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The geography of provisional ballots is a realm of electoral geography that is increasingly important as a key component of shaping election outcomes, yet has been considerably under-researched. This purpose of this dissertation is to identify the geographic significance and the overall impact of the 52,000 provisional ballots cast during the 2008 Presidential election in North Carolina as well as conduct the first comprehensive analysis of the spatial distribution of provisional ballots in North Carolina in both absolute and relative terms during the 2008 Presidential Election. The first phase of the research conducted an inventory of the geography of absolute provisional ballots whereas the second phase of the research used stepwise multiple regression modeling to highlight the links that existed between three dependent variables; provisional ballots cast, ineligible provisional ballots and eligible provisional ballots and a number of independent predictor variables (e.g. race, age, education, etc.).

The research found that counties with older, more educated, white populations with traditional political ideologies cast provisional ballots at a lower rate and have their provisional ballots deemed eligible at a lower rate than other counties. Finally, counties with larger minority populations, specifically Native Americans, and younger populations appear to cast provisional ballots and have those ballots *counted* at a higher rate than other counties less diverse older populations.

THE ELECTORAL GEOGRAPHY OF PROVISIONAL BALLOTS IN NORTH CAROLINA BY COUNTY: THE 2008 U.S. PRESIDENTIAL ELECTION

By

Christopher McGinn

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Approved by

_____
Committee Chair

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

Committee Chair _____
Dr. Keith G. Debbage

Committee Members _____
Dr. Zhi-Jun Liu

_____
Dr. Corey Johnson

_____
Dr. Charles Prysby

_____
Date of Acceptance by Committee

_____
Date of Final Oral Examination

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CHAPTER I

INTRODUCTION

The right to vote has been a cornerstone of the evolution of modern democracies. Despite this, studies of recent U.S. Federal Elections have found that large numbers of eligible voters have been disenfranchised due to inaccurate voting records or other administrative errors (Foley, 2005). The 2000 U.S. Presidential election and subsequent Supreme Court case highlighted the complexity, inequity and uncertainty surrounding federal elections, as well as underscored the need for a better understanding of the electoral process. In Bush v. Gore (2000), the Supreme Court ruled that the recount methods used in Florida were in violation of the Equal Protection Clause of the U.S. Constitution. This decision effectively ended the recount and awarded the state's 25 Electoral College votes to George Bush, which consequently earned him the Presidency. The dissenters on the court (Bush v. Gore, 531 U.S. 98, 2000) opined "Counting every legally cast vote cannot constitute irreparable harm... preventing the recount from being completed will inevitably cast a cloud on the legitimacy of the election." In 2002, the United States Congress addressed these issues raised in Bush v. Gore, by passing the Help America Vote Act, which in addition to numerous other requirements, mandated that states issue provisional ballots to any citizen who believes they should be eligible to vote.

The purpose of this dissertation is to conduct the first comprehensive analysis of the spatial distribution of provisional ballots cast in North Carolina in both absolute and relative terms during the 2008 Presidential Election. This dissertation will not attempt to pinpoint the exact cause and effects of these ballots but rather provide some basic insight into the socio-demographic and administrative variables that contribute to the electoral geography of provisional ballots cast in North Carolina during the 2008 election. The North Carolina Precinct Manual (2010) defines a provisional voter as:

> An individual who believes that he or she should be on the official voter rolls, but is not, or who for some other reason appears ineligible, can vote a ballot that will be held separately and counted later only if the voter's eligibility can be subsequently established.

Geographers have long been actively engaged in better understanding the spatial patterns of electoral geography at various scales (Taylor and Johnston 1979, Taylor 1989, Agnew 1990,O'Loughlin, Flint & Anselin 1994, Morrill et al 2007), but little research has been conducted on provisional ballots. A detailed review of the limited existing research suggests that inconsistent state-wide administration of provisional ballots makes it difficult to conduct research between states although the local variation within states is even more substantial (Pew, 2009). Complexities and administrative variables (e.g. staff size, voting system used) within states, as well as between counties, may contribute to the inequitable distribution of provisional ballots (Stewart, 2009). Kimball and Foley (2009) examined county-level data from California, Florida and Ohio, and found many socio-economic (e.g. race, income, education) and geographic factors (e.g. population density) affect provisional voting rates. Statewide analysis of provisional voting in New Mexico

(Atkenson et al, 2009) suggested administrative rules, poll worker training and voter education all affect provisional voting rates, whereas a similar study in Ohio, found that racial composition, age and mobility all contribute to provisional voting (Alvarez and Hall, 2009).What is less well understood is what key determinants best explain the electoral geography of provisional ballots at a state or county level.

In 2008, North Carolina had the second closest presidential election in the nation, where the margin of victory was a mere 14,000 votes. Approximately 52,000 votes were cast by provisional ballots in North Carolina and nearly half of these provisional ballots were subsequently certified and officially counted in the final election results. Although provisional ballots were a small portion of the total votes cast in North Carolina, they had a significant impact on determining the outcome of the presidential election. Stewart (2011) suggested, "North Carolina is an important study of provisional ballots because North Carolina used provisional ballots before HAVA mandated them."

This dissertation will be focused on attempting to answer two specific research questions. What is the fundamental spatial distribution of absolute provisional ballots, by county, across North Carolina? What determinates contribute to shaping this spatial distribution? The dissertation will develop three multiple regression models that will be used to highlight the links that exist between a number of independent or (predictor) variables (e.g. race, gender, age, party affiliation, etc.) and three dependent variables (Provisional ballots cast per 1000 total ballots cast, provisional ballots not counted per 1000 total ballots cast, and provisional ballots counted per 1000 total ballots cast) at the ***county level***. It is hypothesized that the general spatial distribution of absolute

provisional ballot totals will be a function of the population within each county. Next, it is hypothesized that the rate at which provisional ballots are cast will be disproportionately higher in areas with majority-minority populations, as well as, areas where the population is highly mobile. In addition, it is hypothesized that higher rates of not counted provisional ballots will also be found in areas where the population is highly mobile or composed of high minority populations. Finally, the research theorizes that the rates at which provisional ballots are counted will be higher in more affluent, higher educated, counties with smaller minority populations.

This research will be an attempt to fill the gap that exists in the current provisional ballot literature. Although numerous studies have been conducted examining provisional ballots, few have examined an entire state, during a presidential election, through multiple measures (cast, not counted, counted). Additional research is needed to better understand the electorate that cast provisional ballots and how these ballots affect election outcomes in order to further expand the public's confidence in the democratic process.

CHAPTER II

REVIEW OF THE LITERATURE

2.1 Political Geography: The Theoretical Context and Introduction

Political geography, like all sub disciplines of geography, combines elements of other disciplines and as a result, this literature review, out of necessity, will include research not just in geography but also from political science, public administration and psychology. That said, the central anchor for much of this literature review lies squarely in political geography.

Political geography is a varied and wide-ranging field of research. The origin of the field dates back hundreds of years, during which time people would analyze the relationship between the physical environment and military or political power. As with many other fields of study, political geography is a discipline that, throughout history, has been ever changing and evolving. Pacione (1985, p 17) argued that

> political geographers are concerned with the geographical consequences of political decisions and actions, the geographical factors which were considered during the making of any decisions, and the role of any geographical factors which influenced the outcome of political actions .

Generally, political geography was thought to have a dual focus; the first centered on the interaction of the political unit and the environment, the second, targeted towards the actual decisions made within the political unit and in what manner geography affected those choices. The single long-term interest underlying the field of political geography

from its origins to the present is the interrelationships that exist between politics and the broader social environment. Given the goal of this dissertation to elevate our empirical understanding of the spatial variation of provisional ballots and electoral outcomes, it seems appropriate to focus in greater detail on the electoral geography subfield of political geography.

2.2 Political Participation Rates and Why People Vote

In order to gain a complete understanding of electoral geography and more specifically, the impact provisional ballots have on election participation rates and democracy in general; one must first understand why people vote. Rational choice theorists (Downs, 1957) see political participation as a process where an individual sacrifices the costs of transportation and time for the public good (Blais, 2000). In most cases, individuals are well aware that their specific vote will not sway the election one way or another and so rational choice theorists have expanded the notion of utility to encompass concepts of obligation, altruism, psychic gratification or civic duty (Riker & Ordeshook, 1973). What is less clear is how increased levels of inconvenience affect voter participation rates. For example, when provisional ballots are issued to a voter, they require additional paperwork, additional time, and lead to additional aggravation, often leading to the voter walking away without casting a ballot. However, it is also increasingly clear that provisional ballots can influence voter outcomes especially in close contests such as the Gore v. Bush presidential election.

There are a number of factors that contribute to varied rates of voter turnout, ranging from the type of electoral system in place, voter beliefs, their place of residence,

and various technicalities in election law. Residency requirements, ID requirements, and registration requirements vary from state-to-state. The Election Assistance Commission suggests that this may explain why voter participation rates are far below the levels of participation in many other parts of the world. Many European countries have participation rates exceeding 80%. For example, post-World War II Italy has averaged around 90% participation rates. Research suggests a long-term decline in turnout for national elections in western democracies since the 1970s. This is a potentially serious problem. If fewer people vote, policy outcomes may not be representative of the preferences of the broader community, thereby causing conflict and raising questions about the legitimacy of the political system (Highton, 1997). This was evident when questions arose about the legitimacy of the 2000 U.S. Presidential election, which lead to .numerous statutory requirements, including the implementation of provisional ballots.

Gimpel and Schuknecht (2003) found that accessibility to specific precinct locations has a major impact on election turnout rates, arguing that accessibility is much more than the distance that needs to be traveled to the polling place. Gimpel and Schuknecht (2003) suggested that in suburban precincts, when you increase housing units per square mile, you negatively influence voter turnout. In these precincts, a distance of 2-5 miles has the greatest impact on turnout rates, where as in rural precincts you do not see the same effect. They found in rural precincts, where the average distance to a precinct is 6-10 miles, turnout rates are higher. Gimpel and Schuknecht (2003) suggested that these turnout rates are higher because of the unobstructed travel routes to these precinct locations. In conclusion, they find that many of the restrictions placed on

selecting polling places (e.g. American with Disability Act requirement) negatively impact turnout since they to limit the locations available to Election Administrators. It is clear that voter turnout is not only affected by a number of sociological and psychological factors, but also very strongly influenced by geography. Whereas it is difficult for election administrators to overcome many of the dynamics affecting turnout, geography, is something that can be addressed through administrative changes.

Political participation, as described by Cho and Rudolph (2008) is the apparatus the public uses to communicate and influence the governing process. They believe that political participation is the most important aspect of the democratic process because it is the one thing the public can do to influence decisions made on their behalf. Cho and Rudolph (2008) recognized that while most scholars agree that context matters, there is less agreement regarding the mechanisms through which context matters. They identified four mechanisms of contextual influence on participation which included a self-selection process, elite driven process, social interaction, and casual observation.

Cho and Rudolph (2008) described the self-selection process as natural residential segregation. They found that no matter what the underlying cause, Americans choose to reside near those of similar social status. Recognizing that this phenomenon exists, they believed geographic clustering would be caused by individual level traits (such as race, income, education) or social interaction variables (such as mobilization, racial diversity, income inequality.) Cho and Rudolph (2008, p.275) determined that "if they observe spatial dependence after accounting for these variables, the self-selecting may be part of the story but does not define the mechanism through which context shapes participation."

Elite driven mobilization processes, or "get out the vote" efforts, have often been credited as the most important determinant of political participation. Cho and Rudolph (2008) acknowledged that any spatial dependence may be due to mobilization efforts, but if participation is only based on mobilization, then once we account for it we should not expect to observe any spatial dependence.

Social interaction contextual theory is based on the premise that people want to become knowledgeable about politics, but they want to gather the information without considerable hardship (time or effort). Social networks are believed to provide that information without much hardship, but this information often comes with considerable bias. Cho and Rudolph (2008, p.276) suggested that "if the contextual effects are mediated primarily through social interaction then we should observe little or no evidence of spatial patterning in individuals participation tendencies once their social network involvement is taken into account."

Finally, Cho and Rudolph (2008) discussed casual observation, or the "subtle involuntary influence on an individual." Casual observation includes bumper stickers, yard signs, or how your neighbors dress and behave. Cho and Rudolph (2008, p.277) explained, "For casual observation to serve as an important mechanism, individuals must demonstrate some political awareness of their geographic context that is independent of their involvement in social networks." Cho and Rudolph (2008) suggested that geography would continue to influence participation rates even after controlling for contextual influences.

The results reported by Cho and Rudolph (2008) suggested that participation rates are higher among the politically interested, the politically efficacious and the politically informed. They reported that "despite controlling for a number of individual-level factors, the spatial lag parameter remains positive and significant, implying that an individual's likelihood of participating in politics is positively related to the participation level of his neighbors (2008, p.283)." They also found that the geography of political participation is independent of the geography of the other variables that affected citizens.

A recent phenomenon in political participation analysis is the impact social networking sites have on voter turnout and voter political involvement. Vitak et al. (2011) used qualitative analysis of Midwestern college students prior to the 2008 Presidential election to determine if political participation on Facebook was an indication of political participation in other settings. Vitak et al (2011) suggested that although young voters are participating, their participation is at a superficial level. They found that young citizens engaged in "feel" good activities that had little or no impact on effecting actual change. Although Vitak et al (2011) found that participation on Facebook was, in fact, a significant predictor of multiple forms of political participation (e.g. signing a petition or volunteering); they cited existing research that attributes this correlation to the argument that any form of political association helps general political participation. Vitak et al (2011) were encouraged that the use of social networking sites, such as Facebook, will help to not only distribute political content but also consume it. They concluded that social networking sites provide an opportunity for young people to "test" their political opinions, as well as, be exposed to others, which may motivate their own

interest. Vitak et al (2011) suggested that social networking sites, specifically Facebook, may not directly increase participation rates to young adults, but does support the general communication of political information.

2.3 Electoral Geography

Electoral geography is defined as "the analysis of the interaction of space, place and electoral processes" (Pattie and Johnston, 2007, p.2). Taylor and Johnston (1979) identified "three main foci of geographical interest in electoral studies." The first arena included a focus on the geography of voting based on statistical analysis that identified and explained patterns that may occur during a particular election cycle. The second sub-field identified by Taylor and Johnston (1979) was the geographic influence on voting, including factors such as campaign strategies, specific voter issues on the ballot, and the type of candidates. The final theme identified by Taylor and Johnston (1979) was the geography of representation, focused on electoral district boundaries. The logic here is that precinct assignments clearly have an explicit impact on who, where, and if provisional ballots are cast and counted. Historically, electoral geography research has been concerned with at least one of these three themes, although Agnew (1990) has proposed a fourth focus on the geography of political parties. According to Agnew (1990, p. 87), the geography of political parties should focus on "the relationship between the geography of electoral performance and the geography of organization and mobilization exhibited by political parties."

The origins of Electoral Geography as an independent discipline date to the early 20th century, prior to its autonomy, the principles of the discipline were used throughout political science. The earliest known electoral study was conducted by Krehbiel, who, in 1916, examined the significance of geographic influences in an analysis of British Parliamentary elections between 1885 and 1910 (Prescott, 1959). Krehbiel's study focused on the belief that voters' actions are often determined by public opinion, which he suggested can be measured only by examining election results. Krehbiel used election outcomes to determine if correlations existed with occupations. Prescott (1959) stated that at the conclusion of his paper Krehbiel was able to write "…it is evident that geographical or natural factors have contributed materially in creating the conditions which determine political predilections," (p.432).

Prescott (1959) identified the work of Paullin and Wright (1932) as the next major building block of electoral geography. Paullin and Wright (1932) published the *Atlas of Historical Geography of the United States,* which focused on presidential elections in the United States, and the way in which congressional district members voted on selected measures. Prescott (1959) plotted his results on maps, which he suggested not only revealed a complex pattern of regional differences not always fully appreciated at the time, but also made it easy to recognize the spatial distribution of party affiliation versus the distribution of phenomena such as cotton and tobacco production. For the first time the combination of visual evidence and political commentary allowed the public to draw conclusions about the political-spatial patterns that existed throughout the United States.

More recently, Pattie and Johnston (2007) have suggested that electoral geography is more specifically the sorting out of the contextual and compositional effects of an election. They questioned if voters behave as they do because of who they are (compositional effects) or because of where they are (contextual effects). As the discipline developed and research expanded, political scientists conducted much of the analysis of the compositional and contextual effects of elections. Andre Siegfried, a French political scientist, who is often seen as the founder of academic electoral geography, conducted an analysis of voting patterns throughout France and linked party support to the geology of different regions. Siegfried believed that by analyzing the context, or environment, in which the voting patterns existed, you could identify social trends in the populations that lived and worked in that particular environment. This research was dramatically different from common wisdom at the time, which was rooted in environmental determinism, or the belief that the physical environment, including climate, controls the behavior and culture of individuals.

The next major pioneer in the field of electoral geography was Tingsten, a political scientist from Sweden who employed statistical data to analyze electoral geographies. Tingsten was one of the first to compare electoral and social data in an attempt to explain voting patterns. Pattie and Johnston (2007, p3) suggested that because of Tingsten's research "the statistical analysis of voting and social data aggregated into electoral districts, has become part of the electoral geography mainstream."

In 1949, an American political scientist, V.O. Key conducted a study that explained the electoral patterns of the southern states of the United States. Much of the

research was focused on the impact race played in the southern states prior to and following the Civil War. Key (1949) found that North Carolina electoral patterns were based more on physical geography than racial makeup. Key (1949) found that North Carolina's electoral cleavages were so factional it became close to becoming a two party state. The Key study focused on political party support or what he attributed as the "friends and neighbors" effect. The underlying premise of the theory was that voters were more likely to vote for candidates from their area than from other parts of the state or country.

Although limited research exists, electoral geographers continue to be interested in the neighborhood effect or the tendency for individuals living in the same place to vote in the same way. Later in his career, Key (1955) created an index that labeled elections as "normal" or "critical". Critical elections were elections in which traditional voting patterns changed and new patterns were established. Following a critical election, the new electoral patterns become stable and produced a period of "normal" elections that continued until the next "critical" election cycle. Key's (1955) research found that periods of normal elections have stable electoral geographies, whereas in a critical election the electoral geographies breakdown and in some cases completely change. An illustrative example of this was the traditional Democratic South changing to support Republicans during the 1960's.

Cox (1969) attempted to take Key's theories a step further. He saw voters as decision makers influenced by their local surroundings and influenced by a variety of biases including the:

- Geographical Distance bias: people would be more influenced by the views of their neighbors than by individuals who lived farther away;
- Acquaintance Circle bias: individuals are more likely to be influenced by the views of others in their acquaintance circle than by the opinions of relative strangers;
- Force Field bias: especially before the introduction of the secret ballot, voters might come under pressure from politically powerful groups and individuals;
- Reciprocity bias: individuals are more likely to be influenced by those they have meaningful relationships with (spouses, parent/child, employee/employer) than by people with whom they are simply acquainted to;
- Ideological bias: voters with strong political convictions would be less open to influence than those with weaker opinions;

Archer and Taylor's (1981) analysis of the regional geographies of US presidential elections from 1828 to 1980 were influenced by both Key and Cox. They argued that, "socio-economic interests, spatially expressed in different regions of the United States, produce sectionalism." Merriam-Webster dictionary describes sectionalism as the exaggerated devotion to the interests of a specific region. The electoral sectionalism discussed by Archer and Taylor (1981) referred to the separation of voters into specific voting blocks, these voting blocs often place the interests of local or regional areas over the interests of the whole. As both Key (1955) and Archer and Taylor (1981)

suggest, the analysis of electoral patterns often result in the identification of cleavages in not only regions and states, but also smaller jurisdictions such as counties and cities.

