while visualization (with a z) means the representation of data in the form of an image, understandable for the human perceptual system (Blok, 2005). In this study, the term *visualisation* will be referred to the process that visually explores electoral patterns and *visualization* will be used to represent the process of representing electoral patterns in map form.

The four basic stages in the process of visualization, as described by Ware (2000) consist of:

- the collection and storage of data
- the pre-processing designed to transform the data into something the user can understand
- the display hardware and the graphics algorithms that produce an image
- the human perceptual and cognitive system

There are a number of benefits that derive from data visualization. The most important of them are linked to: a) the ability to communicate huge amount of data in one single dataset and b) facilitation of understanding for both large-scale and small-scale data features.

Geovisualization in particular, as elaborated by MacEachren&Kraak (2001) refers to the process of visualizing spatial data. This process integrates methods and procedures of scientific visualization, cartography, image processing, information visualization, exploratory data analysis and geographic information science. This study deals with subsets of *cartography, geographic information science and vizualization* as it makes use of GIT and vizualization tools to explore the characteristics of electoral patterns in their spatial and temporal distribution.

2.4.2.1 Cartographic visualization

Cartography concerns the art, science and techniques of making maps or charts (Longley et al. 2005). MacEachren et al. (1999) argue that cartographic abstraction is an effective tool for understanding geo-objects, geo-phenomena and spatial relationships among them. Attention to maps as spatial representation has expanded the field of cartography and makes links to a number of other disciplines such as GIS, remote sensing, cognitive science, sociology, cognitive and environmental psychology, and semiotics (MacEachren 1995).

People have been using maps for centuries and, in the last few decades the demand for maps has continuously increased. This is mainly due to a need to explain the growing types of spatial relationships caused by a greater human mobility and range of activities. In addition to that, developments of GIS and other information systems, design and publishing technologies have facilitated the process of map production and dissemination.

The principal task of mapping however has remained unchanged - to communicate spatial information. This communication task is part of geovisualization chain. The well-known visualization schema of DiBiase (1990) was among the first which emphasizes the role of maps and other visualization means as communication tools in a geographical research sequence (figure 2-6).

In his schema, Private Visual Thinking refers to the situation when users generate (cognitive) maps on their own. It stands for the exploration phase. The Public Visual Communication instead represents the stage when cartographers create ready-to-use maps and refers to the presentation phase. Between these two phases of information communication is the process of data analysis.
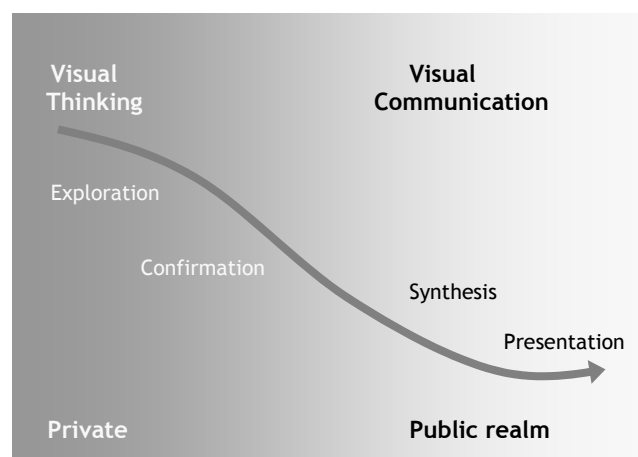
Figure 2-6 Sequences of visualization to communicate information (after DiBiase 1990).

In particular the role of maps in the process of visual exploration of geodata representations was later developed by MacEachren (1994) and presented by his equally well-known map use cube (figure 2-7).
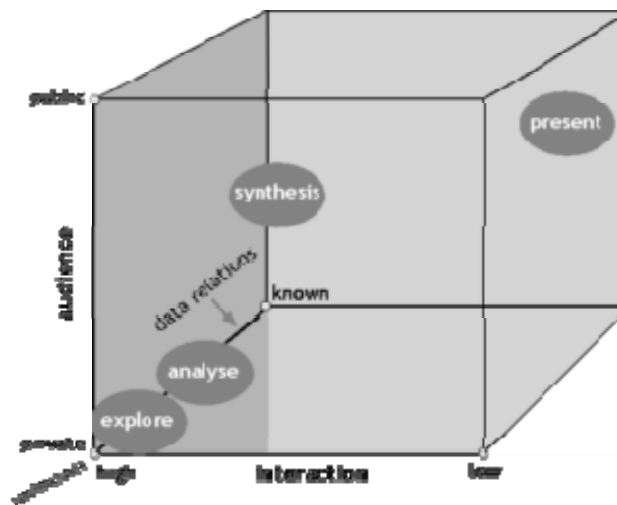
Figure 2-7 Map use cube (after MacEachren 1994)

Map use is presented in this cube along visualization-communication line and is measured in three dimensions:

- private (users create their own (cognitive) maps)versus public (maps created by professionals)

- high human-map interaction (users can change map design or add/subtract data) versus low human-map interaction (users can not change any element on the map)

- revealing unknowns (users explore the data) versus presenting knowns (professionals present information derived from manipulation of raw data).

From the above map use perspective MacEachren places *visualization* on the right-lower corner of the cube and describes it as "map use in the private, revealing unknowns and representing a high level of human-map interaction". On contrast to that he defines *communication* as a process that involves the opposite: a public activity in which knowns are presented in a noninteractive environment.

A wider perspective was given later by MacEachren&Kraak (1997).They elaborated further on the concept of map use for visual exploration and presented in another cube as illustrated by figure 2-8. Again three axes are used to place the aim of map use in the process of geovisualization and information communication. When the aim is to present geodata map use should occupy the right-upper corner of the cube, implying a low level of user interaction and a presentation of known to the public. If the aim is to explore the data it should be placed in the left-lower corner of the cube, speaking for high level of interaction, unknown relationships in the data and private use. With regards to analysis and synthesis an intermediate position implies different levels of interaction and data handling processes.
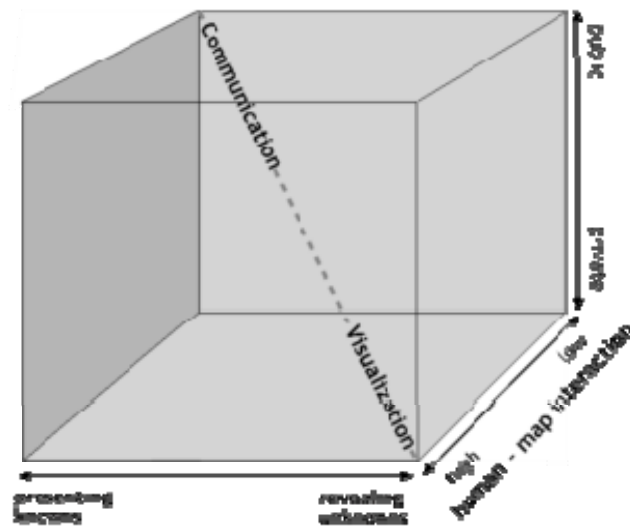
Figure 2-8 Role of map use in geovisualization known as "map use cube" according to MacEachren&Kraak 1997

Nowadays, thanks to a large number of different techniques for manipulating geodata in a GIS environment, cartography has become an important tool in all stages of the visual communication chain. Ormeling and Kraak (2003) underline this view when they address to maps as no longer the final product they used to be. Their main reasons to support the above idea are stated as below:

- maps are direct and interactive interface to GISs with a geospatial dimension.

- maps can be used as visual indexes to phenomena or objects that are contained in the information systems.

- maps, as forms of visualization, can help in both the visual exploration of data sets (also discovery of patterns and correlations) and in the visual communication of the results of the data set exploration in GISs.

- in the output phase, the interactive design software of desktop cartography is superior to the output functions of current GISs.

They describe four situations in which visualization of geoinformation is applied through maps in a GIS environment. These are:

- exploration – used to reveal the unknown in raw data
- analysis – used to manipulate the known data
- presentation – used to communicate geospatial knowledge
- access to the dataset – used to retrieve the information from the database linked to map

In the schema illustrated by figure 2-9, the line from exploration to analysis represents the "problem-solving" component, while the synthesis to presentation line stands for communication aspect of the whole process. Along with these lines, the unique ability to create and manage integrated datasets and perform spatial analysis forms the vital parts of a GIS that support the communication of geoinformation.
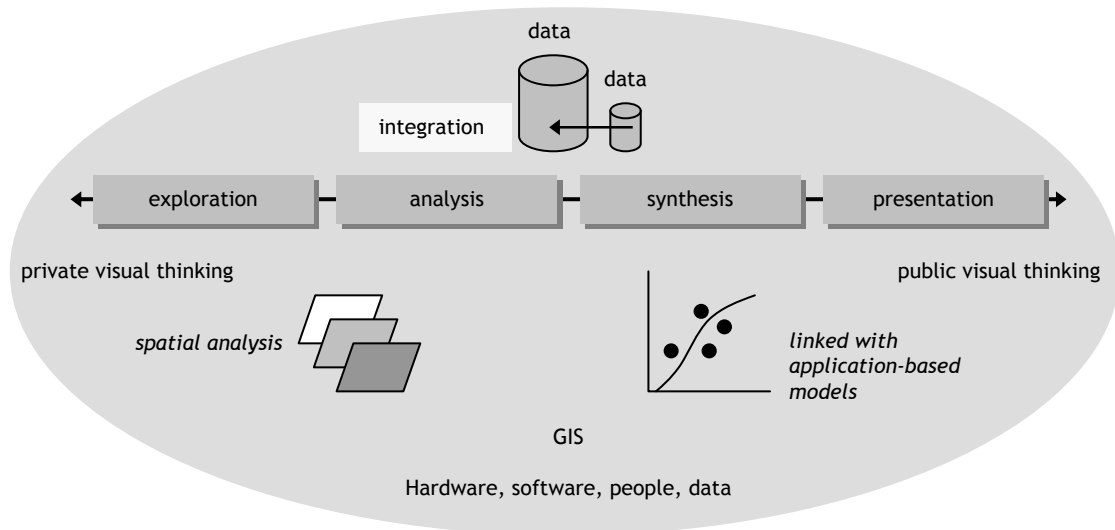
Figure 2-9 GIS and visualization (after Ormeling&Kraak 2003)

2.4.3 Cartographic communication

The significance of communicating information through cartographic representations is expressed by Ormeling (1997) as he stated "we must be concerned that not only do we get the right data to the user but that the user gets the data right". This concern is crucial when one consider the line of changes that the raw data have to go through from those who offer the cartographic information (mapmakers) to those who use it (map users).

The mapping process (figure 2-10) consists of a series of transformations, where each of them has the power to alter the appearance of the final product (Tobler 1979). Real world data are firstly transformed through different procedures of data capturing and storing. Then the processes of abstraction take place, like selection, classification, simplification, exaggeration or symbolization. Finally, the use of map adds to it the value of communicating information.
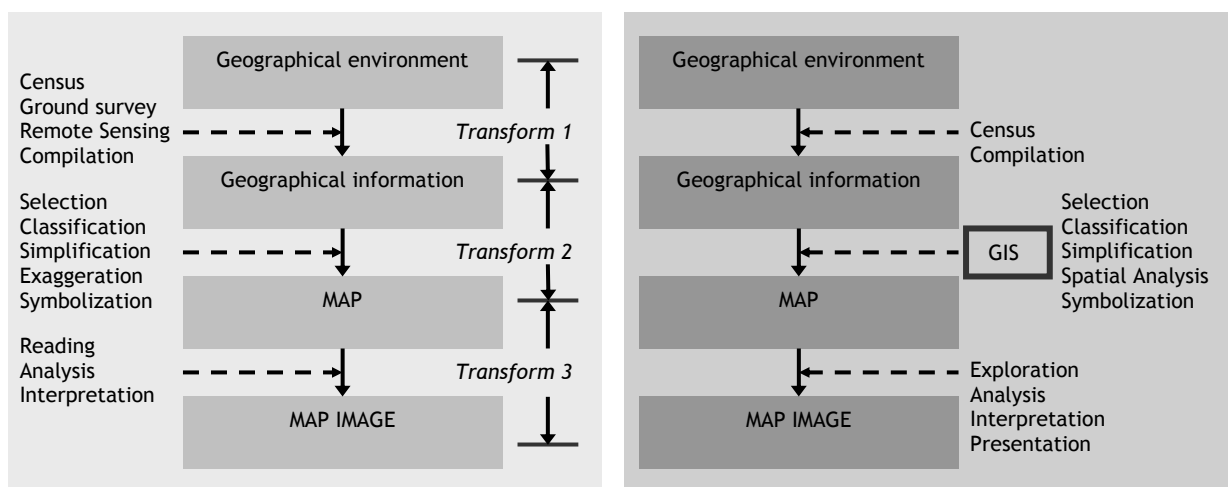
a)

b)

Figure 2-10 a) Fundamental information transformations in cartography and b) their implementation in the study
(after Robinson et al. 1995)

Professional cartographers refer to maps as vehicles for the transmission of knowledge. It is due to this communication paradigm, that cartography is viewed more then mapmaking but rather as a process of communicating spatial information that has inputs, transmission and reception of information and therefore should be analysed as a system (MacEachren 1995).

Following the above concept, figure 2-11 illustrates the system for communicating electoral information in a spatial context adopted in this study.
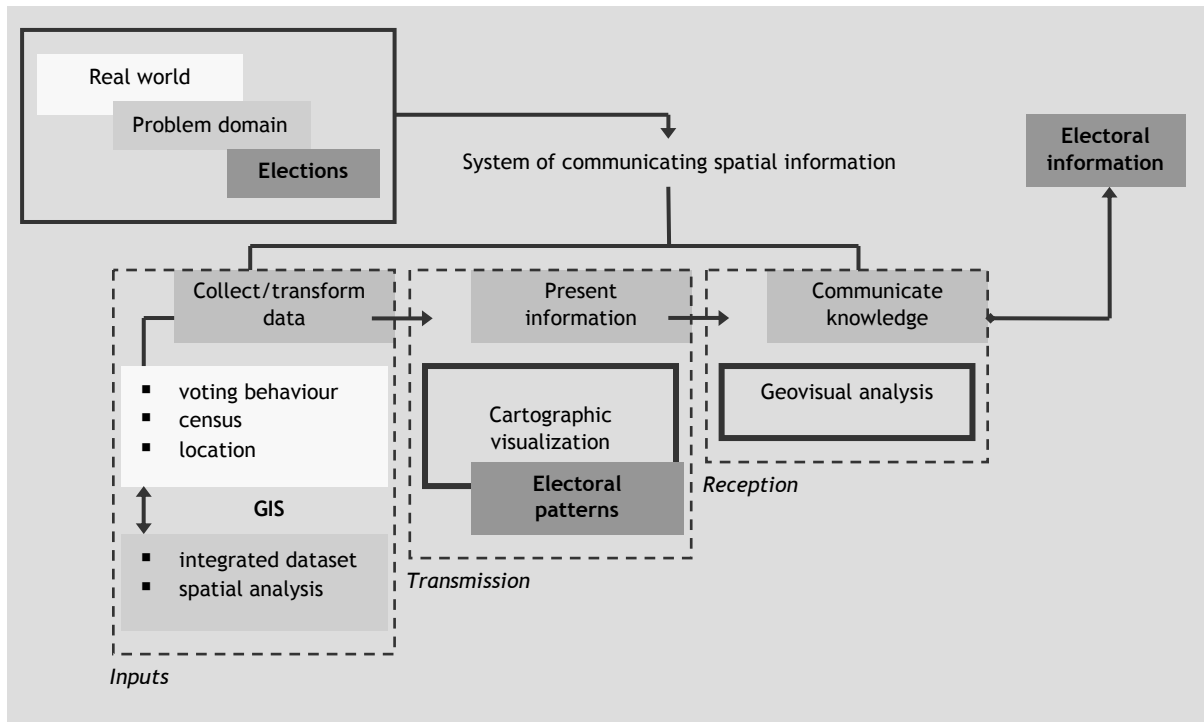
Figure 2-11 System of communicating electoral information (following MacEachren (1995) concept of communicating spatial information system)

2.5 Concluding remarks

This chapter has introduced key concepts related to the study of election and the role of geographical perspective on electoral research. A review of objectives and perspectives that have been developed in geographical electoral research is provided. Since the spatial aspect of voting behaviour is on focus of this type of research, two perspectives of studying elections from a geographical viewpoint are presented here. Because the complexity of electoral information requires the use of methods and tools beyond publications of only electoral data, this chapter elaborates on important concepts related to the technology of geoinformation use and its role in exploring, analysing and displaying electoral information.

Albania – an overview of political developments

This chapter introduces

- The historical and political background of case study area
- Dynamics of elections 1991-2005

Keywords: regional context, parliamentary elections

3.1 Background

Situated on the southern Adriatic coast of the Balkan peninsula, Albania is a relatively small and very mountainous country of just over 3 million people in an area of 28.000km2. Its capital is Tirana. According to Albanian figures, 98 percent of the population is ethnically Albanian, linguistically divided into two dialects - the Gegs in the north and the Tosks in the south. The Albanian language belongs to the group of Indo-European languages but is not closely related to any other and can be traced back to the ancient Illyrians, who are known to have lived in the Balkans as early as the second millennium B.C. The remainder of the population consists mostly of ethnic Greeks, although there are Macedonians, Montenegrins, Gypsies and a few other ethnic groups as well.

Reflecting Ottoman Turk, Greek, and Italian influences, Albania can also be divided by religious belief, with around 70 percent of the population of Muslim, 20 percent of Orthodox, and 10 percent of Roman Catholic background.

Albania has a long history of foreign occupation, including centuries of rule by the Ottoman Empire before becoming independent in 1912. During the communist period, foreign threats were used to justify isolationist foreign policies and repressive policies at home. Living in a mountainous, relatively inaccessible region, Albanians have maintained their linguistic uniqueness as well as some of the old, clan-oriented customs despite a continual foreign presence. After a brief period of democratic development in the 1920s, Albania was ruled by King Zog until was invaded by Italy in 1939.

As the Second World War came to an end the communists, led by Enver Hoxha liberated the country. The Communist Government of Hoxha gained complete control on political power by maintaining a ruthless Stalinist system for four decades. His extreme ideological rigidity, among other factors, led to breaks with the Soviet Union in the 1960's and with China in the 1970's, as the communist regimes in these countries acquiesced at least to some political and economic reforms. As a result, Hoxha's Albania became politically isolated in world affairs. Domestically, in addition to being the scene of some of the worst human rights abuses in post-World War II Europe, Albania became one of the poorest country in Europe, despite having considerable natural resource wealth. After Hoxha's death in 1985, his successor, Ramiz Alia, altered the hard-line course only slightly, and, to the extent he did, it was primarily by expanding Albania's foreign relations to a few additional countries.

In 1990, Albania began to move away from international isolation and domestic repression. With a very young population increasingly frustrated by the worsening state of the already bad economy, pressure for change in Albania first became evident with demonstrations in January 1990 in several cities, especially in the northern city of Shkoder. This was followed by the storming of foreign embassies in Tirana in July 1990 by those seeking to leave the country and, later that year, by the exodus of thousands of Albanians over rugged mountain terrain to Greece and Yugoslavia or by perilous sea routes to Italy. Meanwhile, those who remained behind increased pressure for more dramatic reform, with direct criticism of the country's communist leadership becoming far less risky than it had been in the past. In late 1990, statues of Enver Hoxha were being toppled by protesters, and student demonstrations in December of that year,

supported by certain prominent intellectuals, succeeded in convincing Ramiz Alia and the communist leadership that they had to legalize alternative, opposition political parties.

The subsequent election period in Albania marked a break from the one-party state, but it did not mark as well the end of communist rule. While there was an unprecedented degree of openness, the Albanian media was still in the firm grip of the Party of Labour, which also had significant advantages in other areas, such as transportation, finances, and influence over the local political infrastructure. Combined with instances of intimidation of opposition candidates during the campaign and of voters on election day, the elections fell short of international standards for free and fair elections. The Party of Labour won a two-thirds majority in a 250-seat People's Assembly. It lost in the cities but got especially strong support from the countryside, where Labour advantages over the opposition were the greatest, the significance of the changes in Tirana were less known and understood, and where a sizable portion of the population still lived. The Democrats won most of the remaining seats, with the Greek minority organization OMONIA and the National Veterans Organization being the only other groups to have won representation in the new Assembly. Violent action taken against peaceful opposition demonstrations protesting the communist win, especially in the northern city of Shkoder with its strong anti-communist tradition, further denigrated from the election result and virtually guaranteed the failure of the subsequent communist attempt effectively to rule the country.

3.2   Regional context

In its generic form, context refers to the geographical environment in which individuals reside and behave (Johnson et al. 2002). Political cultures are not independent of general cultures, even at smaller scales (Archer et al. 1986). This is the reason why it is impossible neither to differentiate the long-term component of the vote from the short-term fluctuations, nor to determine the interruptions in long-term patterns without the aid of long historical perspective (Nardulli 1994).

Therefore, it is essential to interpret election results in the cultural and historical context of the country and its regions. The following sections provide an overview of main characteristics of electoral context in Albania in national and municipality scale.

3.2.1 Country scale

When discussing Albanian electorates' context features it is useful to distinguish three major geographical regions in terms of cultural heritage, traditions and customs, economic development and general political attitude of the electorate (map 3-1). Despite efforts during the past communist regime to reduce between these regions the inequalities in standard of life these inequalities are still present. Today, because of lack of policies to narrow these inequalities and as a result of an uncontrolled migratory movement that produce partial development the differences among the three regions are even more emphasized.

(1) *The Northern Region* (including prefectures of Shkodra, Kukesi, and Dibra) is a mountainous area in the north of the country characterised by a predominantly rural Muslim population deeply rooted in traditional society. After the failure of the communist regime elements of this traditional type like blood revenge have reappeared and are now part of everyday culture.

Corresponding to the traditional form of society is a strong anti-communist political attitude of the electorate in general. Although rich in natural resources like minerals and water, the northern region remains the less developed region. The level of poverty in this region is the highest in the country. Here resides 46% of the total poor population. Almost half of the population in north region live under the poverty line with more than 25% of them living under the extreme poverty line (INSTAT, 2004).[1] After the political turnaround, this area has been heavily affected by internal migration towards major cities outside the region. Consequently, traditional societal values and conservative political attitudes are reinforced within the remaining population.

(2) *The Central Region* (including the prefectures of Durresi, Tirana, Lezha, Elbasani and Fieri) includes the geographical, economic and political centre of Albania. The major cities including the capital Tirana are located in this region, which is characterised by a high percentage of urban population. Strongly influenced by migration, mainly as a receiving area from the north and south of the country, the region gradually is losing its genuine cultural traditions and is being transformed into a multi-cultural metropolis. Consequently, the political attitude of its multi-ethnic, multi-religious and multi-traditional electorate is very flexible over space and time.

(3) *The Southern Region* (including prefectures of Berati, Gjirokastra, Korça and Vlora), is the ancient centre of Albania with the country's oldest settlements. A mainly rural Muslim and Greek orthodox population with Greek ethnic minorities, different forms of cultural and societal traditions have co-existed for centuries. Oriented towards the coast, this region has been the source of external migration that has been in turn a source of additional income for those family or clan members that kept living in the country. Consequently, this region has traditionally been better off than other areas. Agriculture has been the main economic activity in the past, while today the economy is more oriented towards trade, tourism and light industry. The southern region with the coastal city of Vlora has been the nucleus of the modern Albanian national state. Due to the multi-cultural composition of the population, the political attitude of the electorate is generally liberal and in favour of left, i.e. anti-conservative parties.

These broadly defined regional characteristics will be explored for potential association with the above population features and voting behaviour of the electorate. Due to lacking economic and socio-demographic data on the electorate, which is an important subgroup of the Albanian population, data pertaining to the total population have been used in this study instead. Adding another important factor like geographical location, this in turn determines the administrative and constituency unit within which the target electorate reside, allow for the completion of a set of variables that jointly act as a driving force in the formation of spatial and non-spatial electoral patterns.

---

[1] World Bank and INSTAT 2003 carry out the estimation of poverty line in Albania.
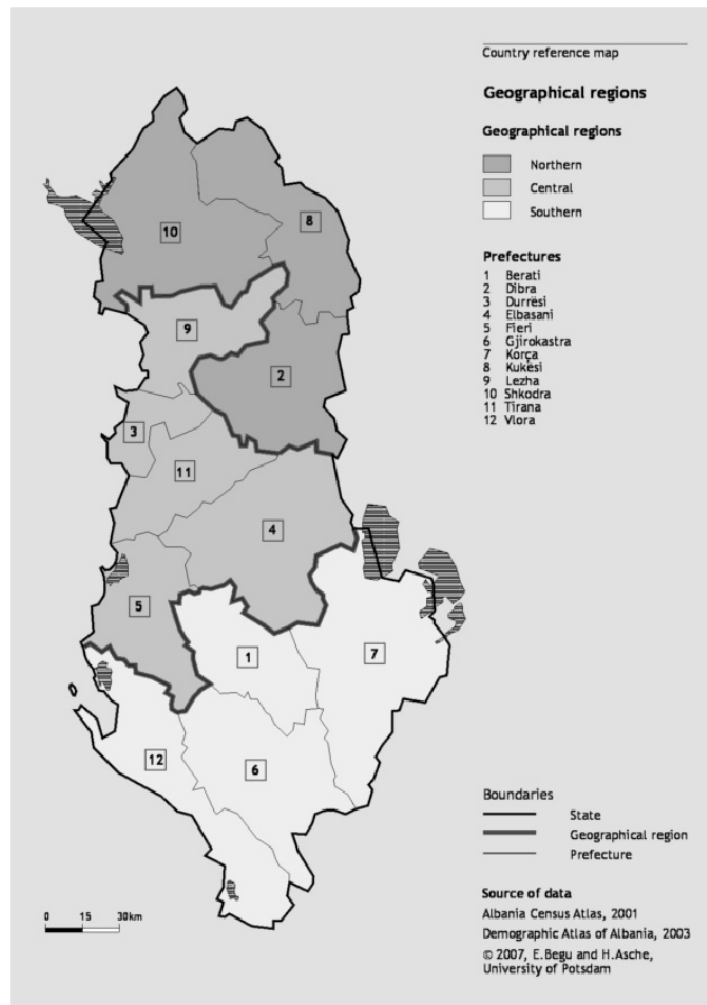
Map 3-1 Geographical regions and administrative divisions of electoral context

3.2.2 Municipality scale – City of Tirana

The city of Tirana was founded in 1614. The first nucleus of the city corresponds today to the square where the monument named "Partizani i Panjohur" has been raised. In 1789 began here the construction of the "Mosque of Et'hem Beu" and in 1839 the "Clock Tower". This is today the centre of the city. On November 25, 1912 two days prior to the proclamation of independence, the citizens of Tirana raised the national flag.

In February 1920, the Government of the National Congress of Lushnja was re-established in Tirana, making the city the capital of the country. At that time, the city of Tirana had 17,000 inhabitants. Referring to the first census of the population, in September 1923 , the city of Tirana had 10,845 inhabitants. In 1950, the area was 10.6 km², in 1970 up to 31 km². After Tirana was proclaimed Albania's capital city, the population increased rapidly. Therefore, Tirana is the only city in Albania that has experienced a significant growth during 1989-2001.

Especially after the 1990s there was an urban "boom". In 2001 Tirana counted for 341.453 inhabitants and by end of 2005 - 585.756 inhabitants. Because of internal migratory movements and high natural growth, population of Tirana grew in this period with 43.4%.

From the administrative point of view, city of Tirana is organized in 11 municipality units (map 3-2).
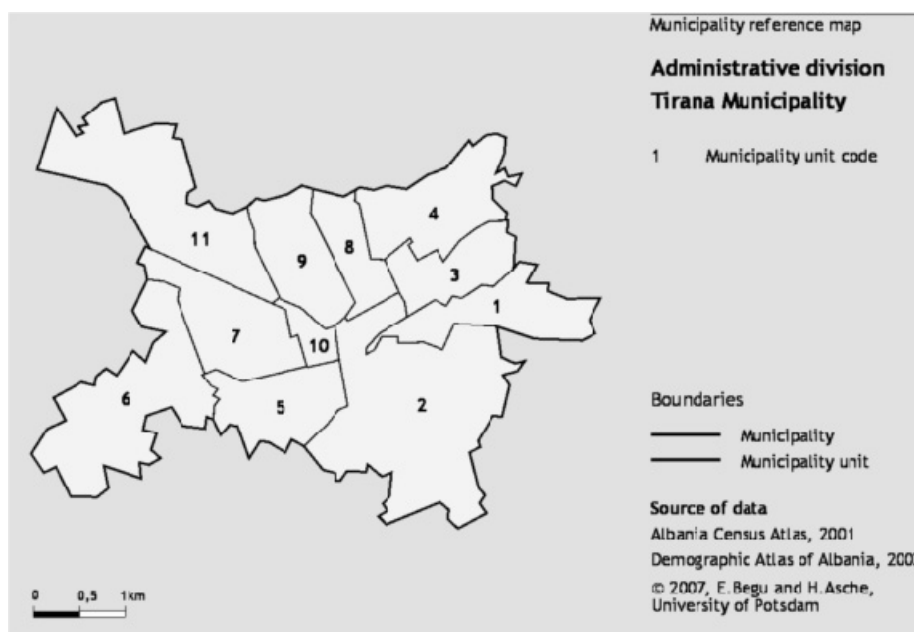
Map 3-2 Administrative divisions of Tirana Municipality

3.3   Main features of elections

Presently Albania is a parliamentary republic. The Parliament called the National Assembly–(*Kuvendi i Shqipërisë*) is elected for four years and consists of 140 deputies. The elections are based on a Mix Electoral System: Majoritarian and Proportional. According to this type of system, one hundred deputies are elected directly in single member electoral zones with an approximately equal number of voters. Forty deputies are elected from multi-name lists of parties or party coalitions according to their ranking. Parties that receive less than 2.5 per cent, and party coalitions that receive less than 4 per cent, of the valid votes on the national scale in the first round of elections do not benefit from the respective multi-name list.