More recently, Pattie and Johnston (2007) described elections as mass events, based on the simultaneous participation of several political parties and many voters. They believe that in order to gain a full understanding of these "mass events" researchers require methods that can generalize large populations. Often this need for generalization leads researchers to focus on the use of quantitative methods, rather than more qualitative techniques. Pattie and Johnston (2007) suggested that these methods range from simple cartographic representations to more advanced statistical analyses although they acknowledged that electoral geographers continue to differ in the specific methods utilized. Pattie and Johnston (2007, p.5) found that "spatial regression techniques, are most widely applied by North American analysts, but in the UK, electoral geographers have made heavy use of survey data." Statistical data allows for analysis in all areas simultaneously, but is limited by data availability and the ecological fallacy. In this case, the ecological fallacy is any inferences made on an individual from data attained at the group level. By contrast, survey data allows for the analysis of individual voters but is not well suited for comprehensive geographic coverage (Pattie and Johnston, 2007).

Recognizing the advantages and disadvantages of each type of analysis, Pattie and Johnston (2007, p.5) found that most analysts have combined socio-demographic data (e.g. income, occupation, etc.)and survey data suggesting that "data on individual voters can be combined directly with data for their constituencies and alternatively, constituency-level estimates can be made of data which are not available directly at that

scale." Pattie and Johnston (2007) suggested that the strength of electoral geography is the continued focus on the nature of voting choices while combining theoretical perspectives from political science (e.g. partisan identification analysis), sociology (e.g. the influence of societal factors), rational choice theorists (e.g. cost-benefit calculations taken by voters), among others.

One of the most influential concepts separating political geography and political science is that of space and place. Although the difference is subtle, it is often considered the factor that separates the two disciplines. "Space" is described as a defined, measurable physical location on the earth's surface. Conversely, "place" is described as the physical location of the "space" in addition to the characteristics, culture and traditions of the location. Essington and McDaniel (2007, p132) suggested, "one of the insights of political geography is that physical space as a category of analysis has been neglected by Western social science." Essington and McDaniel (2007) went on to defend the analysis of places as essential components of political and social relations. They believe that because places are "experienced and lived" they add a vital component to the research. These inferences lead to the ongoing debate between political geographers and political scientists about the best way to think about contextual effects in voting behavior.

Agnew (1996) believed that when conducting political analysis, researchers have embraced traditional definitions of context: either a geographical territory, usually a nation state, onto which a culture or society can be mapped or the impact of a social group membership upon individual attitudes and behavior. He contends that this research leads to concern about context (geographical, social, and political) in which political

behavior exists. Agnew (1996, p.129) described a "concept of context-as-place which abandons the identification of context with a single geographic scale and provides a way of bridging the gap between abstract sociological and concrete geographical analysis." He explicitly stated, "The main objective of this paper is to persuade the reader that there is much more to context than either of these conventional understandings would lead us to expect (p.130)."

During the middle of the twentieth century, political geographers attempted to use elections as a way to express the impact location or distance had on people's political behavior. Agnew (1996, p.130) argued that

> Serious theorizing about geographical concepts such as space and place and the study of elections have parted company due to an electoral geography field content to map election results without attending to how analysis of the results might engage with more abstract questions relating to the putative links between space and politics.

Agnew (1996) suggested that the concept of geographical context can be used to draw attention to the spatial stiuatedness of human action in contrast to the non-spatial sorting of people out into categories based on classification schemes. He referred to "context" as observations of the events that will influence politics and political behavior across multiple geographic scales, not confining the research to a specific pre-determined geographic space. Agnew (1996) felt politics could be mapped not only as a geographical representation of non-spatial processes of political choice, but also as a spatialized process of political influences and choice. One interpretations of Agnew's argument is that researchers cannot just be satisfied with placing election results on a

map, but should combine those results with the underlying social and cultural geographies to gain a more comprehensive understanding of the entire process in a specific location. He believed that this all-inclusive methodology would foster a better understanding of the entire political-geographic relationship, thus departing from the current technique of using non-spatial data to draw spatial inferences. Agnew (1996, p.133) found that "this approach assumes, that political behavior is inevitably structured by a changing configuration of social-geographical influences as global-local connections shift over time."

Agnew (1996) summarized the three important distinctions between this concept of context and those predominant in the political science literature. He cited Huckfeld and Sprague (1993) who described contextual effects as external effects on individuals that arise from social interaction within an environment. Next, he suggested that too much focus targets individual voters and their behavior rather than focusing on the political activity around them which may shape their behavior. Finally, he believed that researchers have a hard time accepting this definition of context because it implies that characteristics such as race, age, income, would lose their individualism and only become relevant and affect behavior in unique political-geographical contexts. Agnew (1996, p. 144) found "that an adequate conception of mapping politics cannot reduce it to single universal factors or causes, this would both disengage space from any constitutive role in politics and to miss the multi-scalar quality of social causation." He then argued that you could not reduce context to neighborhood or friends-and-neighbor effects. He believed

that reducing context to these levels would define scale as a spatial effect working against more abstract non-spatial social effects.

Flint (1996) responded to Agnew (1996) by addressing why, electoral geographers have not accepted this framework. Flint (1996) proposed a connection of existing geographic theories such as neighborhood effect and force field bias with the spatial-hierarchical theory proposed by Agnew. He believed that combining these geographic theories with electoral behavior could make electoral studies a more comprehensive and informative field of research. Flint (1996) suggested two main points; first, the study of electoral behavior needs detailed analysis at the household level to demonstrate the impact processes at larger scales have on voters and the decisions they make. Second, he recommended that geographers focus on data collection; this will allow the discipline to remove the constraints of the non-spatial data and better tailor the data to the research.

The force-field bias, proposed by Cox (1969), attempted to identify the impact local political agents will have on the distribution of political information, therefore, biasing the voter's choice. Flint (1996) argued that these theoretical frameworks are not only compatible with Agnew's approach but also essential ingredients to a more complete research agenda. Flint (1996) believed that each of the decisions made at the local or individual level are, to some extent, based on the external environment shaping the individual, so any data collected at the individual level, intrinsically includes influences from the broader context. However, Flint (1996) argued that sacrificing small-scale

geographic studies to incorporate larger scale contextual research might be unsatisfactory to some researchers.

Flint (1996) recommended that the geography of the individual needs to be analyzed in a way that can identify how the larger scale factors influence the individual behavior. Flint (1996, p.148) suggested that the "analysis of the individual in electoral geography would then become a means for defining the nature and impact of the hierarchical context rather than an ontology that ignores its presence." Flint (1996) believed that when analyzing political behavior you must use a top-down approach, identifying processes at large scales, how they work at the state and local scale, then finally how they influence the voter at a local and neighborhood scale. He suggested that mapping the electoral choices of the individual and the processes that affected their decision together would allow practical electoral geography to reconnect with theoretical electoral geography. Flint (1996, p. 149) suggested "the danger of arguing for detailed analysis of the contextual influences upon the voter at the local scale is that previous analyses have divorced the voter from institutions that allow for a theoretical connection of the individual with the state and global scales." He proposed that studying voters at the household scale allows you to analyze all the stimuli acting upon the voter without removing the state or global context.

2.3.1 The Electoral Geography of "Presidential Election Cycles"

Political participation and the reasons why people vote are numerous and extensive. Although this dissertation is concerned with political participation, the focus

is how this participation affects outcomes in Presidential elections. Kim et al (2003) conducted analyses on US presidential election outcomes held between 1988–2000 to test two theories of voting behavior in the context of county-level geography. They claimed that most studies have ignored the importance of geographic patterns of support for candidates and parties. Kim et al (2003) criticized the utilization of conventional regression methods that lacked an appreciation of geographic knowledge that may have led to "biased and/or inefficient estimates." They also believed that most studies that have analyzed voter turnout have concentrated on state-level analysis, at the same time, ignoring smaller scale analysis such as county and precinct level analysis. The inferences made by Kim et al (2003) underscore the importance of this dissertation, which will be focused on county and precinct-scale statistical analysis of provisional ballots in North Carolina.

Kim et al (2003) found significant geographic patterns and a high degree of spatial correlation when they analyzed county-level data for the presidential elections from 1988-2000. They suggested that the spatial trends such as the Democratic strongholds in the northeast and west coast and Republican gains in the Deep South and Midwest underscore the fact that regional alignments are clearly alive and well in US presidential elections. They found that there are increasing concentrations of geographical support for the two major parties, which upholds the more recent findings of McKee and Tiegen (2009). Kim et al (2003) believed that political parties would become increasingly polarized in terms of ideology. They pointed out that ethnic and racial

minorities will gravitate toward the Democratic Party, while the Republican Party will continue on a more homogeneous path.

Shelley (2008) analyzed the 2008 Presidential election and recognized a significant change in voting patterns. This change was attributed to a combination of record low approval ratings for the Republicans and a record high turnout rate from voters aged 18-25 years old. It could be that the implementation of provisional ballots created an atmosphere in which "fringe" populations were given the ability to cast ballots at locations in which they would typically have been turned away. Webster (1992) suggested that legislation such as the Voting Rights Act of 1965, specifically Section 5, (which required many jurisdictions to pre-clear any change to voting qualification or standard practice to help ensure minorities equal rights under the law), was pivotal to recent electoral change in the political geography of the South. It is possible that the passage of the Help America to Vote Act of 2002 (HAVA), which subsequently became a mandate to provide the provisional ballots, may have a similar impact.

Warf (2006) suggested that a democratic political system is only as good as the accuracy of which the vote reflects the public's preference. Warf (2006) identified the uneven distribution of voting technologies during the 2000 and 2004 U.S. Presidential elections. Following the 2000 Presidential election, it was suggested that inferior voting technology was confined to relatively low-income, minority-populated communities (Warf, 2006). However, Warf (2006, p536) argued, "that voided ballots were more likely to reflect the degree of voter education and proportion of elderly voters." To the contrary, Lichtman (2003) conducted a multiple regression analysis of Florida's voting

system during the 2000 Presidential Election and concluded that the voting system discriminated against African-American voters independent of education or income. Herron & Sekhon (2003) conducted a similar study of Broward and Miami-Dade counties and found residual ballots, or ballots that were NOT counted in the final elections results, were cast disproportionately by voters whom traditionally voted for Democratic candidates. Warf (2006, p. 554) concluded that "given the social and spatial complexities surrounding the nation's voting systems, …, there is little evidence that Democrats, minority voters, or rural areas were systematically disenfranchised contrary to much received opinion." Recognizing the "social and spatial complexities" naturally raises the question of the effects of the inequitable administration of other election procedures such as provisional ballots.

Lesthaneghe and Neidert (2009) built on the research of Kim et al (2003), Shelley (2008) and Warf (2006) by suggesting a connection existed between election results and changes in the patterns of family formation and fertility. They argued that residents with less-traditional forms of family such as children born out of wedlock, marriage and parenthood that occurred later in life, and the acceptance of abortion tended to vote for the Democratic Party. Conversely, voters in areas that retain traditional family structure exhibited an inclination to support the Republican Party. Lesthaeghe and Neidert (2009, p.391) suggested that "one of the consequences of the "culture wars" in the 2000 and 2004 presidential elections was the spatial pattern of the US election results, both by state and by county, exhibited a marked correlation with the prevalence of new patterns of family formation." They described this shift to new demographic patterns as the "second

demographic transition" or SDT. One of the criticisms formulated against the theoretical correlation between elections results and the SDT was that the link was only temporary. Lesthaeghe and Neidert (2009) believed that if these correlations were indeed temporary then economic issues, not culture issues, would dominate the 2008 elections and the correlations would diminish or disappear. They used the second demographic transition as a composite variable formed as a factor in a principal component analysis of a set of 22 indicators dealing with patterns of family formation. Lesthaneghe and Neidert (2009) found that the correlations between the second demographic transition (SDT) and the 2008 elections results did not weaken or diminish at all. To ensure consistency, Lesthaeghe and Neidert (2009) first concluded that correlations at the state level between the SDT factor and the Republican vote for Bush in 2004 and McCain in 2008 was virtually identical. Lesthaeghe and Neidert (2009, p.339) found that "the second demographic transition is indeed a powerful predictor of the presidential election maps and that a fair share of this predictive power cannot be attributed to other correlates." They found that after analyzing elections results from 2004 and 2008 the SDT correlations remained significant and allowed researchers to predict which candidates will do better or worse in an individual county throughout the country. Lesthaeghe and Neidert (2009) suggested that these observations and predictions are most effective in the United States given the predominance of the two-party system. Lesthaeghe and Neidert (2009, p.400)argued, "the United States remains a text book example of spatial correspondence between demographic innovation and political orientation," supporting theories discussed earlier such as the neighborhood effect (Taylor and Johnston, 1979)

and the force field bias (Cox, 1969). Finally, most relevant to this dissertation, Lesthaeghe and Neidert (2009, p.400) found that although the economy played a role in the 2008 Presidential election, the spatial distribution of elections results underscored the importance of "sociological differences in life styles and their underpinning ideologies," which are often measured by many of the demographic variables used in this dissertation.

As Shelley (2008) and Lesthaege and Neidert (2009) discussed, the 2008 Presidential elections was a historic election where many voting patterns changed. Much of the change was attributed to the fact that an African American candidate won a presidential nomination from a major political party for the first time in history. The subsequent result of this historic election highlighted the need for a greater understanding of the impact race has on the election process. Weisberg and Devine (2010) conducted a study to identify the impact that racial attitudes and dissatisfaction with the prior administration had on the 2008 election results. As much of the literature suggests (Lesthaneghe and Neidert, 2006), the passage of the civil rights legislation during the 1960's polarized political parties regarding race, leading to Republicans adopting a conservative point-of-view, while the Democrats embraced a liberal stance. Conservative Republicans embraced traditional views of society, and only supported minimal change to the societal structure. Conversely, liberal Democrats, as the name implies, believed in liberty and equal rights, they supported rapid societal change in order to end inequality. McKee and Teigen (2009) point out that the political polarization of race has distinct spatial characteristics and often times these spatial characteristics coincide with the spatial characteristics of Democrats and Republicans.

Weisberg and Devine (2010) suggested that racial resentment, or a belief system that reflects a negative effect toward African Americans, would have a dramatic effect on the election results of the first presidential African American candidate. Weisberg and Devine (2010) cite existing work (Kinder and Sanders 1996; Sears et al., 1997) that indicates racial resentment is a statistically significant predictor of many social and political attitudes including candidate preference. According to Tesler and Sears (2009), racial resentment was a powerful predictor of vote choice in the 2008 election, as well as other recent elections.

Weisberg and Devine (2010) found that both racial attitudes and performance assessment of President Bush greatly influenced voting in 2008. They pointed out that even when accounting for a number of influential independent variables such as a candidate's personality or policy decisions, racial attitudes were found to have significant effects on voter choice among whites. Weisberg and Devine (2010) suggested that voting preferences in 2008 were affected more by racial attitudes than in comparable elections. They used multiple racial attitude measures to ensure that specific positions on racial resentment were not classified as racist. Weisberg and Devine (2010) found that white racial attitudes had an independent effect on the vote in 2008, they were very careful to also point out that the results simply showed that race was pertinent to the 2008 vote, not that people on one side (or the other) were racist in their voting behavior.

Weisberg and Devine's (2010) analysis showed that attitudes toward race were a significant concern to Obama's candidacy, but were not powerful enough to overcome factors such as an extremely unpopular outgoing Republican president or the

overwhelming support from the African American community. They believed that if the economic and political conditions had not been so favorable toward a Democratic candidate the effect of the negative racial attitude among white voters might have changed the result of the election.

Weisberg and Devine (2010) concluded the 2008 election proved that Americans could see beyond race in electing a president, but also showed that race is still a very important issue. They believed that Obama's victory came from his exceptional support among African-Americans and Hispanics, at the same time minimizing the Republicans advantages on party identification, leadership, and integrity, among white voters.

For the past two presidential elections, the political-cultural divisions within the American electorate have been pithily summarized in the media as "red states" and "blue states." Morrill et al (2007) have questioned this spatial generalization of conservative and liberal states by isolating out anomalous voting patterns and linking them to economic and social changes in the U.S. and local political cultures. They identified several anomalies in larger metropolitan counties and predominately minority counties, that were carried by President Bush, and several hundred non-metropolitan counties that were carried by Sen. Kerry in the 2004 Presidential Election. The analysis conducted by Morrill et al (2007) contradicted many of the historical patterns identified in earlier studies such as Shelley et al. (1996), which suggested patterns of county allegiance that existed between 1976 and 1992, regardless of the economic or social change. What is less clear is whether these anomalous counties reflect longer-term voting patterns or are short-term shifts in voting behavior.

Morrill et al (2007, p.550) argued that "the 2000 and 2004 elections may mark a fundamental weakening of the New Deal engendered economic-class based alignment of the Democratic and Republican parties, and the emergence of a social-class based realignment." The conclusions made by Morrill et al (2007) highlight a prevalent interest in the impact of racial, ethnic and religious diversity on political participation rates. In a study of Britain's electoral turnout, Fieldhouse and Cutts (2008, p 545) conclude "very clear and consistent evidence that there is a strong and positive link between the ethno-religious composition of the area and the turnout of both the minority and majority groups." The findings of Fieldhouse and Cutts (2008) demonstrate that a geographical concentration of minority groups can actually enhance electoral turnout in areas that are traditionally known for low voter participation. What is less understood is whether Fieldhouse and Cutts (2008) findings in Britain can be replicated in voter turnout rates for minority neighborhoods in the U.S.

McKee and Teigen (2009) evaluated the election preferences of voters from a regional perspective, which they called sectionalism, and from a density perspective, which they call location. To measure sectionalism, they partitioned the United States into five geographic regions with traditionally varied voting patterns. To measure density they conducted a county-level analysis to evaluate the importance of population density. They found that when analyzing both individual- and county-level data for the 2000 and 2004 presidential elections both regions and density correlate significantly with voter preferences. They showed that throughout each region, when controlling for race and socioeconomic status, voter preference varied according to the population density of the

neighborhood. McKee and Teigen (2009) argued that where voters call home matters, similar to the arguments made by Cox (1969) and Taylor and Johnston (1979). McKee and Teigen (2009, p.485) proposed "their findings suggest that previous ways of looking at sectional distinctions may not help us understand the 2000 and 2004 presidential elections."

McKee and Teigen (2009) contend that a mixture of compositional, contextual, and historical effects account for the importance of place in influencing electoral outcomes rather than the geography of red and blue states. Through their analysis, they found that geographic region and population density exhibit a clear relationship with voter preference. When you hold one variable constant a correlation exists with the other variable, i.e. when evaluating counties in the Northeast, population density is the significant variable, similarly when evaluating counties with comparable population such as Mecklenburg County, NC and Ventura County, CA, region is going to be the determinate factor in voter preference. In addition, McKee and Teigen (2009) found that regardless of region, counties with sparser populations register a higher Republican vote. As discussed earlier, Morrill et al. (2007) identified ''exceptional'' counties, as non-urban counties that voted for Sen. Kerry or metropolitan areas that President Bush won. McKee and Teigen (2009) contend that these areas are not exceptions but are actually conforming to a larger pattern relating to population density and in the rarer instances where the general spatial trends in voting behavior do not hold, it is often because the compositional makeup of these counties defies the norm.

McKee and Teigen (2009) recognized there is no simple explanation for the political geography of political preference in the 2000 and 2004 presidential elections. They believe that the underlying structure of American politics reflects strong and persistent spatial cleavages where an increasing share of the electorate clearly favors one party over the other in contemporary presidential elections.

McKee and Teigen (2009) concluded that migration patterns in today's society result in people sorting themselves into increasingly homogenized communities. They believed that communities and political candidates become ideologically polarized due to the lack of geographic areas with parity between Democrats and Republicans. Analysis of the 2000 and 2004 U.S. presidential elections reveals clear distinctions between "red states" and "blue states." Analysis of the 2008 Presidential election reveal a divergence of "red" and "blue" states and more states, such as North Carolina, becoming purples, or a battleground state. Although more and more states are becoming purple when conducting a statewide analysis, analysis on county and precinct levels support the assertions made by McKee and Teigen (2009), that populations have become politically self-sorting. This dissertation hopes to determine if the spatial political polarization affects the administration of provisional ballots.