Elections are conducted through free, secret and direct voting. The rules for election processes (election system, the determination of electoral zones, the organization and functioning of the election commissions etc) are specified by the Electoral Code of the Republic of Albania. Every Albanian citizen who has reached the age of 18 on or before the election date, and who fulfils the conditions provided in the Electoral Code, has the right to vote.

Parliamentary elections are administered by a three-tiered election administration: the Central Election Commission (CEC), 100 Zone Election Commissions (ZECs), and some 4,764 Voting Centre Commissions (VCCs). Through their nomination of members to election administration bodies at all levels, political parties exert considerable influence over the electoral process and are in effect almost wholly responsible for the functioning of the electoral administration.

3.4   The spectrum of Albanian politics during 1991-2005

Parliamentary Elections of 1991-2005 represent the free and pluralistic elections of post-communist era in Albania. However, although political pluralism was accepted in early 1990, Parliamentary Elections of 1992 are considered to be the starting point of political changes in the country. This is mainly due to the fact that after four decades of communist rule only in this year the political power was transferred to the opposition party. Not very surprisingly though, Parliamentary Elections of 1991 were won by the communist party. A very short period between official allowance of pluralism in late 1990 and hold of the elections in march 1991 did not gave new parties the necessary time to set up their organizational structures and perform a qualitative electoral campaign.

During 1991-2005 Elections a dozens of new parties have been created. However the two most influential parties in Albanian political arena are Socialist Party (PS) and Democratic Party (PD).A brief description of four more important political parties will follow as below.

1. PD is the first democratic party established in 1991 and the largest opposition party in the country. It is a right wing oriented party and draws support from all social strata of population. During 1992-1997, it was the leading party in government and since 2005 Elections is currently in power. PD claims to support a social-market economy but in reality it applies a "shock therapy" approach.

2. PS is the successive of former communist party, the Labour Party of Albania. It is the largest political institution in the country. The economic policy of PS is more socially market oriented than that of PD. It was the leading party in government during 1997-2005.Its main support comes from the south region.

3. PR – the Republican Party is the second main opposition party founded in 1991.It is a right oriented party and within the Albanian political spectrum is seen as somewhere between PS and PD. It differs from PD in its economic goals, which are much less radical and stressed socio-economic rights over the development of private enterprise. It also has a broad support from across the country.

4. PPDNJ – Party of Human Rights is a representative of Greek minorities in Albania.

3.5   Dynamics of elections

While presenting dynamics of Albanian Parliamentary Elections, it is important to distinguish between 1991-1992 and 1997-2005 elections. This is due to differences in historical backgrounds that have gained deterministic values in voting behaviour of electorate. Parliamentary elections of 1991-1992 were held in an atmosphere of major political, social and economical changes resulting from the collapse of communist era. Being aware of vote's historical value Albanian electorate was divided in those who were against the old regime and those who were fighting to preserve it. Hence, voting behaviour in these elections was driven by a "pro" and "anti" communism attitude. This is reflected as well in the characteristics of spatial distribution of voting behaviour that will be discussed in coming chapters.

PARLIAMENTARY ELECTION 1991

On march 31, 1991 Albania held its first multi-party parliamentary elections since 1920. The elections were for the 250 seats in the unicameral People`s Asembly, based on a Majoritarian Election System. In this election, the *Party of Labour* (PPSH) won two-thirds of the seats, enabling it to maintain control of government, pass desired constitutional changes and choose the new President. The party did especially well in the countryside where the rural population was more cautious on economic reform issues and more susceptible to consequences. The leading opposition party, the *Democratic Party* (PD) took just under one-third of the seats, winning most of the constituencies of the larger cities.

The following tables provide information on main features of parliamentary election 1991.

Parliamentary Election, 1991	
Electoral System	Majoritarian
Number of constituencies	250
Enrollment	1.980.000
Informal vote	94.372
Turnout	98.92%

Tab. 3-1 Main features of Parliamentary Election 1991
Source: Commission of Mandates and Immunity, 17.4.1991

PPSH	56.0
PD	25.74
PRSH	4.30
OMONIA	2.90
BKV	3.11
PA	1.87

Total   100 %

Tab. 3-2 Votes for candidates (%)
Source: Commission of Mandates and
Immunity, 17.4.1991

PPSH	PD	OMONIA	BKV
169	75	5	1

Total 250
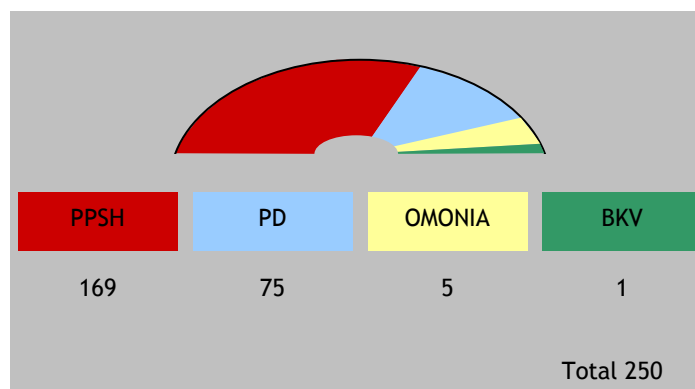
Tab. 3-3 Seats in parliament
Source: Commission of Mandates and Immunity, 17.4.1991

PARLIAMENTARY ELECTION 1992

On March 22, 1992, the second multi-party elections took place. They were held in a significantly more open environment than those of a year before. The opposition, and the Democratic Party in particular, had increased the ability to communicate their message throughout Albania, and a freer media led to more accurate and balanced reporting on developments in the country. The elections were for the 140 seats in the unicameral People's Assembly. In the year since the first multi-party elections in Albania, the *Party of Labor*, the ruling communist party that maintained its power with significant support from the countryside,

was nevertheless unable effectively to rule the country, despite some internal reforms and a change of its name to the *Socialist Party*. Its first government fell in June 1991, and then a "Government of National Stability" formed from an informal coalition with opposition parties collapsed in December 1991, setting the stage for the holding of new elections. The need for new elections can be attributed to a combination of political maturity and economic collapse in Albania.

In an almost complete reversal of the results of the earlier elections, the opposition *Democratic Party* did better than expected, winning in 90 of the 100 electoral zones and maintaining a sufficient percentage of the total votes cast to ensure just under two-thirds of the 140 Assembly seats when the results were adjusted to a proportional electoral system with party lists. Most of the remaining seats went to the Socialist Party, with the *Social Democratic Party*, *the Union for Human Rights* and the *Republican Party* each winning only a small number of seats.

The following tables provide information on main features of parliamentary election 1992.

Parliamentary Election, 1992	
Electoral System	Majoritarian/Proportional
Number of constituencies	100
Enrollment	2.000.000
Informal vote	140.647
Turnout	90.35 %

Tab. 3-4 Main features of Parliamentary Election 1992
Source: Commission of Mandates and Immunity, 1992

PD	62.0	
PSSH	25.74	
PSD	4.30	
PBDNJ	2.90	
PR	3.11	
Other	1.87	
	Total	100 %
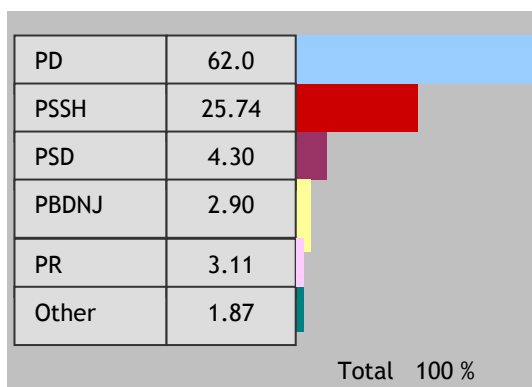
Tab. 3-5 Votes for parties (%)
Source: Report of CSCE, 1992

PD	PSSH	PSD	PBDNJ	PR
92	38	7	2	1

Total 140
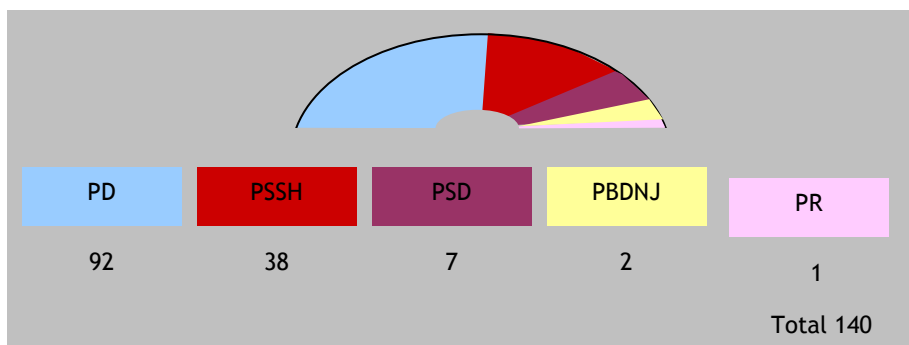
Tab. 3-6 Seats in Parliament
Source: Report of CSCE, 1992

PARLIAMENTARY ELECTION 1996

The May 1996 elections were the third parliamentary election in country. They were for 140 seats in the Assembly, 115 of them contested on the basis of majority races in electoral zones and 25 on the basis of a proportional division of parties achieving at least 4 percent of the vote.

In this election, PD won 122 seats in Parliament winning in the first round in 95 constituencies. PS won only 10 seats and PBDNJ 3 seats.

However because of a great number of irregularities such as vote fraud and pulling out of the election monitoring commission occurred, 1996 election were considered not sufficiently fair. By all accounts, they were a major disappointment and far below standards of free elections. In one year time country went to the next elections. Therefore, 1996 parliamentary elections have not been covered by this study.

PARLIAMENTARY ELECTION 1997

As a proposed solution to the profound political crisis that had gripped the country, Albania held new elections in June and July 1997 for 155 seats in its unicameral parliament. These were the fourth parliamentary elections in the country since the collapse of the one-party Communist state in December 1990, and were held just over a year since the last elections, which were considered highly irregular and contributed to the crisis of authority throughout most of 1997. The results of 1997 elections show a large win for the opposition Socialist Party, which together with its allies achieved a two-thirds parliamentary majority enabling constitutional changes.

The following three tables give an overview of results and main features of these elections.

Parliamentary Election, 1997	
Electoral System	Majoritarian/Proportional
Number of constituencies	115
Enrollment	2.031.183
Informal vote	162.456
Turnout	72.7 %

Tab. 3-7 Parliamentary Election 1997
Source: Bulletin of Election Commission, 1997

PS	53.30
PD	25.16
PLL	3.25
PBDNJ	2.90
PAD	2.76
PSD	2.63
PR	2.43
PBK	2.30

Tab. 3-8 Votes for parties (%)
Source: Bulletin of Election Commission, 1997

PS	PD	PSD	PBDNJ	PR	*OTHER
101	27	8	4	2	13

Total 155
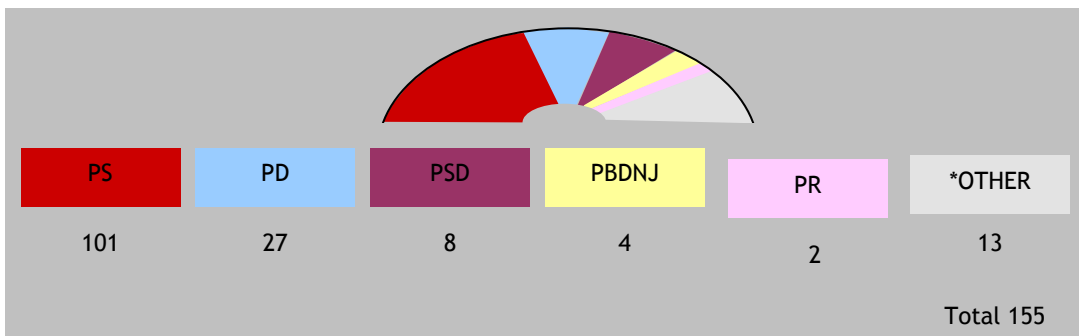
Tab. 3-9 Seats in Parliament
Source: Report of CSCE on Parliamentary Election in Albania 1997
*Other: PAD 2; PA 1; PUK 1;PLL 1; FNSH 1;

PARLIAMENTARY ELECTION 2001

The 2001 Parliamentary elections were held under an Electoral Code adopted by Parliament in May 2000, and amended in May 2001. This election provided an opportunity for further consolidation of democratic standards after the local government elections in October 2000. In addition to determining the next government, the parliamentary elections were also critical for the election of the President in 2002 as the winning candidate would require the votes of at least 84 of the 140 Members of Parliament.
An overview of results is provided by the following tables.

Parliamentary Election, 2001	
Electoral System	Majoritarian/Proportional
Number of constituencies	100
Enrollment	2.499.238
Informal vote	65.587
Turnout	53%

Tab. 3-10 Parliamentary Election 2001
Source: OSCE 2001 Elections Report

PS	41.0
PD	36.8
PDr	5.2
PSD	3.6
PBDNJ	2.6
PA	2.5
PAD	2.5
	Total 100 %
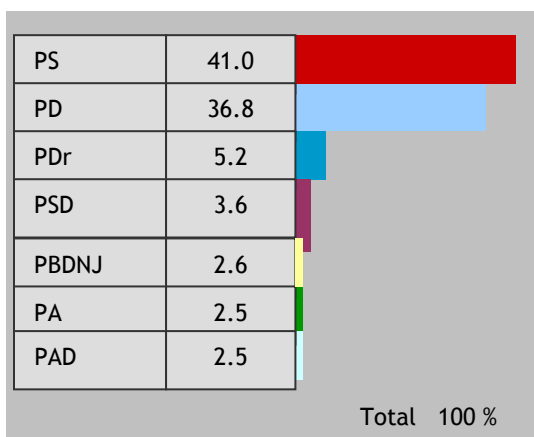
Tab. 3-11 Votes for parties (%)
Source : Central Election Commission

PS	PD + BF	PDr	PSD	PBDNJ	*Other
73	46	6	4	3	8
					Total 140
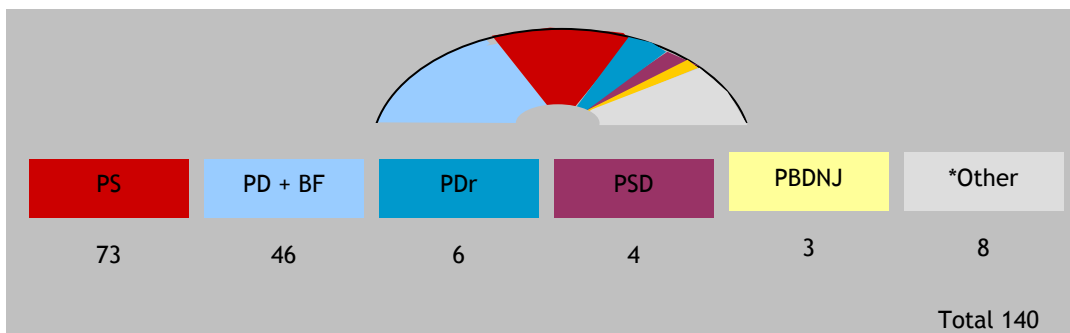
Tab. 3-12 Seats in Parliament
Source: Central Election Commission
*Other: PASH 3; PAD 3; Independent party candidate (IC) 2

PARLIAMENTARY ELECTION 2005

The 3 July 2005 elections were the sixth post communist elections to be held in the country. All major political parties contested these elections either in coalitions or separately. They were based on the Electoral Code of June 2003 and on a separate law issued in March 2005 for the establishment of 100 election zones.

In these elections PD took 56 seats on the Parliament and formed consequently the new government .PS went in opposition after eight years of ruling.The following three tables give an overview of results and main features of these elections.

Parliamentary Election, 2005	
Electoral System	Majoritarian/Proportional
Number of constituencies	100
Enrollment	2.850.821
Informal vote	21.973
Turnout	49.23%

Tab. 3-13 Parliamentary Election 2005
Source: Central Election Commission

PR	19.96
PSD	12.74
PSSH	8.89
LSI	8.40
PD	7.67
PDR	7.42
PAA	6.56
Other	28.36

Total   100 %
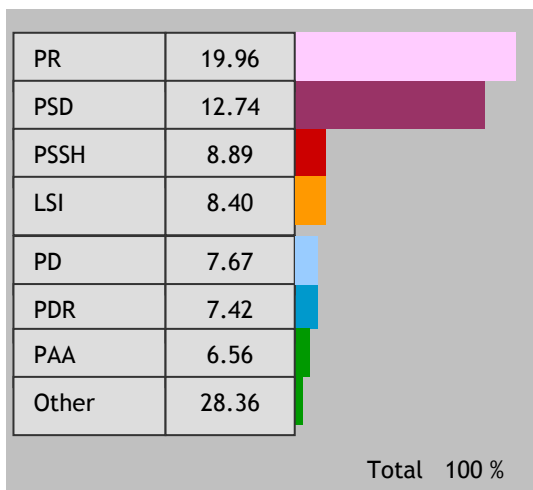
Tab. 3-14 Votes for parties (%)
Source : Central Election Commission

PD	PSSH	PR	PSD	LSI	*Other
56	42	11	7	5	19

Total 140
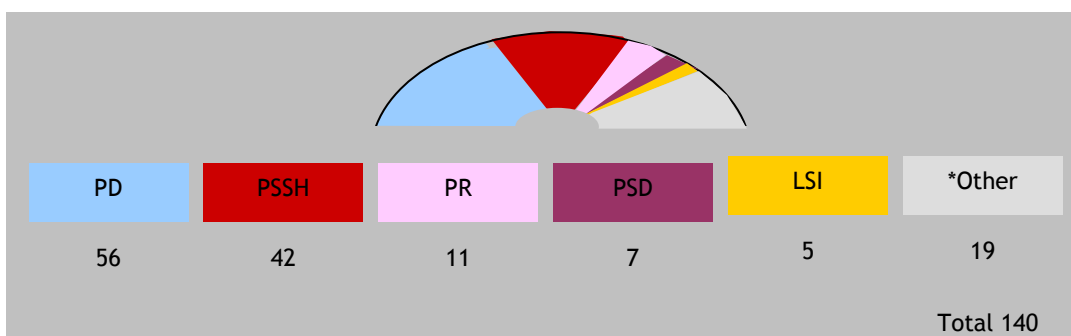
Tab. 3-15 Seats in Parliament
Source: Central Election Commission
*Other: PDR 4; PAA 4; AD 3; PBDNJ 2; PDK 2; PDSSH 2; BLD 1; Independent 1

3.6 Concluding remarks

In this chapter, the case study area has been presented. It starts with a brief introduction to Albania, its historical background and political developments. Next, an overview of the regional context characteristics is provided in order to understand the specifications of environment where Albanian electorate resides and behaves. This presentation is then followed by an elaboration on main features of parliamentary elections during 1991-2005. The focus was on type of electoral system and code that have been adopted in these elections, profile of major political parties and main characteristics of five parliamentary elections in terms of elections results and voting behaviour.

"…we cannot expect to understand elections and electoral behaviour simply by looking at them through the prism of voters. Rather we need also to measure the macro-context within which electoral behaviour takes place…"

J.Curtice, 2002

Chapter 4

Exploring electoral patterns in the framework of geographical perspective

This chapter presents

- components of electoral patterns
- contextual effect perspective in exploring electoral patterns
- case study variables and their significance within the context analysis of voting behaviour

Keywords: electoral context, components of electoral patterns, variables

4.1 Electoral patterns from a geographical perspective

As already stated in the introductory chapter, studying electoral patterns from a geographical perspective involves exploring the interaction between three entities: place, electorate and elections. In this context, three major relations are addressed by this study (figure 4-1). They are:

- *Relation 1: Place-Electorate.*
  It is expressed through the social and economical features of the electorate, its viewpoint on political issues and its expectations from the government performance. The outcome of this relation is the profile of electoral context.

- *Relation 2: Electorate-Elections.*
  It addresses the characteristics of voters` involvement in election process and is represented by voting behaviour.

- *Relation 3: Place-Elections*
  It deals with the role of location in the process of delineating constituency boundaries. This role is manifested in voting behaviour features since these boundaries limit voters` political choices.

Two more relations, one between election results and electoral context named "allocation of political power" and the other named "governance" are also important elements in formation of electoral patterns. To study these relations requires a post-elections survey in order to assess the allocation of political power, fulfilment of voters` expectations and level of government performance and its impact on local issues. These relations are beyond the scope of this study.
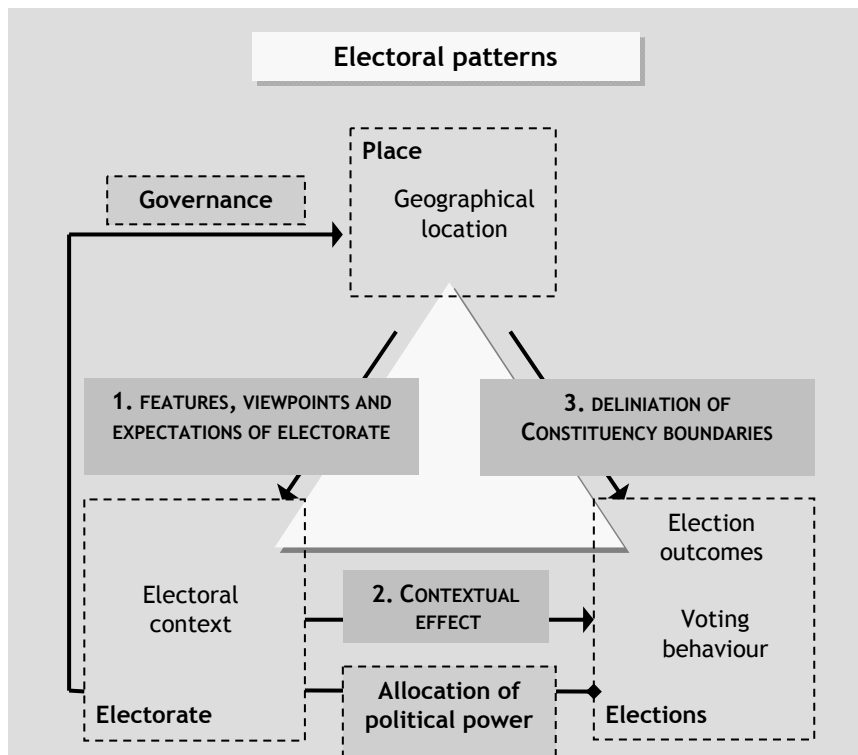
Figure 4-1 Relations between components of electoral patterns

4.1.1 Relation 1 – Electoral context profile

The relation between place and electorate refers to the way in which characteristics of geographical location where voters reside, shape their social features and impact political attitudes. Since these locations have different developments levels, social, demographic and economical characteristics of electorate are therefore not uniformly distributed over the space. Consequently, also voters' needs and expectations from political developments will spatially vary. In addition, there are other elements linked to location as local culture and customs, clan structure and neighbourhood effects that emphasize this spatial non-uniformity. All these aspects of place-electorate relation create the profile of electoral context.

4.1.2 Relation 2 - Contextual effect

Voters manifest their political attitude in the framework of electoral context. The relation between features of the electoral context and voting behaviour forms the baseline for the "contextual effects" perspective in studying elections.

The analysis of contextual effects have enriched political theory by studying the voter as beyound isolated individual making solely decision (Johnson et al 2002). In general, context refers to the environment where voters live and manifest their social, economical and political behaviours. In electoral research this term is also used to define the place where voters reside (the spatial unit of place though varies according to the scope of research, thus "place" might refer to constituency, district or even to national scale). Consequently, the circumstances under which voters take their decisions are the core concern of contextual effects analysis.

How does context matter in electoral behaviour? The role of contextual effect can actually be explored from several viewpoints dependently from the research objective. However, there are two major mainstreams for exploring contextual effects and the greatest part of applications in the field of election studies focus on them. First, is the so-called "global effect" (Marsh 2002 - in Lazarsfeld et al. 1972). This effect refers to the fact that voters at specific location face different practical choices in terms of political parties or candidates. The second effect of context in voting decision is related to the fact that local units where voters reside differ from socio-economic development's level thus producing unique environment where the voters take their decision. Such an effect is called "contextual" (Marsh, 2002 - in Huckfeldt et al. 1975).

An important remark has to be made here while discussing contextual factors that independent of locality seem to be equivalent but in fact, they are not. To illustrate this remark at individual level a typical example would be the differences in voting behaviour of a farmer in south of Albania with another farmer that lives in the Albanian Alps. These two voters have different expectations and demands although they have the same lifestyle. That is why they are also expected to vote differently. At an aggregate level the example would refer to the fact that a specific issue in the political agenda of a certain party does not have the same importance and does not attract the same attention of voters uniformly all over the country.

The contextual effects are therefore seen as a set of variables that interactively affect the voters` decision-making. Although the use of contextual variables in election studies is known more then half a century, scholars have not yet reached an agreement for a standardised set of

necessary variables that would explain voting behaviour. As such there can be found studies like that of 1996 USA national election where are used 1.500 contextual variables.

The selection of context variables depends on many elements of the research itself where the most important are the design and the purpose. Thus, there are studies which focus on the voters opinions about parties or candidates performance in order to gain insight about election outcomes. Another group of studies interpret election features as a function of long-term social and political behaviour of electorate. Other significant elements that have been used in election research can also be the measurement of media impact, the importance of certain issues in political agenda, the effectiveness of electoral campaign etc. As a result, these variables are accordingly generated via questioners (pre or post elections) or from other sources like census data. Some example of major group variables used so far in election studies are (Knight et al, 2002):

Demographic*s*
- occupation
- gender
- religion
- education

Party attachment
- party closeness
- probability of voting for
- party/candidate images as likes/dislikes

Government performance
- economic status (country or locality)
- improvement or not in personal life standard

Media evaluation
- efficiency of transmitting political information
- electoral campaign

Voting
- decision to vote/not to vote
- political preferences
- registration issues

The existence of contextual factors raises a number of issues for research design and analysis, involving both what should be studied and how that should be done (Marsh 2002). In this respect, the tendency is first to add more variables in order to capture the whole spectrum of potential factors; second, to use data on the smallest geographical unit possible, until to the individual level since these data are seen to provide useful insights for spatial variations in voting behaviour.

In this study a group of selected variables is chosen to construct the profile of electoral context in national and municipality level. Their specifications are provided in sections 4.2 and 4.3.

4.1.3 Relation 3 – Delineation of constituency boundaries

This relation reflects the implications that the delineation of constituency boundaries exert in election outcomes. It focuses however only in one element that this process is based on, voters` allocation by constituency. For this reason the spatial allocation of voters in constituencies is investigated since this aspect define (and limit) the voters` possibilities in terms of the political choices they will face. This element in turn is a significant input for the formation of electoral patterns and effects their spatial and temporal distribution.

4.2 Variables for studying electoral patterns components and relations

As stated in the previous chapters of this study, understanding election patterns requires an investigation of a number of factors responsible for their formation. Due to the secrecy of vote it is evident that the electorate's voting behaviour cannot be observed directly. That is why indirect measurements of data are required instead called *independent variables* (van der Eijk 2002). These types of variables include data about the electoral context, mainly demographic characteristics of the electorate. The purpose of the usage of such data is to "uncover the process of individual decision-making and the mechanisms through which context matters" (Marsh 2002). Electoral data that can readily be observed directly like turnout (electoral participation) and political support (party choice) are termed *dependent variables* in contrast (van der Eijk 2002). It is well understood that the targeted electorate is geographically distributed among the constituencies. Since the focus of this study is to explore election patterns from a geographical perspective, a third group of components is added called *geo variables*. These variables refer to geographical data on voters' residence, their access to natural, economic, political resources etc. Geo variables are also essential in delimiting administrative and constituency boundaries.

Looking for explanations of election patterns in the framework of national elections it is obvious that a certain scale of data generalisation is required. That is why these variables are discussed as grouped variables (figure 4-2). The elections patterns an isolated constituency might produce are thus outside the scope of this study. Instead constituencies are investigated as a group that form areas, which manifest common characteristics, spatial and non-spatial, to uncover the relations of variables that underlie these characteristics.
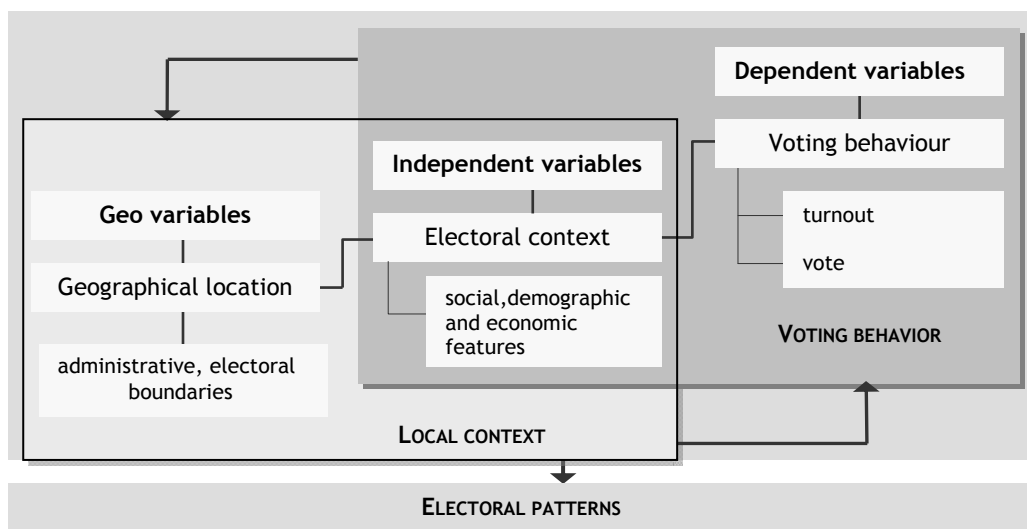
Figure 4-2 Variables for studying electoral patterns

4.3   Specifications of case study variables

This study explores the role of contextual effect on two important elements of an election event: voting behaviour and election outcomes. The focus is therefore on the formation of electoral patterns and on exploring the regional differences in their spatial and temporal distribution. The Albanian population has undergone profound changes during 1991-2005 because of the transition towards the democratization of political structures and transition to a market based economy. Therefore, it is important to study background where electoral behaviour has developed.