Hood and McKee (2010) examined the role that migration played in the 2008 Democratic presidential victory in North Carolina. They highlighted the substantive demographic change that the state went through, citing population migration from many northern states. Hood and McKee (2009) suggested that in North Carolina, migrants born outside the south are more likely to identify and register as politically unaffiliated, and

their growing share of the state's electorate directly contributed to Obama's narrow victory. Hood and McKee (2010) pointed out that in 2008; only Missouri had a more competitive presidential outcome than North Carolina, supporting the need for this dissertation research. They found that North Carolina experienced the largest positive swing in the U.S. in regards to presidential turnout from 2004 to 2008, voting eligible turnout increased by 13.8%.

Hood and McKee (2010) suggested that immigration to North Carolina, from states outside of the traditional south, have pushed the state into a competitive direction, making it a swing state, or a "purple" state, as much of the earlier literature stated. They used data derived from a polling series conducted between 1992 to 2001 by UNC Chapel Hill Odum Institute for Research in Social Science called the Southern Focus Poll (SFP). They proposed that migrants typically avoid identification with a specific political party. They believed that this propensity to remain politically independent makes them more susceptible to short-term political conditions. This political independence also creates an attitude of apathy toward election administrative procedures such as registration deadlines and residency requirements leading to Election Day confusion that may manifest itself in provisional ballot rates.

Hood and McKee (2010) found that 2008 revealed a different pattern in Southern presidential politics, the states that Obama won (Florida, North Carolina, Virginia) had the largest percentage of residents born in the Northeast—the bluest region in the United States (McKee, 2009, Morrill et al , 2007). They also suggested that although Obama did not win Georgia and South Carolina, he did very well because Georgia and South

Carolina have the largest percentage of Northeastern born residents after Florida, North Carolina and Virginia. Hood and McKee (2010, p.293) revealed a "South-Atlantic pattern in contemporary Southern presidential elections." They found that with the exception of Texas, the five South-Atlantic states discussed above have witnessed the most population growth since the 1980s.Hood and McKee (2010) concluded that the political geography of the South-Atlantic states, particularly North Carolina, has shown that the immigration of residents from the Northeast has made the state the quintessential northern transplant state. This characterization has created a presidential political battleground that will result in close elections for years to come. The changing demographic patterns combined with close presidential election results further substantiate the need for a complete understanding of the state's political participation rate including provisional ballots.

2.4 Provisional Ballots - The Help America Vote Act (HAVA) and Administrative Issues

Liebschutz and Palazzolo (2005) have argued that HAVA has spawned a wave of federal, state, and local voting innovation and policy implementation since its passage. Section 302 of Title III of HAVA states that: If an individual declares that such individual is a registered voter in the jurisdiction in which the individual desires to vote and that the individual is eligible to vote in an election for Federal office, but the name of the individual does not appear on the official list of eligible voters for the polling place or an election official asserts that the individual is not eligible to vote, such individual shall be permitted to cast a provisional ballot. A provisional ballot is described as a retrievable

ballot that will be researched following Election Day and subsequently determined if it should be counted or not.

Consequently, as mandated by HAVA, all states had implemented the provisional ballot requirement in time for the 2004 Presidential election. However, a study by electionline.org (2005) pointed out that the 2004 election "revealed quite dramatically that when it comes to provisional ballots, a national standard hardly means national uniformity." The main differences in state election laws have to do with the procedures for counting provisional ballots. In twenty-eight states, including Florida, a provisional ballot counts only if the voter casts the ballot in the correct precinct, but in seventeen other states a provisional ballot counts for any precinct as long as the voter casts the ballot in the same jurisdiction. (electionline.org, 2005)

The Commission on Federal Election Reform, (more commonly known as the Carter-Baker Commission) deemed provisional ballots an "overwhelming success" during the 2004 Presidential election, because they served as a "crucial safety net" for hundreds of thousands of eligible voters. That said, in many jurisdictions, provisional ballots created significant confusion and problems at the polls, and may have led to the disenfranchisement of many voters in 2004 (Weiser, 2006). Weiser identified many of the problems as being administrative in nature. A number of states did not plan for provisional balloting until shortly before the election and administrators kept changing the rules for provisional voting right up until the last minute. Provisional ballots were not available at some polling locations. Poll workers did not offer or refused to allow voters to cast provisional ballot and many voters who should have been entitled to cast regular

ballots were given provisional ballots. The final problem identified in Weiser's research is one of the most difficult to quantify; poll worker training- this is often identified as one of the biggest challenges in the overall administration of any election.

According to Eagleton and Moritz (2006), in the 2004 Presidential election, approximately 1.9 million votes, or 1.6% of the total turnout, were cast as provisional ballots. More than 1.2 million, or just over 63%, were officially included in the final vote count. They also suggested that the spatial distribution of provisional ballots cast in the 2004 Presidential election was extremely varied. Some of their major findings included:

- Six states accounted for two-thirds of all provisional ballots cast.
- The percentage of provisional ballots cast by state varied by a factor of 1,000 from a high of 7% in Alaska to Vermont's 0.006%.
- The proportion of provisional ballots cast that were counted ranged from 96% in Alaska to 6% in Delaware.
- States with voter registration databases counted, on average, 20% more of the provisional ballots cast compared to states without databases.
- States that provided more time to evaluate provisional ballots counted a greater proportion of those ballots. Those states that provided less than one week to research provisional ballots, counted an average of 35.4% of their ballots, while states that permitted more than 2 weeks to research provisional ballots counted 60.8% of votes cast.

A similar Pew (2009) study, found that more than two million provisional ballots were submitted nationwide during the 2008 presidential election. Of these, more than 1.4

million, or approximately 70 percent of all provisional ballots, were counted and nearly 600,000 were rejected. The Pew (2009) study indicated that the rate at which state and local jurisdictions issued and counted provisional ballots varied greatly, as did the reasons why the ballots were ultimately rejected. These findings are consistent with the research conducted by Eagleton and Moritz (2006) when they analyzed provisional data from the 2004 Presidential Election.

According to Pew (2009, p.2) "HAVA left states with a great deal of latitude in creating and managing their provisional voting process, and that has led to continued variation in how these ballots are issued and counted (Pew Charitable Trusts, 2009, p2)." Due to this significant variation in state standards, it is very difficult to conduct research on provisional ballots across state lines. The Pew (2009, p.2) study suggests that "Depending on state laws and local rules, provisional ballots are issued for a variety of reasons, including the following: a voter's name is not on the registration list; a voter does not have the proper identification; a voter has moved within the county; a voter is recorded as having been already cast; or polling place hours are extended beyond regular hours." They also point out that only four states accounted for two-thirds of all provisional ballots submitted nationwide; Arizona, California, New York, and Ohio.

While the inconsistent statewide administration of the use of provisional ballots makes it difficult to conduct research between states, the local variation *within* states is even more substantial. The Pew (2009) study found that in Florida, where voters submitted slightly more than 35,000 provisional ballots, roughly half of the submitted provisional ballots were validated, although the rate varied significantly by county. They

found that while more than 80 percent of the provisional ballots were counted in Duval County fewer than 60 percent were counted in Hillsborough County. In the South Florida region, approximately one-third were counted in Miami-Dade and just over six percent were counted in Broward County. One explanation for this significant spatial variation is that a number of different factors are acting on voters and as the Pew (2009, p3) study suggests this "has led some observers to express concern about the potentially different treatment of voters who should be subject to the same rules within the same state."

Regarding the likely causes that trigger a provisional ballot, the Pew (2009) study found the trigger regularly revolved around voter registration and voter information. Pew (2009) found that one-third of the ballots that were rejected were largely because the person was not registered in the state. They suggested that while some voters were likely never registered, it is probable that many experienced an administrative error due to an outdated, inefficient registration system. For example, "in more than 30 states and the District of Columbia, provisional ballots are not eligible to be counted if they are cast in the wrong precinct" (Pew, 2009, p.4). The Pew (2009) study suggested that voters possibly lack the information needed to verify their registration or proper precinct location or they were provided with incorrect information. One of the goals of this dissertation is to determine if jurisdictional changes to physical precinct boundaries or polling places plays a role in influencing the geography of provisional ballots.

Pew (2009, p4) also found that "more than 27,000 or 6 percent of the rejected ballots were disallowed because of various errors, including incomplete provisional ballot envelopes, missing or non-matching signatures on the provisional ballot applications,

incomplete applications, and envelopes that contained no provisional ballots." They suggested that while many of these errors were committed by the voters, a large numbers of the errors were a result of administrative problems by the poll workers at the polls.

The Pew (2009) study suggested further that the collection of precinct-level data on why provisional ballots are issued and why they are rejected could offer more insight and better understanding of how provisional ballots are administered. Pew (2009, p.5) concludes that although provisional ballots are a double-edged sword in a sense they provide a solution and a problem, "they have successfully allowed millions of voters who otherwise would be disenfranchised the opportunity to vote but also represent a citizen who, for whatever reason, has encountered some sort of problem in the voting process."

Foley (2008, p.1) depicts provisional ballots as an insurance policy for elections serving two purposes; "to protect voters from being disenfranchised when administrative error has caused their names to be missing from registration lists and to protect the integrity of the election itself by requiring a voter whose eligibility is questionable to cast a ballot that is set aside until eligibility is later confirmed." However, Foley (2008) also describes the HAVA requirements for provisional ballots as "sketchy." The Act prescribes four circumstances for issuing a provisional ballot; an individual's name does not appear on the official list of eligible voters for the polling place but the individual "declares" that they are both eligible and registered in the "jurisdiction." Next, a poll worker or other election official challenges the voter's eligibility. Third, an individual is unable to satisfy the voter identification requirements set forth in HAVA. Finally, a court order requires polling places to stay open longer than their scheduled closing time. Foley

(2008, p.3) points out that "HAVA leaves the details of implementing these new requirements for the states to fill out according to their own laws." Section 305 of HAVA plainly states, "The specific choices of the methods of complying with the requirements of this [statute] shall be left to the discretion of the State." Foley (2008) points out that the HAVA criteria for determining voter eligibility regarding provisional ballots is very convoluted. According to Foley (2008, p.3), "one of the consequences of HAVA's sparse but rather confusing language has been uncertainty, inconsistency, and litigation." For example, fifteen states, including North Carolina, will count provisional ballots if the voter is qualified but the individual cast the ballot in the *wrong precinct*, although 30 states will not accept such a voter as eligible. Foley (2008) pointed out that "states having more stringent voter identification requirements, or states that more readily permit polling place challenges to a voter's eligibility, will tend to cause states to rely more heavily on provisional voting."

These analyses highlight the need for more consistency in issuing provisional ballots, but what is perhaps more troubling, is the inconsistencies in the procedures for verifying provisional ballots, and specifically the overall timeframe for this verification. "Some states allot an extremely short period of time for this verification process, as little as two days - Iowa, Tennessee, and Vermont – while other states take two weeks or longer or even up to a month: California, New Jersey, Rhode Island, and West Virginia" (Foley, 2008, p.8). North Carolina requires that provisional ballots be verified within 10 days of the election.

The examples cited above combined with the amount of leeway provided by the language used in the Help America Vote Act assures that this Federal mandate is almost certainly administered differently by jurisdiction. Foley (2008) recognized that in the wake of the number of close elections in 2004 that states have attempted to eliminate many of these inconsistencies and adopt more clear-cut rules and procedures for verifying provisional ballots although he suggested that most states could do much more in this regard.

Overall, the variation in state laws concerning provisional voting reflects underlying policy differences and reasons concerning the dual function of provisional voting. According to Foley (2008), some states want to ensure that voters are not disenfranchised by administrative errors whereas other states want to "protect the integrity of elections from ineligible individuals."

Foley (2008) argued that when the margin of victories among conventional ballots is small, the losing candidate wants to count as many provisional ballots as possible in traditional areas of support. Conversely, the leading candidate wants to reject those same ballots cast in traditional areas of non-support, resulting in a "ballot-by-ballot brawl over the reason each provisional ballot was cast" (Foley, 2008, p.12). Foley (2008) suggests the rates at which provisional ballots are cast will affect a candidate's motivation to pursue litigation in close elections. He argued that any state with provisional ballots cast at a rate of over 1% would face litigation over the validity of provisional ballots. Preliminary evidence from the *2006 Election Day Survey* compiled on behalf of the US Election Assistance Commission, shows that 11 states, notably North Carolina, continue

to have provisional ballot rates greater than the 1% margin of victory. Results from the 2008 Presidential Election in North Carolina show that the number of provisional ballots cast (52, 243) more than tripled the margin of victory (14,177).

Obviously, if the rate at which jurisdictions *cast* provisional ballots will affect the "margin of litigation" then the rate at which jurisdictions *count/reject* provisional ballots will also have an effect on subsequent litigation. Foley (2008) believes that the rates at which provisional ballots are counted can be grouped into four categories:

1. Count greater than 75% of provisional ballots cast
2. Count between 50% and 75% of provisional ballots cast
3. Count between 25% and 50% of provisional ballots cast
4. Count less than 25% of provisional ballots cast

Foley (2008) used statistics obtained from Eagleton and Moritz (2006) which stated "in 2004, 6 states were in the first quartile, 14 in the second, 13 in the third, and 8 in the fourth" North Carolina's rate of counting provisional ballot was in the second quartile (between 50%-75%). "States with higher rates of provisional ballots *cast* tended to have higher rates of provisional ballots *counted*, and similarly states with fewer provisional ballots as part of their total ballots cast tended to count a smaller percentage of their provisional ballots" (Foley, 2008, p.15).Again, according to the *2006 Election Day Survey* compiled on behalf of the US Election Assistance Commission, preliminary evidence suggests a noticeable shift towards counting a greater percentage of provisional ballots over time with 15 states in the first quartile, 10 in the second, 9 in the third, and 6 in the fourth.

Foley (2008) asserted, that there is equally significant – if not even more significant – variation in provisional voting *within* states. "Variations within states is potentially more troublesome than variation across states because, in addition to whatever policy concerns it may raise, it also presents the possibility of an Equal Protection challenge" (Foley, 2008, p. 17). Foley believed that variability in the casting and counting of provisional ballots within a single state violates the Equal Protection Clause of the U.S. Constitution. He suggested that this variability was caused by the inability of states to prescribe specific standards and procedures for local officials to follow.

Foley (2008) concluded that the Help America Vote Act was needed as a response to the administrative errors that disenfranchised many voters during the 2000 Presidential Election, but the experience with provisional voting in both 2004 and 2006 suggests that more reform is needed. Foley (2008) believes ultimately, Congress will need to amend HAVA to provide greater clarity and uniformity. "Even if Congress still will wish to leave the states with considerable flexibility in implementing HAVA's provisional voting requirement, Congress should clarify what exactly is the scope of this flexibility" (Foley, 2008, p.20). Finally, Foley (2008) recognized that there are large gaps in our knowledge of provisional voting, validating the need for this dissertation, which will use complete and accurate data on provisional ballots cast in North Carolina in 2008 and conduct an in-depth statewide, county-by-county, study of the electoral geography of provisional ballots.

2.5 Provisional Ballots – More Detailed Empirical Research

This section will provide a detail review of the empirical research conducted on provisional ballots. Only a limited amount of research has been conducted on provisional ballots and one of the most geographically explicit analyses includes the work of Kimball and Foley (2009). They discuss many of the complexities regarding the administration of provisional ballots and how "provisional voting offers an inviting target for post-election litigation." "Invalidated and unrecorded ballots are a common source of dispute in election recounts, in part because they are examined and counted (or rejected) after Election Day"(Kimball & Foley, 2009, p.1). The research conducted by Kimball and Foley (2009) attempts to identify a jurisdictions appeal as a target for election litigation. The research conducted uses "unsuccessful provisional voting rates" or the percentage of total ballots cast that were rejected as provisional ballots, as the proxy to measure the potential for an election challenge. They emphasized the importance of measuring both successful provisional ballots as well as rejected provisional ballots. High rates of provisional ballots, both accepted and rejected, can be a cause for concern when analyzing a jurisdictions administration of the provisional ballot process.

Kimball and Foley (2009) state: "there is considerable variation among states in defining the types of voters who must cast a provisional ballot." They make it clear that they are very concerned that because provisional voting is relatively new, election administrators, as well as, poll workers, do not have a clear understanding of how to implement the provisional voting laws. Such a concern emphasizes the importance of conducting research in North Carolina, which as stated earlier, used provisional ballots

for nearly ten years prior to the Help America Vote Act mandate. They suggested that enforcement of election law by local election officials has a significant impact on the casting and counting of provisional ballots.

As much of the research has suggested, and the 2009 Pew study confirmed, a large variation exists across states and within states, in the administration of provisional voting. Kimball and Foley (2009) examined state level data from 44 states and county-level data from California, Florida and Ohio, and the research compared provisional voting rates from the 2004 and 2008 General Elections. They found the provisional voting rate (as a percentage of total ballots cast) in American states were consistent from one presidential election to the next and suggested that; "provisional voting tends to be more common in areas with large concentrations of Black or Hispanic residents and in places with large population growth" (Kimball & Foley, 2009, p.2). However, they also found that the single best predictor of a state's rate of provisional voting in 2008 was its provisional voting rate in 2004.

Their researches continued by using the "unsuccessful provisional voting rate" in order to recognize areas where people attempted to vote but were unable to do so. Kimball and Foley (2009) accepted the conclusions made by U.S. Election Assistance Commission (2005, 2007) that "the lack of voter registration is the most common reason for rejecting a provisional ballot." They used "unsuccessful provisional voting rates" as a proxy for measuring "the degree to which the registration systems act as a barrier to voter participation." They found that unsuccessful provisional voting rates dropped in most

states over time; they attributed this decline to election officials and poll workers becoming more familiar with provisional voting procedures.

In an attempt to identify "at-risk" states where provisional voting rates may lead to challenges and litigation, Kimball and Foley (2009) identified states that were below the national average for "unsuccessful" provisional voting (0.5%). In this dissertation, I will go one-step further by identifying "at-risk" counties and precincts, which will give State and County Board of Elections insight into voting districts that may need improvement.

Kimball and Foley (2009) found that sixteen states, in 2004, had unsuccessful provisional voting rates above the national average, while in 2008 only ten states were above the national average. According to Kimball and Foley (2009, p.8) "no state moved above the threshold in 2008 after being below it in 2004." From a geographic perspective, Kimball and Foley (2009) found that states with the highest rates of unsuccessful provisional voting are not confined to one region of the country. Part of the rationale for this lack of geographic concentration is partially related to the broad scale of analysis (state level) at which the study was conducted. An important aspect of this dissertation is to identify if correlations exist between specific administrative and demographic data and provisional ballots rates at a more disaggregated scale – more specifically, at the county and precinct level.

Finally, Kimball & Foley (2009, p.9) found "several demographic variables were used as predictors of provisional voting and none come close to past performance in explaining unsuccessful provisional voting rates in 2008." They found that counties with

relatively high rates of unsuccessful provisional voting tend to be the metropolitan counties with the greatest number of provisional ballots. For this reason, Kimball and Foley (2009) concluded that the most populous counties in each state would be the likely focus of provisional ballot litigation. This dissertation will show that metropolitan counties in North Carolina will have lower provisional voting rates and lower unsuccessful provisional voting rates due to a number of administrative factors (e.g. number of full-time staff, voting system used, provisional ballot system used).

As much of the literature suggests, the administration of elections, specifically HAVA mandated provisional ballots, is a complex and highly discretionary administrative process. Stewart (2009) identified some of the complexities and administrative factors that most contribute to the inequitable distribution of provisional ballots throughout the country. Stewart's (2009) main research question was not whether the utilization of provisional ballots represents an expansion or contraction of the right to vote, but whether the late-adopters of provisional ballots will ever implement these laws with the same enthusiasm as the early-adopters. Stewart considers North Carolina an "early-adopter" of provisional ballots. Although North Carolina is classified as an "early-adopter," significant variation exists within the state, at both the county level and the precinct level, regarding provisional ballot implementation. Stewart (2009) investigated three states where county-level data existed and these included California, Florida, and Ohio. He examined how variation in provisional ballot rates in each of the three states are caused by factors such as residential mobility rates and turnout levels or whether it is better explained by administrative factors such as experience with

provisional ballots and local enthusiasm in implementing provisional ballot procedures. Through his research, Stewart (2009) determined that even when accounting for specific independent variables, Florida is still a significant outlier, questioning the effectiveness of its provisional ballot law. Stewart (2009, p3) suggested "administrative practices (explicit or implicit) associated with implementation" may be the cause.

Stewart (2009, p3) compared counties in California and Florida that had equal turnout levels and mobility rates and concluded that "about half the difference in provisional ballot usage between California and Florida is due to factors other than ones measured in the regression model, such as administrative practices associated with implementation." Stewart (2009) pointed out that California had used provisional ballots prior to the 2000 general election, classifying them an "early-adopter," whereas Florida implemented provisional ballots in 2001 making them a "late-adopter."

Stewart (2009, p4) concluded that "the differences that remain in the frequency with which provisional ballots are given out between early- and late-adopting states must rest on administrative choices and practices that are fundamentally different in the two sets of states." Although Stewart's (2009) research did not explicitly show that early- or late- implementation of provisional ballots has had an effect on provisional ballot rates; it clearly identified the need to account for variance in early- and late-adopting *counties* within North Carolina. This dissertation attempts to account for many of these administrative factors by accounting for measures such as the number of full-time staff, the type of voting system used, the provisional ballot system used, etc. Stewart (2009)

highlighted the complicated relationship that exists regarding the implementation and measurement of provisional ballots.

Atkeson et al (2009) highlighted the importance of provisional ballots in closely contested elections and suggested a substantial need exists for a statewide analysis of provisional ballots. Atkeson et al (2009) researched the impact thousands of provisional ballots had in New Mexico during the 2004 presidential election and the 2006 congressional election. Atkeson et al (2009) chose to examine the 2008 New Mexico Democratic presidential primary due to the unusually large turnout as well as the high number of reported administrative errors. During the Democratic presidential primary in February 2008, 17,276 provisional ballots were cast in New Mexico. Atkeson et al (2009) found that 51.4% of the provisional ballots cast were disqualified. When analyzing the disqualified ballots, 42.5% were not counted because the voter was not a registered Democrat (required in a partisan primary) and another 15.4% were disqualified because the voter was not registered. The remaining ballots that were not counted were due to a number of procedural issues such as ballots without names or affidavits without ballots.

Atkeson et al (2009) found that the percentage of provisional ballots cast as a percentage of total ballots cast ranged from 0.08 % in Luna County to 5.44% in McKinley County. They found that on average counties counted almost three-in-five (59%) provisional ballots cast. The percentage of provisional ballots that were counted ranged from 13% in Union County to 96% in San Miguel County. Atkeson et al (2009) suggested that although the average percentage counted was relatively high, more

troubling was the variation between counties. The variation identified by Atkeson et al (2009), in New Mexico, was consistent with Foley's (2008) findings, who uncovered similar variations in California, Florida and Ohio. Atkeson et al (2009) then analyzed the reason why each provisional ballot was counted or not counted in Santé Fe County, the only county to provide this data. They found that uncounted ballots fell into one of three categories: (1) unregistered voters (51%), (2) voters registered in another county (27%), and (3) voters purged in 2007 who did not re-register (11%). Atkeson et al (2009) also found that valid provisional ballots included voters that were at the wrong polling place (64%), poll worker errors (12%), restored felons (9%), and numerous other factors (15%). Atkeson et al (2009) concluded that New Mexico's experience with provisional ballots suggested that statewide procedures, poll worker training, and voter education levels all affect the rate at which provisional ballots are cast and the rate at which these ballots are counted. The findings of Atkeson et al (2009) again support the need to account for administrative attributes when attempting to explain the spatial variation of provisional ballots.

Baybeck and Kimball (2007) examined provisional voting in the 2006 Federal election in Cuyahoga County, Ohio; Duval County, Florida; and Baltimore City, Maryland. Each of these states had some kind of provisional voting mechanism in place prior to HAVA. Baybeck and Kimball (2007) argued that provisional voting should be concentrated in areas with large groups of voters likely to trigger the provisional ballot option. Baybeck and Kimball (2007) identified factors such as voters who move a lot, people who are not registered or groups that lack resources or civic skills as some of the

main components that will trigger a geographic concentration of provisional ballots. Baybeck and Kimball (2007, p.1) believed that the "geographic concentration of provisional voting is mitigated by ambiguous laws defining provisional voting, decentralized election administration, and a high degree of discretion left to poll workers in implementing provisional voting."

The three counties studied are all jurisdictions within a major metropolitan area, but more importantly are all jurisdictions with major differences in the administration of provisional ballots. Baybeck and Kimball (2007) believed that if centralized administration of provisional voting existed, then they should observe concentrated areas of provisional voting that are explained by a similar concentration of the population with specific demographics. Conversely, they argued that if the implementation of provisional voting is decentralized, the concentration of voting will not be based on demographic variables but will instead be a factor of administration policies and decisions.

Baybeck and Kimball (2007)examined the percentage of provisional ballots cast relative to three key demographic variables which included the percentage of the precinct population that is non-white, (a proxy for race), the percentage of households with children and a single female head of household, (a proxy for poverty), and the percentage of households occupied by renters, (a proxy for mobility). Baybeck and Kimball (2009, p9) found that "provisional voting is more common in precincts with larger concentrations of non-white residents, female-headed households with children, and especially rental-occupied households." By contrast, Baybeck and Kimball (2007) concluded that provisional voting in Duval County is uncorrelated with race or female-

headed households with children, and only weakly correlated with renter-occupied households. Although Baybeck and Kimball (2007) do not explain the difference between Duval and the other Counties, it is possible that Stewart's (2009) measure of early- and late-adopters of provisional ballots will explain this difference because once again we see the "outlier" located in a state considered a late-adopter. The conclusions drawn by Baybeck and Kimball (2007) support the hypotheses of this dissertation, that provisional voting rates will be affected by race, voter mobility and administrative procedures.

Baybeck and Kimball (2007)also found that the reasons for rejecting a provisional ballot were largely due to the voter being in the wrong precinct or not being registered. Baybeck and Kimball (2007, p.12) found that in Baltimore County the "rejection of provisional ballots for other reasons is correlated with race and female-headed households with children." In Cuyahoga County, Baybeck and Kimball (2007, p.12) found that the "rejection of provisional ballots for voting in the wrong precinct is correlated with race and female-headed households with children." The findings of Baybeck and Kimball(2007), that a correlation existed between the rejection rate of provisional ballots and the proxy for race and poverty, underscores the need for an in-depth analysis of not only, provisional ballots cast, but the acceptance/rejection rates of those provisional ballots.

Baybeck and Kimball's (2007, p.1) original hypothesis was that the "geographic patterns in the casting and counting of provisional ballots depends on the spatial clustering of populations likely to qualify for provisional ballots and the degree of

centralized administration of provisional voting." However, they concluded that the dispersion of provisional ballots is not geographically concentrated and they recognized that the lack of geographic concentration is likely caused by the inequitable implementation of administrative procedures governing provisional ballots. However, Baybeck and Kimball's (2007) use of self-selected counties with similar populations does not provide a comprehensive reflection of the actual dispersion of provisional ballots throughout each state. This dissertation contends that their selection of jurisdictions in multiple states complicates their research because of the variance in administrative procedures prescribed in each state. In this dissertation, I will conduct a more rigorous spatial statistical analysis that uses the consistency of North Carolina provisional procedures simultaneously crossing county and precinct jurisdictional boundaries.

Alvarez and Hall (2009) analyzed provisional ballots in the 2008 Ohio general election. They found that 206,879 provisional ballots were issued in the general election adding up to 5.13% of the total precinct votes cast. However, the distribution as a percentage of total ballots cast were not uniform across counties. They found that "there is a 7.4 percentage point gap between the highest and lowest provisional voting rates, with the average county having 4% of ballots cast provisionally" (Alvarez and Hall, 2009, p.2). Less clear is what explains this spatial variation. Alvarez and Hall (2009, p2.) hypothesized that "provisional ballots are likely to be used in areas with a high degree of residential mobility," and "in counties with highly mobility[sic] populations and voters sensitive to the cost of registration, there will be higher rates of provisional ballot use." Alvarez and Hall (2009) examined Ohio counties that have a college or

university with large student populations located in the county to test the mobility hypothesis. Additionally, Alvarez and Hall (2009) used the percentage of a county's population over the age of 65 to test their hypothesis that younger populations are more likely to be mobile and to consist of new voters. Alvarez and Hall used four additional precinct-level variables to help support their hypothesis including the percent of the population that is White, the percent in poverty, the percentage of new registrants, and the turnout percentage. Alvarez and Hall's (2009) key findings included:

- The percentage of provisional ballots cast was higher in precincts with a low percent of white population.
- A positive and significant correlation existed between the percentage of a county's population in poverty and the percentage of provisional ballots cast.
- Conversely, no significant correlation existed between the percent of the county's population in poverty and the number of provisional ballots cast per precinct.
- A negative relationship existed between the percentage of the population over 65 years old and both the percentage of provisional ballots cast and the total number of provisional ballots cast per precinct.
- A positive and significant correlation existed between the percentage of new registrants and percentage of provisional ballots cast of total ballots and number of provisional ballots cast per precinct.
- A negative correlation existed between turnout and both, percentage of provisional ballots cast of total ballots and number of provisional ballots cast per precinct.

Alvarez and Hall (2009) conducted additional research on counties that contained a large college or university (+15,000 students). Their research compared the average provisional voting rates of counties that have a large college or university and counties that do not. This dissertation will conduct a similar analysis, of both the county level as well as the precinct level. Alvarez and Hall (2009) found that the average provisional voting rate was 6.11% for counties with large colleges or universities but 3.74% for those without a college or university. The increase in provisional ballots in counties with large universities suggests these younger, more mobile populations have an impact on the administration of provisional ballots. It will be interesting to determine if the results found by Alvarez and Hall (2009) regarding provisional ballots in college communities in Ohio are consistent with similar communities at the county level and precinct level in North Carolina or if the results are unique to Ohio.

This in-depth analysis of provisional voting in the Ohio 2008 General Election has lead Alvarez and Hall's (2009) to a number of conclusions including:

> First a county's racial composition is a significant factor related to provisional voting... Second, the age of the county's population consistently has an effect in each of the models…Third, additional evidence exists that counties with large colleges or universities have higher provisional ballot use….Finally, counties with higher rates of new registered voters do see higher provisional ballot usage rates, though in these two models those estimates are not statistically significant when we control for other factors (such as age and mobility) that might be related to the new voter registration rate.

2.6 Summary and Discussion

The purpose of this literature review is to demonstrate the complex set of factors that contribute to political geography, electoral geography and ultimately the geography of provisional ballots. At its broadest point, this literature review encompasses research from political geography and its general themes including the interaction within the political unit and how the spatial distribution of populations affected those choices. This review began to narrow its focus by identifying four focuses of electoral geography: the geography of voting, the geographic influence on voting, the geography of representation, and the geography of political parties. Within electoral geography, the contextual and compositional effects of an election, the comparison of electoral and socio-demographic data, and the analysis of electoral patterns and how they change have all been shown to be major contributing factors in voting behavior.

The literature review cited research that analyzed county level voting behavior and highlighted the importance of voting systems and voting procedures, and highlighted anomalous voting patterns and significant changes in voting patterns during the 2008 Presidential election.

Next, the literature review focused in on research conducted on variables similar to the ones used in this dissertation regarding provisional ballots, discussing possible connections between election results and changes in the patterns of family formation and fertility as well as the impact of racial attitudes and migration on the 2008 Presidential election results. More specifically, the literature review analyzed empirical studies of how provisional ballots impacted presidential electoral outcomes with an emphasis of

how the complexities of administrating provisional ballots may contribute to an inequitable distribution of voting outcomes and also research that highlighted the importance of provisional ballots in closely contested elections.

Political geographers have traditionally conducted studies focused on the spatial distribution of election results and socio-demographic data. This dissertation will go beyond these traditional themes and attempt to fill the gap in the existing literature. This research will conduct a comprehensive statewide spatial analysis of whom cast provisional ballots, where they cast their ballots, and what affect their ballots have on the outcome of the 2008 Presidential election in North Carolina.

The United States is unique among federal systems in authorizing the states rather than the national government to administer elections to national office. The rise of election reform as a major policy issue has been accompanied by a rebirth of interest among scholars in the administration and formation of election law (Liebchutz, 2005). One of the difficulties in conducting this type of research is the inequity with which national statutes are enforced at the individual state level. As evident by the prior research, the geography of provisional ballot varies dramatically between states. An important reason for this variation was the state's previous experience with provisional voting and various fail-safe voting techniques. For example, North Carolina is one of the few states that prior to the passage of HAVA, previously had procedures in place to allow for provisional ballots. The North Carolina State Board of Elections adopted provisional voting following the passage of the National Voter Registration Act of 1993. Section VIII of NVRA states; "The NVRA also provides additional safeguards under which

registered voters would be able to vote notwithstanding a change in address in certain circumstances. For example, voters who move within a district or a precinct will retain the right to vote even if they have not re-registered at their new address." The North Carolina state board and state legislature interpreted this passage as meaning a need existed to create a safeguard for those voters whose records may be incomplete or inaccurate at the polls but were still eligible to vote. The NVRA went into effect January 1, 1995 and subsequently, North Carolina has had provisional voting procedures in place for over a decade. Given its history with provisional ballots, North Carolina is an appropriate case study in any analysis of the geography of provisional ballots. The research proposed in this dissertation will provide the first statewide analysis of the geography and demography of provisional ballots in North Carolina. The data gathered from this research will be critical in assessing the validity and legitimacy of North Carolina's elections process and will be useful in addressing these same concerns on a national level.

CHAPTER III

RESEARCH DESIGN

3.1 Introduction

The principal objective of this dissertation is to gain a better understanding of the overall electoral geography of provisional ballots in North Carolina for the 2008 Presidential election. A key element of this research is to use statistical modeling to identify the key predictor variables that might better explain the electoral geography of provisional ballots. This research will be conducted at the county level and attempt to identify possible predictors of provisional ballots cast, provisional ballots not counted and provisional ballots counted.

Three stepwise regression models for ***each county*** in North Carolina will be developed based on three dependent variables: provisional ballots cast per 1000 total ballots cast, provisional ballots not counted per 1000 total ballots cast, and provisional ballots counted per 1000 total ballots cast.

The three dependent variables were chosen to give a comprehensive understanding of the provisional ballot process in North Carolina during an presidential election, from the time the ballot was issued at the polling place to the time the ballot is determined to be counted or not counted by the local County Board of Elections. ***Provisional ballot cast per 1000 total ballots cast*** will illustrate where disproportionately high or low numbers of provisional ballots are being cast relative to the total number of

ballots cast in throughout the entire election. This dependent variable will help to identify if population measures, socio-economic factors or election administrative variables are influencing the number of provisional ballot cast. Provisional ballots cast per 0/00 will give a better understanding of the spatial distribution of the ballots cast relative to the actual ballots cast and provide insight into the how provisional ballot impacted actual turnout on Election Day. ***Provisional ballots <u>not counted</u> per1000 total ballots cast*** will identify where disproportionately high or low numbers of provisional ballots cast are subsequently being disqualified relative to all the other ballots cast, thus identifying areas that may be disenfranchising certain segments of the population on or before Election Day. This variable will provide a more comprehensive spatial understanding of not only who is being required to cast provisional ballots, but also whose provisional ballots are being disqualified, thus not added to the final vote total. Finally, ***provisional ballots counted per 0/00,*** will illustrate the spatial distribution of the provisional ballots that actually influenced the election results and the outcomes.

The data for this dissertation will be collected from The State Election Information Management System *(SEIMS)*, which is a statewide database, used to track all election and registration transactions. SEIMS is one of the most exhaustive and rigorous statewide database systems in the nation. Furthermore, North Carolina is one of the most rapidly growing and increasingly diverse states in the nation. All these factors make North Carolina a highly suitable case study for the analysis of the geography of provisional ballots.

3.2 Overall Research Hypotheses

The research will be rooted in three basic hypotheses based on a detailed reading of the extant literature. First, I hypothesize that ***provisional ballots cast per 1000 total ballots cast by county,*** as the dependent variable will be more strongly influenced by predictor variables that capture the socio-economic variation, specifically racial composition, as well as, other demographic variables, such as level of educational attainment and age cohort. Next, I hypothesize that ***provisional ballots not counted per 1000 total ballots cast by county,*** will not only be influenced by socio-economic variation in racial composition, educational attainment, and income but also be influenced by predictor variables that capture the political ideology of the population. Finally, I theorize that the ***provisional ballots counted per 1000 total ballots cast by county,*** will be best explained by some combination of predictor variables from each of the two groups that measure the socio-economic variation of the population and the efficacy of the administrative process.

3.3 Data Definition

The independent variables used to better understand the electoral geography of provisional ballots in North Carolina could be broken down into three sub-categories: *population measures, socio-economic characteristics, county board of elections characteristics, and voter/precinct characteristics* (see Table 1).

Table 1. List of Independent Variables for Stepwise Regression Analysis
1. Population Measures
Total Population Voting Age Population Registered Voter Population New Registered Voters - 2008 Registered Voter Market Share Migration - In-migration and Out-Migration
2. Socio-economic Characteristics
Age Race High School graduates, % persons 25+ Bachelors Degree or higher, % persons 25+ Median Household Income Families Below Poverty Level Homeownership Rate Housing in multi-unit structures Residents in same home 1+ year Foreign Born
3. Election Administrative Variables
Political Party Affiliation General Election Turnout Early Voting Turnout Number of Full Time Election Staff Technology used on Election Day Administrative Procedure

The data associated with each of the variables listed below was downloaded and assigned to the one hundred North Carolina counties from the U.S. Census Bureau 2008 American Community Survey, the North Carolina State Information Management System (SEIMS), and the U.S Internal Revenue Service Database. They include:

3.3.1 Population Measures

Total County Population - The population data from the 2008 American Community Survey will be used to determine if the sheer size of a county influences any of the provisional ballot measures (cast, not counted, counted)

Voting Age Population – Voting age population can be very different from total population, it is necessary to determine if the population over 18 is having an influence in shaping provisional ballots. According to the most basic requirements, this population would be eligible to vote and may attempt to show up at the polling place in an attempt to cast a ballot.

Registered Voter Population – This variable differs from either of the previous population measures. At some point, registered voters have proactively participated in the process, yet they often believe that they are eligible to vote anywhere within the state or county. Attempting to vote in the wrong precinct or county will trigger a provisional ballot.

New registered voters – 2008 – Based on the perceived interest in the current election, this research will determine if the number voters who registered for the first time in

specific county between January 2008 and the registration deadline influenced the provisional ballot process.

Registered Voter Market Share – The research will use the SEIMS database in combination with the American Community Survey to determine if the percentage of the population that is registered to vote in each county will have an impact on the provisional ballot process.

Migration – In/Out – County level migration data downloaded from IRS database, tracks where tax returns are filed, thus giving a basic insight into the in-migration and out-migration of the each county. The migration data will be used to identify if population mobility affects provisional ballots. The data will be used at the absolute (total migration) and relative (migration as a percentage of county population) level.

3.3.2 Socio-economic Characteristics

Age – The age data in the SEIMS database will be used to draw inferences into the voting behavior of different age groups based on various assumptions. The data will be used at the relative scale (e.g. percent of the population between ages 18-25). The age groups include:

> *18-25* – Largely first time voters, voters recently out of college, and voter's that were first eligible to vote during the 2000 Presidential Election.
>
> *26-40* – The underlying assumption behind this group is it will encompass voters that have greater knowledge of politics, started careers, established permanent residency, and started families.