As stated in the previous section, three groups of variables that interact to form the electoral patterns are identified in this study. These are *geo variables, independent variables and dependent variables*. The characteristics of electoral patterns have been explored in this study in two spatial levels: Country and Municipality. Therefore, concerning geographical location and electoral context data different variables for country and municipality level are used.

The electoral context is modelled only for 1997-2005 Parliamentary Elections. As already elaborated in section 3.4, 1991-1992 Elections are held in a very specific historical background and therefore it is not meaningful to explore voting behaviour of this period in the framework of electoral context, based on study pre-selected independent variables. In addition, economical and social concepts like unemployment and migration were new to life style of Albanian electorate and consequently figures on these phenomenon's are lacking for this period.

The following sections introduce the main features for each index of study variables.

4.3.1 Indexes of geo variables

These variables represent the geographical location of the target electorate. The data used for this purpose include administrative and electoral divisions (tables 4-1, 4-2).

From the administrative viewpoint, based on the Albanian law "Functions and Organization of Local Government" of July 2000 the country is presently divided into 12 Prefectures, 309 communes and 65 Municipalities. Prefectures are divided into 36 districts which represent geographical units composed by the aggregation of communes and/or municipalities sharing common historical, geographical and cultural features. Communes and municipalities are divided into cities and villages, which represent the lowest administrative unit in urban and rural areas respectively. Cities with more than 15 thousand inhabitants are subdivided into municipal units. Communes and municipalities belong to the same administrative level. Commune boundaries include rural areas, while municipalities correspond to urban areas.

Concerning the electoral organization, constituency boundaries have been a subject of consistent change therefore their number varied from one election to another.

Geo variables in Country level					
	Allocation of divisions index				
Administrative and Electoral divisions	*Elections 1991*	*Elections 1992*	*Elections 1997*	*Elections 2001*	*Elections 2005*
Prefecture	12	12	12	12	12
District	26	26	36	36	36
Constituency	250	100	115	100	100

Table 4-1 Geo variables in country level

In city level the administrative organization corresponds to municipality and municipality units. The Municipality of Tirana is divided into 11 municipality units. Although the boundaries of electoral units (constituencies) do not correspond to the administrative ones the number is still preserved. There are also 11 constituencies for 2001 Parliamentary Elections.

Geo variables in Municipality level *Elections 2001*	
Administrative and Electoral divisions	**Allocation of divisions index**
Municipality units	11
Constituency	11

Table 4-2 Geo variables in municipality level

4.3.2 Indexes of independent variables

This group of variables comprises data about social-demographic and economic features of the the electorate. It evaluates the relative social and economical wellbeing of the studying area where the target electorate resides. These types of data are needed to understand voters` behaviour as part of their local environment and to explore further the regional differences of this behaviour over a wider geographical space. The term well-being is obviously a relative term and can mean many different things. In a broad sense, it refers to welfare or quality of life. While there is no single indicator that adequately measures living standards or the level of well-being, an overview can be formed by considering a range of indicators. In this study, the indicators selected as significant for measuring the status of wellbeing stand for two perspectives: the social-demographic and the economic perspective.

Independent variables are in this study in two scales: country and municipality. The data on country scale cover the period 1997-2005. These data are two types: economical indicators and social indicators. Social indicators include variables that measure *the rate of unemployment and*

proportion of families that live in social assistance. Social indicators include variables that measure *proportion of immigrants and emigrants and level of education attainment.* A higher score on this index means that electorate has a relatively large proportion of people with the above attributes. Conversely, a lower score means that electorate has a relatively low proportion of people with these characteristics. The data corresponding to independent variables in country scale are in district and prefecture spatial unit level. In this chapter, their characteristics have however been generalized and are presented in the frame of three geographical regions of electoral context.

The data on Municipality scale are only from 2001. These data are also categorized in two groups: social-demographic and economical. Social variables measure the proportion of people living below poverty level, level of education attainment and proportion of immigrants and emigrants. Economical variables measure the unemployment rate and average monthly income per capita. The data for these variables are in municipality unit level and are in this chapter presented at this scale as well.

4.3.2.1 Country scale

The following tables present independent variables selected to study electoral patterns in country scale. Table 4-3 highlights group 1 of variables used to perform spatial analysis and create the profile of electoral context. Table 4-4 provides independent variables of group 2 that are used to complement the information on context profile.

Independent variables Group 1 – Country scale			
Administrative divisions	**1.1 Social-demographic indexes**		
	Elections 1997	*Elections 2001*	*Elections 2005*
Prefecture level	▪ schooling years	▪ schooling years	▪ schooling years
District level	▪ migration features	▪ migration features	▪ migration features
	2.1 Economic indexes		
	Elections 1997	*Elections 2001*	*Elections 2005*
Prefecture level	▪ Families on social assistance	▪ Families on social assistance	▪ Families on social assistance ▪ Unemployment rates
District level	▪ Unemployment rates	▪ Unemployment rates	

Table 4-3 Independent variables Group 1 – country level

Independent variables Group 2 – Country scale			
Administrative divisions	**1.2 Social-demographic indexes**		
	Elections 1997	*Elections 2001*	*Elections 2005*
Prefecture level	▪ population density ▪ gender ratio	▪ population density ▪ gender ratio	▪ population density ▪ gender ratio
District level	▪ urban rural ratio	▪ urban-rural ratio	▪ urban-rural ratio
	2.2 Economic indexes		
	Elections 1997	*Elections 2001*	*Elections 2005*
Prefecture level	▪ Type of economy	▪ Type of economy	▪ Type of economy

Table 4-4 Independent variables Group 2 – country level

Social-demographic indexes in country scale

The variables that are included in this index represent the social and demographic features of the electorate from 1997-2005. They are gender ratio, urban-rural ratio, schooling years, population density and internal migration features. The following sections provide an insight into the characteristics of these variables with regard to their characteristics over three geographical regions of electoral context.

Internal migration features

From a demographic point of view, internal migration shows first the degree of change of the territorial distribution of the population during a certain period. In absolute terms, migration accounts for the numerical increase or decrease of the population. For these reasons, migration is part of the demographic evolution of the regions, as well as an indicator of social changes such as urbanization (INSTAT/Migration, 2001). In this study, this variable represents the spatial dimension of internal migration during 1991-2005.

Migration in Albania can be characterized historically by several phases. As regards the period after the collapse of communist regime, the main feature to be observed is a total absence of migration policy. As such, the country suffered large and uncontrolled population movements. Around 900 000 people migrated from the rural to the urban areas inside the country and cites. The capital Tirana grew disproportionately in comparison to the rest of urban regions in the country. According to the 2001 census data, this factor caused a 13% decrease in the population residing in rural areas. It is estimated that 70% of migrants from the prefectures of Kukes and Diber moved to the prefectures of Tirana and 20% to Durresi. The prefectures of Fieri and Vlora in the southern region seem also to attract migrants from surrounding areas. In the Northern region, Lezha is the destination of 30% of immigrants coming from Shkodra and Durresi. The comparison of the net migration among three country regions (refer table 4-5) shows that the

Northern region has a negative net migration representing more than -20% of the 1989 resident population (Kukes has the highest value -29%).

Region of Departure	Region of arrival			
	North	Centre	South	Total
North in %	-	107.433 98.7	1.465 1.3	108.898 100.0
Centre in %	2.491 17.5	-	11.721 82.5	14.212 100.0
South in %	1.273 2.1	58.256 97.9	588.967 -	59.529 100.0
Total	410.180	1.341.509	602.153	182.639

Interregional migration flows 1989-2001
Number of persons and repartition in percentage

Table 4-5 Interregional migration flows 1989-2001 Source: INSTAT, Census 2001[2]

Internal migration in Albania is clearly a 'one-way' migration: approximately 91% of the inter-regional cases of migration are directed to the central and coastal zones of the country. There are two general conclusions drawn in the research undertaken in this respect by INSTAT 2001. First, the population in the Northern and Southern regions have the same migratory profile with their respective internal populations moving towards the central and coastal regions. Second, there is a relatively high movement from the central and coastal zones to the Southeast.

These migratory movements have had an impact not only on the absolute size of the population and its geographic distribution, but also on the demographics of the population in terms of sex and age ratios as well as of its socio-economic composition; they effect the differences in incomes and living standards, creating a relative balance between the natural resources and the productive potentials of the region. Migration also means modification in lifestyle, since the tendency of movement is usually from rural areas towards urban areas. In the Albanian case around 58% of total number of immigrants moved to urban areas. Consequently, those prefectures with a positive migratory balance experienced a significant increase in urban population. Looking at these chaotic and imbalanced characteristics of migration it is obvious that they have created in turn economic, social and demographic imbalances too, especially in recipient regions. Because of this important role in the electorate's life, migration is included in the group of independent variables.

The spatial patterns of migration discussed above are in this study defined as areas that lost population and areas that have gain population. The degree of this change has a scale between a minimum of 15% loss to a maximum of >40% gain of population.

---

[2] Three regions in table 4-4 correspond to those described at Chapter 3, Section 3.2.

Schooling years

A better education is often seen as a pathway to a better quality of life since it improves individual's job prospects and increases their earning capacities. The variable of education attainment represents in this study the average years of schooling of population. It is measured as a ratio of number of years successfully completed by persons aged 15 and over to the total population aged 15 and over. The figure 4-3 illustrates the distribution of the generalized values for this variable by three geographical regions.

Regarding the proportion of population that have completed university studies, they represent the highest values with 10.9% of population in Prefecture of Tirana, while the lowest value are in the prefecture of Dibra where this value is 2.9% (INSTAT 2001).
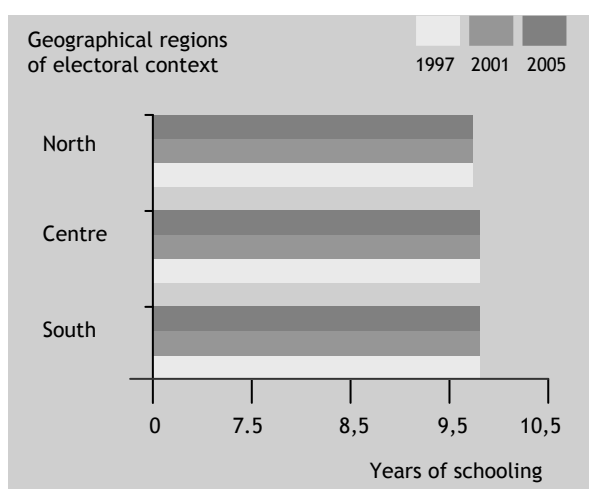
Figure 4-3 Schooling years by three regions
Source: INSTAT 2001, Albanian Census Atlas,
INSTAT 2002, Education statistics and indicators, 1991-2002,

Another important aspect of education is the illiteracy level of population. It is a well-established fact that Albania has a highly educated population with a high literacy level compared not only to the countries with the same development level but also to contemporary developed societies (INSTAT, 2004).The results of INSTAT survey from population and housing census shows that illiteracy is less than 2% for the population aged 6 years and over and 5.7% for people older than 14 years. There is not much difference in the illiteracy level between males (1.2) and females (1.9) (INSTAT 2001).

Because of overall low rates of illiteracy the differences among districts are difficult to be captured, however while comparing these values for the three regions of electoral context the results would be as presented in figure 4-4. Important to notice in this respect is the illiteracy rate of 2.3% in Tirana city, representing the lowest level in the country. The North region is contrast shows the highest rate for the country with 5.4% of illiteracy.
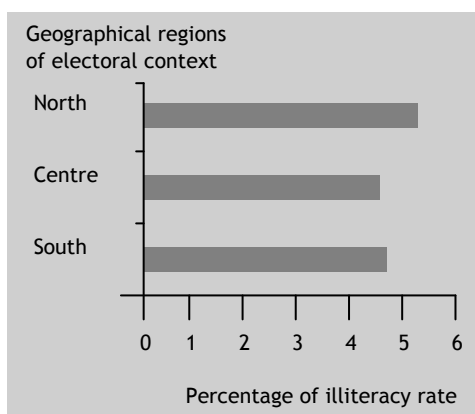
Figure 4-4 Illiteracy rate for population above 6 years
Source: INSTAT 2004, Living conditions and inequalities in Albania,

Urban – rural population

This variable represents the spatial and temporal distribution of urban-rural population over the country as percentage of rural-urban population towards total population in prefecture. The highest values of rural population are in the prefectures of Kukesi and Dibra (Northern region) where this population represents 75.5-80% of the total. The lowest values are in prefecture of Tirana (Centre region) where rural population represents only 36.3% of its total population (INSTAT 2001).A distribution of number of population in urban and rural zones by three regions in year 2004 is given by figure 4-5. The distribution of rural and urban population during 1991-2005 is provided by figure 4-6.
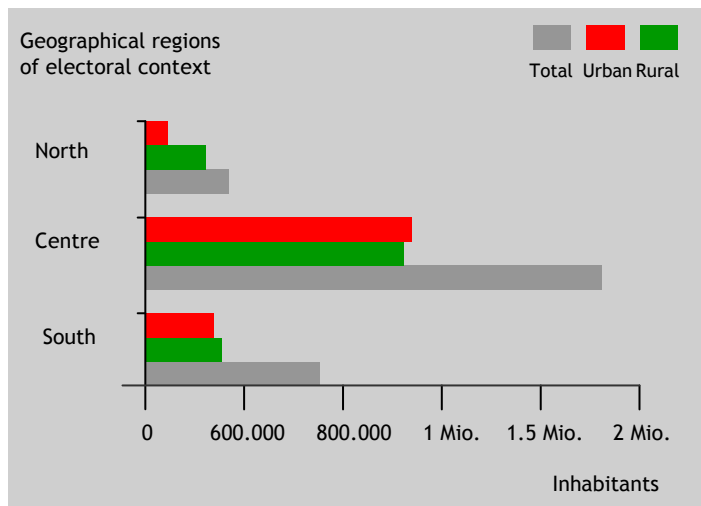
Figure 4-5 Urban and rural population versus total population
Source: INSTAT 2004 Living conditions and inequalities in Albania
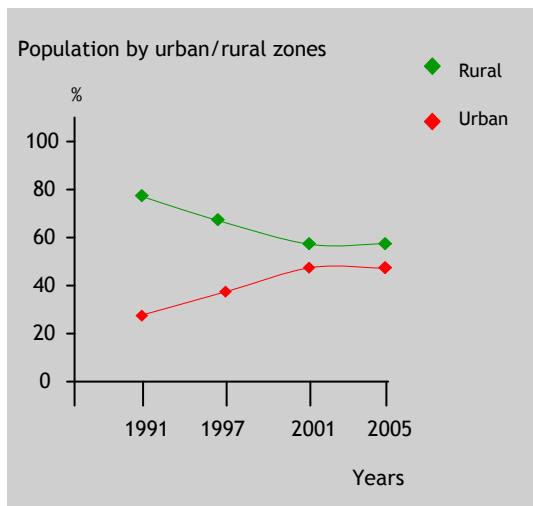
Figure 4-6 Population by urban rural zones
Source: INSTAT 2005 Social indicators yearbook

Density of population

This variable represents the spatial/temporal distribution of population density, the measure of the number of persons per unit area. Density of population is distributed unequally over the country. The population is mainly concentrated in the central and western part of the country. About 40% of the total population is located in 25 communes or municipalities, out of 374. With the exception of Tirana, only 6 towns have more than 50,000 inhabitants (Census Atlas, 2001). When calculated on prefecture level drastic differences among the values can be noticed as 362

inhabitants/km^2 in the prefectures of Durresi and Tirana and 39 and 47 inhabitants/km^2 respectively in the prefectures of Gjirokastra and Kukesi (INSTAT 2001).

Figure 4-7 provides an overview of population density over three geographical regions from 1997-2005.
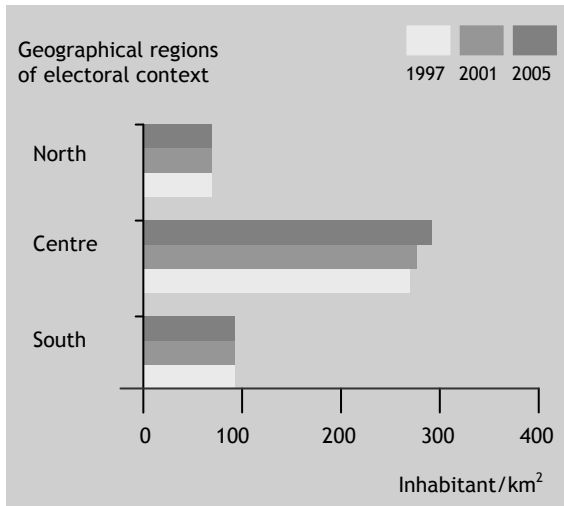
Figure 4-7 Population density by three geographical regions
Source: INSTAT 2005 Indicators by prefectures 2004-2005
INSTAT 2002 Indicators by prefectures 2001-2002
INSTAT 2000 Indicators by prefectures 1996-1999

Gender ratio

This variable represents the spatial distribution of gender ratio in the country over three geographical regions. Figures 4-8 and 4-9 provides information on distribution of this variable values over three geographical regions for the period of time 1991-2005.
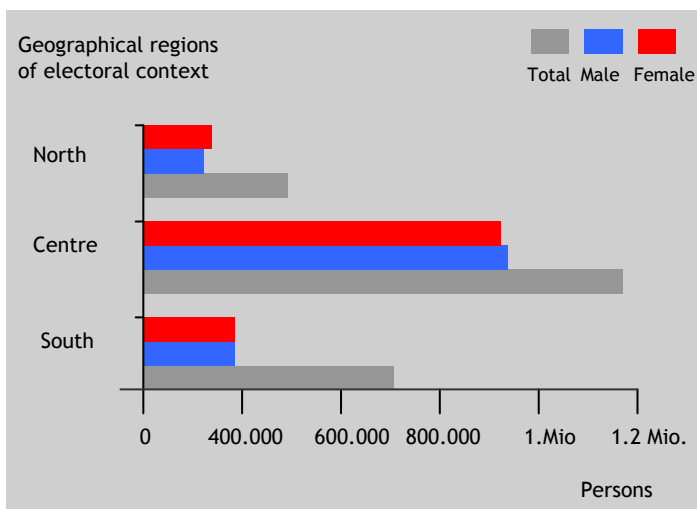
Figure 4-8   Distribution of population by gender in 2005.
Source: INSTAT 2005 Indicators by prefectures 2004-2005
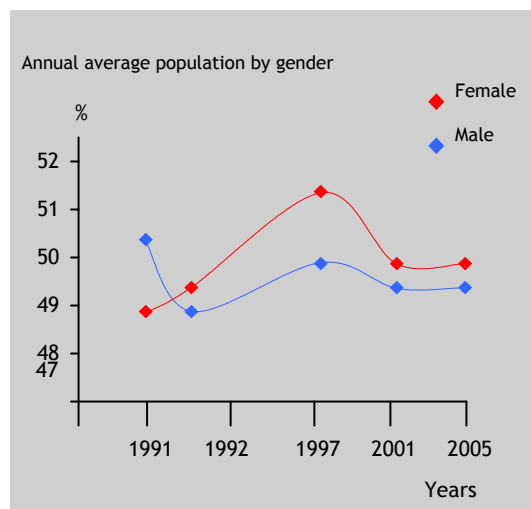
Figure 4-9 Annual average population by gender
Source: INSTAT 2006 Women and Men in Albania

Economic indexes

The variables that are included in this index represent the economical features of electorate from 1991-2005. These features are unemployment rate, type of local economy and proportion of families living in social assistance. They provide an economic perspective on living standards in the country and give insights for the regional differences in this aspect.

The following sections provide an insight on the characteristics of these variables with regard to their developments over three geographical regions of electoral context.

Unemployment rates

This variable represents the spatial distribution of unemployment rates in the country. Unemployment rate refers to percentage of unemployed towards economically active population in the respective administrative unit where it is measured.

The concept of unemployment was for the first time introduced in post communist Albania in 1992. The highest value was in 1992 with 26.5% (Statistical Yearbook 1991-1999). Presently the unemployment rate is 13.8% (INSTAT 2006). In 2001, 77.3% of the labour force was employed and 50.5% of the employed population was still working in agriculture (INSTAT 2003). With regards to the relation between unemployment rate and the poverty it is observed that this rate is 14.2% among the poor, 8,5% for the non-poor and the worse effected are living in extreme poverty with a rate of 23.7% of unemployment (World Bank and INSTAT 2003).

Figures 4-10 and 4-11 provides information on unemployment rates distribution over three geographical regions from 1992-2005.
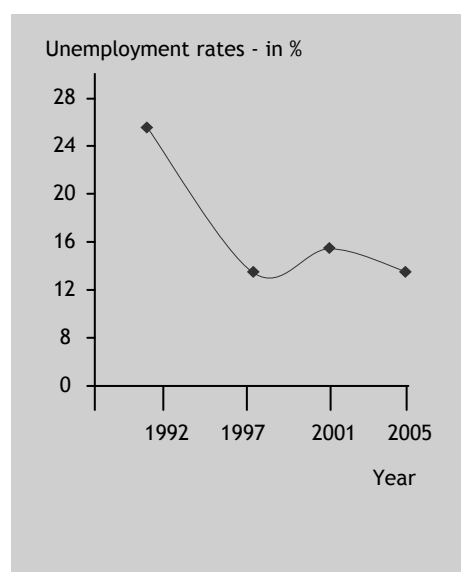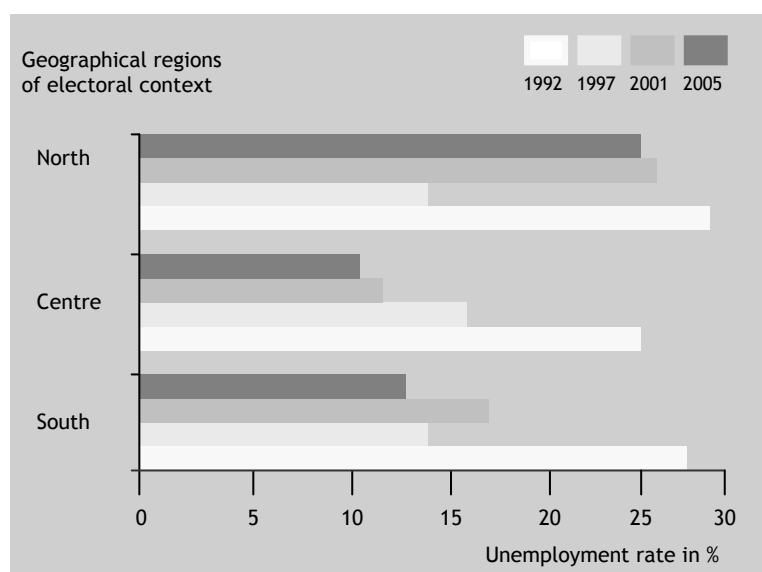
Figure 4-10 Unemployment rates in three electoral context regions
Source: INSTAT 2006 Indicators by prefectures 2004-2005
            INSTAT 2002 Indicators by prefectures 2001-2002
            INSTAT 2001 Indicators by prefectures 1996-2000
            Registration of population, 1989
            Statistical Bulletin Nr 1, 1993

Figure 4-11 Unemployment rates
Source: Social Indicators Yearbook,
            INSTAT 2006

Type of employment

This variable represents the spatial distribution of population by district and/or prefecture unit based on type of employment by economic activities. This variable is measured as the ratio of employed persons by economic activities to the total employed population, in percentage. With regards to average values for the country in year 2001: 50.5% of population have been employed

in agriculture, 18.4% in industry, construction, and transportation, 27.0% in trade and services and 36.6% in others (Census Atlas 2001).This high level of employment in agriculture tells that despite of strong internal migration movement towards cities, this sector dominates country's economy.

It is difficult to design a model of spatial distribution of this variable, however what can be observed is that district which have the lowest percentage of population employed in agriculture are Tirana 22.2%, Durresi 29.3% and Vlora 32.2%. These three districts are in fact the most urbanized and industrialized areas in the country. The districts of Delvina and Gjirokastra have also a low level of employment in agriculture but this is related to the high level of emigration that these two districts have faced in the last decade. The highest levels are in districts of Puka and Devolli where more then 65% of population is employed in agriculture.

The following figure 4-12 illustrates the spatial distribution of this variable in 2001 for three geographical regions of electoral context.
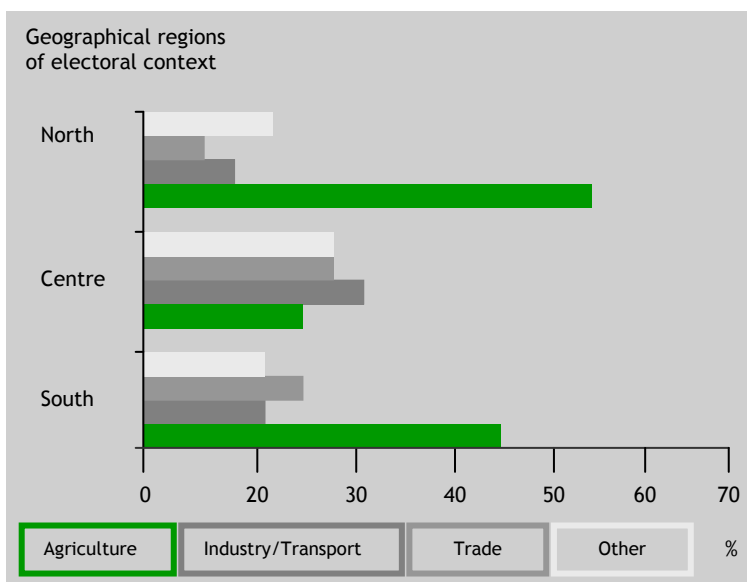
Figure 4-12 Employment rates by economic activities in 2001
Source: Albanian Census Atlas, 2001 INSTAT 2001

Families on social assistance

This variable represents the spatial distribution of the proportion of families in district and/or prefecture unit that lives in economic assistance towards total number of families in that respective district and/or prefecture unit. The average value of this variable for the whole country is 12% (INSTAT 2000). The highest values are in district of Kukesi (40%) and Dibra(34%), both located in north region.

The distribution of social assistance by prefectures is different depended by economic development and the level of unemployment. The prefecture of Shkodra has the higher number of families treated with social assistance, this is linked with the high level of unemployment in this region. In the prefecture of Durres is noted the lower number of families treated with social assistance, about 2800 families.

The following figure illustrates the distribution of this variable during 1997-2004 generalized by three electoral context regions.
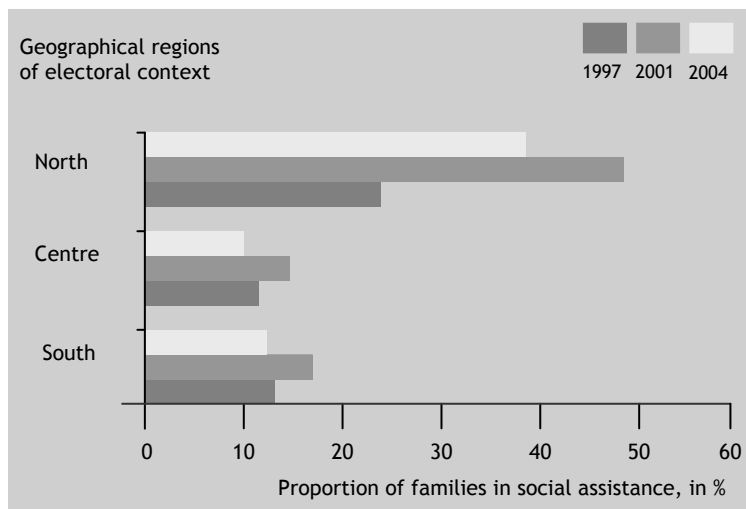
Figure 4-13 Proportion of families with social assistance versus total population of geographical region
Source: INSTAT 2001, 2002 Indicators by prefectures 1996-2000, 2001-2002 INSTAT 2005 Albania in figures

4.3.2.2 Municipality scale

The independent variables in Municipality scale include data from social-demographic and economic indexes. They cover here only data on year 2001 and aim to demonstrate the usefulness of the study approach also in a local scale.

Independent variables Group 1 – Municipality level	
Administrative division	**Social-demographic indexes**
	Elections 2001
Municipality unit	1. Migration features
	2. Schooling years
Administrative division	**Economic indexes**
	Elections 2001
Municipality unit	3. Unemployment
	4. Monetary poverty indicator
	5. Average monthly consumption

Table 4-6 Independent variables Group 1 in Municipality scale

Independent variables Group 2 – Municipality level		
Administrative division	**Social-demographic indexes**	
	Elections 2001	
Municipality unit	6. Population density	
	7. Spatial distribution of land use features	

Table 4-7 Independent variables Group 2 in Municipality scale

Social-demographic indexes

The variables that are included in this index represent the social and demographic features of electorate in Municipality of Tirana in 2001. These features are *migration features, average years of schooling and population density*.

The following sections provide an insight on the characteristics of these variables for 11 municipality units.

Migration features

This variable represents the spatial distribution over 11 municipality units of the proportion of immigrants and emigrants during 1991-2001, expressed as percentage towards total population. Regarding the population that has immigrated in municipal units, nearly 1/3 of them originate from rural areas and have settled mostly in outskirts of Tirana in units 6 and 11. Those coming from urban areas, nearly 2/3, have settled mostly in units 2,3,5,7 and 10.

The greatest number of newcomers from the Northern region (25.3%) has settled in the municipal unit 11, followed by units 2,4,7 and 6. Comers from the Southern region have settled mostly in municipality units 6,5 and 7. In none of the municipal units, people coming from the central region constitute the majority of the comers but their highest number is recorded in units 10 and 5. They have preferred to settle near the centre of the city where the living standard is higher.

Almost 90% of those who left the city belong to units 1,2,3 and 5. In the greatest part they settled within the district of Tirana.