41-65 – This is the second most consistent group of voters, typically a group with well-established roots in the community and actively participates in local government and community service.

66> - Historically, this classification produces the most consistent electoral turnout, are well-established residents, and feel a civic responsibility to vote.

Race –The purpose of this classification is to determine if minorities are casting more provisional ballots than white voters are. Race will be broken down into four classifications levels, Caucasian, African American, Native American, and Hispanic.

High School Graduates, percentage persons 25+ - This variable will be used to determine if a correlation exists between *basic* education and provisional ballots.

Bachelor's Degree or higher, percentage persons 25+ - The variable will also be a measure of education. It will be used to determine if a correlation exists between *higher* education and provisional ballots.

Median Household Income – This variable will be used to determine if the number of provisional ballots changes as the range in wealth changes.

Families below poverty level – Also a measure of wealth, this variable will be used to identify if a correlation exists between the number of provisional ballots cast and poverty.

Homeownership Rate – The purpose of this variable is to determine if a relationship exists between a theoretical permanent residency and provisional ballots measures.

Housing units in multi-unit structures - the purpose of this variable is to determine if a correlation exists between apartment residents, often more mobile and less permanent and provisional ballots cast and/or counted.

Residents in the same home for 1+ years – This variable will be used to determine if the temporal aspect of homeownership influences provisional ballot measures.

Foreign Born Persons – An indicator of naturalized citizenship, this variable will be used to identify if a relationship exists between the number of provisional ballots cast and a specific segment of the population that may be unfamiliar with the policies and procedures in the United States.

3.3.3 Election Administrative Variables

Each of the variables listed below was collected by either contacting respective elections directors of each of the 100 counties in the state or downloading the data from the SEIMS database. This data will be used to determine what influence, if any, election administrative characteristics have on the provisional ballot process. They include:

Political Party Affiliation – The political party affiliation from the registered voters in each county will be downloaded from the SEIMS database. In North Carolina, election law allows voters to register as Democrat, Republican, Unaffiliated or Libertarian. The party affiliation totals will be evaluated in relative (percentage of registered voters by party) terms. This purpose of this variable is to determine if a voter's affiliation with a specific political party is more predisposed to cast a provisional ballot.

General Election Turnout – The turnout rate from each county will be downloaded from the SEIMS database to determine if participation rates influence the provisional ballot process. Turnout rate is defined as the number voters who attempt to cast a ballot divided by the total number of registered voters.

Percentage Early Voting Turnout – This research will calculate the early voting turnout percentage for each county in North Carolina. It is theorized that counties with elevated early voting turnout will have lower Election Day provisional ballots cast because during the early voting period voters are able to register to vote and update their record. Early voting totals will be evaluated in both absolute (total early voting ballots cast) and relative (early voting percentage as function of total ballots cast) terms.

Number of Full Time Staff – This variable will be used to determine if the number of full-time staff employed by each county has an impact on the provisional ballot statistics. The variable will be an indication of the amount of responsibility placed on individual employees at county level. This research assumes that higher staffing levels will lead to fewer mistakes throughout the administrative process, thus reducing the need for provisional ballots.

Technology used on Election Day – This variable will be used to measure the level of technology used in each county. It is theorized that counties with increased levels of technology and an increased ability to communicate with the central SEIMS database will cast fewer provisional ballots. Typically, two types of communication are used throughout the state. First, determining if **Cell Phones** are provided to each precinct, enabling the poll workers the ability to communicate with the central election office. This communication often provides support in determining the proper procedure when handling discrepancies, such as issuance of a provisional ballot. Second, is to determine if the poll workers at the precinct have access to an **E-poll book,** or laptop computers. Access to e-poll books provides precinct officials the ability to verify missing or incorrect

information without having to contact the central election office. It is theorized that counties with higher levels of communication will have fewer provisional ballots.

Administrative provisional system used – This variable will be used to determine what type of provisional ballot administrative procedure was used in each county during the 2008 Presidential election. North Carolina counties use two types of procedures to administer provisional ballots, based in either a central location or more localized precinct locations. Counties that use centralized locations send each provisional voter to a central location within the county to cast the provisional ballot. This central location is often the main office and staffed by experienced individuals with access to the entire SEIMS database. Counties that use precinct locations allow each provisional voter to cast a provisional ballot at the precinct in which they are located, typically staffed by part-time poll workers with limited access to SEIMS database.

3.4 Data Limitations

One limitation to this research is it is limited to just North Carolina. That said, the geography of North Carolina is conducive for analyzing urban, suburban and rural jurisdictional election procedures given the differentiation between the mountains, piedmont and coastal plain population settlements. Second, the North Carolina SEIMS database contains high quality data for the entire state. Although HAVA mandates a statewide database for each state, North Carolina law specifically prescribed that the State Board of Elections is responsible for maintaining all data associated with all elections. In many other states, individual jurisdictions are responsible for maintaining

their own data and simply reporting the minimum requirements to the state level. Next, the North Carolina State Board of Elections stipulates additional precinct uniformity guidelines that each county must follow in the administration of all elections. Finally, the North Carolina State Board of Elections ensures that all election related data (excluding date of birth and personal identification numbers) is public record and available upon request based on existing North Carolina public records law.

The temporal dimension of the research will also limit results. This research focused solely on the geography of provisional ballots cast in the 2008 Presidential Election. Elections are very much cyclical in nature and municipal elections differ from mid-term elections that differ from general elections, highlighting the need for additional research over multiple election types and election cycles.

Finally, there are a number of possible methodologies that might shed light on the electoral geography of provisional ballots; regression modeling was chosen in order to gain a statistically significant understanding of the predictor variables that may shape the spatial distribution of three provisional ballot measures. An obvious flaw to using regression modeling is the ecological fallacy that may present itself. Many of the inferences about individuals based on the results of the regression analyses may be based simply on the aggregate statistics of the counties in which those individuals live.

CHAPTER IV

FINDINGS

4.1 Spatial Variation of Provisional Ballots in North Carolina by County

In the 2008 Presidential election, a total of 52,304 provisional ballots were cast in North Carolina, with an average of 523 provisional ballots per county, ranging from a low of 20 ballots in Alleghany County to a high of 4,187 in Wake County (Figure 1). The first step in understanding the complexities of the spatial distribution of these ballots is to understand the geography of the absolute totals of the provisional ballots cast. Overall, the spatial distribution of provisional ballots suggests that high numbers of ballots were cast along the I-85 urban corridor, with low absolute numbers cast in both the Mountain west and northeastern Coastal Plain. It is commonly assumed that absolute ballot totals will reflect population totals, with more ballots cast in more populated areas and fewer ballots cast in regions that are more rural.

Wake County (4187), Mecklenburg County (4168), and Cumberland County (2848) generated the highest number of provisional ballots. The large city populations of Charlotte (Mecklenburg County) and Raleigh (Wake County) best explain the large number of provisional ballots in these urban counties. Cumberland County lacks an urban population center similar in size to those in Charlotte and Raleigh, suggesting other explanations is needed.

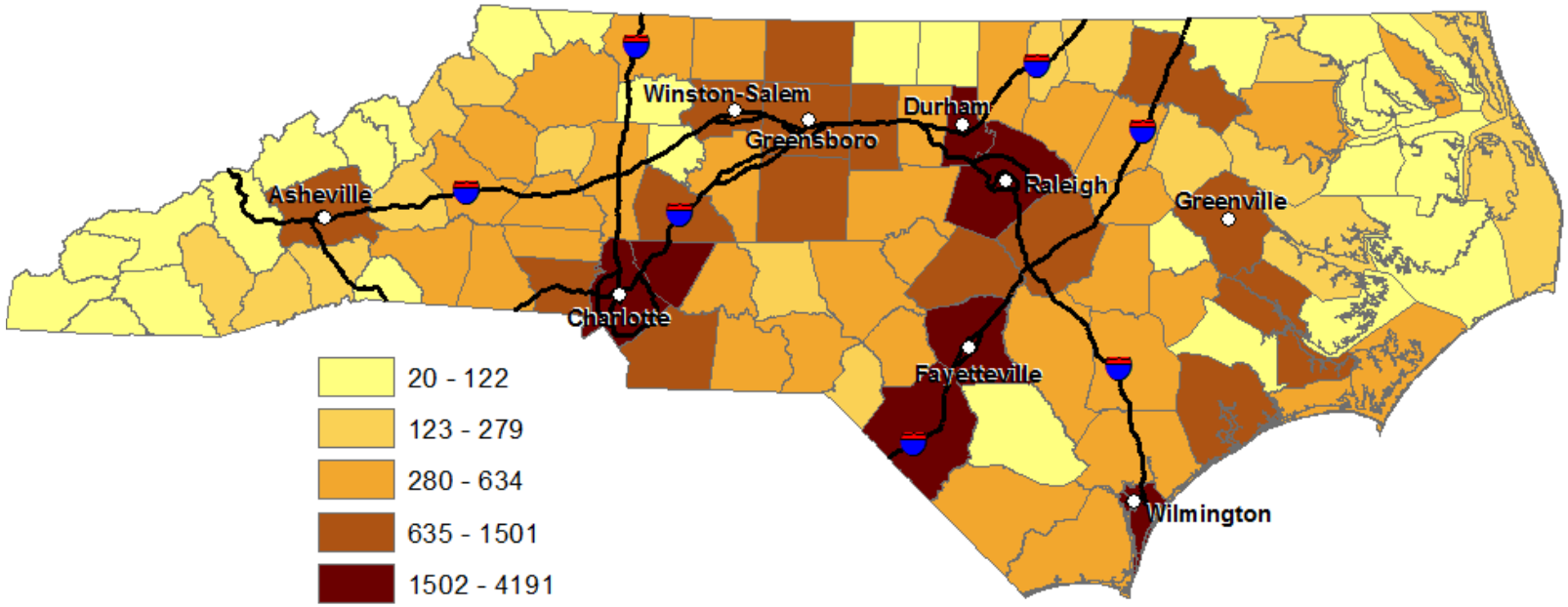

Figure 1. Total Number of Provisional Ballots Cast by North Carolina County for the 2008 Presidential Election

Wake County, Mecklenburg County and Cumberland County - the three counties with the highest number of provisional ballots cast - are all in the top ten in total population and total registered voters. However, of the remaining seven counties in Table 2, four counties (Robeson, Cabarrus, Pitt, Johnston) do not rank in the top-ten in either *total population* or *total registered voters.* Conversely, four counties (Buncombe, Gaston, Guilford and Union), are ranked in the top-ten in terms of total population but are not ranked in terms of total provisional ballots cast.

Table 2. North Carolina Counties Ranked by Absolute Provisional Ballot Totals with Population and Voter Registration

County	Total Provisional Ballots	County Population	County Rank of Total Population	County Registered Voter	County Rank of Total Registered Voters
Wake	4191	866410	2	593045	2
Mecklenburg	4168	890515	1	628068	1
Cumberland	2848	312696	5	210796	5
Robeson	2097	129123	24	71580	24
New Hanover	2013	192538	8	146450	8
Durham	1823	262715	6	193306	6
Cabarrus	1634	168740	11	109599	11
Pitt	1501	156081	12	107463	12
Johnston	1428	163428	17	101224	17
Forsyth	1371	343028	4	222147	4

Although this is a very basic observation, the discrepancy between provisional ballot rankings and population/ voter registration rankings seem to lend credence to the general hypothesis that absolute provisional ballot totals are not merely a function of population size. One key question to ask is what is causing more populated counties to cast fewer provisional ballots than anticipated and more rural counties to cast more provisional

ballots than projected? The first step in formulating a response to these questions is to gain an understanding of the socio-demographic factors and administrative variables that shape the populations of many of these counties.

Wake and Mecklenburg are the two most populated counties in the state, and their combined populations account for nearly twenty percent of the entire population of North Carolina. Although each county can best be described as a traditional "urban" county with a major city center, the economic profiles of each are very different. Raleigh, located in the heart of Wake County, serves as the state capital; as a result, the largest employer in the county is the state of North Carolina, followed closely by the Wake County School System. According to the Wake County Economic Development Bureau (2008), eight of the top twenty employers in Wake County would be considered "public sector" employers; they include North Carolina State University, Wake County Government, City of Raleigh, and Wake Technical Community College. The rest of the economy is largely based in technologies (IBM, Cisco, Verizon, Time Warner) and medical services (Wake Med, GlaxoSmithKline, Rex HealthCare).

The level of educational attainment in Wake County is the highest in the state and one of the highest in the country with 48% of the population possessing a Bachelor's degree or higher. Along with increased levels of education often comes increased levels of income and Wake County's median household income is roughly $65,000 per year, well above the median household income for the state ($43,674) and the country ($50,221).

As we described earlier, Wake County contains a major urban core city (Raleigh), surrounded by many peripheral suburban towns (Cary, Knightdale, Fuqua-Varian, Wendell). Often, urban core cities are comprised of higher densities of minority populations but Raleigh is an exception with nearly 64% of the population white, consistent with the racial profile of the county as a whole, which is nearly seventy percent white.

The profile of Wake County seems to dispel earlier theories regarding the socio-demographic explanations for high provisional ballot totals. It was theorized counties such as Wake, with high levels of educational attainment, would cast fewer provisional ballots. This hypothesis was based in theory at least, on the notion that a population that is highly educated would also be more civically minded. This civic mindedness would lead to voters who are aware of their proper polling location, their electoral districts, and the requirement to update address information, leading to fewer discrepancies and thus, fewer provisional ballots. It was also theorized that counties with smaller minority populations would cast fewer ballots due to many of the other related socio-demographic factors that frequently accompany large minority populations (e.g. lower incomes and low educational attainments). According to the existing literature, this combination of factors should lead to fewer provisional ballots, but as Figure 1 and Table 2 illustrate, Wake County cast the highest number of provisional ballots in the state, thus contradicting many of these hypotheses.

Mecklenburg County cast the second highest total of provisional ballots during the 2008 Presidential election. Although the geographic profiles of both Mecklenburg

and Wake County's appear very similar, the economic foundations are very different. According to the Charlotte Chamber of Commerce (2011), the economy of Mecklenburg County is largely centered on three main industries: banking, manufacturing and transportation. The largest employer in the financial sector is Wells Fargo, employing over 20,000 workers, followed by Bank of America, which is head quartered in the heart of downtown Charlotte. This commitment to finance has allowed Charlotte to become the second largest financial center in the country behind only New York City (Charlotte Chamber of Commerce, 2011).

Manufacturing also plays a significant role in providing economic stability to the region. Mecklenburg County has become the third largest region for manufacturing in the state, home to over 1,900 companies and employing nearly 75,000 workers. A major strength is Mecklenburg's numerous transportation networks including: Charlotte-Douglas International Airport, Norfolk Southern and CSX Railway transportation systems as well as several major interstate highway corridors.

Although the underlying economic foundation in Mecklenburg County is very different from that of Wake County, both have a similar socio-economic mix. According to the U.S. Census Bureau American Community Survey (2008), roughly forty percent of the population has a Bachelor's degree or higher, and a median household income of $57,994 per year, both well above state averages. Additionally, thirty-six percent of the population classified as minority, mostly African American, well above the state average of twenty-one percent, but still below the minority populations of many other major urban counties. The economic and demographic mix of Mecklenburg County again casts

doubt on the notion that affluent, well-educated voter populations, with relatively small minority population will likely cast fewer provisional ballots.

Cumberland County, in southeastern North Carolina, generated the third highest number of provisional ballots (2,848) and was the fifth most populated county in the state. However, Cumberland County's total population (~300,000) is significantly smaller than that of both Wake and Mecklenburg counties. The largest city is Fayetteville (170,000) – a much smaller city than either Raleigh or Charlotte. Historically, the economy of the county was rooted in elements of manufacturing and agriculture, but as the county has grown it has become home to the largest military installations on the east coast - Fort Bragg/Pope Air Force base. According to the Fayetteville Chamber of Commerce (2011), about 47,000 military personal and over 10,000 civilian personal are employed on or around the base. It is estimated that the base generates an additional 21,000 civilian jobs in the community. The mixture of varied economies and communities creates not only racially diverse populations, but populations that consist of a variety of education levels, income levels, and political ideologies.

The percent of the population with a Bachelor's degree or higher is only nineteen percent, well below the percentage in Wake and Mecklenburg County's, as well as just below the state average (21%). According to the U.S. Census Bureau's American Community survey (2008), the median household income in Cumberland County is $41,163, again well below that of Wake and Mecklenburg County's, as well as below the state average. Furthermore, nearly forty-six percent of the population is classified as minority, above not only the state average, but also well above the percentages found in

the urban areas of Raleigh and Charlotte. The socio-economic profile of Cumberland County (e.g. low education level, low-income level, high minority population share) is clearly more consistent with the initial hypotheses about what causes unusually high provisional ballot totals.

Although Wake, Mecklenburg, and Cumberland counties have very different socio-economic profiles and very different potential explanations for the high number of provisional ballots in each county, they all have one thing in common…the unusually high level of ***mobility*** in each of the county populations. (Table 3)

The U.S. Internal Revenue Service can be helpful in attempting to understand mobility and migration patterns based on the practice of tracking the location of tax returns filed from year to year. According to their data, Mecklenburg, Wake and Cumberland counties had the highest rate of both In-migration and Out-Migration in 2008.

It is possible that highly mobile, transient populations will be the most likely to need to cast provisional ballots given the potential confusion and complexity of relocating from one location to another. Elevated mobility levels within the county population may be more important than the socio-economic mix of the household in shaping the geography of provisional ballots.

That said the mobility levels of the populations in Wake, Mecklenburg and Cumberland Counties are likely caused by very different factors.

Table 3. North Carolina Counties Ranked by In-Migration and Out-Migration, 2008

County	In-Migration	Out-Migration
Mecklenburg	**32,528**	**25,535**
Wake	**29,428**	**20,567**
Cumberland	**14,409**	**13,738**
Guilford	12,582	11,344
Onslow	11,010	11,332
Durham	10,946	9,117
Forsyth	8,603	7,836
Buncombe	7,063	6,472
New Hanover	6,765	6,052

Wake County contains one major university (NC State) and four additional full-time institutions of higher learning (Peace, Meredith, Shaw, St Augustine). These colleges and universities have a combined student body population of roughly 40,000 students. As hypothesized earlier, communities with colleges and universities may cast higher numbers of provisional ballots due to the mobility of the population as well as the lack of ties to the local community.

Mecklenburg County's population is also highly educated and highly mobile; The University of North Carolina at Charlotte is home to over 25,000 students, which has a similar impact on the community as described above. The population is employed in highly mobile industries such as banking and transportation with populations frequently changing jobs in pursuit of career advancement.

Although the population and the economics of Cumberland County are very different, the population's mobility more closely resembles that of a higher educated, more urban county due to the large percentage of the population employed by the U.S.

military. More than 45,000 military personnel, often between the ages of 18-25, are employed on Fort Bragg and Pope Air Force base creating a highly mobile population similar to counties that include a large number of colleges and universities. Elevated mobility rates often create doubt about a voter's permanent residence thus affecting their voter registration status and creating discrepancies that frequently lead to the voter being required to cast a provisional ballot.

A closer examination of Table 2 suggests that Robeson County may be the most anomalous county, ranking only twenty-fourth in total population and voter registration but fourth in total provisional ballots cast. Similarly, but to a lesser extent, Johnston County ranked seventeenth in population and registration totals but ninth in total provisional ballots cast. Additionally, Cabarrus and Pitt County were also ranked in the top-ten in provisional ballots cast but outside the top-ten regarding total population and voter registration populations.

Robeson County is a border county with South Carolina, located in the southeastern Coastal Plain region of the state. It is the most rural county listed in Table 2, with a 2008 population of just under 130,000. Robeson County is also one of the 10% of counties in the entire United States that has a population composed of "minority-majority", where roughly 68% of the population is non-white, the largest percentage of minorities in the state. The "minority-majority" population is composed primarily of Native Americans that largely identify as Lumbee Indian. Robeson County is consistent with earlier hypotheses regarding elevated totals of provisional ballots given the lack of education and income that is typically associated with communities with large minority

populations. According to the U.S. Census Bureau, in 2008 the median household income was roughly $31,000 per year, well below the state average (~$43,000). The percentage of the population with a Bachelor's degree or higher is only 11%, again, well below the state average (25%). This combination of elevated minority populations, low median household income and low educational attainment often leads to a population that is less civic minded and less involved in local government.

As discussed earlier, the existence of a college or university can also often lead to elevated provisional ballot totals. The University of North Carolina at Pembroke is located in Robeson County and is home to nearly 7,000 students, 60% of which are "minorities". In 2008, roughly 5,000 of the 7,000 students came from other counties within the state, adding to an already sizable "at-risk" population regarding voter registration.

Buncombe, Gaston, Guilford and Union counties are jurisdictions that rank in the top ten in population and voter registration totals but do not appear in the top-ten in terms of provisional ballots cast. (Table 4) Each are relatively urban counties with populations near or greater than 200,000. However, the socio-demographic profiles of each of the counties in Table 4 are very different. Minority populations range from 40% in Guilford County to only 10% in Buncombe County. The median household income in each county is above average for the state, but varies from $62,478 in Union County to $43,805 in Buncombe County.

Table 4. Provisional Ballot Totals for Counties Ranked in the Top-Ten in Population and Voter Registration

County	# of Provisional Ballots	*Provisional Ballot Rank*	State Population Rank	State Voter Registration Rank
Gaston	1048	***12***	9	9
Guilford	1039	***13***	3	3
Buncombe	993	***14***	7	7
Union	837	***19***	10	10

The educational attainment level is similarly varied, ranging from 30 % of the population in Guilford County possessing a Bachelor's degree or higher to only 10% of the population in Gaston County. Transportation networks, physical geographies, and migration rate data all further support the notion that this group of counties has little in common. It is theorized that the reasons each of the counties cast a disproportionally low number of provisional ballots is partly because they practice superior administrative procedures in conducting elections. These procedures include; an increased number of full-time election staff, which often helps in alleviating registration discrepancies; the use of electronic poll books, which provides poll workers access to additional information regarding voter registration; and conducting regular voter registration list maintenance.

Although it is difficult to fully explain why certain counties generate disproportionately high provisional ballot totals it is easier to explain low provisional ballot totals by county. Three of the six lowest counties in terms of provisional ballot totals are, Alleghany (20), Polk (21), and Graham (32), they each fit the traditional model of a rural mountain community. Each of these counties consists of populations of less than 20,000 people with over 95% of the population classified as Caucasian. The

economies are centered on manufacturing, agriculture, and tourism, in-migration is extremely low and education and income levels are consistent with the state average, and below those of the more urban counties. By contrast, Tyrell (22), Gates (29), and Hyde (37) counties in the Northeast part of the state also generated low provisional totals although the physical geographies of these coastal plain counties are very different from the mountain counties. That said, the populations of these counties are all below 12,000 people, education and income levels are similar to those in the mountain counties and well below state averages. According to IRS.gov, Tyrell County ranks 100th in in-migration, followed by Hyde County 99th and Gates County 95th. The racial composition of these coastal plain counties is very different from the majority Caucasian mountain counties, where on average each county in the coastal plain is less than 65% Caucasian. Consequently, race seems to play less of a role in explaining how provisional ballot totals are distributed. Instead, low provisional ballot totals seem to largely reflect the low total populations in each of these counties.

These initial observations illustrate the importance of developing a more comprehensive understanding of the spatial factors influencing provisional ballot totals. It was theorized that an analysis of absolute provisional ballots total might simply mimic population and voter registration population statistics, yet what has been found is that a complicated mix of socio-demographic, geographic and economic factors can influence the spatial distribution of provisional ballots. Although, these general interpretations are preliminary and fundamental, they are a first step in working towards and gaining a better understanding of the geography of provisional ballots in North Carolina.

4.2 Spatial Distribution of Provisional Ballots per 1000 Total Ballots Cast

An analysis of absolute provisional ballot totals by county has allowed us to identify general spatial patterns and the possible socio-demographic causes of these patterns. However, this does not help in determining if the spatial distribution of these ballots is equitable relative to the population densities of each county.

In conducting an analysis of provisional ballots per capita, a question arises as to what measure should be used in the analysis. A number of population measures exist including; total population (total number of people living in the county), registered voter population (the number of people that have successfully registered to vote), vote-eligible population (the number of people that fulfill all the requirements to register to vote but may or may not have registered) or the voting-age population (the number of people in each county over 18 years old). Additionally, difficulty arises from the very nature of a provisional ballot and the procedures prescribed for the issuance of such a ballot. In North Carolina, a provisional ballot is to be issued to any voter that believes he or she should be eligible to vote or simply wishes to vote and requests the ballot. The ambiguity that exists in issuing provisional ballots adds an additional level of complexity in conducting an analysis on the geography of the provisional ballots. A common misconception in conducting an analysis of this type is that only registered voters that have problems with their registration cast provisional ballots. In reality, registered voters and non-registered voters, residents of the county and non-residents of a particular county, and citizens and non-citizens all cast provisional ballots. Based on this uncertainty, the research opted to use the total ballots cast at the normalized measure.

Total ballot cast not only highlights the impact provisional ballots had on the final outcome, also encompasses each of the population measures discussed above. Overall, the spatial distribution of provisional ballots cast per 1000 total ballots cast yields very different results compared to the spatial distribution of absolute provisional ballot totals (Figure 2). Robeson County (50.66), Bertie County (38.75) and Halifax County (30.00) cast the highest number of provisional ballots per 1000 total ballots cast and were the only three counties in the highest classification in Figure 2. These initial observations add to the already complex analysis of provisional ballots. Whereas the absolute provisional ballots totals illustrated in Figure 1 were initially explained by population centers such as Raleigh and Charlotte, the spatial distribution displayed in Figure 2 needs a more thorough investigation and subsequent explanation. Throughout these initial observations, Robeson County has been well profiled, a rural county of less than 100,000 people, located in the southeastern Coastal Plain. Robeson County's most telling characteristic is that it is one of the 10% of counties in the United States with a minority majority population; sixty-four percent of the population is classified as minority. Although each of these counties initially appear very similar, in many ways they are each very different. In 2008, Bertie County was the least populated of the three, as well as the most sparsely populated. Bertie County had a population density of roughly 28 people/square mile, well below Halifax County (75 people/square mile) and significantly more sparsely populated than Robeson County that has a density of nearly 120 people/square mile.

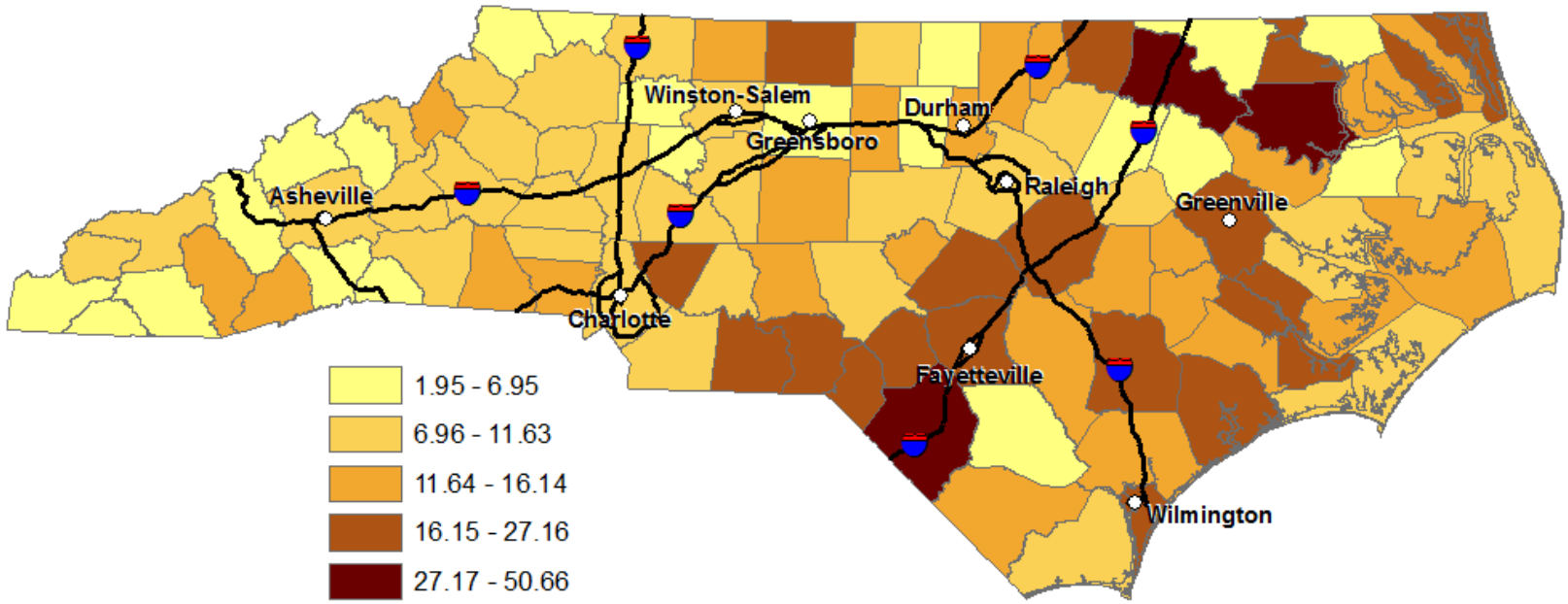

Figure 2. Provisional Ballots Cast per 1000 Total Ballots Cast by North Carolina County for the 2008 Presidential Election

According to the Bertie County Economic Development Strategy (2008), the county's economy is dependent on forest production and agriculture, primarily cotton and tobacco. Additionally, an emerging livestock and poultry industry has developed. This dependence on forestry and agriculture has been under continuous pressure from regional environmental groups and animal rights organizations. The pressure received from these groups, in addition to the lack of workforce preparedness has hindered economic development. The 2008 economic development strategy also cited that the limited number of programs in the academic system and low per capita expenditures per student have stalled further development. Bertie County is one of the least educated counties in the state where only 63.5 % of the population graduates from high school, the second lowest percentage in the state, well below the state average of 73%. Not surprisingly, only 8.8% of the population possesses a bachelor's degree or higher, again one of the worst percentages in the state, ranking it 96th out of 100 counties. These low levels of educational attainment combined with an industry based in agriculture and forestry lead to median household incomes well below the state average. The median household income in Bertie County in 2008 was $31,375; again well below the state average, ranking it the fourth poorest county in the state.

Geographically located to the west of Bertie County, Halifax County again boasts a minority population of 58%, of largely African Americans. According to the North Carolina Wildlife Commission, Halifax County is always ranked 1st or 2nd in the number of harvested white-tail deer. Although Interstate 95 divides the county, it remains predominately-agrarian community. The median household income ($31,495) ranks it as

the third poorest county in the state. The educational attainment is also ranked along the bottom, only 65% of the population graduated from high school (97^{th}) and only 11% possess a bachelor's degree or higher (76^{th}). The socio-demographic profile of Bertie and Halifax closely resembles that of Robeson County and further supports the basic hypothesis that less educated, less affluent, counties with larger concentrations of minority populations will cast more provisional ballots than those counties with higher educated, more affluent, predominately white populations.

Figure 2 clearly illustrates the importance of conducting a per capita analysis of provisional ballots. When provisional ballot totals are normalized against the total ballots cast in each county a very different and very distinct spatial distribution emerges. Table 5 ranks the top-ten counties according to the number of provisional ballots cast per 1000 total ballots cast and compares these totals with the total voting age populations. This table seems to provide additional evidence to suggest that a number of rural counties are casting disproportionately high number of provisional ballots, dispelling earlier theories about these rural jurisdictions. Of the ten counties listed in Table 5, only Cumberland County ranks in the top-ten, whereas each of the remaining counties ranks outside of the top-twenty.

Additionally, the total number of provisional ballots cast for each county also contradicts many assumptions made regarding the spatial distribution of provisional ballots. Only two of the counties, Cumberland and Robeson, rank in the top-ten in absolute provisional ballots cast.

Table 5. Top-Ten North Carolina Counties Ranked by Provisional Ballots Cast per 1000 Total Ballots Cast

County	Provisional Ballot Cast/ 1000 Total Ballots Cast	Voting Age Population	County Rank of Voting Age Population	Total Provisional Ballots	Total Provisional Ballot Rank
Robeson	50.6	93,746	22	2,097	4
Bertie	38.8	15,060	84	383	37
Halifax	30.0	42,016	48	759	20
Harnett	27.2	82,296	24	1,114	11
Hoke	26.5	30,046	61	416	32
Anson	26.4	19,602	74	286	55
Rockingham	26.5	71,731	29	960	16
Duplin	22.3	39,517	52	447	28
Cumberland	21.9	226,061	5	2,848	3
Craven	21.5	71,917	28	973	15

Further analysis of Table 5 seems to suggest that socio-demographic factors are driving these elevated densities. Of the ten counties listed in Table 5, five counties; Robeson (64%), Bertie (64%), Halifax (58%) and Anson (50%) are composed of minority majority populations. Both Figure 1 and Figure 2 appear to suggest that a correlation exists between provisional ballots and the percent of the population that is classified as minority.

The county profile of Anson County is very similar to that of Bertie, Robeson, and Halifax counties. The median household income in Anson County is among the lowest in the state (86^{th}), the percent of the population with a high school diploma (70%) is well below the state average, and it is comprised of one of the lowest percentages of the population with a bachelor's degree or higher (9%), ranking it 95^{th} in the state.

The two counties profiled above, combined with the county profiles conducted earlier on Bertie County and Robeson County, clearly identifies race as a substantial factor in the spatial distribution of provisional ballots per total ballots cast. What is less clear are the factors contributing to the high density of provisional ballot cast in the remaining counties in Table 5 that have yet to be discussed; Harnett (27.2), Hoke (26.5), Rockingham (26.5), Duplin (22.3), and Craven (21.5). Each county has considerable variation in the geographic location, the median household income, level of educational attainment, and racial composition. Based on this array of socio-demographic factors, this research anticipates that the multiple regression analysis will demonstrate that numerous administrative factors are significantly influencing the number of ballots being cast relative to the voting age population. Through the analysis of Figure 2 and Table 5 it became further evident that a complex set of factors contributes to the spatial distribution of both the absolute provisional ballot totals as well as per capita provisional ballot totals. This analysis raises a number of questions; do socio-demographic factors dictate the number of provisional ballots cast or do socio-demographic factors simply dictate the concentration and location of provisional ballots cast? Do administrative variables have a stronger impact on provisional ballots than socio-demographic factors? How does the statistical unit (i.e. County, region, VTD) affect the spatial distribution of provisional ballots?

Analysis of Table 6 raises additional questions about the spatial distribution and possible causes of this distribution. Table 6 ranks the bottom-ten counties regarding provisional ballots cast per 1000 total ballots cast. It is clear that many of the counties in

Table 6 also rank toward the bottom of absolute provisional ballots cast as well as voting age population.

Table 6. Bottom-Ten North Carolina Counties Ranked by Provisional Ballots Cast per 1000 Total Ballots Cast

County	Provisional Ballot Cast/ 1000 total ballots cast	Voting Age Population	County Rank of Voting Age Population	Total Provisional Ballots	Total Provisional Ballot Rank
Polk	1.9	15,496	82	21	99
Henderson	2.6	80,656	26	129	72
Haywood	2.7	45,213	43	77	84
Alleghany	3.7	8,896	94	20	100
Guilford	4.3	360,468	3	1039	13
Person	4.3	28,786	64	81	82
Orange	4.5	102,513	21	337	45
Ashe	4.5	20,674	72	61	89
Bladen	4.7	24,439	70	74	85
Cherokee	5.1	21,321	71	66	86

What is less clear is how the socio-demographic profiles of these counties compare to the counties ranked the highest in Table 5. Examination of the profiles for the counties in Table 6 does not identify any significant patterns in median household income nor educational attainment. Median household incomes vary from "above-average" (Guilford-$47,836), to "average" (Haywood - $39,042), to "below-average"(Bladen – $29,043), the poorest county in the state. This variation makes it difficult to affirm that median household income has an effect on low provisional ballot per capita measures. Moreover, educational attainment varies just as much, where Henderson County ranks 8th in the state for High School graduation rate (89%), whereas Alleghany ranks 85th in state,

yet each cast few provisional ballots relative to their total ballots cast. The percentage of the population with a Bachelor's degree or higher also fluctuates where 30% of the population in Guilford County has a bachelor's degree or higher, ranking it 7th in the state, compared to Person County, where only 10% of the population possess an advanced degree. Yet in both counties, voters cast fewer than 5.0 provisional ballots per 1000 total ballots cast.

As evident during earlier analysis, Guilford County once again appears to be an outlier; along with Orange County, it is the only other county with a population over 100,000, and the only other county that could be considered urban. It appears that Guilford County is going to serve as an anomaly regarding many of the measures of provisional ballots. What is not yet evident is what administrative procedures are being used in Guilford County to overcome many of the socio-demographic factors that appear to shape the geography of provisional ballots.

The most telling aspect of the socio-demographic profiles conducted in the counties in Table 6 is the racial compositions of these counties. Six of the Ten counties are composed of minority populations percentages in the single digits; Ashe (2%) the smallest percentage of minorities in the state, followed by Haywood (3.2%) ranked 6th, Alleghany (3.4%) ranked 7th, Cherokee (5.0%) ranked 10th, Henderson (5.4%) ranked 13th, and Polk (6.5%) ranked 18th. Additionally, of the nearly thirty counties with non-white population percentages in single digits, only five counties are classified outside of the two lowest classifications on Figure 2. This suggests that the majority of the counties provisional ballots concentrations of less than 11.6 ballots per 1000 total ballots cast are

composed of populations that are over 90% white. Furthermore, of the remaining four counties in Table 6, each is composed of minority percentages below forty-percent, Orange (21.7%), Person (27.8%), Guilford (37.3%), and Bladen (39.6%). It is obvious that the racial composition, more specifically, the percentage of non-white persons has a major influence on the concentration of provisional ballots relative to the voting age population.

The combination of Table 5 and Table 6 again supports the earlier hypothesis that emphasizes the importance of race as a significant factor in the shaping the geography of provisional ballots. Although many of these initial assertions have been made from simple observations of thematic maps they are backed with substantial statistical support. It is entirely possible that counties with racial compositions that are overwhelming Caucasian are at less risk regarding provisional ballots, conversely counties with minority-majority populations are at increased risk regarding provisional ballots regardless of their population. In an attempt to support many of these assertions, the next phase of the analysis is to conduct a comprehensive stepwise regression analysis on the number of provisional ballots cast per 1000 total ballots cast.

4.2.1 Stepwise Regression Analysis

This purpose of this dissertation is to conduct one of the first comprehensive analyses of the spatial distribution of provisional ballots cast in North Carolina for the 2008 Presidential Election. A stepwise regression analysis was conducted based on its ability to sift through a large number of independent variables by continuously adding

and removing variables in order to achieve the most parsimonious and rigorous solution. The SPSS version 20.0 stepwise regression analysis utilized an algorithm that automatically adds variables and subtracts variables based on what variable most significantly enhances the final regression. This process continuously repeats through each of the independent variables until no variable in the group enhances the model.

Two important components of understanding and interpreting a stepwise regression analysis are the R-square value and the B coefficient. By definition, the R-square value equals 1 minus the ratio of residual variability, in other words, when the residual values around a regression line are small relative to the overall variability then the predictions of the regression equation are good. For example, an R-squared value of 1.0 means that the equation can perfectly predict the value of the dependent variable so as the R-squared value increases, the predictability of the dependent variable also increases.