Figures 4-14 and 4-15 provide illustrates the portion of immigrants and emigrants over 11 municipality units.
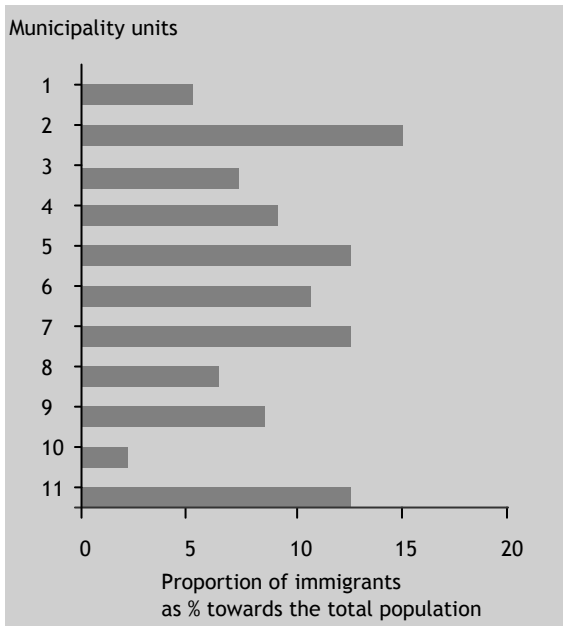
Figure 4-14 Portion of immigrants
Source: Statistical Bulletin,
Tirana Municipality 2001
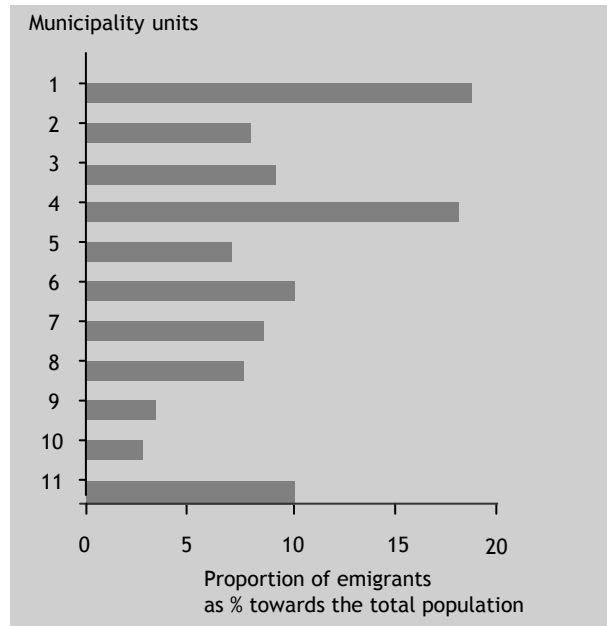
Figure 4-15 Portion of emigrants
Source: Statistical Bulletin,
Tirana Municipality 2001

Average years of schooling

The variable of education attainment represents the average years of schooling of population. The figure 4-16 illustrates the distribution of this variable by municipality units.
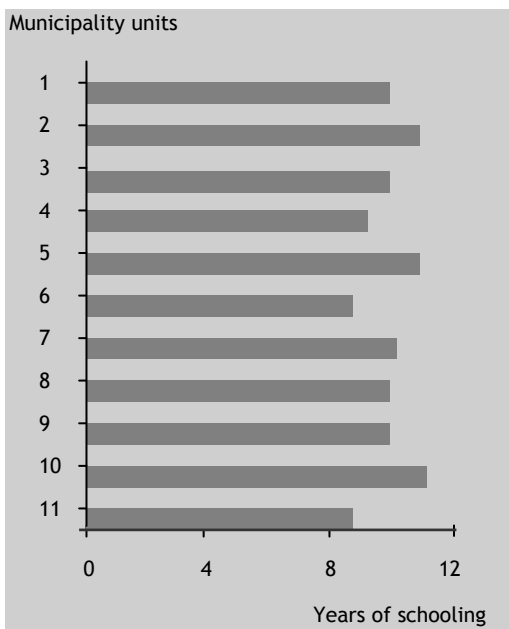
Figure 4-16 Average years of schooling
Source: INSTAT 2001 Registration of the population and dwellings

The average years of education for persons of 15 years and above range between 9,1 and 9,2 years in units 6 and 11 and between 11,2 and 11,7 years in units 5 and 10.

Tirana counts for 36.7% of the persons graduated from higher schools or who have completed post-university studies on national level. The municipality units with the highest percentage people who have graduated from university are those close to the centre of Tirana. In contrast,

persons who have completed only the 8-form school are mainly inhabitants of municipality units 6 and 11

Density of population

This variable represents the spatial distribution of the density of population in 11 municipality units of Tirana (figure 4-17). The average population density in The Municipality of Tirana 80 times higher that the average value for the country. The highest value is in municipality unit number 10 (19.241 inh/km^2) and the lowest value is in municipality unit number 2 (4.494 inh/km^2) (INSTAT 2001).
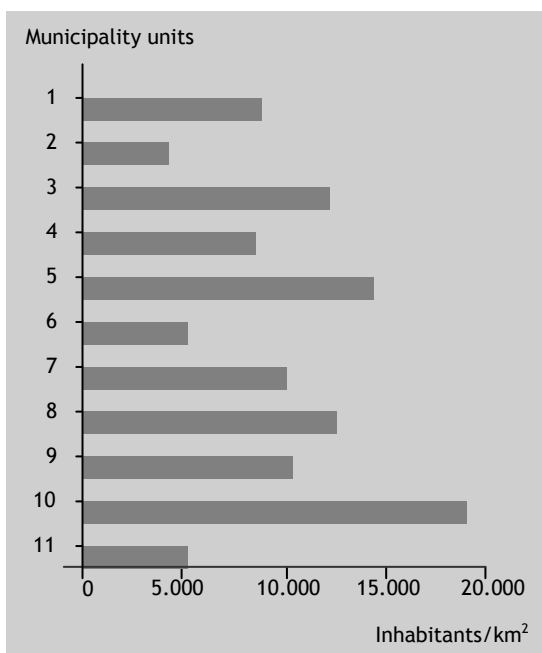
Figure 4-17 Density of population
Source: INSTAT 2001, Albanian Population

Economic indexes

This index includes variables that represent the economical features of electorate in Municipality of Tirana in 2001. These features are *unemployment rate, monthly consumption and monetary poverty level*. The following sections provide an insight into the characteristics of these variables for each municipality unit.

Unemployment rates

This variable represents the spatial distribution in 11 municipality units of unemployment rates. The highest percentages of employment in industrial sectors are in municipality units 9, 8, 7 and 1 (M.Karaguni et al. 2005).The average value of unemployment for the municipality of Tirana in 2001 was 25.8% while highest values occurred in municipality units number 6 and 11, respectively 33.6% and 33.3%. The lowest values were in municipality unit number 10 with 18.9%.

The following figure 4-18 illustrates the distribution of this rates in 11 municipality units.
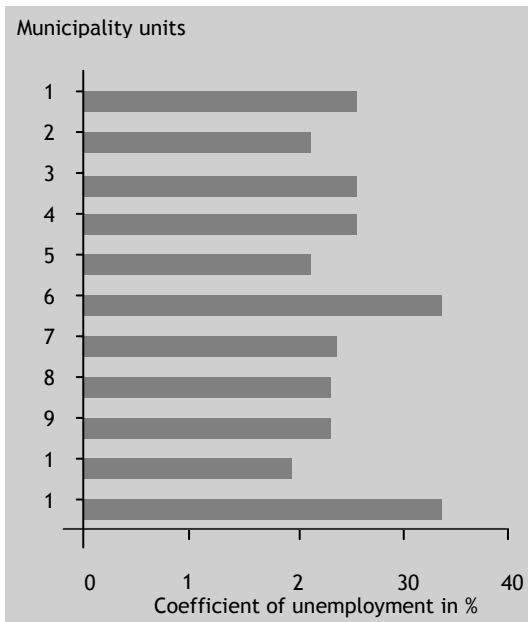
Figure 4-18 Coefficient of unemployment
Source: INSTAT Registration of the population and dwellings

Regarding the employment values, it is important to note that they are the same as average values of the country. As results from the census data, the employed population represent 74.2% of the active population in the municipality. The lowest level of employment can be noticed in the municipality units' number 6 and 11 where the employed population represents respectively 66.4% and 66.7% of the total active population (INSTAT 2001).

Monetary poverty indicator

This variable represents the spatial distribution of the monetary poverty indicator in 11 municipality units. The monetary poverty indicator itself expresses the percentage of the population under poverty level. According to statistical figures published from INSTAT 2004 results that the least poor units are municipal units 5 and 10.

The highest indicator of monetary poverty is recorded in municipal units 4, 6 and 11. These are also the municipal units with the greatest influx of incomers where more than half of population living there consist of newcomers (between 1989 and 2001).

Figure 4-19 illustrates the distribution of this variable over 11 municipality units.

Municipality

Percentage of population under poverty line
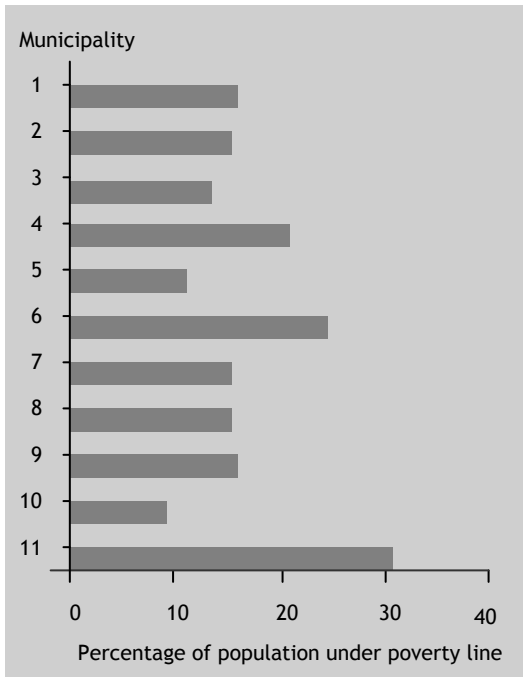
Figure 4-19 Indicator of monetary poverty
Source: INSTAT 2004, Maps of poverty and inequality in Albania

Average monthly consumption indicator

This variable represents the spatial distribution of monthly consumption indicator in 11 municipality units. The monthly consumption indicator itself expresses the monthly average consumption per capita in the Municipality of Tirana. The average value of this indicator in Tirana Municipality is 10.182 Lek[3].The highest values are recorded in Municipality units 2,5,7 and 9 and the lowest are in units 6,10, and 11.

The distribution of average monthly consumption indicator over 11 municipality units is provided by figure 4-10 as below.
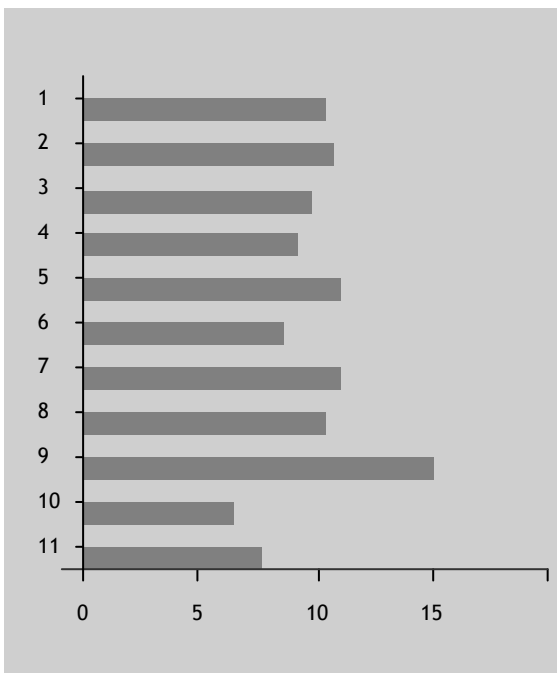
Figure 4-20 Indicator of monthly consumption
Source: INSTAT, Living standard measurement survey 2002

4.3.3 Indexes of dependent variables

This group of variables comprises data on electoral behaviour, specifically on turnout rates and political choices of target electorate. These data are in constituency scale. The following tables 4-8 and 4-9 provides an overview of dependent variables that are used in this study to explore electoral patterns of Albanian parliamentary elections 1991-2005 in country and municipality scale.

Dependent variables – Country level					
Electoral division	**Voting behaviour index**				
	Elections 1991	*Elections 1992*	*Elections 1997*	*Elections 2001*	*Elections 2005*
Constituency level	1. Turnout 2. Voting	1. Turnout 2. Voting	1. Turnout 2. Voting	1. Turnout 2. Voting	1. Turnout 2. Voting

Table 4-8 Dependent variables in country

Dependent variables – Municipality level *Elections 2001*	
Electoral division	**Voting behaviour index**
Constituency level	1. Turnout 2. Voting

Table 4-9 Dependent variables in municipality scale

4.4   Concluding remarks

Exploring electoral patterns from a geographical perspective was in the focus of this chapter. In this framework, three relations between electoral patterns components, namely place, electorate and elections have been introduced. They are: *1. place-electorate* that results in electoral context, 2. *electorate-elections* forming the voting behaviour and 3. *place-elections,* which represents the effect of constituency boundaries delineation in election outcomes and voting behaviour.

To analyse these relations from a geographical perspective three types of variables are needed. *Geographical variables* represent *place* and refer to geographical location of population in relation to administrative and electoral division where they are allocated. *Dependent variables* represent electorate behaviour and are composed of data on vote choice and turnout values. *Independent variables* stand for the profile of electoral context and are constitute of data on social, demographic and economic features of target electorate. In order to understand the above relations an overview of variables specifications is provided as well in this chapter.

"...the first law of GIS management says: you get something for nothing by bringing together (geo)information from different sources and using it in combination..."

Longley et al, 2005

Chapter 5

Analysing electoral patterns in a spatial context

This chapter provides

- The study approach
- The results of analysis

Keywords: GIS, data modelling, geovisualization modelling, geovisual analysis

5.1   Outline of analysis approach

Analysis of elections in a spatial context focuses on characteristics of electoral patterns in theirs spatial and temporal distribution. For this purpose, the spatial and temporal distribution of electoral patterns components (voting behaviour, electoral context) need to be explored first in order to gain insights into their characteristics. Second, the characteristics of spatial and temporal distribution of components correlation must be analysed to investigate the relevance of "contextual effects" perspective in studying elections.

The analysis of spatial and temporal distribution characteristics of the electoral patterns is performed based on two views (figure 5-1).They are:

- A -Geography of components
- B –Geography of relations
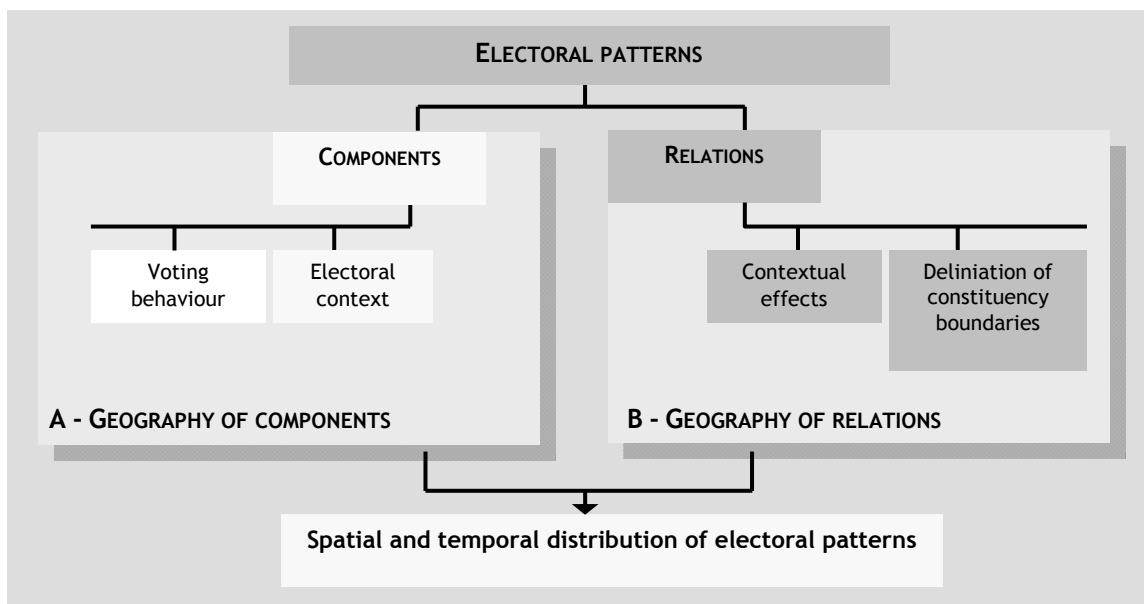
Figure 5-1 Geographical views for studying electoral patterns

A - Geography of components addresses the characteristics of spatial and temporal distribution of electoral patterns components: voting behaviour and electoral context. Voting behaviour is represented by two elements: *vote choices and turnout values.* Electoral context is represented by electoral context features formed by independent and geo variables.

B - Geography of components addresses the characteristics of spatial and temporal distribution of electoral patterns components relation. It explores two relations: contextual effect and delineation of constituency boundaries. Contextual effect addresses the characteristics of spatial correlation between electoral context profile and voting behaviour components. The second relation deals with the spatial patterns created as a result of deviations from tolerated values in voter's allocations per constituency.

Both geographical views described above are addressed in this study by modelling the data in GIT environment. Therefore, two models are created: Data Model and Geovisualization Model.

An outline of this approach for studying elections in a spatial context is provided by figure 5-2 as below.
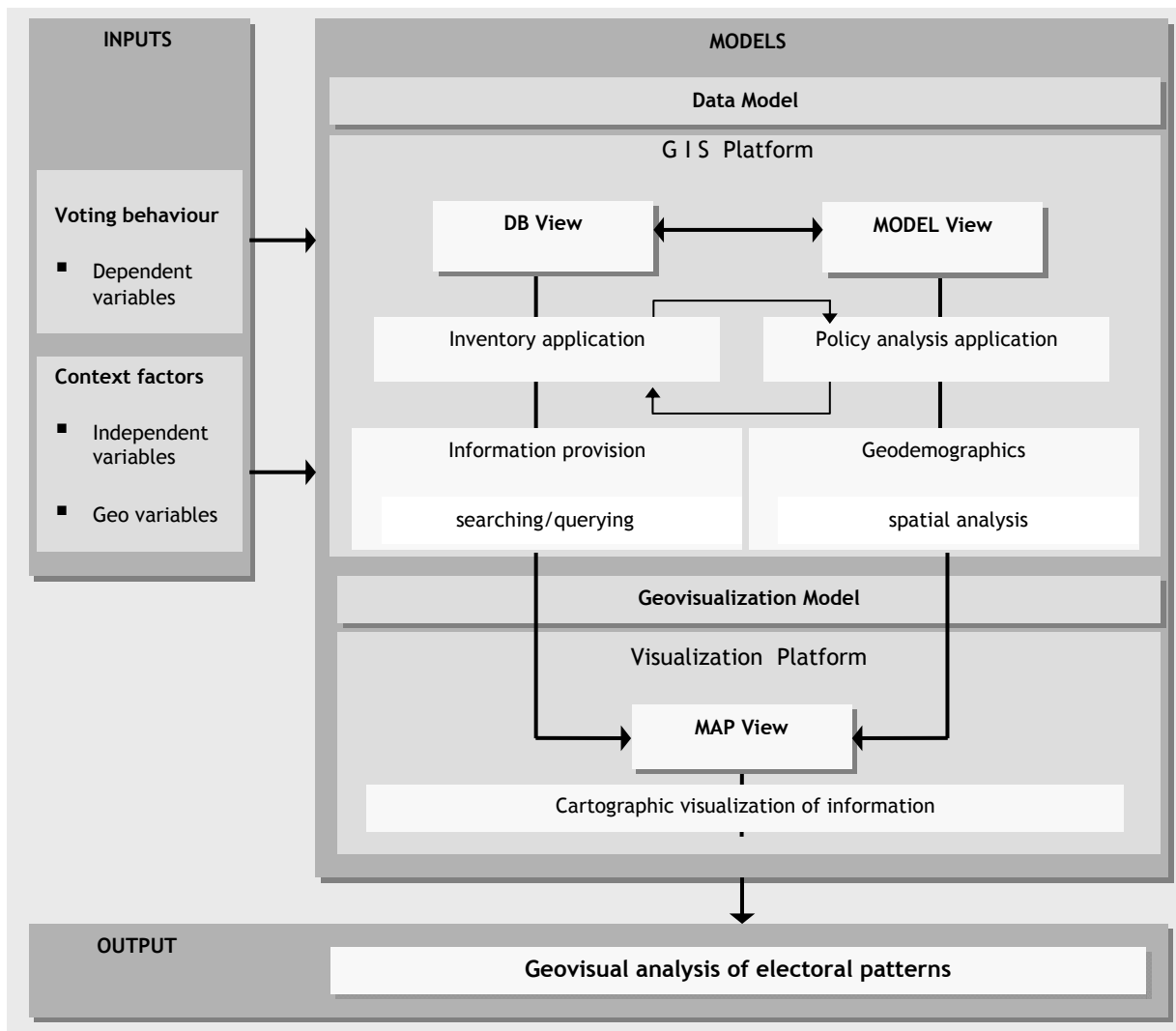
Figure 5-2 Outline of approach for studying electoral patterns in a spatial context

5.1.1 Data processing

The key concept related to geographic data is spatial correlation. Since electoral patterns hold a spatial dimension this concept is applied in this study to explore the spatial correlation of different factors that interact to form these patterns. For this purpose three variables discussed in previous chapter need to be used. These variables are of different types (geographical, socio-demographic and electoral) and their values are in different scales of measurements (e.g. unemployment rate in percentage and education attainment in years). Data about these variables are also stored in layers of dissimilar spatial units (e.g. voting behaviour data are referenced to constituency spatial unit, migration features to district units, unemployment rate to prefecture units). The peculiarity of electoral patterns – a multidimensional array that

contains information on three variables, stored in data layers of dissimilar spatial units of reference and scales of value measurement – prohibit spatial analysis based on the original source data. To perform a joint spatial analysis it is therefore mandatory to restructure the spatial units of reference while preserving their semantic content. In this operation, all relevant electoral as well as socio-demographic data referenced to different administrative spatial entities are re-referenced to uniform grid cells as virtual spatial units of reference. Depending on the scale of data acquisition and map presentation, a cell width of 0.5 km has been determined. The resulting fine grid forms the basis of subsequent data analyses and correlations.

Conversion of the original vector data layers into target raster layers allows for unification of spatial units, at the same time retaining the existing level of detail of the data (variables, uniform distribution over space). This in turn facilitates the integration of the variables studied and the performance of GIS-based spatial analysis. In addition, conversion to raster format makes it possible to assign new values to the original data, which are based on a common scale eliminating existing differences in scale of measurement. Raster format operations of the type described are well-established data analysis techniques in GIT, yet they have rarely been employed to process and analyse electoral data.

Based on the grid-referenced datasets, classical GIS modelling such as weighted overlay method has been employed for an interpreted data assessment of the retained semantic content of datasets. Among three types of data used in GIS, (vector, raster and TIN) raster data structure provides the most comprehensive modelling environment for this type of spatial analysis. This issue is discussed in 5.5.2 *Model View* In full details.

The following figure 5-3 outlines the flow of data storage and transformation in both country and municipality scale.
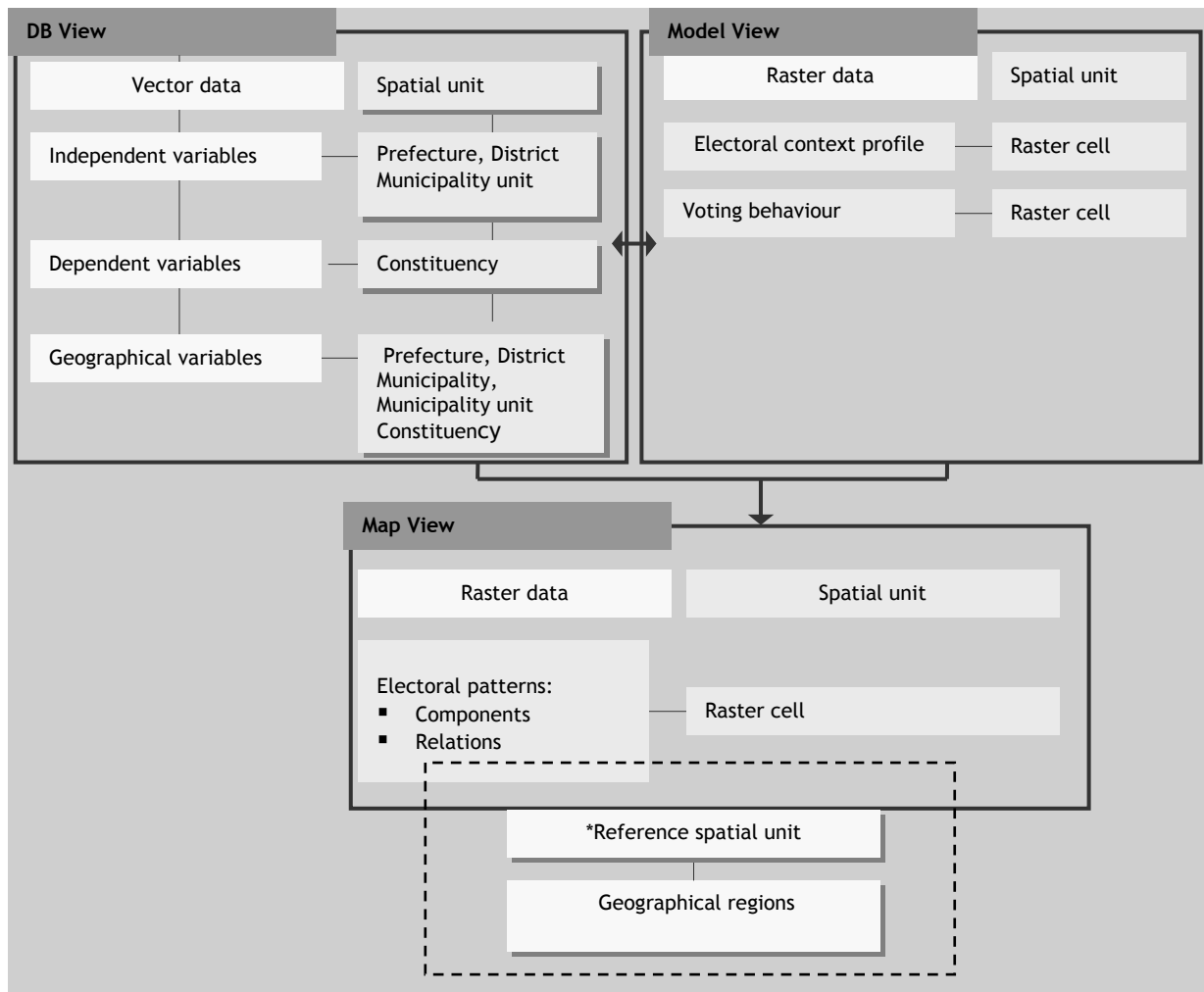
Figure 5-3 Flow of data storage and transformation in country and municipality scale with regard to spatial unit
*Reference spatial unit applies only to Map View on country scale

5.2 Data Model

Data modelling represents the process of structuring and organizing the data to facilitate the data analysis in the framework of the study objectives. Data Models can be developed at various steps of research and for different purposes. In general terms a model in itself is a simplified representation of a phenomenon or object for purposes of description, explanation, forecasting and planning (Wegener 2000).It is through the design of models that we build our perception of the real world and at the same time, they help us to communicate this perception to others.

Models can be categorized with respect to *a)* their degree of formalisation: scale, conceptual and mathematical models; *b)* level of indeterminism of real world phenomena: deterministic, probabilistic and stochastic models; *c)* level of static's/dynamics: static, dynamic and stimulation models; *d)* resolution in space, time and attributes ranging from microscopic to macroscopic; *f)*level of comprehensiveness: if they use one spatial subsystem or an interaction between different spatial subsystems; *g)* modelling structure: if there is one principle for the running of the whole model or more linked to it; *h)* theoretical foundations: like environmental laws or socio-economic theories etc.

People engage with the process of data modelling in GIS through processes of data storage and description, database querying, different types of spatial analysis, information presentation etc (Figure 5-4).

GIS Data Model
Description and
Representation

Operational GIS
Analysis and
Presentation

Real world

People
Interpretation
and Explanation

Figure 5-4 The role of data model in GIS (after Longley et al, 2005)
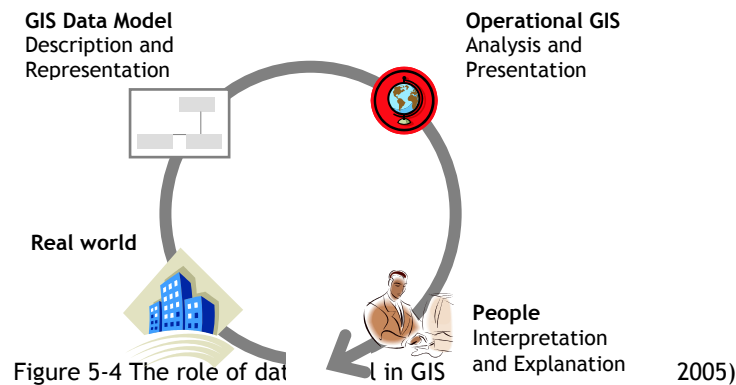
With regards to modelling techniques, there are two main types of models: representation model and process model. A model is defined as a representation type when its focus is to describe objects or phenomenon over a particular geographical area. Along with it, representation models capture also the spatial relation between those objects and model their attributes. Representation models are sometimes referred to as data models and are considered descriptive models. Process models instead aim to describe the interaction between objects that are modelled in the representation model. In this case, the relationships are modelled using spatial analysis tools offered by GIT. Process modelling is sometimes referred to as cartographic modelling. Process Models are used to describe processes and/or to experiment with "what if" scenarios. Despite of these distinctions, since everything in the real world occurs in space and time all the models we build have inherently both the spatial and temporal dimensions. Nevertheless, there are cases when for making these models easier to understand we ignore one or another of these dimensions. Such examples would be demographic models that predict population growth, ageing etc.

The data model is the heart of any GIS and represents a set of constructs for describing and representing selected aspects of the real-world in the digital environment of the computer (Longley et al. 2005).Because geographic reality is infinitely complex there is no single type of all-encompassing GIS data model that suits any situation. However there are four levels of abstraction in which all developers and users engage while dealing with data model (figure 5-5). These levels must be taken in consideration prior the design of any data model in a GIS.
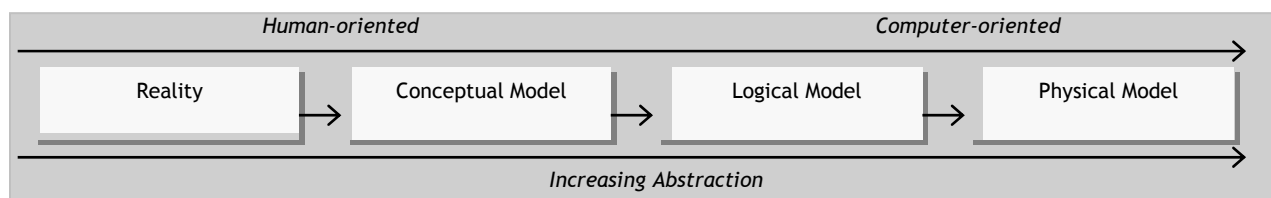
Figure 5-5 Levels of abstraction relevant to GIS data models (after Longley et al, 2005).

In the above schema, *reality* refers to real-world objects or phenomenon that the data model addresses. It contains definitions of the main types of objects to be represented. The *conceptual model* is human-oriented and comprises a conceptual schema, which describes the relation

between objects and processes that need to be studied. The l*ogical model* is an implementation-oriented representation of reality and it is expressed in the form of diagrams, lists, graphs etc that describes the behaviour and interaction between objects. The final stage of abstraction is the *physical model* that represents the implementation of the model in a GIS and is made of data stored in a database.

A Data Model for studying voting behaviour requires both spatial and temporal dimensions. Consequently the model that this study has created is classified as a "space/time model". A space/time model is a model of an objective of investigation in trispace: space, time and attribute (Wegener 2000). This model comprises elements from both representative and process modelling techniques because it a)describes the spatial distribution of voting behaviour and b) explores the relation between electoral patterns components by making use of GIS functionalities for spatial analysis.

The following figure 5-6 illustrates the conceptual model designed to explore electoral patterns in a GIT environment.
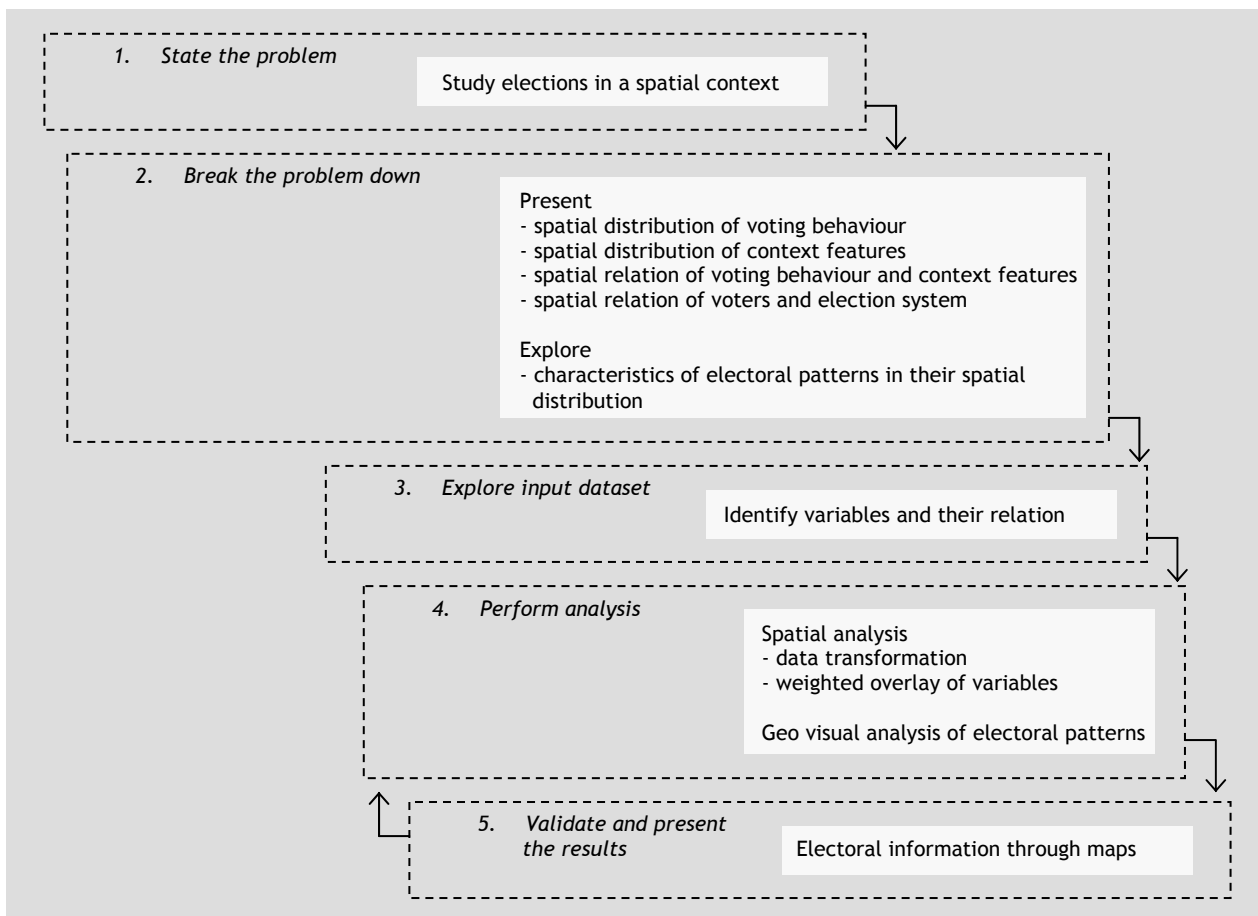
Figure 5-6 Conceptual model of case study (adopted after ESRI: ArcGIS 2005)

Data Model for analysing electoral patterns is designed in two parts: *Database View* and *Model View*.

Database View is an integrated set of data required to study the electoral patterns. They include data on voting behaviour (votes and turnout values), social, demographic and economical features of electorate and geographical location – administrative and electoral boundaries.

Model View is in general terms, a set of data transformation tools that derive new geographic information from the existing datasets. These geoprocessing functions take information from existing datasets, apply analytic functions, and write results into new derived datasets. Section 5.2.2 elaborates in details the purpose and functionalities of Model View created in this study.

Since the focus of the study is to explore the characteristics of electoral patterns in their spatial and temporal distribution, using these views in a GIS platform fulfils the study requirements because it offers the following services:

- storing and manipulating data that are of different:
    - survey sources
    - spatial resolution
    - dimensions: electoral (voting behaviour), social, demographic and economic (electoral context features) and spatial (geographical location).

- exploring data by creating a space/time data model

- analysing derived information in the frame of the research objectives and questions

5.2.1 DATABASE View

The key GIS representation issues are *what* to represent and *how* to represent it (Longley et al, 2005). When dealing with spatial analysis, the nature of the analysed factors implicitly leads to a simplified representation of space. Therefore, space is usually defined as a set of geographic objects, which represent the essential entities of the analysis. The geographic objects are then translated into a database management language and transformed into points, lines, polygons or pixels. In this database environment, the geographic objects are described by their location, their geometry and their statistical attributes.

To analyse the characteristics of spatial and temporal distribution of electoral patterns, both in national and municipality scale, three types of data are used: foundation, framework and mission specific data (figure 5-7).
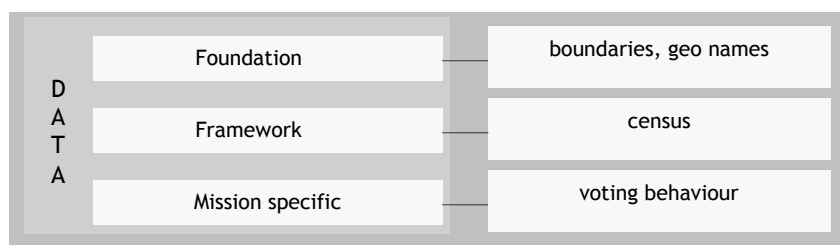
Figure 5-7 Representation types of data to explore electoral patterns

The group of *foundation data* includes data on geographical location of case study area. With regard to electoral patterns components, this data refer to geo variables.

The Framework data group is made up of data that portrays the features of electoral context. For this purpose are used census data that cover social, demographic and economic characteristic of target population. These data form the independent variables.

The Mission specific data group consist of data that refers to dependent variables and are represented by voting behaviour of electorate: vote choice and turnout values.

The Database View of the study in national and municipality scale is illustrated by figures 5-8 and 5-9.
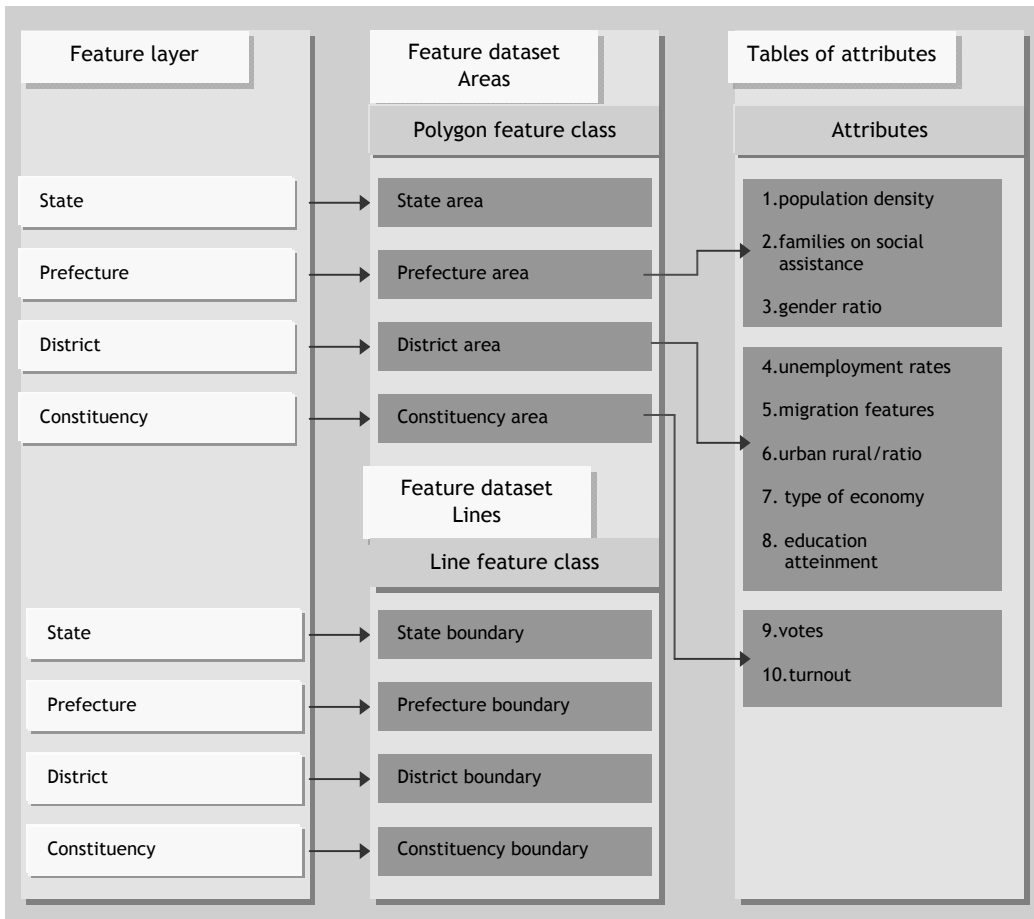
Figure 5-8
Database View
National scale
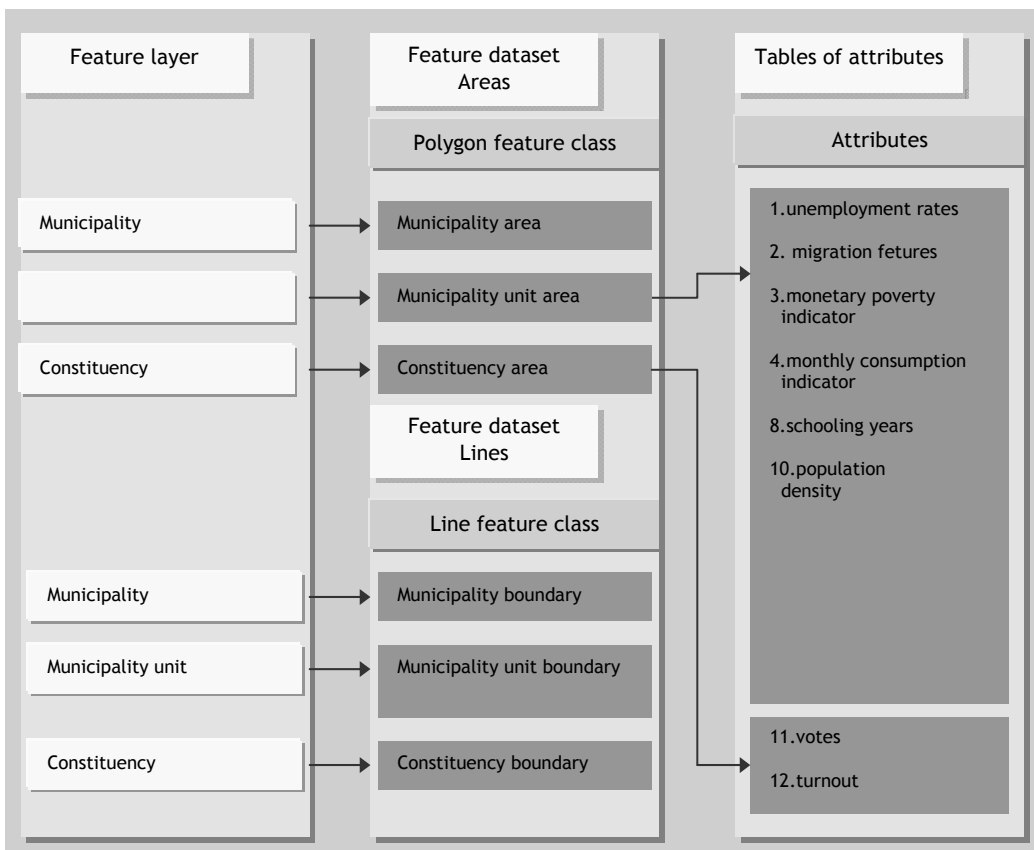
Figure 5-9
Database View
Municipality scale

Analysing electoral patterns in a spatial context   73

5.2.2 MODEL View

Modelling spatial and non-spatial data forms a vital part of GIS platform. Within its environment there are different methods available for performing modelling tasks. Selecting the best suited method depends on a number of issues but the most important ones are the purpose of analysis and user requirements.

The Model View in a GIS environment is a set of information transformation tools that derive new geographic datasets from existing datasets (ESRI 2007). The geoprocessing functions involved in this process take data from existing Database View, apply analytic functions, and write results into new derived dataset. Spatial analysis is the means of adding value to geographic data and turning them into useful information (Longley et al. 2005).

Model View for analysing electoral patterns is based on a geodemographic approach. Geodemographics is defined as "the analysis of people by where they live" (R.Harris et al. 2005). GIS functions are linked with geodemographic types of investigations like aggregation, overlay and point-in-polygon analysis. In this Model *the overlay functions* of GIS environment are used to perform spatial analysis. With spatial analysis is understood "a methodology or set of analytical procedures used to derive information about spatial relationships between geographic phenomena" (ESRI, 2005). Spatial analysis includes all transformations, manipulations and methods that can be applied to geographic data to add value to them, to support decisions and to reveal patterns and anomalies that are not immediately obvious (Longley et al, 2005).The end result of spatial analysis is the transformation of raw data into meaningful information.

A spatial analysis operation as *overlay* combines data from different datasets to determine whether the distribution of one type of feature organized in a particular data layer is related to the distribution of features organized in another data layer. In particular *Weighted Overlay* is a technique for applying a common measurement scale of values to diverse and dissimilar inputs to create an integrated analysis. Weighted Overlay type of analysis operates only with integer raster[4] type of data. A raster theme represents a geographic layer where space is partitioned into square cells in a view. Each cell stores a numeric data value that conveys information about the geographic layer it represents. Hence, through Weighted Overlay a discrete raster output theme[5] is created by combining the values in multiple raster input themes. For each location, the cells in each input theme at that location are weighted and added to create the value for the output theme. This process assist to discover and understand spatial correlations of data which otherwise would not be revealed.

The Model View for studying elections in a spatial context is created by using Spatial Analyst 2.0/ModelBuilder[TM], a spatial analysis tool provided as an extension to GIS software ArcView 3.3. This type of spatial analysis gives us the possibility to combine a number of contextual factors which are stored in different layers and have different values scales and produce a single output layer that represent the profile of electoral context. The primary goal of this analysis is to reveal what kind of spatial correlation exist between profile of context and voting behaviour of electorate both in national and municipality scale.

---

[4] Integer raster data stores whole numbers as the values of each cell (ESRI, 2007)
[5] A matrix of square cells representing geographic features. Each cell has an integer value which represent a feature (ESRI, 2007)

Modelling electoral patterns consist of combining several stages of data transformation and manipulation into a single one for the purpose of exploring spatial correlation between their components. These stages are illustrated by figure 5-10 and consist of:

1. selection of input data
2. transformation of input data
3. performance of spatial analysis.
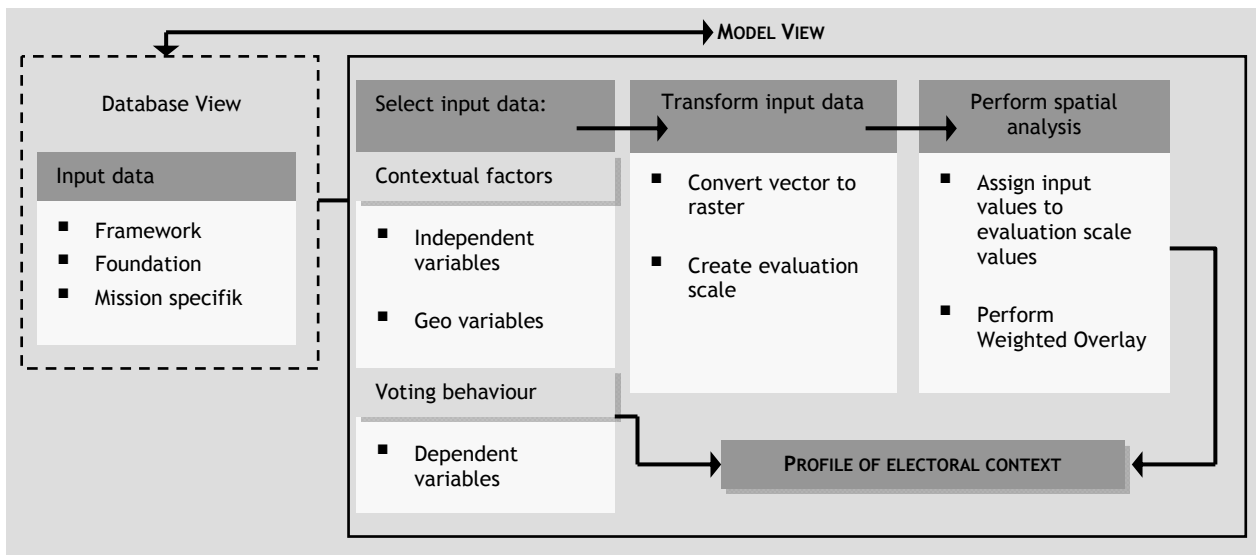
Figure 5-10 Flow of stages in Model View of the study

- Selection of input data

Input data (foundation, framework and mission specific data) stored in Database View form the dataset used to build Model View. In order to explore the context effect perspective in voting behaviour input data are grouped in contextual factors and voting behaviour data. Contextual factors are represented in this model by a selected number of independent variables and geovariables. Independent variables represent important social, demographical and economical aspects of Albanian electorate. They measure the relative social and economic well-being of the environment where the electorate reside. In national scale they include: *unemployment rate, schooling years, migration features and families on social assistance*. In Municipality scale these variables stand for: *unemployment rates, schooling years, migration features, average monthly consumption, and monetary poverty*. Geo-variables constitutes of prefecture and district administrative divisions to which the values of independent variables are assigned. Voting behaviour data are represented by dependent variables (vote and turnout) and are overlaid to profile of electoral context to gain insight in spatial correlation between context factors and voting behaviour.

- Transformation of input data

The data transformation includes several processes of *conversion* and *reclassification*. Input data consist of independent variables. In country scale they are stored in vector data that are in two

spatial units. Thus, variables of *unemployment rate* and *families on social assistance* are stored in vector layer that correspond from administrative division point of view to prefecture unit, while values for *migration features* and *schooling years* are measured in contrast in district unit. Being aware of differences in the level of detail that these data offer it is assumed that values of independent variables in prefecture units will be broken down with the same values to district units that constitute the respective prefecture unit. In other words, if the rate of unemployment for e.g. in Prefecture of Vlora is 20%, the assumption implies that also Districts of Delvina and Saranda that belong to this administrative division will have both a value of 20% for unemployment rate. This assumption arises as a result of lack of data concerning these variables and it was judged as more useful to keep the level of details for two other variables that are in district level rather then loosing them.

In order to perform overlay operation all input data need to be in integer raster layers. Therefore all vector data layers which stores data on independent variables are converted in raster layers. Raster cell resolution varies in country and municipality scale respectively 0,5km and 25m. These resolutions allow a good quality of information visualization and do not distort the original level of details in input vector data.

Independent variables are also in different measurement scales and can not be combined directly in spatial analysis. In order to obtain a meaningful result their values must be unified in a common scale. In addition to that not all variables have the same influence in the overall profile of electoral context. Therefore, each value class in an input raster is assigned a new value based on a predefined evaluation scale. These new values are reclassifications of the original input raster values. Evaluation scale contains five degrees of measurement where value number 1 stands for a *very good* well-being status of the areas and in contrast to that number 5 represents *the worst* scenario.

- Spatial analysis

As previously stated, Weighted Overlay is a type of GIS spatial analysis that assesses the level of spatial correlation between contextual factors represented by selected independent variables. It contains two data processes: *weighting* and *overlaying*. Weighting and overlaying input themes are done in two steps. First, each input raster that represent one independent variable is weighted according to its importance, named as a percent influence. Therefore, cell values for each input raster in the analysis are assigned values from the evaluation scale. The weight is a relative percentage, and the sum of the percent influence weights of all input themes in that will overlay must equal 100 percent. The highest values are assigned to variables that represent economical features such as e.g. unemployment rate or monetary poverty indicator. This is related to the fact that economic situation is what preoccupies the most Albanian citizens. According to a pre-election poll conducted by Gallup International Association in June 2005, 58% of the interviewers see unemployment as the most pressing problem and 43% of them held the government accountable for the living standards. The lowest percentage influences are assigned to variable that stand for average number of schooling years. This is due to the fact that Albanian electorate is in general highly educated and there are no major differences in absolute figures among geographical regions or municipality units. The percentage influences assigned to selected independent variables in National and Municipality scale are given in below table 5-1.

National scale	
Independent Variables	Percentage of influence
- unemployment rate	30%
- families on social assistance	30%
- migration features	30%
- schooling years	10%
Municipality scale	
- unemployment rate	25%
- monetary poverty indicator	25%
- monthly consumption indicator	20%
- migration features	20%
- schooling years	10%

Table 5-1 Percentage of influences assigned to independent variables in National and Municipality scale

The new values in each input theme are multiplied by the percent influence assigned to that theme. Then the overlay operation is performed where the new weighted values in the cells that overlay each other are added together and rounded to create the output theme values.

The stages of creating Model View respectively in National and Municipality scale are schematically illustrated by figures 5-11 and 5-12
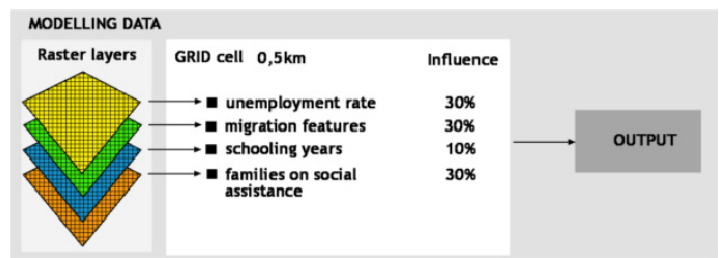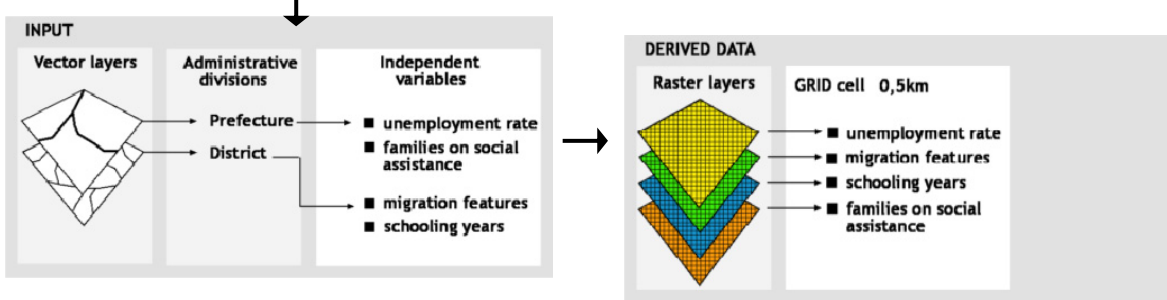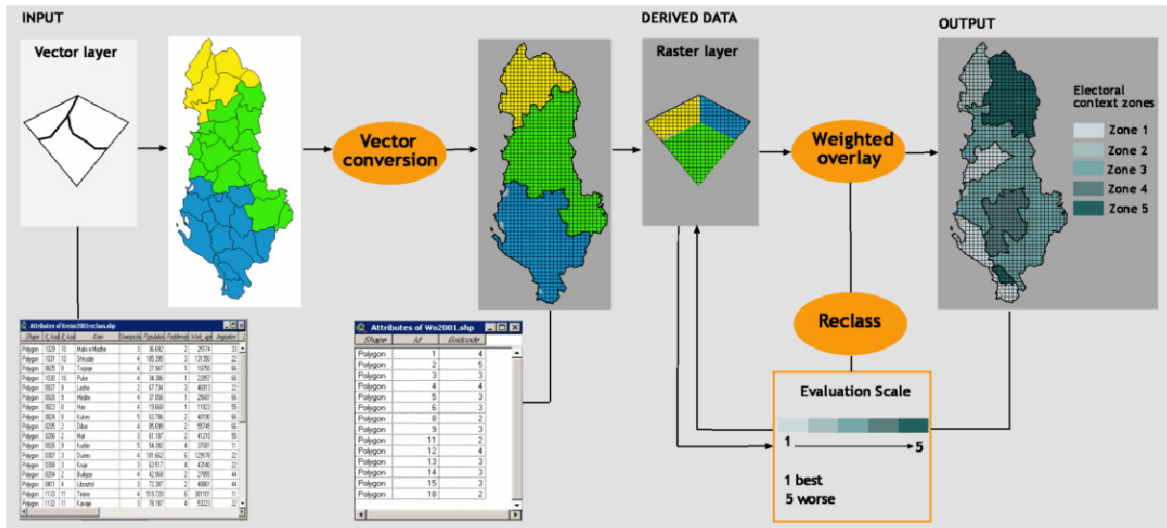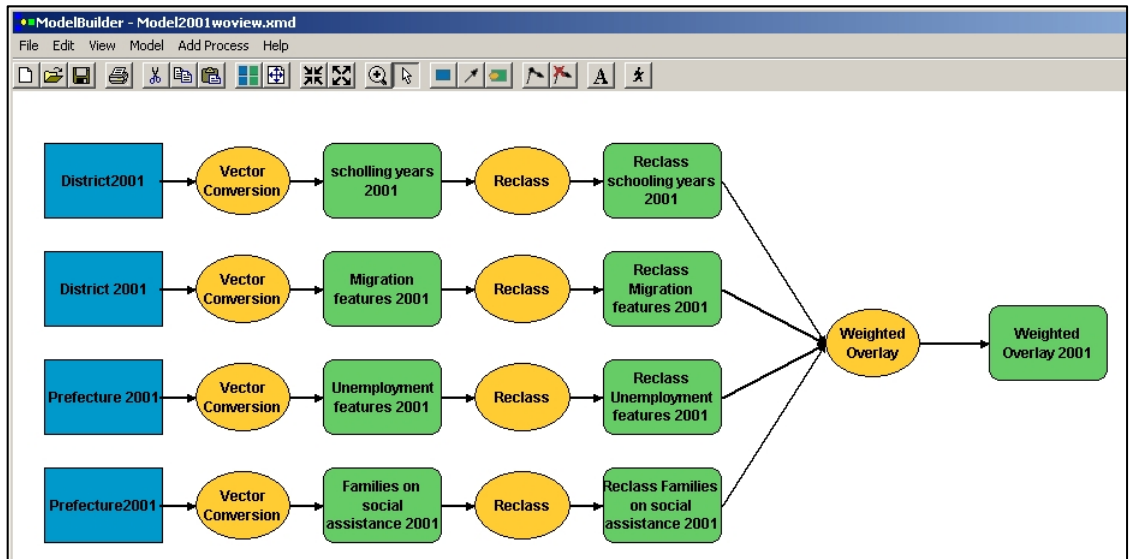
Figure 5-11 Processes of Model View in National scale
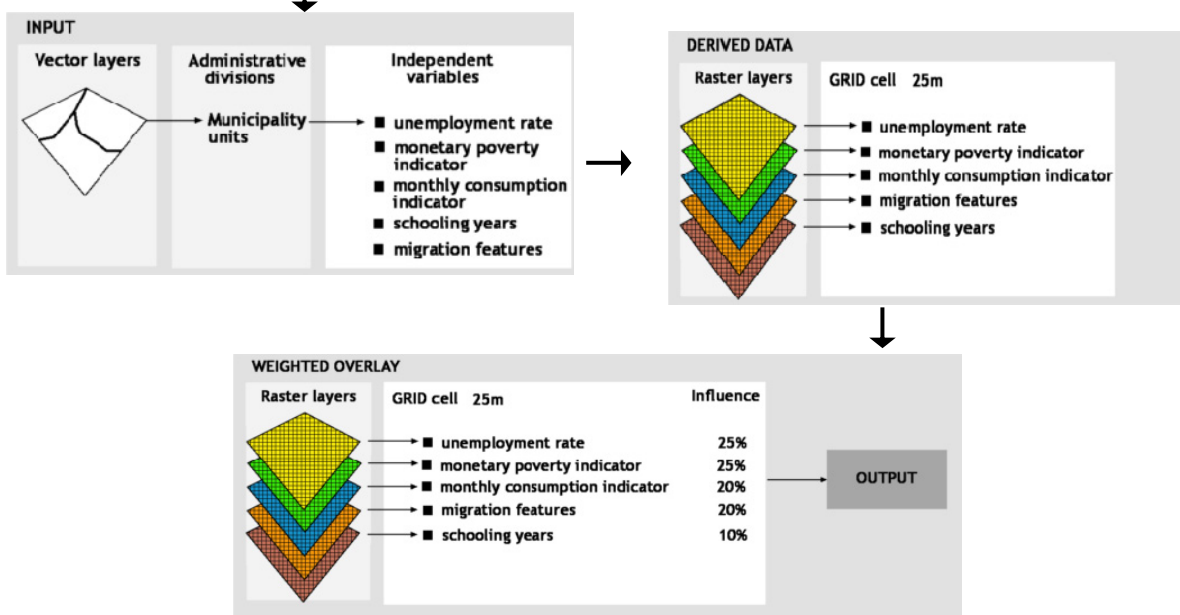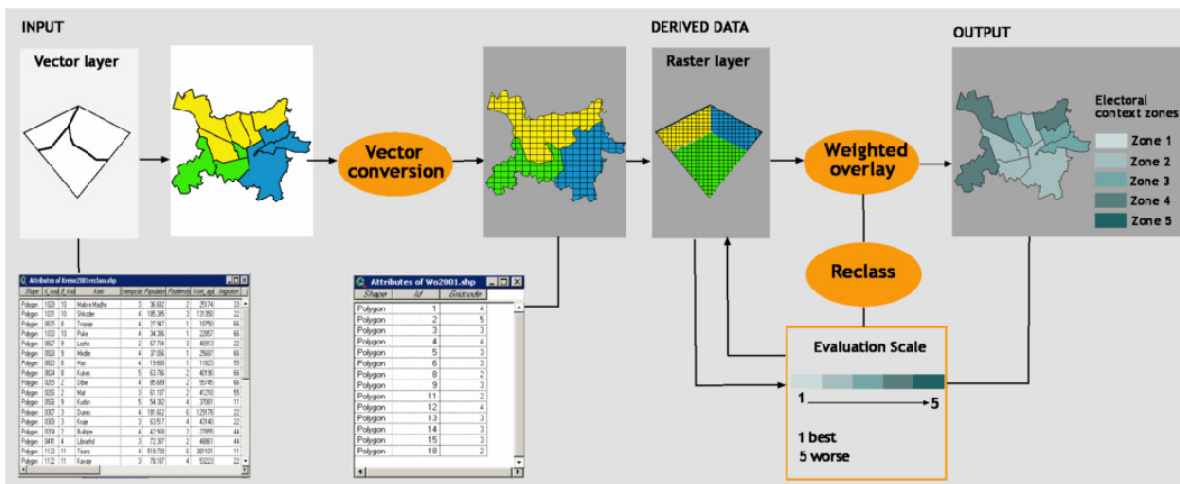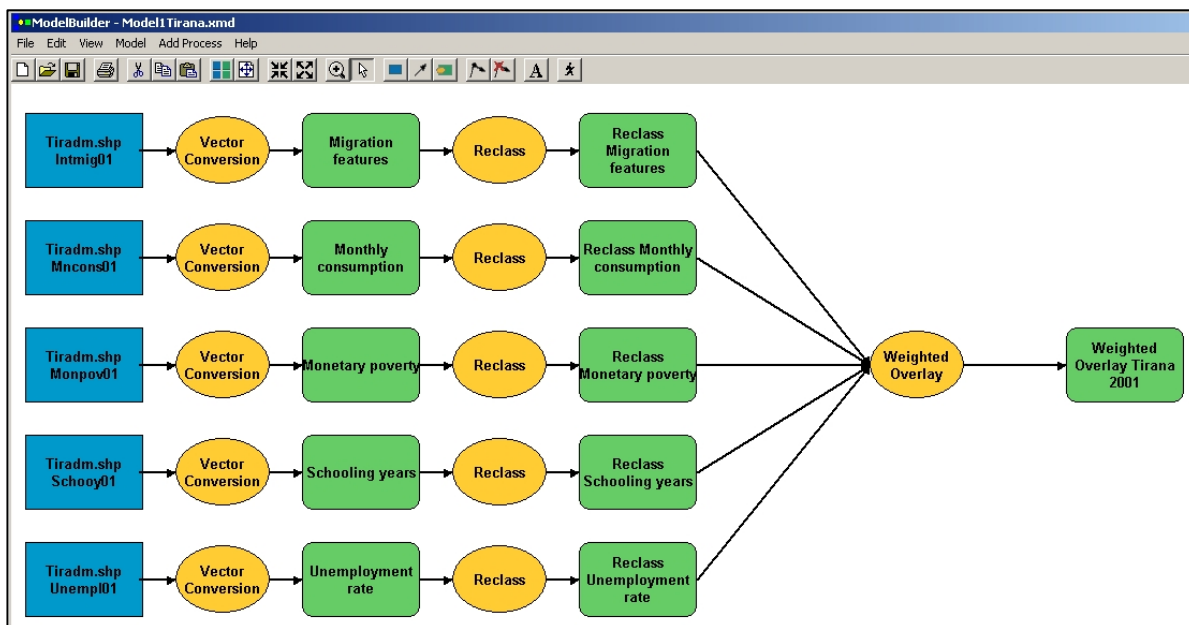
Figure 5-12 Processes of Model View in Municipality scale