Conversely, the B coefficient or unstandardized regression coefficient refers to the influence of each independent variable on the dependent variable. In any regression analysis, the B coefficient denotes the amount of change in the dependent variable associated with a one-unit change in the relevant independent variable.

4.2.2 Regression Diagnostics

The first step when conducting a regression analysis is to examine the distribution of variables to determine if any non-normally distributed variables exists. It is imperative to make sure that the dependent variable (provisional ballots cast per 1000 ballots cast) has a linear relationship with the independent variables and is normally distributed, since

without verifying this distribution, many of the results of the regression analysis may be misleading.

This dissertation used a histogram and a quantile probability plot to analyze the normality of the dependent variable. A histogram is a fundamental graphic representation showing the distribution of the dependent data. The histogram below appears to illustrate that provisional ballots cast per 1000 total ballots cast is only slightly non-normally distributed, indicating a skewness value of 1.9. (Figure 3) This research suggests that this skewness is a result of two outlier data points, which will be discussed later in the diagnostic analysis.

A quantile probability plot is also a graphic representation for comparing two probability distributions by plotting their quantiles against one another. A normal Q-Q plot compares randomly generated "expected" normal data on the y-axis to the "observed" data on the x-axis. The arched shape illustrated in Q-Q plot below, indicates that the observed values, along the x-axis, have heavier tails than the expected normal values on the y-axis. (Figure 4) The observation of the Q-Q plot is consistent with earlier observations of the histogram, the heavier tails illustrated in the Q-Q plot are once again attributed to the outliers observed in the data.

4.2.3 Outlier Diagnostics

Outliers are defined as an observation of a specific data point that is numerically distant from the rest of the data. Statistically, there are two types of outliers, univariate and multivariate.

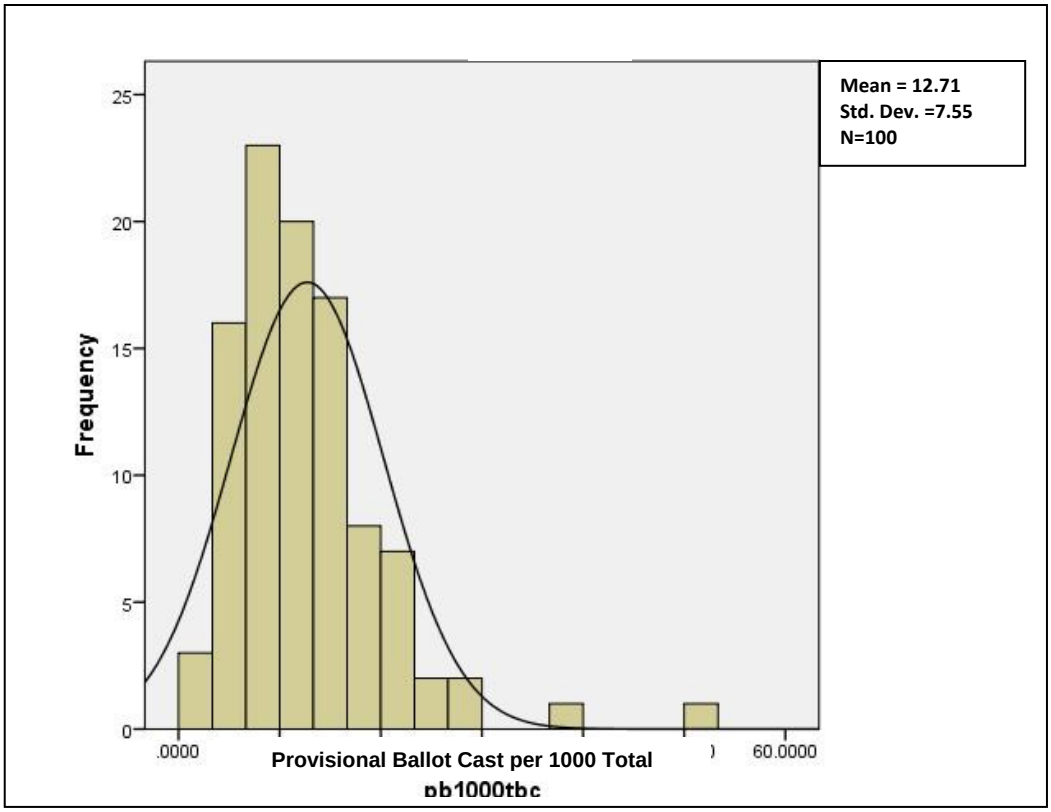

Figure 3. Histogram of Provisional Ballots Cast per 1000 Total Ballots Cast

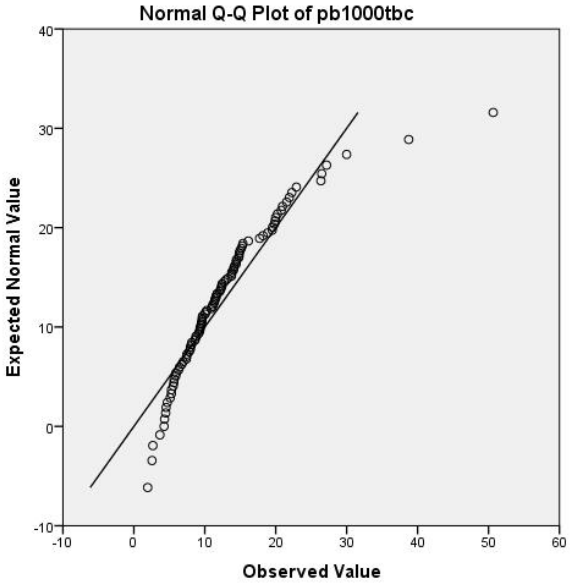

Figure 4. Q-Q Plot For Provisional Ballots Cast per 1000 Total Ballots Cast

Univariate outliers are cases that have unusual values for a single variable, whereas multivariate outliers are cases that have an unusual combination of values for a number of variables. In this analysis, we will be concerned simply with univariate outliers for the dependent variable (provisional ballots per 1000 total ballots cast). An important step in assessing the rigor of the regression analysis, is to identify unusual observations that are considerably different from all other observations and determine if these observations make a significant difference of the regression analysis. In SPSS version 20.0, one-way to identify univariate outliers is to convert all of the scores for a variable to standard scores. If the sample size is larger than 80 observations, it is considered an outlier if its standard score is greater than or equal to 3.0. The results of the standard score conversion indicated that Robeson County and Bertie County were each identified as univariate outliers regarding the dependent variable, and each of these county's data sets has the potential to substantively influence the regression equation.

4.2.4 Multicollinearity Diagnostics

In addition to testing for linearity, multicollinearity is another concern that needs to be addressed when performing regression analysis. When independent variables are too highly correlated minor changes to the model often result in irregular changes to the independent variables. It is important to note that multicollineariity does not always reduce the predictive power of the regression analysis; it simply affects the calculations and interpretations of the independent variables that are correlated. Using the statistical software (SPSS version 20.0) a number of collinearity statistics were used, including

tolerance, variance inflation factor (VIF), and the condition index. According to the existing literature (Norusis, 2002), when tolerance is close to 0, specifically less than 0.1, there is a high multicollinearity of that variable with other independents and the B coefficients will be unstable. According to Rogerson (2006), a VIF exceeding 5 indicates a probability of high levels of multicollinearity and instability in the B coefficients. Furthermore, multicollinearity can also be assessed by analyzing the condition index. According to Rawlings et al. (1998), a condition index over 30 suggests high levels of multicollinearity between the independent variables. Diagnostics of the current model suggests that multicollinearity is low and almost nonexistent. The variance inflation factor of each independent variable is below 1.26 and the tolerances are all above 0.778. With the exception of the fifth variable, each of the condition indexes for the remaining variables is below 12.0. The condition index of the fifth variable, is 54.97, well above the recommended limit of 30, indicating that percent of the population 65 years old and older is closely related with another independent variable. Using Spearman correlation coefficient, this analysis found that low to moderate correlation exists between percent of the population 65 year old and a high percentage of the population with a Bachelor's degree or higher.

4.2.5. Normality of Residuals

One of the assumptions of a linear regression analysis is that the residuals are normally distributed. A residual is essentially the observable estimate of an unobservable statistical error. The most basic way to assess residuals is to observe a histogram and a P-

P plot to determine if a normally distributed residual error existed. As discussed earlier the distribution of the histogram suggests a small amount of positive skew, but we also observed a relatively symmetrical, single peak distribution. Furthermore, the P-P plot below indicates that the residuals have a relatively normal distribution along the line of best fit. (Figure 5) The combination of the histogram and the P-P support a relatively normal distribution of residuals for the regression analysis.

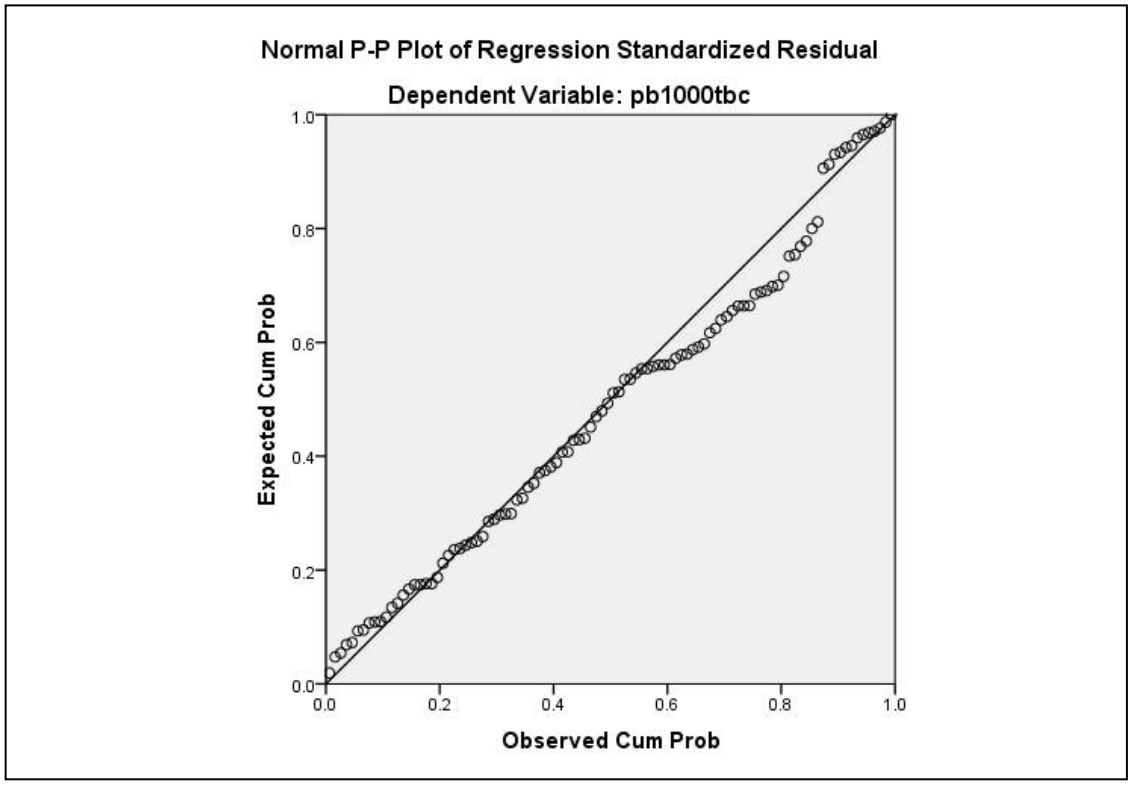

Figure 5. P-P Plot for Provisional Ballots Cast per 1000 Total Ballots Cast

4.2.6 Homogeneity of Variance (Homoscedasticity)

According to the literature, another assumption of regression is the variance of the residuals; this variance should be homogeneous across all levels of the predicted values,

also known as homoscedasticity. If residuals are non-constant then the residual variance is said to be 'heteroscedastic'. A visual examination of the residual plot below, indicates that most of the residuals are in a horizontal band around 0, indicating homogeneity of variance. (Figure 6)

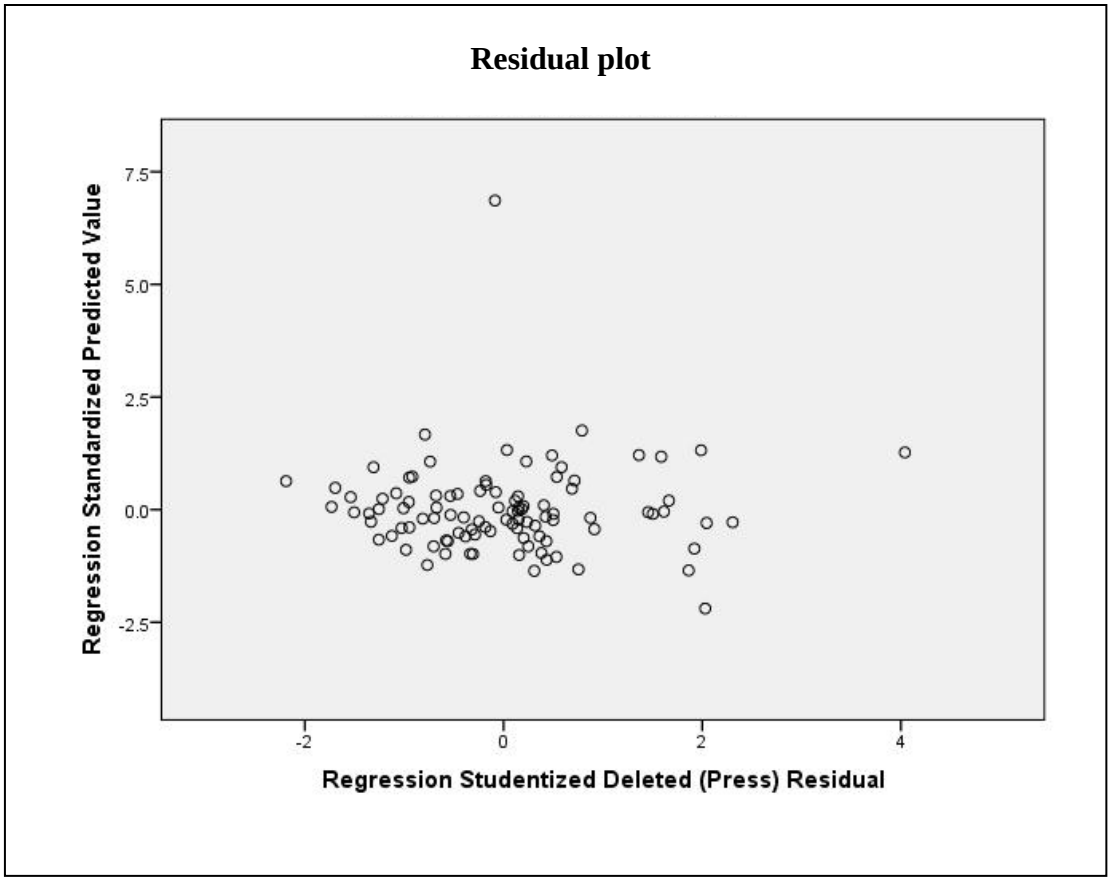

Figure 6. Residual plot of Provisional Ballots Cast per 1000 Total Ballots Cast

4.2.7 Regression Interpretation

The summary of the results of the regression analysis indicate that five independent (predictor) variables are key factors in shaping the spatial distribution of provisional ballots in North Carolina. The R-square value of the model is 0.47 (Table 7),

suggesting that 47% of the variation in provisional ballots cast can be explained by percent white population, percent Native American population, percent aged 45-64 years old, percent with a bachelor's degree or higher, and percent aged 65 years old and older. The F-score, which measures the overall accuracy of the equation, was 16.49, with a p-value of 0.00, indicating the regression analysis is significant at the 1 % level.

Table 7. Model Summary of Provisional Ballots Cast per 1000 Total Ballots Cast By North Carolina County, 2008

	Independent Variable	R Square	Adjusted R Square	Std. Error of the Estimate
1	-% White Population	0.260	0.253	6.52
2	-% White Population -% Native American Population	0.351	0.338	6.14
3	-% White Population -% Native American Population -% between 45-64 years old	0.401	0.382	5.93
4	-% White Population -% Native American Population -% between 45-64 years old -% with Bachelor's Degree or higher	0.438	0.414	5.78
5	-% White Population -% Native American Population -% between 45-64 years old -% with Bachelor's Degree or higher -% 65 and older	0.467	0.439	5.65

Table 8 illustrates the specific effect each of the independent variables had on provisional ballots per county while the following section will analyze the specific impact of each variable on the geography of provisional ballots in North Carolina.

Table 8. Final Regression Model of Provisional Ballots Cast per 1000 Total Ballots Cast by North Carolina County, 2008

Variables	Unstandardized Coefficients		Standardized Coefficients	t	p-value
		Std. Error			
Constant	63.84	10.4		6.121	0.000
White Population (%)	-0.151	0.038	-0.342	-4.01	0.000
Native American Population (%)	0.431	0.123	0.277	3.51	0.001
Population between 45-64 years old (%)	-0.864	0.282	-0.253	-3.07	0.003
Population with a Bachelor's Degree or Higher (%)	-0.228	0.074	-0.260	-3.07	0.003
Population between 65 and older (%)	-0.331	0.145	-0.195	-2.28	0.025

$$\boldsymbol{PB} = 63.84 - 0.15\ \boldsymbol{WP} + 0.43\ \boldsymbol{NA} - 0.86\ \boldsymbol{MA} - 0.23\ \boldsymbol{BA} - 0.33\ \boldsymbol{ELD}$$

Where,

PB = Provisional Ballots per 1000 Total Ballots Cast

WP = White Population (%)

NA = Native American Population (%)

MA = 45-64 years old (%)

BA = Bachelor's Degree or Higher (%)

ELD = 65 and older (%)

4.2.8 Percent White Population

The first variable to enter the regression analysis was the percent white population by county. The relationship between it and the number of provisional ballots cast per 1000 total ballots cast was inverse, indicating that if the percent white population

increases by one percentage point, then the provisional ballots per 1000 will decrease by 0.151. This relationship suggests that the "whiter" a county becomes the fewer provisional ballots will be cast, supporting many of the initial hypotheses that suggested a connection existed between provisional ballots and racial composition. Furthermore, the inverse relationship appears to highlight the importance of gaining a comprehensive understanding of the history of suffrage regarding specific races, suggesting that populations with a well-established history of voting rights may experience fewer barriers regarding the electoral process, and thus cast fewer provisional ballots.

According to the U.S. Census Bureau, between 2004 and 2008, the Caucasian population in North Carolina, grew by nearly 8%, or more than 487,000. The total non-white population or minority population grew by nearly the same amount in absolute terms, roughly 464,000 people, but leading to a 20% increase from 2004. This indicates that the non-white population is growing at a greater rate than that of the Caucasian population. This trend is not only taking place in North Carolina, but also the entire nation, as immigration, both legal and illegal, continues to increase. Consequently, the proportion of the white population will continue to shrink, suggesting that more provisional ballots will be cast over time, all other things being equal.

As much of the literature has suggested, the geography and demography of North Carolina is becoming increasingly complex. Studies of North Carolina often show-interesting patterns in which the ethnic and electoral geography of the population emulates the three physical geographic regions that included, the Mountains, the Piedmont and the Coastal Plain. Luebke (1998), who suggested the Mountains could be

classified as a traditionalist culture where the people embrace small town life grounded in evangelical Christian values, offered one of these theories. As Figure 7 clearly illustrates, this region lacks racial diversity, with each county having Caucasian populations above 80%. By contrast, Luebke (1998) classified the Coastal Plain as traditionalist, embracing careers dedicated to serving the country and rooted in the farming industries of the past, such as tobacco and cotton production. The Coastal Plain contains a number of "majority-minority" counties such as Robeson, Bertie, Halifax, and Hertford, each with Caucasian populations below 40%. Based on these regional profiles we would expect to find elevated provisional ballot rates in the Coastal Plain, specifically those counties with "minority-majorities" relative to the less diverse Appalachian region.