The output raster theme represents the spatial correlation of selected independent variables based on their relative importance. Hence, by associating the values of output raster with values of evaluation scale the characteristics of electoral context profile both in national and municipality scale are revealed. As result of the above-described analysis, five zones of overlaid independent variables have been created. They form the profile of electoral context.

Vector layers that contain data on voting behaviour have been also converted in raster format with the same resolution of independent variables raster layers. These data are then spatially overlaid with the profile of electoral context and geo variables layers. Through this process, the electoral patterns have been revealed. Their spatial and temporal distribution characteristics are explored in Geovisualization Model in the following section 5.3.

5.3   Geovisualization Model

The purpose of Geovisualization Model is to support the information generated in Data Model by means of cartographical visualization. It aims to explore the characteristics of spatial and temporal distribution of electoral patterns by mapping:

- voting behaviour
- electoral context profile
- spatial and temporal correlation of electoral context features and voting behaviour
- spatial allocation of voters in constituencies

To achieve this goal, the information generated from spatial analysis in GIS platform is transferred in a graphic platform (figure 5-13). This platform facilitates information visualization and form the baseline of Map View.
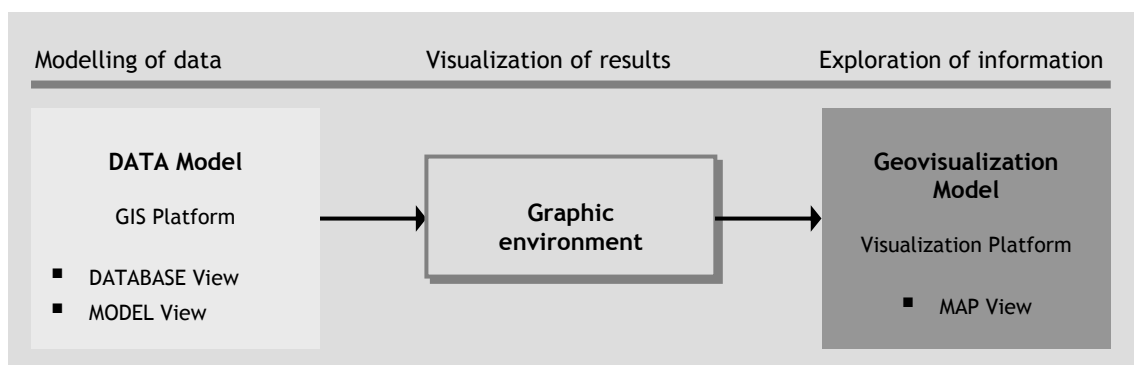
Figure 5-13 Geovisualization Model of the study

5.3.1 MAP View

The Map View supports the geo visual analysis of electoral patterns by visualizing the information in map form. Linked to the Database View and Model View, it shows datasets content in a visual form and opens possibilities for performing different querying operations.

Thematic maps in national and municipality scale are grouped following the geographical views for studying electoral patterns discussed in section 5.1.

Group A – Geography of components includes 18 thematic maps in national scale and 6 thematic maps in municipality scale. They present information on spatial and temporal distribution of electoral patterns components, namely vote for political parties and candidates, turnout values and electoral context features. In national scale this information refers to 1991-2005 Parliamentary Elections. In municipality scale, it addresses only 2001 Parliamentary Election in Tirana Municipality.

Group B – Geography of relations includes 17 thematic maps in national scale and 4 thematic maps in municipality scale. Through these maps is provided information on two relations between electoral patterns components: 1) electoral context features and voting behaviour and 2) electoral system and voter's allocation in constituencies. Because of particularities of 1991-1992 Elections as well as lack of data concerning independent variables during this period these types of thematic maps for Parliamentary Elections 1991-1992 are not included in the Map View.

The following figure 5-14 illustrates the content of Map View in country and municipality scale.
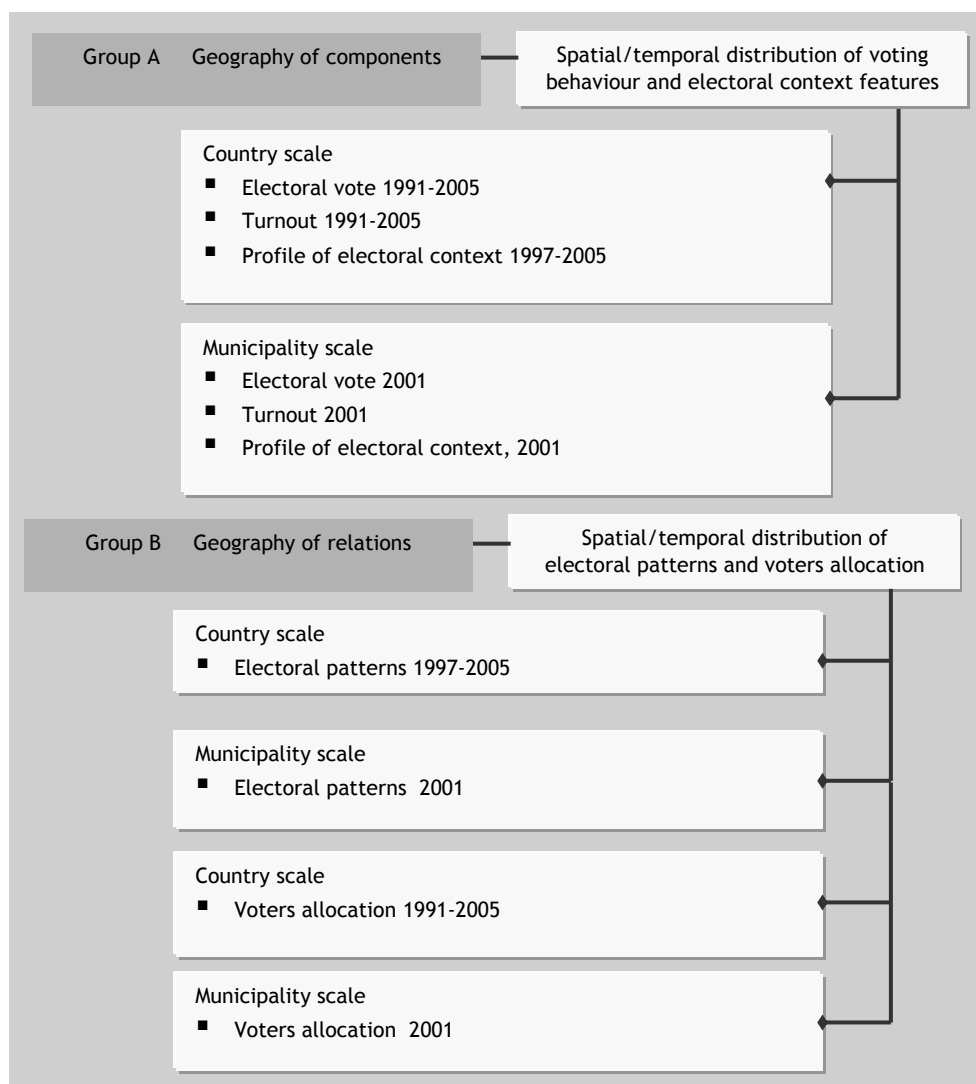
Figure 5-14 Map groups based on two views of geographical perspective

Analysing electoral patterns in a spatial context

5.4 Geovisual analysis of electoral patterns

Geovisual exploration of data which are (carto)graphically represented stands for that part of the geovisualization chain that prompt thinking and understanding. Human vision is powerful in information extraction from graphic representations such as maps or diagrams. Therefore visual exploration triggers deduction of knowledge about patterns and relationships among features that have been presented. Together with domain expertise, vision is assumed to be able to turn large, complex, heterogeneous data volumes into information (Card et al. 1999). This is partly the case because such displays are structured spatially (instead of alphanumerically), which facilitates recognition of patterns in the data, and partly because the visual perceptual system uses mechanisms that enable quick recognition of certain visual stimuli (Blok 2005).

As already elaborated in the second chapter maps plays a vital role in the process of visual exploration. In this respect, four main goals of visual exploration have been recognised: *discovery, explanation, knowledge acquisition and decision-making*. According to Blok (2005) users of (carto)graphic representation of data are generally interested in:

- the existence of patterns and their characteristics
- relationships and differences between them
- trends in patterns developments

In this framework, she designs four main pattern-related tasks They are:

- to identify locational and attribute patterns
- to compare locational and attribute patterns
- to identify patterns in the spatio-temporal domain
- to compare patterns in the spatio-temporal domain

The geovisual analysis adopted in this study makes use of Geovisualization Model in order to explore electoral patterns. It represents the final stage of studying elections in a spatial context and communicating electoral information.

The main goals of this analysis are to:

- identify electoral patterns and their characteristics

- explore spatial and temporal distribution of electoral patterns components and relations between them

- explain changes of these patterns and relationships over time

- acquire and disseminate knowledge on voting behaviour and election outcomes

The geovisual analysis of electoral patterns is performed in the following steps:

1) characteristics of spatial and temporal distribution of voting behaviour (voting choice and turnout) and electoral context features are explored by map group A. The analysis reveals the regional variation as well as spatial and temporal dependency of electorate's voting behaviour.

2) local contextual effects on voting behaviour are investigated by map group B. The focus here is on spatial and temporal correlation of electoral context features with components of voting behaviour.

3) voters` relation to electoral rules and regulation is explored by map group B too. The focus here is in voters' allocation while delineating the constituency boundaries.

5.4.1 Geography of electoral patterns components

Map Group A

This group includes thematic maps that present the components of electoral patterns: voting behaviour, electoral context and their distribution on geographical space.

5.4.1.1 Voting behaviour

Voting behaviour refers to two elements that are related directly to voters' decision making. They are vote choice and participation in election. Voting behaviour in itself is an aggregate level concept therefore the focus is not in the electoral patterns produced by individuals but in those produced by electorate as an aggregate entity that act organized in constituency level. These patterns are discussed in this study in their spatial and temporal distribution in order to explore further their characteristics in terms of:

- Spatial and temporal variations of political preferences and turnout values with regard to three context regions

- Existence of spatial and temporal dependency in spatial and temporal distribution of political preferences and turnout values

5.4.1.1a Vote choice

Vote choice expresses the voters' preferences towards political candidates and parties that have been enrolled in a specific election event. This is a significant element of voting behaviour since its analysis facilitates the understanding of voter's political orientation and provides insight for the formation of mosaic of political support over the country.

In order to understand the characteristics of spatial and temporal distribution of voting choice in country and municipality scale the following issues have been addressed:

1. Long-term political support

The analysis of spatial distribution of vote choice over the country reveals patterns of long-term political support in the 1991-2005 Parliamentary Elections. Since the boundaries of constituencies have continuously changed during these elections, it is difficult to delineate the boundaries of long-term political support patterns preciously. Therefore, generalization is used while mapping this information.

Long-term patterns are explored by geo visualizing data on vote choice for candidates and political parties. Considering the differences in voting behaviour between the first two 1991-1992 elections and 1997-2005 it was found necessary to geovisualize patterns of long-term political-support as grouped values based on their common spatial and temporal distribution. Nevertheless, two patterns of long-term support for party candidates can still be observed in all five elections under study. They are presented by map 5-1 and correspond to (a-1) pattern located in northern region and representing vote choice for Democratic Party candidate (PD) and (a-2) pattern located in southern/central region and representing vote choice for Socialist Party candidate (PS).

During 1992-2005 elections, another pattern (b) of long-term political support is revealed through geovisualization. It is located in northern region and corresponds to vote for Democratic Party candidate (PD). Pattern (c) occurs during 1991-1997 Elections. It is located in southern region and corresponds to political support for candidate of Union of Human Rights (PBDNJ).

Concerning vote choice for political parties, there is no long-term pattern for 1991-2005 Elections that preserved sustainability in the spatial and temporal distribution (note that in 1991 election there was applied only majoritarian system). However, as illustrated by map 5-2 when grouping the elections three patterns of long-term support for political parties can be observed. They are: pattern (c) during 1992-2005 Elections (with an exception of 2001 Elections) located in southern region and corresponding to vote for Party of Human Rights (PPDNJ); patterns (a) and (b) during 1992-2001 Elections located respectively in southern/central and northern region and corresponding to Socialist Party (PS) and Democratic Party (PD).

Since voting behaviour is analysed in the framework of electoral context only for 1997-2005 Elections it is important to geovisualize also separately for these elections the patterns of long-term political support. They are illustrated by Map 5-3. Regarding support for candidates, two long-term patterns have been revealed: (a) located in southern/central region and represent vote choice for Socialist Party candidate (PS); (b) located in northern/central region, representing vote choice for Democratic Party candidate (PD). In contrast to support for candidate, long-term patterns of support for political party can be observed only in southern region and by excluding 2001 Elections. However its was found significant to represent this pattern since even PS got the majority of votes in this area for 2001 Elections, PPDNJ did get also a high percentage of votes (25%). Therefore, this can be referred to as a pattern of long-term support for PPDNJ.

Mapping patterns of long-term political support both for candidates and for parties enable to explore their characteristics a spatial and temporal distribution. What therefore can be observed in above discussed maps is a spatial clustering of patterns based on political preferences.

Table 5-2 provides an overview of these clustering over three geographical regions.

Geographical Regions	Patterns of long-term political support (party candidates and parties)		
	PD	PS	PBDNJ
Northern	●		
Central		●	
Southern		●	●

● PD   ● PS   ● PBDNJ

Table 5-2 Spatial clustering of long-term political support patterns
over three geographical regions

Voters` preferences for PD are clustered in patterns located in northern region. Regarding preferences for PS clustering occurs in both central and southern regions while for PBDNJ these patterns are located in the extreme south of country, in southern region.

Geovisualization of vote choice in municipality level reveals also patterns of long-term political support (map 4-3). Pattern *a*, located in north-western part of the city represent a stronghold for PD in 2001-2005 elections. It correspond to municipality units 9 and 11.

Pattern b-*1* is located in northeast part of the city and belongs administratively to municipality unit number 3. Pattern *b-2*, located in southern part of the city administratively belongs to municipality unit number 5. Both of them represent stronghold patterns of support for PS.

Vote margins in long-term patterns have been over 10% throughout 1991-2005 Elections. This indicates a strong political support of electorate that resides there.

2. Shifting political support

In contrast to patterns of long-term political support, are spatial patterns, which correspond to vote choice that shift from one election to another. They are defined here as patterns of shifting political support. These patterns are not spatially clustered rather scattered in southern and central regions. Important to note is that in country scale these patterns include major cities as Tirana, Vlora, Fieri, Durresi, and Pogradeci.

Also in municipality level is manifested shifting political support. As in county scale, this behaviour is especially emphasized during 1991-1992 elections. A spatial vote distribution from 1991 Elections -"all red" to 1992 Elections -"all blue" underline again the characteristics of voting behaviour in this period as a "pro" and "anti" communism vote and independent from spatial differences in electoral context.

Concerning 1997-2005 elections vote choice has constantly been shifted (excluding long-term patterns) between PS and PD party candidates. This vote behaviour is preserved also when it comes to vote choice for political parties with an exception of 2005 Elections. During this election, the tendency was to vote for other parties as PR, PSD etc.

3. Heterogeneous versus homogenous political support

This issue treats the nature of spatial and temporal distribution of political support in terms of homogeneity and heterogeneity. Political support is defined as spatially homogenous when more than 50% of constituencies within a geographical region manifest the same vote choice. Temporal homogeneity represents the sustainability of spatial homogeneity features while comparing them for 1991-2005 elections. The opposite situation stands for heterogeneous spatial and temporal distribution of political support patterns. Geovisualization of vote choice for candidates in the five parliamentary elections reveals a homogenous political support inside every geographical region while comparing the vote choice for five elections (Table 5-3).

Concerning 1997-2005 Elections, patterns of heterogeneous support occur in central region while in southern and northern regions patterns of homogenous support are preserved.

Geographical regions	Homogenous vs. heterogeneous support				
	1991	1992	1997	2001	2005
Northern	H ●	H ●	H ●	H ●	H ●
Central	H ●	H ●	H ●	H ●	h
Southern	H ●	H ●	H ●	H ●	H ●

H Homogenous   h Heterogeneous   ● PD   ● PS

Table 5-3 Political support in country scale

In 1991-1997 elections, political support is very homogenous in all constituencies of Tirana municipality. These patterns however change during 2001-2005 elections for both vote choice for party candidates and political parties. Table 5-4 illustrates these results.

Homogenous vs. heterogeneous support				
1991	1992	1997	2001	2005
H ●	H ●	H ●	h	h

H Homogenous   h Heterogeneous   ● PD   ● PS

Table 5-4 Political support in municipality scale

4. Differences in political support for party candidates and parties

The geovisualization of spatial distribution of political support for party candidates and corresponding parties in the three geographical regions reveals a positive correlation between them for 1992-1997 elections and there are not strong differences among geographical regions in this aspect (table 5-5).

In 2001 Elections, a positive spatial correlation can be revealed only in northern region. In the two other regions, this correlation is negative.

In 2005 Elections, a negative spatial correlation occurs in the three geographical regions.

Geographical regions	Correlation of vote for party candidates and parties			
	1992	1997	2001	2005
Northern	+	+	-	-
Central	+	+	+	-
Southern	+	+	+	-

+ positive   - negative

Table 5-5 Correlation of vote for party candidates and parties in country scale

In municipality scale, the correlation of vote choice for party candidates and parties appears as in table 5-6. There is a positive correlation between these two elements for 1997-2001 elections and a negative one for 2005 elections.

Correlation of vote for party candidates and parties		
1997	2001	2005
+	+	-
+	+	-
+	+	-

+ positive   - negative

Table 5-6 Correlation of vote for party candidates and parties in municipality scale

Vote for candidates

Parliamentary Elections 1991-2005 a-1) a-2)

1992-2005 b)

1991-1997 c)

Northern region

(a-1)   (b)

Central region

(a-2)

Southern region

(c)

0 15 30km

Vote for parties

Parliamentary Elections 1992-2005 c)*

1992-2001 a) b)

Northern region

(b)

Central region

(a)

Southern region

(c)

0 15 30km

Patterns of long-term political support

Vote

■ PD

■ PS

■ PBDNJ

*not valid for 2001 Elections

Boundaries

——— State

——— Geographical region

Source of data

Albanian Central Election Commitee 2001, 2005

Archive of parliamentary of Albania 1991,1992,1997

Demographic Atlas of Albania, 2003

© 2007, E.Begu and H.Asche, University of Potsdam

Map 5-1 Patterns of long –term support in country scale, 1991-2005

Vote for candidates

Parliamentary Elections 1997-2005 (a)(b)

Northern region

(b)

Central region

(a)

Southern region

0 15 30km

Vote for parties

Parliamentary Elections 1997-2005*

Northern region

Central region

Southern region

(c)

0 15 30km

Patterns of long-term political support

Vote

PD

PS

PBDNJ

*not valid for 2001 Elections

Boundaries

State

Geographical region

Source of data

Albanian Central Election Commitee 2001, 2005

Archive of parliamentary of Albania 1991,1992,1997

Demographic Atlas of Albania, 2003

© 2007, E.Begu and H.Asche, University of Potsdam

Map 5-2 Patterns of long –term support in country scale, 1997-2

Analysing electoral patterns in a spatial context 93
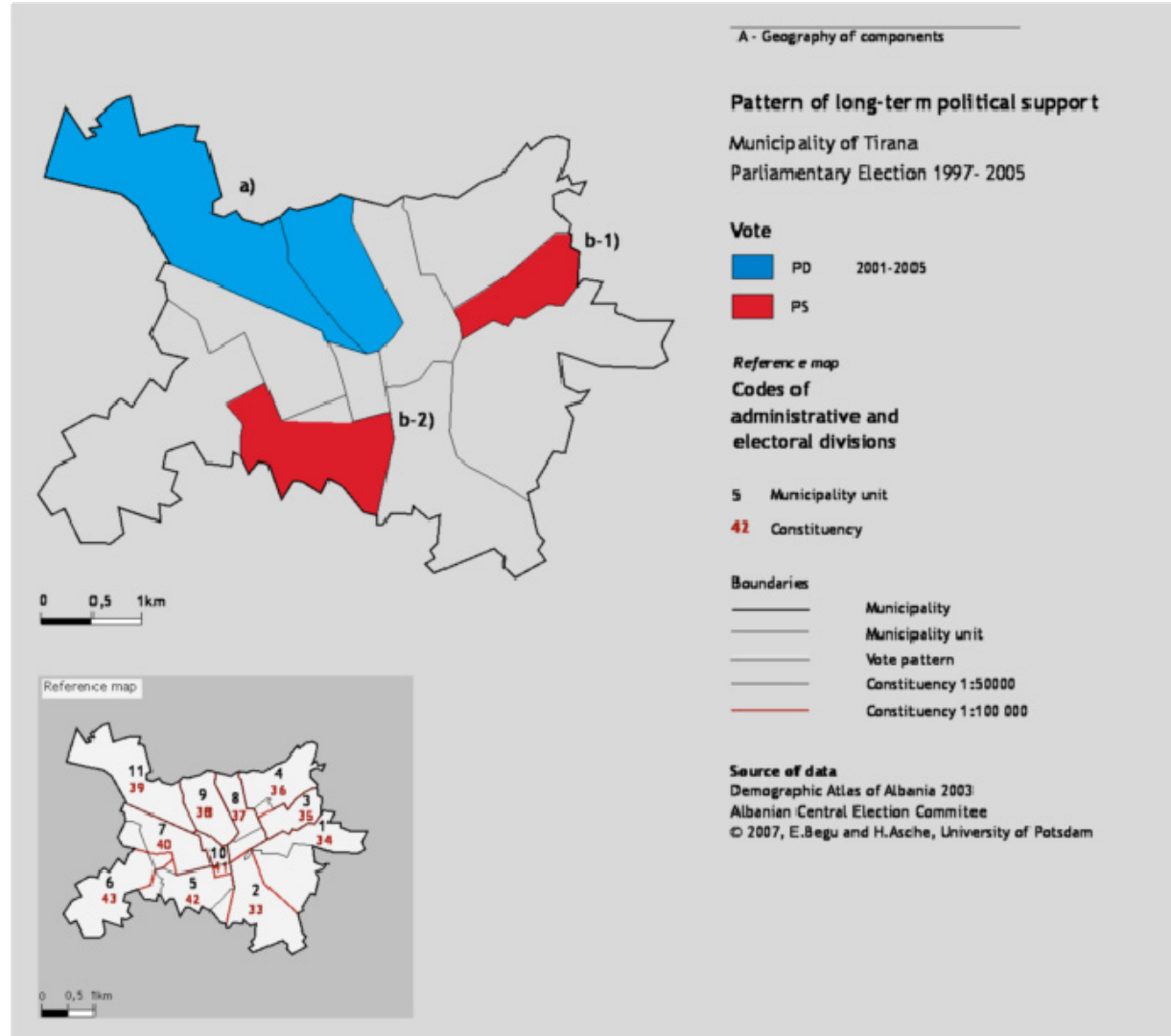
Map 5-3 Patterns of long –term support in municipality scale, 1997-2005

5.4.1.1b   Turnout

Turnout expresses the level of the electorate's participation in election process. The values of turnout shows the degree of political engagement of the target electorate and are very often treated as an indicator to test the well functioning of democracy in a country.

In order to understand the characteristics of spatial and temporal distribution of turnout values in national scale the following issues have been addressed:

1. Patterns of long-term stable values

This issue addresses the question if there are patterns of long-term stable values in spatial distribution of turnout during 1991-2005 elections. The geo visual analysis of turnout values shows that there is only one long-term pattern of stable values of turnout. This pattern is illustrated by map 5-3.

Turnout values however have been continuously decreasing over the country as shown by figure 5-15.
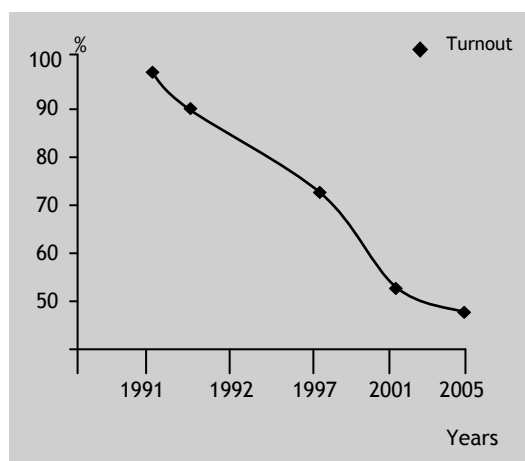
Figure 5-15 Turnout values in country scale in 1991-2005 Parliamentary Elections

Despite of the overall decreasing values, while exploring turnout spatial distribution over three geographical regions differences can be observed. These differences refer to the amplitude of decreasing which results to be smaller in Northern region. This region differentiates also from two others because the average values of turnout have always been as much or higher then the average country values. This is especially underlined for 2001-2005 elections when turnout values for southern and central regions were under country's average ones. In northern region, these values were at the same level or higher.

The average values of turnout for 1991-2005 elections and over three geographical regions are presented in table 5-7.

Geographical regions	Turnout				
	1991	1992	1997	2001	2005
Northern	>90%	85%	70%	65%	65%
Central	>90%	85%	70%	50%	<50%
Southern	>90%	85%	80%	55%	50%
Average values in the country	*>90%*	*90%*	*73%*	*53%*	*49%*

Table 5-7 Turnout values in country scale in 1991-2005 Parliamentary Elections

In municipality scale, the distribution of turnout values repeats the decreasing panorama as in country level. In addition, turnout values in all elections are lower then average country values (figure 5-16).
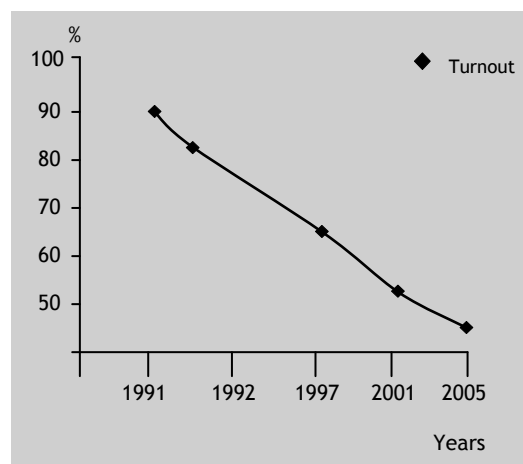
Figure 5-16 Turnout values in municipality scale in 1991-2005 Parliamentary Elections

2. Heterogeneous versus homogenous values

This issue address the question whether the spatial distribution of turnout values is homogenous in long-term inside each geographical region. The geovisual analysis of turnout values shows that these values are heterogeneous in long-term when comparing them between geographical regions. The only exception is related to the spatial distribution of turnout in Parliamentary Election 1991 where the values where homogenous all over the country. This homogeneity is related to the fact that these elections represent the turnaround moment in Albanian political system and therefore are seen by the electorate as a contribution to these major changes that were happening in the country.

In municipality level, the distribution of turnout values is homogenous for 1991-1992 and 2005 elections and heterogeneous in 1997-2001 elections.

3. Spatial and or temporal dependency of values

This issue addresses the question whether there is any evidence of dependency in spatial and temporal distribution of turnout. Concerning spatial dependency of turnout values, the geo visual analysis shows that there are many cases when neighbourhood constituencies share the same class value of turnout. This dependency is as well preserved while the values have decreased during the five elections.

Concerning temporal dependency of turnout, the cases that displays patterns of similarities in long-term are shown in map 5-4. Pattern a located in northern region preserves a value of 65% of turnout for three parliamentary elections 1997, 2001 and 2005. Pattern b located in southern region preserves a value of less then 50% of turnout for parliamentary elections 2001 and 2005.
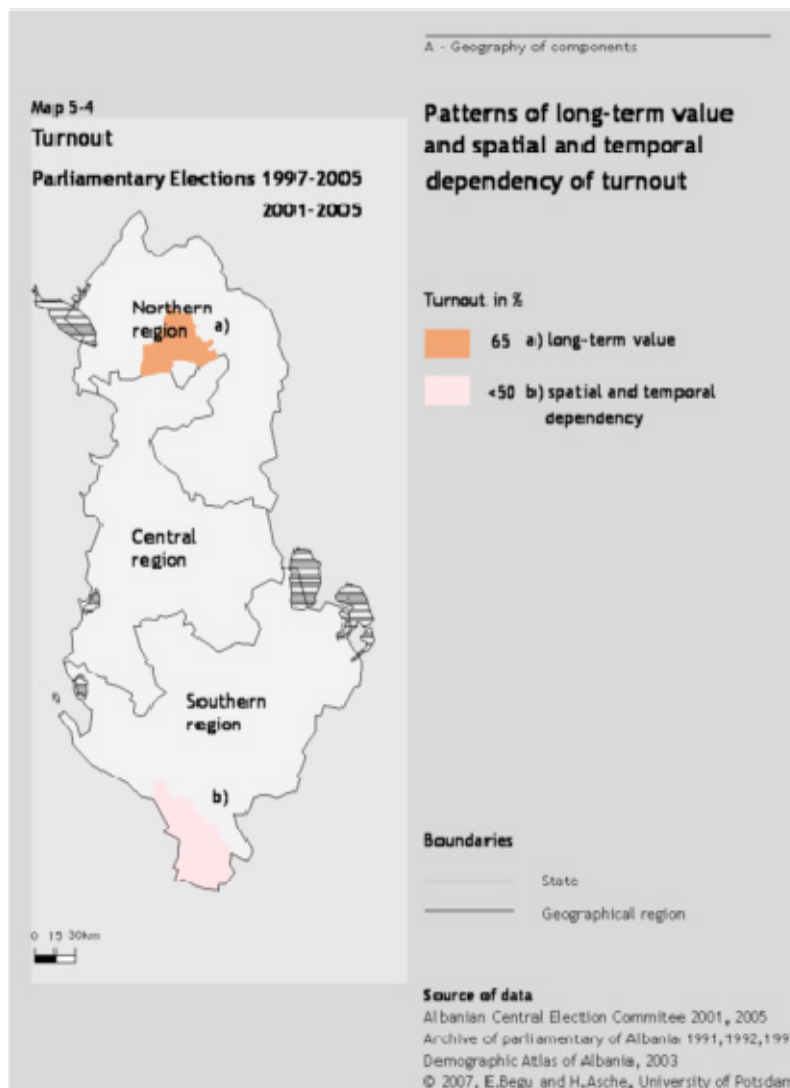
Map 5-4 Patterns of long-term value and spatial and temporal dependency of turnout

In municipality level, the patterns of spatial dependency are more emphasized in 1991-1992 elections, although they occur throughout all elections under study.

Concerning temporal dependency of turnout values, there is no patterns in municipality level.

5.4.1.2   Electoral context

Map group B

The profile of electoral context is presented in two groups of thematic maps. Maps of Group B-1 geovisualize the spatial and temporal distribution of independent variables correlation created in Model View. in five electoral context zones. Maps of Group B-2 complement the first group by presenting information on electoral context features through a set of additional independent variables.

The following tables 5-8 and 5-9 provide information on characteristics of electoral context profile.

Independent variables - Group 1	Profile of electoral context – Country scale				
	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
▪ Unemployment rate	low	medium	medium-high	high	very high
▪ Schooling years	very high	high	high-medium	medium	low
▪ Families on social assistance	low	medium	medium-high	high	very high
▪ Migration features	gain very high loss very low	gain high loss low	gain medium loss medium	gain low loss high	gain very low loss very high

Table 5-8 Profile of electoral context in Country scale

In municipality scale

Independent variables - Group 1	Profile of electoral context – Municipality scale				
	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
▪ Unemployment rate	low	medium	medium-high	high	very high
▪ Schooling years	very high	high	high-medium	medium	low
▪ Monetary poverty indicator	low	low-medium	medium	medium-high	high
▪ Monthly consumption indicator	very high	high	high-medium	medium	low
▪ Migration features	gain very high loss very low	gain high loss low	gain medium loss medium	gain low loss high	gain very low loss very high

Table 5-9 Profile of electoral context in Municipality scale

5.4.1.3   Concluding remarks for geography of electoral patterns components

The geovisualization of vote choice in national scale reveals:

- Long-term patterns of political preferences. These patterns coincide in their spatial distribution while comparing preferences for candidates and parties. As a result the following conclusion can be drawn:

- northern region holds a pattern of preferences for Democratic Party

- central-southern region holds a pattern of preferences for Socialist Party

- southern region holds a pattern of preferences for Union for Human Rights Party

▪ Homogenous patterns of political support in northern and southern regions

▪ Heterogeneous patterns of political support in central region.

▪ Patterns of positive correlation between vote choice for parties and vote choice for candidates during Parliamentary Elections 1992-1997

▪ Patterns of negative correlation between vote choice for parties and vote choice for candidates in 2001- 2005 elections.

▪ Although there are patterns of long-term support their characteristics shows that Municipality of Tirana is not a stronghold of neither PS or PD.

The geovisualization of vote choice in municipality scale reveals:

▪ Long term patterns of political preferences corresponding to PD (a) and PS (b-1, b-2) in 1997-2005 elections.

▪ Homogenous patterns of political support in 1991-1997

▪ Heterogeneous patterns of political support in 2001-2005

▪ Patterns of positive correlation between vote choice for parties and vote choice for candidates during Parliamentary Elections 1997-2001

▪ Patterns of negative correlation between vote choice for parties and vote choice for candidates in Parliamentary Elections 2005

The geovisualization of turnout in national scale reveals:

▪ There is one long-term pattern of stable values of turnout for 1997-2005 Parliamentary Elections.

▪ With exception of 1991 elections, there is no homogeneity in spatial distribution of turnout out values.

The geovisualization of turnout in municipality scale reveals:

▪ Turnout values are homogenously distributed in 1991-1992 and 2005 elections and heterogeneously in 1997-2001 elections

5.4.2 Geography of relations between components of electoral patterns

Map Group B

Geography of relations between electoral patterns components focuses on two relations:

- Electoral context and voting behaviour. Through this relation is explored the contextual effect perspective in spatial and temporal distribution of electoral patterns.

- Geographical location and electorate. Through this relation is investigated geographical location's impact on delineating constituency boundaries.

5.4.2.1 Electoral context and voting behaviour

This relation addresses the characteristics of spatial and temporal correlation between electoral context profile and voting behaviour components: vote choice and turnout.

To explore this relation in a spatial context the characteristics of vote choice and turnout discussed in previous sections are analysed in the framework of electoral context profile in both National and Municipality level. Thematic maps created for this purpose facilitate the understanding of variables correlation in a spatial and temporal distribution.

The following tables 5-10, 5-11 and 5-12 provide information on correlation of three groups of variables that form electoral patterns.

	Parliamentary Elections 1997				
	Zones of electoral context				
	1	**2**	**3**	**4**	**5**
Number of voters					
	246.849	925.628	664.000	194.956	
Independent variables					
Unemployment rate	low	medium	medium-high	high	
Schooling years	very high	high	medium-high	medium	
Migration features	gain very high / loss very low	gain high / loss low	gain medium / loss medium	gain low / loss high	
Families on social assistance	low	medium	medium-high	high	
Dependent variables					
Turnout (average)	80%	70%	70%	65%	
Constituencies won by PD	4	2	11	5	
Constituencies won by PS	10	51	25	6	
Constituencies won by PBDNJ	1*		1*		
Geo variables					
Constituencies	15	53	36	11	
Prefecture	Vlora, Fieri	Tirana, Lezha, Korça, Gjirokastra,	Korça, Gjirokastra, Berati, Elbasani, Dibra* Shkodra	Kukesi, Dibra, Lezha	
Districts	Vlora, Saranda, Delvina, Fieri, Lushnja, Mallakastra	Tirana, Kavaja, Lezha, Kurbini, Mirdita	Korça, Pogradeci, Devolli, Kolonja Gjirokastra, Permeti, Tepelena Berati, Kuçova Elbasani,Gramshi, Pogradeci, Librazhdi Bulqiza Shkodra, Malesia e Madhe,Puka	Kukesi, Tropoja, Hasi Dibra, Mati,	
Geo regions					
	Central and Southern regions	Central and Southern regions	Northern Central and Southern regions	Northern region	

Table 5-10 Electoral context and voting behaviour in 1997 Parliamentary Election

	Parliamentary Elections 2001				
	Zones of electoral context				
	1	**2**	**3**	**4**	**5**
Number of voters					
		1.489.917	597.868	332.454	69.908
Independent variables					
Unemployment rate		medium	medium-high	high	very high
Schooling years		high	medium-high	medium	medium-low
Migration features		gain high loss low	gain medium loss medium	gain low loss high	gain very low loss very high
Families on social assistance		medium	medium-high	high	very high
Dependent variables					
Turnout (average)		55%	60%	65%	70%
Constituencies won by PD		13	9	5	2
Constituencies won by PS		46	13	9	1
Constituencies won by IC		1	1		
Geo variables					
Constituencies		60	23	14	3
Prefecture		Vlora, Fieri Tirana, Lezha, Korça, Gjirokastra,	Korça, Gjirokastra, Elbasani*	Dibra, Berati, Shkodra	Kukesi,
Districts		Vlora, Saranda, Delvina, Fieri, Lushnja, Mallakastra Tirana, Kavaja, Lezha, Kurbini, Mirdita	Korça, Pogradeci, , Kolonja Gjirokastra, Permeti, Tepelena Gramshi,Pogradeci, Librazhdi Lezha Shkodra	Dibra, Mati, Bulqiza Berati, Kuçova Malesia e Madhe, Puka Devolli	Kukesi, Tropoja, Hasi
Geo regions					
		Central and Southern regions	Northern Central and Southern regions	Northern region	Northern region

Table 5-11 Electoral context and voting behaviour in 2001 Parliamentary Election

	Parliamentary Elections 2005				
	Zones of electoral context				
	1	**2**	**3**	**4**	**5**
Number of voters					
	1.057.255	728.872	766.991	231.382	66.375
Independent variables					
Unemployment rate	low	medium	medium-high	high	very high
Schooling years	very high	high	medium-high	medium	medium-low
Migration features	gain very high loss very low	gain high loss low	gain medium loss medium	gain low loss high	gain very low loss very high
Families on social assistance	low	medium	medium-high	high	very high
Dependent variables					
Turnout	45%	50%	55%	60%	65%
Constituencies won by PD	18	10	10	6	3
Constituencies won by PS	12	17	21	3	
Constituencies won by LSI			1		
Constituencies won by IC	1				
Geo variables					
Constituencies	31	27	32	9	3
Prefecture	Tirana Fieri Vlora	Lezha, Korça, Gjirokastra,	Korça, Gjirokastra, Elbasani	Dibra, Berati, Shkodra	Kukesi,
Districts	Tirana Fieri, Lushnja, Saranda	Kavaja Vlora, Mallakastra Gjirokastra, Permeti, Pogradeci Elbasani Durresi	Delvina Korça, Pogradeci, Kolonja Tepelena Gramshi, Librazhdi Lezha Shkodra Lezha, Kurbini, Devolli	Dibra, Mati, Bulqiza Berati, Kuçova Malesia e Madhe, Puka Mirdita	Kukesi, Tropoja, Hasi
Geo regions					
	Central and Southern regions	Central and Southern regions	Northern Central and Southern regions	Northern region	Northern region

Table 5-12 Electoral context and voting behaviour in 2005 Parliamentary Election

The following table 5-13 summarizes the correlation of context features and voting behaviour in 1997-2005 Elections.

The correlation shows that the Northern region is a stronghold of PD and turnout of electorate has been sustainable. Associated with this voting behaviour is the fact that thenorthern region is in these elections spatially correlated with zones 3, 4 and 5 of electoral context profile.

The Central and Southern regions are in contrast stronghold of PS (note especially the low score of PD by 10% in southern region) and with decreasing values for turnout. These regions are spatially correlated with zones 1, 2 and 3 of electoral context profile.

1997-2005 Elections				
Context features		**Voting behaviour**		
Geo regions	Zones of electoral context	Turnout	Constituencies won (in % towards total number of constituencies in geo region)	
			PD	PS
Northern	3,4,5	stable values	59%	40%
Central	1,2,3	decreasing values	34%	64%
Southern	1,2,3	decreasing values	10%	84%

Table 5-13 Correlation of electoral context features and voting behaviour in 1997-2005 Elections

In order to check in more details the contextual effect perspective in spatial distribution of strongholds patterns, long-term patterns of political support are spatially overlaid with electoral context profile. This correlation is presented in maps 5-4, 5-5 and 5-6 and the information is summarised by table 5-14.

Long-term patterns of political preferences within electoral context profile			
Political preferences	1997 Elections	2001 Elections	2005 Elections
	Zone of electoral context		
PD	3,4	3,4,5	3,4,5
PS	1,2,3	2,3,4	2,3
PBDNJ	1,3	2,3	1,3

Table 5-14 Correlation of electoral context features and long-term patterns of political preferences

What is revealed through spatial correlations of variables in 1997-2005 Elections is that:

- PD has its strongholds in the northern part of the country, characterised as a poor and undeveloped region. The rural population, called highlanders are the majority in this region. Climatically it is characterised by a very cold winter. In addition, lack of transport infrastructure made it traditionally difficult to develop. The communist government made in this no effort to change it. After 1990, it has been hardly affected by migration and loss of population, which reaches up to 40%. This region is well known for an anti-communist attitude of electorate. City of Shkodra where PS never won is also situated here.The leaders of PD originate from this area.

- In the framework of electoral context profile, PD has its strongholds in zones 3,4 and 5. It does not have strongholds in zones 1 and 2.

- PS has its strongholds in the central and mostly in the southern region, which are the most developed country areas. Cities of Gjirokastra and Saranda (southern region) where PD never won are situated here. Party leaders and the majority of members originates from the south.

- In the framework of electoral context profile, PS has its strongholds in zones 1, 2, 3 and 4. It does not have any stronghold in zone 5.

- PBDNJ has its stronghold in the extreme southern part of the country, southern region. In this area resides the Greek minority in Albania.

- In the framework of electoral context profile, PBDNJ has its strongholds in zones 1,2 and 3. It does not have strongholds in zones 4 and 5.

- There are no strongholds for any of the major parties in the western valley where major cities like Tirana, Vlora, Durresi, Fieri are located. This area is the most developed in the country. It has been greatly affected by migration movements, especially internal ones serving mainly as a receiving area. Population gain reaches here up to 30%.

- In the framework of electoral context profile area of no strongholds is spatially located in zones 1 and 2.

Exploring the spatial correlation between long-term patterns of political support and electoral context zones it is revealed that voters who reside in the same electoral context zone vote differently. The opposite situation is true as well: voters who reside in different electoral context zones have the same political preferences. As such the contextual effect perspective (note: for independent variables selected in this study) does not fully explain the characteristics of electoral patterns in their spatial and temporal distribution.

However, there are two remarks that single out from this statement. First political preferences for two main parties, PD and PS are in long-term spatially correlated respectively with the undeveloped and developed areas. Thus, zone 5 of electoral context profile (corresponding to the worst living condition according to our evaluation scale) is spatially located only in the Northern region, Prefecture of Kukesi. This area is a stronghold of PD.

The second important remark is that zone 1 of the electoral context profile (indicating better of situation according to our evaluation scale) is always spatially located in southern and central

regions, specifically in western valley. Major cities as Tirana, Durresi, Vlora and Fieri are located here.

Although this study demonstrates that the north-south division in voting behaviour (vote choice) was always present in 1997-2005 elections this is not exclusively due to selected contextual factors. Obviously, there are other place- specific factors like cultural and life-style features, historical developments etc that need to be studied in order to understand these differences in spatial and temporal distribution of electoral patterns.

This holds true also for turnout spatial and temporal distribution since voters residing at the same zones participate in elections in different levels.

Spatial correlation of the second voting behaviour's component, turnout with electoral context profile is presented by map 5-7. Patterns of long-term values and spatial and temporal dependency are overlaid with electoral context zone to check the correlation characteristics. The following findings are revealed as presented in below table 5-15.

Geo regions	Turnout patterns	Zones of electoral context
Northern region	a	3,4
Central region		
Southern region	b	1,2,3

Table 5-15 Turnout patterns of long term values and spatial and temporal dependency within electoral context frame

In the municipality scale long-term patterns in 1997-2005 elections are overlaid with electoral context profile in 2001. From this spatial correlation it is revealed again that even at this scale voters who reside at different electoral context zone vote the same. As it is illustrated by map 5-7 political preferences for the two main parties PD and PS are both found in zones 3 of the electoral context profile. An important remark to be made at this point is that spatial distribution of long-term vote for PD corresponds with municipality units 11 and 9, which have the highest percentage of incomers from northern region. There is no coincidence that the same voting behaviour that is was found in this region it is evident as well in this long-term pattern in municipality scale. In addition, spatial distribution of this pattern of preferences for PD is related to zone 4 of electoral context. From this can be concluded that these group of electorate has preserved the same socio-demographic and economic features as in the areas the originated from.

What has been revealed from this analysis is that for understanding voting behaviour place-factors should be taken in consideration.

Therefore the contextual effect perspective remains a significant approach for studying elections

Electoral context

Parliamentary Elections 1997

Vote for candidates

Parliamentary Elections 1997-2005

Vote for parties

Parliamentary Elections 1997-2005"

Patterns of long-term political support in the framework of electoral context

Zones of electoral context

1
2
3
4

Vote

PD
PS
PBDNJ

Boundaries

State
Geographical region

Source of data
Albanian Central Election Commitee 2001, 2005
Archive of parliamentary of Albania 1991,1992,1997
Demographic Atlas of Albania, 2003
© 2007, E.Begu and H.Asche, University of Potsdam

Map 5-5 Long-term patterns of political support during 1997-2005 and electoral context features in 1997

Analysing electoral patterns in a spatial context

Electoral context

Parliamentary Elections 2001

0 15 30km

Vote for candidates

Parliamentary Elections 1997-2005

0 15 30km

Vote for parties

Parliamentary Elections 1997-2005*

0 15 30km

Northern region

Central region

Southern region

Patterns of long-term political support in the framework of electoral context

Zones of electoral context

2
3
4
5

Vote

PD
PS
PBDNJ

Boundaries

———— State
———— Geographical region

Source of data

Albanian Central Election Commitee 2001, 2005
Archive of parliamentary of Albania 1991,1992,1997
Demographic Atlas of Albania, 2003
© 2007, E.Begu and H.Asche, University of Potsdam

Map 5-6 Long-term patterns of political support during 1997-2005 and electoral context features in 2001

Analysing electoral patterns in a spatial context   111

Map 5-7 Long-term patterns of political support during 1997-2005 and electoral context features in 2005
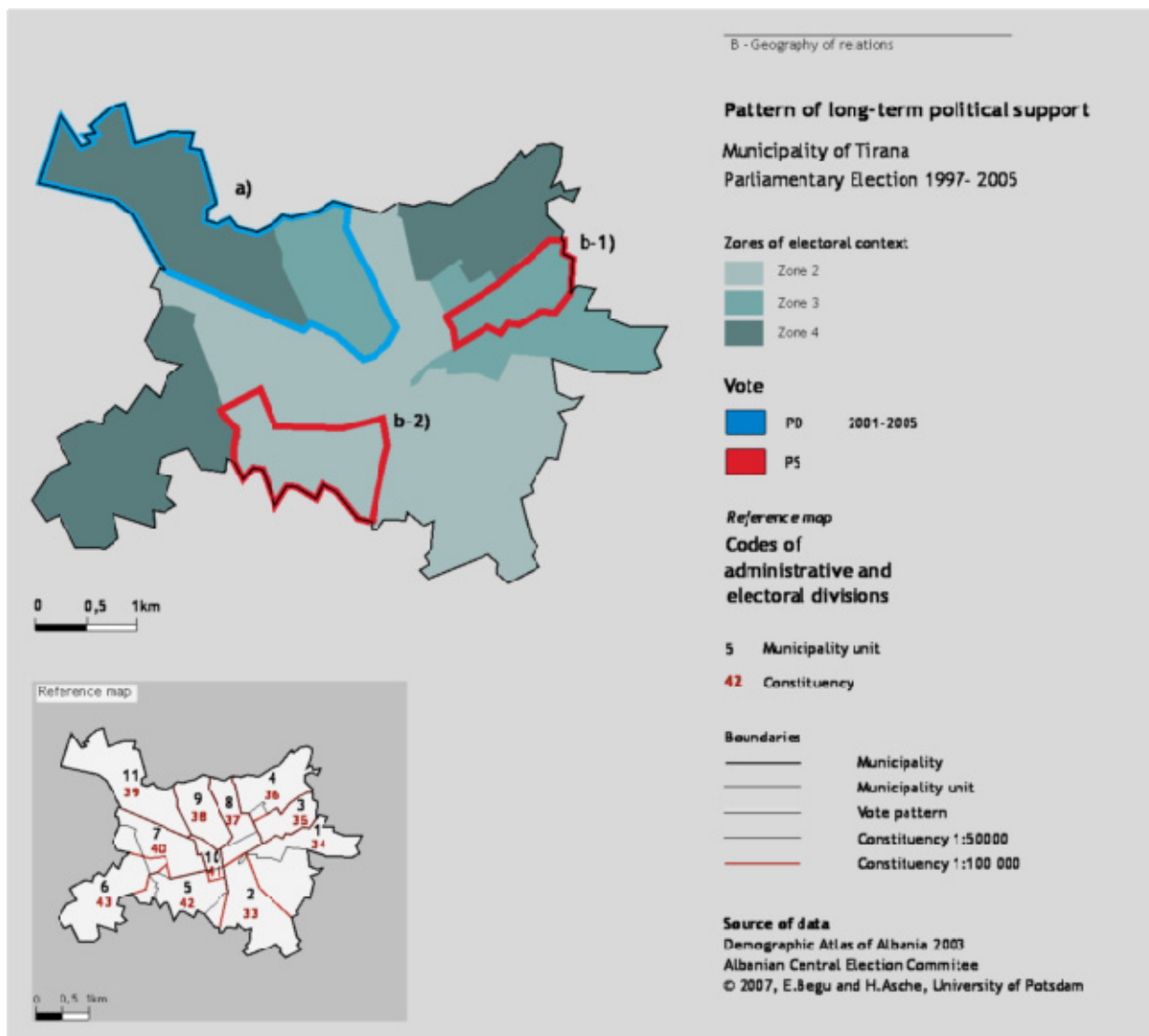
Map 5-8 Long-term patterns of political support during 1997-2005 and electoral context features in 2001, Municipality of Tirana

Turnout and electoral context 1997

Parliamentary Elections 1997-2005 a)

2001-2005 b)

a)

Northern region

Central region

Southern region

b)

0 15 30km

Turnout and electoral context 2001

Parliamentary Elections 1997-2005 a)

2001-2005 b)

a)

Northern region

Central region

Southern region

b)

0 15 30km

Turnout and electoral context 2005

Parliamentary Elections 1997-2005 a)

2001-2005 b)

a)

Northern region

Central region

Southern region

b)

0 15 30km

B. Geography of relations

Electoral context and Patterns of long-term value and spatial and temporal dependency of turnout

Zones of electoral context

1
2
3
4
5

Turnout in %

60-70 a) long-term value

<50 b) spatial and temporal dependency

Boundaries

———— State
———— Geographical region

Source of data
Albanian Central lElection Commitee 2001, 2005
Archive of parliamentary of Albania 1991,1992,1997
Demographic Atlas of Albania, 2003
© 2007, E.Begu and H.Asche, University of Potsdam

Map 5-9 Patterns of long-term values and spatial and temporal dependency of turnout within electoral context 1997-2005

5.4.2.2 Geographical location and elections

The process of delineating constituency boundaries represents the relation between elections and geographical locations. It determines the size and location of constituencies, which are the basic spatial units where elections take place. Thus, the way in which their boundaries are defined directly affect the election outcomes. This is especially significant in those countries which apply a "first past the post" election system. Albania belongs to this group of countries as well when referring to voting for candidates (Majoritarian System)[6]. In such cases, where the winning candidate takes the majority of votes (no matter how high or low the vote margin is) she/he is the winner of elections. The votes cast for the losing candidate are practically the "wasted" ones. Consequently a party that loses in every constituency by just one vote will not be able to have representatives in that legislature, while a party that wins in every constituency by just one vote too will hold all the seats. Obviously, certain parties are favoured when their supporters are spatially concentrated and discriminated if their supporters are dispersed.

The rules for delineating constituency boundaries are generally specified by Electoral Code. During the 1991-2005 Elections, constant changes are made to Electoral Code in Albania. Despite of these changes, a number of main criteria's have been followed while concerning rules for delineating constituency boundaries. These criteria include:

- approximately equal number of voters per constituency

- spatial compactness of constituency

- boundaries of constituencies must not elapse boundaries of administrative divisions (one commune[7] should (possibly) be comprised in one constituency or not divided in more then two constituencies).

- local culture and common traditional values must be preserved

- geographical boundaries and natural barriers (as mountains, rivers etc) as well as communication infrastructure (roads) must be taken in consideration.

How these criteria are applied in 1991-2005 parliamentary elections is investigated in both country and municipality scale. For this purpose, thematic maps titled "Voters allocation" are created for five above elections. They display the spatial and temporal distribution of voters' allocation in constituencies with regard to tolerated deviation[8]. Boundaries of constituencies are also checked in relation to boundaries of administrative divisions and geographical regions. Geovisualization of these data allow investigating the spatial and temporal distribution of cases where the above criteria's have been violated.

Geovisualization reveals anomalies concerning the issue of equally allocation of voters per constituency. Tables 5-16 and 5-17 summarize information respectively in country and

---

[6] Size of constituencies does not play any role in Proportional System.
[7] Commune is an administrative division. A number of communes constitute a district.
[8] The average number of voters per constituency is determined as a ration between total number of voters and number of electoral zones. The difference between number of voters in constituency and average number should not exceed +/- 5% of the average number. Tolerated deviation must not exceed +/- 5%.

municipality scale regarding number of constituencies that have values within tolerated deviation and those with values greater and smaller then 15% of this deviation. It results that with an exception of 2001 Elections, the constituencies to which the electoral code is correctly applied do not even reach 50% of total number of constituencies. Particularly problematic appears the situation in 2005 Elections where constituencies with values within tolerated deviation do not exceed 22% of total number of constituencies. This implies that 78% of constituencies in 2005 Elections are not in alignment with criteria's for constituency boundaries delineation specified by electoral code.

Total number of constituencies				
1991 Elections	1992 Elections	1997 Elections	2001 Elections	2005 Elections
250	100	115	100	100
Average number of voters per constituency				
7920	20.000	17.662	23.390	28.500
Number of constituencies with values >+15% from average number				
13	10	22	2	16
Number of constituencies with values >-15% from average number				
49	17	23	1	22
Number of constituencies with values inside tolerated deviation				
67	34	28	60	22
Percentage of constituencies with values inside tolerated deviation towards total number of constituencies				
26.8%	34%	28%	60%	22%

Table 5-16 Numbers of constituencies with values within tolerated deviation, +15% and -15% deviation
* For 1991 and 1992 Elections, data on Tirana Municipality are included in this table[9].

In municipality scale in the 2001 Election the number of voters in all constituencies was within tolerated deviation. In contrast to that, in 2005 Election in only one constituency from 12 the number of voters was not exceeding the average value. Table 5-17 illustrates this.

---

[9] Note: these data are not displayed in maps "Voters allocation 1991, 1992" because data on constituency numbers for Tirana Municipality are lacking

Total number of constituencies in Tirana Municipality		
1997 Elections	2001 Elections	2005 Elections
14	11	12
Number of constituencies with values >+15% from average number		
1	-	11
Number of constituencies with values >-15% from average number		
2	-	-
Number of constituencies with values inside tolerated deviation		
4	11	1
Percentage of constituencies with values inside tolerated deviation towards total number of constituencies in municipality		
28.5%	100%	8.3%

Table 5-17 Numbers of constituencies in Tirana Municipality with values within tolerated deviation, +15% and -15% deviation

The spatial and temporal distribution of constituencies with values inside tolerated deviation over three geographical regions is provided by Table 5-18 as below. Even at this spatial scale, it is evident that the greatest anomalies are present in 2005 Elections. The lowest value occurs in Northern region. In this election, only 16.6% of total constituencies in this region have a number of voters that is inside tolerated deviation; 83.4% of constituencies exceed these values.

Geo regions	Percentage of constituencies with values inside tolerated deviation				
	1991 Elections	1992 Elections	1997 Elections	2001 Elections	2005 Elections
Northern	29.5%	23.8%	35%	50%	16.6%
Central	23.9%	39.5%	24.2%	71.6%	24.5%
Southern	31.2%	32.2%	17.2%	45.1%	20.6%

Table 5-18 Percentage of constituencies with values inside tolerated deviation over three geographical regions towards total number of constituencies per region

This implies that elections are "fair play" only for 3 (16.6%) political candidates in the Northern region. For 15 of them (83.4%) the result depends on how many voters in corresponding constituency surpass the allowed average number per constituency.

The following table 5-19 provides information on differences on number of voters between constituency with the highest number of voters and that with lowest number.

Number of voters as difference between two constituencies with the highest and lowest number of voters				
1991 Elections	1992 Elections	1997 Elections	2001 Elections	2005 Elections
9339	17.194	15.887	14.773	25.129

Table 5-19 Differences in number of voters between two constituencies with highest and lowest values

Despite of the anomalies presented above, overlaying of spatial and temporal distribution of voters' allocation patterns with strongholds patterns reveals that number of voters per constituency does not play a major role in their patterns distribution. The high values of vote margins in these patterns also emphasize this conclusion. Thus, these values are an indicator of a robust support for main parties in these areas and those can not be easily affected by voters allocation.

The shape of constituencies plays as well a significant role in election outcomes. This is due to manipulations that can be made on spatial extent of a constituency in order to increase number of supporters for a particular party candidate or political party. Hence, how geographical location is used becomes crucial in determining the winner.

What features have the spatial extents of constituencies are looked upon by overlaying constituency boundaries with boundaries of administrative divisions and geo regions. The geovisualization of these features shows that in 1991-2005 Elections the criteria's concerning spatial distribution of constituencies are followed at a great extent. Table 5-20 summarizes the cases, which rule out from this.

Cases of constituency boundaries elapsing administrative and geo region boundaries				
1991 Elections	1992 Elections	1997 Elections	2001 Elections	2005 Elections
2	1	4	-	3

Table 5-20 Cases of constituency boundaries elapsing administrative and geo region boundaries

5.4.3 Concluding remarks

This chapter has presented the approach of studying elections in a spatial context. For this purpose, two geographical views have been introduced to explore the components and relations of electoral patterns. They are: A-Geography of components and B- Geography of relations. Both views are addressed by modelling the data in a GIT environment. Again, two models have been created: Data Model and Geovisualization Model. In Data Model, three types of variables that form electoral pattern components are integrated and modelled in GIS platform.

The database and model views created as a result provide a crucial context to generate information on voting behaviour and spatially analyse it. Geovisualization Model support data analysis by visualizing the information in map form.

Through these models important characteristics of electoral patterns are revealed which facilitate our understanding on electorate's behaviour and factors that might influence it.

Chapter 6

Conclusions and recommendations

This chapter provides

- The study contribution and conclusions
- Recommendation for further research

Keywords: electoral patterns, electoral information

6.1 Main contributions and conclusions of the study

Studying elections from a geographical perspective was in focus of this research. In this framework, the Albanian Parliamentary Elections during 1991-2005 in country and municipality scale have been explored in a spatial context. Throughout the study, it is argued that understanding elections requires much more than simply publishing raw data on election outcomes and voters participation. Hence, communication of electoral information is introduced here as a system that involves a number of processes needed to transform these data into information, which facilitate our understanding about elections. An approach that combines GIT functionalities of spatial data modelling and geovisualization techniques was used to analyse voting behaviour and communicate electoral information.

The main contribution of this study relies on presenting an approach for analysing elections, which integrates all facets that constitute such events. Through this approach, it has been demonstrated that:

- geodata provides a crucial context to understand voting behaviour and election results

- GIT supports in-depth analysis of elections by combining and integrating large and dissimilar input data

- geovisualization can be successfully employed to reveal electoral patterns, facilitate our understanding on election's result and communicate electoral information

In this framework, the main conclusions of the study can be summarised as follows:

- elections are social phenomena that incorporate a spatial dimension and hence their features should be studied in a spatial context

- in order to understand election events we need to analyse the spatial and temporal characteristics of electoral patterns that these events produce

6.1.1 Elections in a spatial context

Studying elections in a spatial context includes two major aspects:

1. Exploration of spatial and temporal distribution of voting behaviour in relation to specifications of the environment where electorate resides

2. Communication of electoral information through a spatial information system that involves transformation of raw spatial and non-spatial data and output geovisualization

To accomplish these tasks the concept of electoral patterns has been introduced. A GIT approach to analyse these patterns and disseminate electoral information is then designed and applied by the study.

- Electoral patterns dimensions

The study refers to the concept of electoral patterns as a multi dimensional element that embodies the interaction of voting behaviour, electoral context and geographical location peculiarities and that occurs at a specific time. Electoral patterns in this study represent the interaction of three entities: electorate, elections and place. These entities are referred as independent variables, dependent variables and geo variables respectively. In order to explore the nature of their interaction three relations have been introduced: 1. place-electorate that produces electoral context profile; 2. electorate-elections resulting in voting behaviour and 3. place-elections represented by the process of delineating constituency boundaries (Chapter 4). The outcome of these relations in a specific time forms the so-called electoral patterns.

- GIT approach

Since electoral patterns hold a spatial dimension, GIT environment offers the necessary tools and methods needed to explore their characteristics. In this framework, the approach followed by this study is based on two models: Data Model and Geovisulalization Model (Chapter 5).

A Data Model is created in a GIS environment for two purposes: 1) to integrate in one dataset data that are of different types (DB View) and 2) to model these data in order to explore the above described relations (Model View).

A Geovisualization Model is linked to Data Model and supports it by visualizing information in map form (Map View). This model is created in a graphical platform that enhances geovisualization quality.

6.2.2 Results of analysis

The results of analysis are summarized in the framework of research questions on which this study is based on. They are presented as below.

Research question 1: What characterizes the spatial and temporal distribution of Albanian voting behaviour in 1991-2005 parliamentary elections?

- *Characteristics of voting behaviour in its spatial and temporal distribution*

Voting behaviour is represented by two elements: vote choice and turnout.

In country scale, vote choice throughout 1991-2005 Elections is distributed homogenously in Northern and southern geographical regions and heterogeneously in central region. In municipality scale, this spatial distribution is homogenous across municipality units only for 1992-1997 Elections and heterogeneous during 2001-2005 Elections. There is a positive correlation regarding vote choice for parties' candidate and vote choice for parties in country scale during 1992-1997 elections. This correlation is negative for 2001-2005 Elections. In municipality scale, vote choice for party candidates and parties are positively correlated in 1997-2001 Elections and negatively correlated in 2005 Elections.

In country scale, geo visual analysis revealed three patterns of long-term political support in the 1997-2005 Election with the following characteristics:

- Northern region holds a long-term pattern of preferences for PD

- Central-southern regions hold a long-term pattern of preferences for PS

- Southern region holds a long-term pattern of preferences for PBDNJ

Major cities like Tirana, Vlora, Fieri, Durresi, Korca, Elbasani and Pogradeci are characterized by a shifting voting behaviour.

In municipality scale during 1997-2005, there are two patterns of long-term political preferences for PS. Their spatial distribution correspond to municipality units 3 and 5. Therefore can be concluded that these units are during these elections strongholds of PS.

PD in contrast has only one stronghold in municipality of Tirana for 2001-2005 Elections.

Tirana Municipality is therefore the stronghold of none of two major parties.

Concerning characteristics of spatial and temporal distribution of turnout, with an exception of 1991 elections, this distribution is heterogeneous. Turnout values have constantly decreased in all geographical regions. However, in northern region the amplitude of decrease has been smaller then in two other regions. In addition, turnout values were in northern region never below average country values. The only long-term pattern of turnout stable values during 1997-2005 Parliamentary Elections is located also in this region.

In municipality scale, turnout values are homogenously distributed in 1991-1992 and 2005 elections and heterogeneously in 1997-2001 elections.

Research question 2: Does the perspective of "local contextual effects" explain the characteristics of spatial and temporal distribution of voting behaviour?

▪ *Contextual effect perspective*

Contextual effect perspective is approached as correlation of electoral context profile and voting behaviour components. Electoral context profile represents spatial and temporal correlation of independent variables in country and municipality scale.

Voting behaviour and zones of electoral context profile correlates in their spatial and temporal distribution revealing that voters who reside at the same zone (implying to share the same socio, demographic and economic features) behave differently. This holds true for both country and municipality scale.

However, concerning strongholds some important remarks need to be made. During the 1997-2005 elections the strongholds of PD are spatially located in zones 4 and 5 of electoral context profile corresponding to the Northern region and less developed districts (Districts of Tropoja, Hasi, Kukesi/Prefecture of Kukesi). PD has no stronghold in zone 1. In contrast to that the strongholds for PS correlate with zones 1, 2, 3 and 4 of electoral context corresponding to the southern and central regions. These regions are more developed in comparison to northern one.

PS has no stronghold in zone 5. The strongholds for PBDNJ are spatially located in zones 1, 2 and 3 of electoral context part of southern region. This party is a representative of Greek minority in Albania and patterns of long-term preferences for this party correspond with spatial location of this sub-group of electorate.

In municipality scale, PD has again its stronghold patterns in areas that correspond to zones 3 and 4 of electoral context while PS in zones 2 and 3. PS has again no stronghold in zone 4.

Research question 3: What are the characteristics of spatial and temporal distribution of electoral patterns that have emerged in these elections?

▪ *Specifications of electoral patterns*

Electoral patterns represent the output of studying elections from a geographical perspective. The analysis of components and relations that form these patterns reveals that four main electoral patterns have emerged in country scale during 1997-2005 parliamentary elections in Albania (figure 6-1).Their specifications are provided below.

EP-1

This pattern is geographically located in the northern region and represents a stronghold for PD. Turnout values have been stable and preserved an average value of 65% during 1997-2005 elections. The electoral context profile of this pattern is characterised by a low density of population, high loss from migration movement and high unemployment rate. Agriculture is the predominant economic activity and rural population predominate the area. Electorate has a relatively high level of education. The highest percentages of families that live on social assistance are in this area (30%).

EP-2

This pattern is geographically located in the central and southern region and represents a stronghold for PS. Turnout values have continuously decreased during 1997-2005 elections. This area has experienced a very high population gain during the last decade therefore, population density is also very high. A mix of rural and urban population resides here. The population has a very high level of education although the unemployment rates are high as well. The average value of families that live in social assistance is 10%.

EP-3

Situated in the southern region, this pattern represents a stronghold for PBDNJ. Its geographical location correspond to Greek minority habitations. Turnout values have continuously decreased here as well. In contrast to the migration features that characterise southern region this particular area has experienced a relatively high loss of population. It is non-agriculture area and its economy is mainly oriented towards tourism and commerce. The level of unemployment is medium.

It corresponds to the electoral patterns produced in major cities like Tirana, Durresi, Pogradeci, Vlora, Fieri, Korca. Concerning electoral profile of this pattern, it can be noticed that its is characterised by a urban population with a very high level of education. The percentage of families living on social assistance is very low. The unemployment rate is low and population density is very high. It has been strongly affected by migration movements and therefore has experienced a high level of incomers from all geographical regions.

An overview of characteristics of the electoral patterns for 1997-2005 elections in country scale is provided by figure 6-1.

Parliamentary Elections 1997-2005				
Country scale				
Voting behaviour		**Electoral context**		**Geographical location**
Vote choice (strongholds)	Turnout	Profile of electoral context		Geographical regions
[blue box]	stable → [orange box]	unemployment schooling years migration features families on social assistance population density economy type population type	high medium-high loss high high low agriculture rural	Northern
[red box]	decreasing ↓ [light orange box]	unemployment schooling years migration features families on social assistance population density economy type population type	medium-high high-very high gain very high medium-low very high non agriculture urban/rural	Central
[red box] [light orange box]	decreasing ↓ [light orange box]	unemployment schooling years migration features families on social assistance population density economy type population type	medium high -very high gain high medium-low medium-low non agriculture urban/rural	Southern

ELECTORAL PATTERNS

EP-1 → [blue box] + NORTHERN REGION + ZONE 4,5

EP-2 → [red box] + CENTRAL/SOUTHERN REGION + ZONE 1,2,3,4

EP-3 → [light orange box] + SOUTHERN REGION + ZONE 1,2,3

EP-4 → [outlined box] + MAJOR CITIES + ZONE 1,2,3

[blue] PD [red] PS [light orange] PBDNJ [outlined box] Shifting vote choice
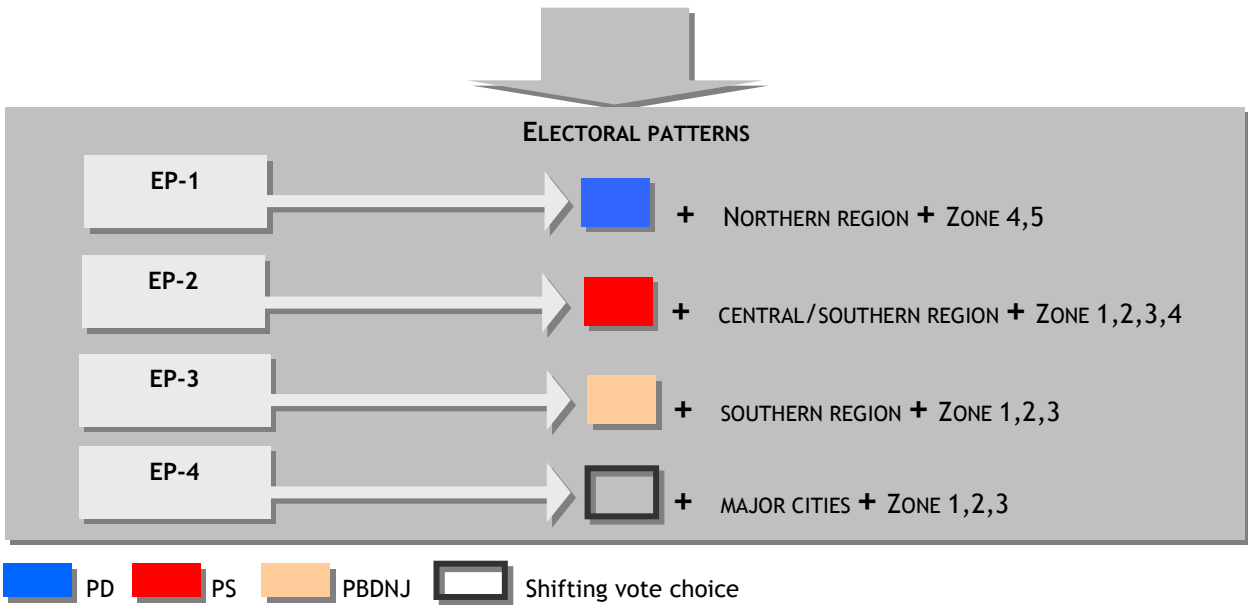
Figure 6-1 Electoral patterns

6.2   Recommendations for further research

This case study shows that the engagement of election studies with GIT, in particular GIS- based spatial analysis and geovisualization, is of immense utility in exploring election features and understanding their characteristics. It produces a wealth of information which provides insights into the spatial and temporal relationships between the components of election patterns.

The recommendations that can be derived from the outcome of this study are first to collect data on independent variables only for electorate as a target group.

A second related recommendation is to add more independent variables in the spatial approach in order to increase the level of details in capturing spatial differences on voting behaviour

Finally, for a more close to reality presentation in map form of electoral patterns the exclusion of permanently non-inhabited areas is required.

Appendix 1

Political parties	Initials
Center-left	
Socialist Party	PSSH
Democratic Alliance	AD
Union of Human Rights	PBDNJ
Socialist Movement for Integration	LSI
Movement for National Development- Leka I Zogu	LZHK
Social Democratic Party	PSD
Agrarian Environmentalist Party	PAA
New Democratic Party	PDR
Communist Party	PKSH
Party of Labour of Albania	PPSH
Party of National Safety	PSKSH
Party of Freedom and Human Rights	LDLNJ
Center-Right	
Democratic Party	PD
Republican Party	PR
Christian Democratic Party	PDK
Legality Party	PL
National Front	PBK
Liberal Democratic Union	BLD
Union of Veterans	BKV
Independent candidate	IC

Bibliography

Asche, H., Berxholi, A., Doka, Dh., (2003). *Demographic Atlas of Albania*. ISBN 99927-907-6-8.

Ascher, J.C., Shelley, M.F., (1986). *American electoral mosaics*. Association of American Geographers, Washington, USA.

Anckar C., (1997*). Determinants of Disproportionality and Wasted Vote*. Electoral Studies, Vol. 16, No. 4. Great Britain.

Agnew, A.J., (1996). *Mapping politics: how context counts in electoral geography*. Political Geography, 15.

Agnew, A.J., (1996). *Maps and models in political studies : a reply to comments*. Political Geography, 15.

Agnew, A.J., (1987). *Place and Politics: the Geographical Meditation of State and Society.*Boston, 1987.

Benoit, K., (2004). *Models of electoral system change*. Electoral Studies 23. Elsevier Science Ltd, Great Britain.

Blaisa, A., Young, R., Turcotte M., (2004). *Direct or indirect? Assessing two approaches to the measurement of strategic voting*. Electoral Studies 24. Elsevier Science Ltd, Great Britain.

Blok, A. C., (2005). *Dynamic visualization variables in animation to support monitoring of spatial phenomena*. Netherlands Geographical Studies 328, Enschede, The Netherlands.

Birkin, M., (1996). *Intelligent GIS: location decisions and strategic planning*. Cambridge, Geoinformation International.

Blount, S., (2002). *Unemployment and economic voting*. Electoral Studies 21. Elsevier Science Ltd, Great Britain.

Burden, C. B., (2004). *A technique for estimating candidate and voter locations.*Electoral Studies 23. Elsevier Science Ltd, Great Britain.

Chou, H-Y., (1997). *Exploring Spatial Analysis in Geographic Information Systems*. ISBN 1-566690-119-7.

Curtice, J., (2002). *The state of election studies: mid-life crisis or new youth?*, Electoral Studies 21. Elsevier Science Ltd, Great Britain.

Dardanelli P., (2005). *The parliamentary and executive elections in Switzerland, 2003*. Electoral Studies 24, Elsevier Science Ltd, Great Britain.

Davis E. B., (1996). *GIS: A visual approach*. OnWord Press, Santa Fe, USA.

Davis, E. D., (1999). *GIS for everyone*, 2nd ed. ISBN 1-879102-91-9.

DiBiase, D., (1990). *Visualization in the earth sciences*. Bulletin of the College of Earth and Mineral Sciences, Penn State University, USA.

Eijk, van der C., (2002). *Design issues in electoral research: taking care of (core) business*. Electoral Studies 21, Elsevier Science Ltd, Great Britain.

Elzakker, van C.P.J.M, (2004). *The use of maps in the exploration of geographical data.* Netherlands Geographical Studies 326.

Erikson, R.S. (2002). *National election studies and macro analysis.* Electoral Studies 21. Elsevier Science Ltd, Great Britain.

Fernandez-Duran a, J.J., Poire, A., Rojas-Nandayapa, L., (2004). *Spatial and temporal effectsin Mexican direct electionsfor the chamber of deputies.* Electoral Studies 23, Elsevier Science Ltd, Great Britain.

Fotheringham, A.S., Wegener M., (editors), (2000). *Spatial models and GIS – new potentials and new models.* GISDATA 7.

Felsenthal, S. D., Machover, M., (1995*). Who Ought to be Elected and Who is Actually Elected? An Empirical Investigation of 92 Elections under Three Procedures.* Electoral Studies, Vol. 14, No. 2, Elsevier Science Ltd, Great Britain.

Gimpel, J.G., Morris, L.I., Armstrong, R.D., (2004).*Turnout andthe local age distribution: examining political participation across space and time.* Political Geography 23.

Grofman, B., Koetzle, W., Brunell, Th., (1997). *An integrated ierspective on three potential sources of partisan bias: malapportionment, turnout differences, and the geographic distribution of party vote shares.* Electoral Studies, Vol. 16, No. 4, Elsevier Science Ltd, Great Britain.

Glasgowa, G., Alvarez, M. R., (2004). *Voting behavior and the electoral context of government formation.* Electoral Studies 24. Elsevier Science Ltd, Great Britain.

Goodchild, F. M., Janelle G. D., (2004). *Spatially integrated social science.* Oxford University Press.

Harris, R., Sleight, P., Webber, R., (2005).*Geodemographics, GIS and Neighbourhood targeting.* ISBN 0-470-86413-3.

Huckfeldt, R., Sprague, J. (1995). *Citizens, Politics and social communication: information and influence in an election campaign.* Cambridge: Cambridge University Press.

INSTAT, (2006), *Indicators by prefectures 2004-2005.* INSTAT, Albania

INSTAT, (2000), *Developments of labour market 1990-1999.* INSTAT, Albania

INSTAT, (2001), *Indicators by prefectures 1996-2000.* INSTAT, Albania

INSTAT, (2000), *Indicators by prefectures 1996-1999.* INSTAT, Albania

INSTAT, (2005), *Women and Men in Albania.* INSTAT, Albania

INSTAT, (2005), *Indicators by prefectures 2003-2004.* INSTAT, Albania

INSTAT, (2004)*, Quarterly statistical bulletin 4.* INSTAT, Albania

INSTAT, (2001), *Labour market 2000.* INSTAT, Albania

INSTAT, (2002), *Education statistics and indicators 1991-2002.* INSTAT, Albania

INSTAT, (2005), *Social indicators yearbook.* INSTAT, Albania

INSTAT, (2004), *Labour market 2004.* INSTAT, Albania

INSTAT, (2004), *Health indicators 1999-2003*. INSTAT, Albania

INSTAT, (2004), *Living conditions and inequality in Albania*. INSTAT, Albania

INSTAT, (2001), *Migration in Albania – Population and Housing Census*. INSTAT, Albania

INSTAT, (2001), *Albania Census Atlas*. INSTAT, Albania

Jefferson W. W.,(2005). *Regional cleavages in Turkish politics: An electoral geography of the 1999 and 2002 national elections*. Electoral Studies 24, Elsevier Science Ltd, Great Britain.

Johnston, R. J., (2001). *Electoral geography in electoral studies: an overview of putting voters in their place*. Workshop on Process and Spatial Methods, Miami, USA.

Johnson, M., Shively, P.W., Stein, M.R.,(2002). *Contextual data and the study of elections and voting behavior: connecting individuals to environments*. Electoral Studies 21, Elsevier Science Ltd, Great Britain.

Johnston, R.J., Taylor, P.J., (1979). *Geography of elections* .ISBN 0 – 7099 – 0056 -2

Jones, M., Jones, R., Woods, M. (2004). *An Introduction to political geography –space, place and politics*. USA.

Kostadinova, T., (2002). *Do mixed electoral systems matter?: a crossnational nalysis of their effects in Eastern Europe*. Electoral Studies 21, Elsevier Science Ltd, Great Britain.

Knight, K., Marsh, M., (2002). *Varieties of election studies*. Electoral Studies 21, Elsevier Science Ltd, Great Britain.

Leib, I.J., Dittmer, J., (2002). *Florida's residual votes, voting technology, and the 2000 election*. Political Geography 21.

Ladnera, A., Milnerb, H., (1999). *Do voters turn out more under proportional than majoritarian systems? The evidence from Swiss communal elections*. Electoral Studies 18, Elsevier Science Ltd, Great Britain.

Longley, A.P., Goodchild, F.M., Maguire, J.D., Rhind, W.D., (2005). *Geographic information systems and science*. Second edition, England.

Longley,A.P., (1996). *Spatial analysis: modelling in a GIS environment*. ISBN 1 89976126 8

MacEachren, M.A. (1995). *How maps work: representation, visualization, and design*. ISBN 0 89862 859 0.

MacEachren, M.A., Kraak J. M., (1997). *Exploratory cartographic visualization:advancing the agenda*. Computers and Geosciences 23.

Madden,s B., Fiers, S.,(2004).*The direct PM election and the institutional presidentialisation of parliamentary systems*. Electoral Studies 23, Elsevier Science Ltd, Great Britain.

Maesschalck, de F., (2004). *The Impact of Electoral Geography on Urban Politics: An Underresearched Theme in Urban Politics*. Research and training network urban Europe, Nr.9.

Massicotte, L., Blais, A., (1999). *Mixed electoral systems: a conceptual and empirical survey*. Electoral Studies 18, Elsevier Science Ltd, Great Britain.

Marsh, M., (2002). *Electoral context.* Electoral Studies 21, Elsevier Science Ltd, Great Britain.

Moser, G. R., Scheiner, E., (2004). *Mixed electoral systems and electoral system effects: controlled comparison and cross-national analysis.* Electoral Studies 23, Elsevier Science Ltd, Great Britain.

Moore, T., (2002). *Comments on Ron Johnston's "Manipulating maps and winning elections: measuring the impact of malapportionment and gerrymandering",* Political Geography 21.

Muir, R., (1981). *Modern political geography.* ISBN 0 333 31128 0

Muir, R., (1997).Political geography – a new introduction. ISBN 0 333 64188 4
Nardulli, F. P., (1994). *A normal vote approach to electoral change: Presidential Elections, 1828-1984.* University of Illinois, 1994 Plenum Publishing Corporation

Nishikawa, M., Herron, S. E., (2004). Mixed *electoral rules'impact on party systems.* Electoral Studies 23, Elsevier Science Ltd, Great Britain.

Ormeling, F., Kraak, M-J., (2003). *Cartography: geovisualisation of spatial dat – 2nd ed.* ISBN 0-130-8890-7.

Ormeling, F., (2004). *In Praise of Map Use.* GIM International 8, Volume 18.

O`Looney, J., (2001). *Beyound maps: GIS and decision making in local government.* ISBN 0 87326 156 9.

Perdomo, C.J.V., (2004). *The local context and the spatial diffusion of multiparty competition in Urban Mexico, 1994-2000* .Political Geography 23.

Pattie, Ch., Dorling, D., Johnston, R., (1997). *The electoral geography of recession: local economic conditions, public perceptions and the economic vote in the 1992 British election.*Royal Geographical Society, Great Britain.

Rallings, C., Thrasher, M., Borisyuk, G., (2003). *Seasonal factors, voter fatigue and the costs of voting.* Electoral Studies 22, Elsevier Science Ltd, Great Britain.

Spence, R., (2001). *Information visualization.* ACM Press, United Kingdom.

Stoker, L., Bowers, J., (2002). *Designing multi-level studies: sampling voters and electoral contexts.* Electoral Studies 21, Elsevier Science Ltd, Great Britain.

Sui, Z. D., Hugill, J. P., (2002). *A GIS-based spatial analysis on neighborhood effects and voter turn-out: a case study in College Station, Texas.* Political Geography 21.

Theobald, M. D., (2001). *GIS concepts and ArcVIEW methods.* ISBN 0 9679208-1-7

Turner, D., (2004). Spatial Autocorrelation: *ArcGIS Joint Count Tool and Analysis.*GIS Workshop Summer 2004, University of Texas, Dallas.

Tverdova, Y.V., Anderson, C.J., (2004). *Choosing the West? Referendum choices on EU membership in east-central Europe.* Electoral Studies 23, Elsevier Science Ltd, Great Britain.

Ware, C., (2000). *Information Visualization – Perception for design.* Academic Press, USA.

Webster, R. G., (2002). *Introduction to forum: the 2000 presidential election and the Florida debacle in geographic context.* Political Geography 21.

URLs/web addresses

The Central Elections Commission of Albanian	
The Australian Electoral Committee	http://www.aec.gov.au
American National Election Studies	http://www.electionstudies.org
Das Internetportal der ARD	http://stat.tagesschau.de
The Comparative Study of Electoral Systems	http://www.cses.org
European Election Studies	http://www.europeanelectionstudies.net
Canadian Election Study	http://www.ces-eec

Selbständigkeitserklärung

Hiermit erkläre ich, daß ich die vorliegende Arbeit selbständig und nur mit den angegebenen Hilfsmitteln angefertigt habe und an keiner anderen Hochschule eingereicht habe.

Enkela Begu

Potsdam, 31.10.2007