As was discussed earlier, counties with large relative and absolute white populations can serve as a surrogate for many other socio-economic variables such as education, income, poverty, etc. that are often key components in influencing voter participation and election turnout. That said the Spearman rank correlation coefficient between percent white population and high school graduation rate was only 0.24, and only slightly higher when measuring the relationship between percent white and percent bachelor's degree or higher (0.34). However, each of these correlations was found to be significant at the 1% level. Similarly, the correlation coefficient between percent white population and median household income was only 0.27, but was again significant at the 1% level.

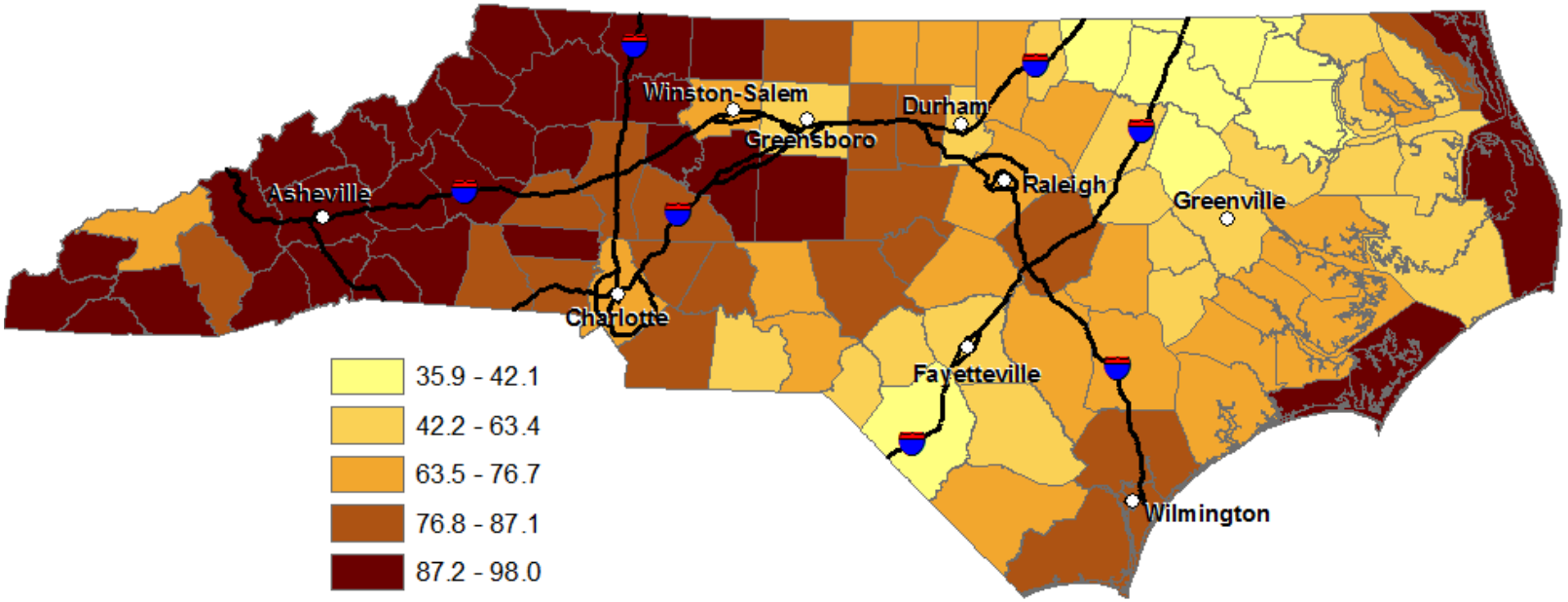

Figure 7. Percent White Population by North Carolina County -2008

Further analysis found that the highest positive correlation was that between percent white population and homeownership rate (0.51), while a moderately to strong negative correlation existed between the percent white and the percent of the population below the poverty line (-0.47). Once again, each of these correlations was significant at the 1% level.

The literature suggests that jurisdictions with higher educated populations are more involved in the community, more informed and have more time for civic-minded activities, such as voting. In turn, this civic-mindedness leads to a better understanding of the policies and procedures that govern the voting process including; voting at your assigned precinct, changing your address 30-days prior to Election Day, what districts you are eligible for, etc. Additionally, populations with lower median household incomes often have limited access to transportation and information, and often find themselves asking if it is really worth their time and effort to not only get registered, but to travel to a voting site that frequently is difficult to reach without private transportation. Table 9 not only demonstrates the linkages that exist between many of these socio-demographic measures and racial composition and it also supports the spatial distribution illustrated in Figure 7, since each of the ten leading counties regarding percent white are located in Luebke's (1998) Mountain region.

Table 9. Top-Ten North Carolina Counties Ranked by Percent White

County	Percent Caucasian Population	Percent of Population with High School Degree	Percent of Population with Bachelor's Degree or Higher	Median Household Income	Home-owner-ship Rate	Percent of the Population below the Poverty Line
Ashe	98.0	75.8	16.5	$35,689	78.8	18.2
Clay	97.6	81.3	20.0	$38,049	82.2	16.9
Yancey	97.4	78.3	15.7	$35,707	78.4	17.8
Mitchell	97.1	75.3	14.6	$35,195	75.2	18.3
Madison	97.1	75.5	19.4	$38,077	75.1	19.3
Haywood	96.8	83.4	20.3	$39,042	75.7	15.2
Alleghany	96.6	68.4	16.5	$33,824	75.3	19.3
Macon	96.3	83.9	19.5	$38,989	78	18.8
Watauga	95.8	86.1	34.9	$39,490	56.5	21.2
Cherokee	95.0	81.5	14.9	$33,645	81.6	17.8
Top 10 Average	***96.7***	***78.9***	***19.2***	***$36,707***	***75.6***	***18.2***
State Average	***73.8***	***79.5***	***18.4***	***$41,807***	***71.8***	***18.3***

By contrast, the majority of the counties ranking in the bottom-ten (Table 10) are all located in the Coastal Plain. Not only do the geographies of the top-ten and bottom ten differ greatly, but the education and income levels illustrate further the geographic disparities that exist. Excluding median household income, each of the education and income measures displayed for the counties in the top-ten are consistent with the state averages. The below average median household income found in Table 10, is attributed to the lower cost of living found in the more rural counties.

Table 10. Bottom-Ten North Carolina Counties Ranked by Percent White

County	Percent Caucasian Population	Percent of Population with High School Degree	Percent of Population with Bachelor's Degree or Higher	Median Household Income	Home-owner-ship Rate	Percent of the Population below the Poverty Line
Scotland	49.4	75.3	15.2	$33,364	64.7	29.6
Vance	48.8	72.2	11.5	$34,093	66.9	32.3
Washington	48.1	75.7	11.5	$34,027	70.2	23.3
Edgecombe	42.1	75.3	9.9	$33,346	60.3	25.7
Halifax	41.2	73.5	11.7	$31,495	65.4	26.8
Northampton	40.9	69.2	12.8	$31,054	73.9	24.9
Warren	40.6	73.5	13.0	$33,632	78.8	26.1
Hertford	36.0	74.3	14.9	$34,131	65.8	24.9
Bertie	35.9	72.2	9.6	$31,375	73.8	24.3
Robeson	35.9	68.8	12.7	$31,499	67.8	31.1
Bottom-10 Average	***41.9***	***73.0***	***12.2***	***$32,801***	***68.7***	***26.9***
State Average	***73.8***	***79.5***	***18.4***	***$41,807***	***71.8***	***18.3***

Conversely, the education and income measures for the bottom-ten counties all fall well below the state averages. Similarly, the bottom-ten counties are all above the state average regarding percent of the population below the poverty level.

One of the most revealing statistics in both Table 9 and Table 10 is the homeownership rates of the respective populations. On average, nearly 76% of the population in the ten counties with the highest percent white population in North Carolina owns their home, well above the state average of 72%. Homeownership has a major impact on the number of provisional ballots cast due to the stability homeownership entails regarding voter registration. Earlier discussion has raised questions about the

affect mobility and migration rates have had on provisional ballots. According to the NC State Board of Elections (2009), residential address discrepancies are one of the biggest causes of large numbers of provisional ballots being issued. Mobility and migration not only imply a physical relocation between states or counties, they also refer to relocations that take place within a given county. Often times in-county relocations can generate more provisional ballots than do relocations from other counties or states. In many instances, voters that are registered in a specific county think their registration is permanent even if they relocate within a county resulting in discrepancies regarding a voter's permanent address that can lead to the need for a provisional ballot. It is entirely possible that the elevated homeownership rate found in predominately-white counties is one of the underlying causes of the inverse relationship between percent white population and the number of provisional ballots cast per 1000 total ballots cast.

The analysis of the white population in North Carolina, also accentuates the variation that exists regarding the spatial distribution of voter registration rates across the state. The literature has suggested (Cox, 1969), that your "friends and neighbors" often contribute to shaping your political ideology and level of civic participation. A detailed examination of the white voter registration rates across the state appears to support this theory. The average registration rate for white populations in North Carolina is 66 %. The average voter registration rate for white populations in the counties with the highest percentages of white's (Table 9) is roughly 70%, above the state average. Conversely, the average voter registration rate for white populations in the counties with lower percentages of white's (Table 10) is only 64%, below the state average. This analysis

suggests that the varying registration rates among white populations throughout the state may be a function of the white population's percentage within an individual county. We have seen, throughout the research, how civic participation is often a product of racial composition, educational attainment, income, etc. It appears that electoral participation may be more strongly influenced by a "culture of civic participation," or a lack thereof, rather than simply a function of racial composition.

4.2.9 Percent Native American Population

One of the initial hypotheses of this research was that a county's racial composition influenced the number of provisional ballots cast by county. The regression analysis of provisional ballots cast per 1000 total ballots cast seems to support this basic hypothesis, since the first variable to enter the equation was percent white and the second independent variable to enter the regression was percent Native American population in each county. As discussed earlier, the coefficient of an independent variable is the amount of change in provisional ballots per 1000 total ballots cast based on a one unit change in the independent variable. The relationship between the percent Native American population and the number of provisional ballots cast per 1000 total ballots cast is positive. This regression coefficient indicates that as the percent Native American population increases by 1 percent the number of provisional ballots cast per 1000 total ballots cast will increase by 0.431.

According to the U.S. Census Bureau, between 2004 and 2008, the total Native American population in North Carolina increased by roughly 10,000 or 8.5%. If North

Carolina experiences a similar increase between 2008 and 2012, and all other things are equal, the regression coefficient (0.431) indicates that this increase would result in an additional 3.4 provisional ballots cast per 1000 total ballots cast. The average provisional ballot rate per 1000 total ballots cast, in North Carolina, was 12.01. If this rate were to increase by 3.4 provisional ballots per 1000, it would result in a new rate of 15.48 provisional ballots per 1000 total ballots cast, or over 14,000 additional ballots cast. It is clear that the regression equation suggests that the percent Native American population not only significantly affects the number of provisional ballots cast, but also has the potential to influence election outcomes at the highest level.

The spatial distribution of the percent Native American population in North Carolina is very distinct. Figure 8 illustrates the concentrations that exist in the southeastern and western part of the state. The Native American populations found in each of these clusters account for nearly 60% of the total Native American population in the state. In 2008, nearly three-quarters of the total Native American population was concentrated in just eight counties, the majority residing in Robeson County. Robeson County's 48,938 Native Americans represent nearly 42% of the total Native American population in the entire state. The overall Native American population of the 21 leading counties totaled 72,175, over 61% of the total Native American population in North Carolina.

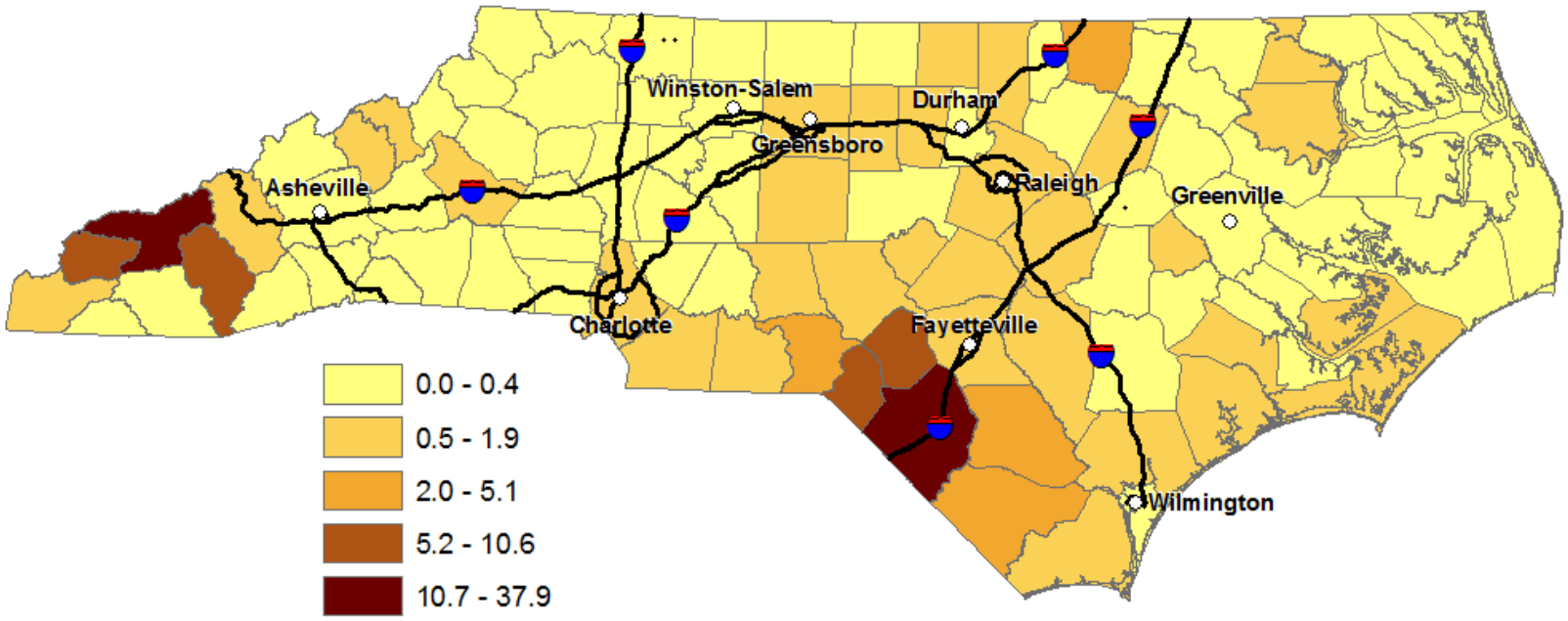

Figure 8. Percent Native American Population by North Carolina County - 2008

Although, on average, Native Americans comprise only 3.5 % of the total population in each of the leading counties. Only five of these 21 counties have Native American population percentages above 1% including Robeson (38%), Scotland (10%), Hoke (9%), Warren (5%) and Richmond (2%), suggesting that these counties, particularly Robeson County, may be a primary driver behind the inclusion of the Native American absolute population total as an independent variable in the regression analysis.

Using ArcGIS version 9.2, a cluster analysis was performed on the absolute Native American population by county, and it was determined that a positive spatial autocorrelation existed in two distinct areas of the state. A group of counties in the southeast comprised of Cumberland, Hoke, Robeson, and Scotland counties, as well as a group of counties in the west that included Swaim and Jackson counties. These findings help support the initial observations that suggested that the spatial distribution of Native American populations was concentrated in specific areas of the state.

Historically, North Carolina was comprised of seven major Native American tribes (Catawba, Cherokee, Creek, Croatan, Tuscarora, Tutelo and Saponi), but the only federally recognized tribe in North Carolina is the Cherokee, although a number of other tribes are recognized by the state. For example, the North Carolina Department of Indian Affairs also recognizes the Coharie tribe, located in Sampson and Harnett Counties, the Haliwa-Saponi tribe, located in Halifax County, the Waccamaw tribe, located in Columbus County, and the Lumbee tribe, located primarily in Robeson County. Although the Cherokee are well known and the only tribe federally recognized, their population pales in comparison to that of the Lumbee tribe. Roughly, 10,000 people,

throughout the state, classify themselves as Cherokee, the majority of them living on the Qualla Boundary territory, located in the western part of the state, specifically the eastern part of Swain county and the northern part of Jackson county. Conversely, nearly 65,000 people classify themselves as members of the Lumbee tribe and are primarily located in Robeson County, although Lumbee Indians also inhabit parts of nearby Cumberland, Hoke, and Scotland Counties, making the southeastern part of North Carolina the most densely populated area of the state regarding Native American populations.

The tension between Native American's and the federal government has been long documented. The "Trail of Tears," experienced by the Cherokee, is only one case of the civil rights abuses endured by this culture. At a local level, the lack of federal recognition for many tribes within North Carolina is another example of the United States government's perceived lack of respect for the culture. The tension that exists between many minorities and the government is at the heart of many of the factors that affect voting rights, and by extension provisional ballots. The American Civil Liberties Union (ACLU) (2009) identified a number of barriers to effective Native American political participation, including a depressed socio-economic status and the lack of enforcement of the Voting Rights Act. The U.S Supreme Court (1986, p.69) has stated "political participation tends to be depressed where minority group members suffer effects of prior discrimination such as inferior education, poor employment opportunities, and low incomes" suggesting a significant correlation exists between civic responsibility/election participation and socio-economic status.

According to the U.S. Census Bureau (2000), the U.S. median household income for Native American families was $33,144, compared to over $55,000 a year for white families. In North Carolina, the median household income of the six counties where more than 5% of the population was Native American is $35,989 well below the state average of $41,807.A similar pattern exists regarding the percentage of the population below the poverty line. On average, 22.8% of the population in these six counties lives below the poverty line ($22,025/yr. for a family of four) compared to only 18% statewide.

The ACLU (2009) cites the lack of enforcement of the Voting Rights Act as a major cause of Native American disenfranchisement. The Voting Rights Act of 1965 was written as an attempt to secure equal voting rights for minorities, especially African-Americans, but it has since be revised to include discrimination regarding all minorities. The act sought to eliminate discriminatory practices used to weaken the voting strength of minorities. Two of the most pervasive practices included redistricting cohesive voting blocks, such as Indian reservations, in an attempt to weaken the strength of the population and requiring potential voters to take poll tests that were only available in English. In 1975 the Voting Rights Act was amended to ensure that all language minorities had access to assistance regarding the electoral process.

Although only 1% of North Carolina's total population is Native American, it is clear that many of the issues discussed above appear relevant when conducting a spatial analysis of the geography of provisional ballots in North Carolina. What is less clear is whether empirical voter registration data regarding Native American populations in North

Carolina support the empirical evidence regarding similar populations throughout the United States.

Table 11 highlights the top-ten counties in North Carolina regarding percent Native American population. Although large absolute populations of Native Americans are found in each of the most populated counties (e.g. Mecklenburg, Wake, Guilford), the majority of the table is comprised of rural counties in the southeast or western part of the state with much smaller total populations.

Table 11. Top-Ten North Carolina Counties Ranked by Percent Native American Population

County	**County Percent Native American Population**	**Percent Native American Registered to Vote**	**Percent White Registered to Vote**	**Percent African American Registered to Vote**	**2008 Voter Turnout**
Robeson	37.9	45.4	49.1	61	59.8
Swain	26.4	41.0	78.6	20.6	60.9
Jackson	10.6	35.6	73.8	50.1	66.1
Scotland	10	28.5	64.4	57.6	65.3
Hoke	9.3	46.6	48.3	65.8	59.1
Graham	7.7	45.8	84.9	2.1	65.9
Warren	5.1	53.9	65.9	70.2	79.3
Columbus	3.3	54.1	66.2	67	67.7
Bladen	2.4	27.6	64.5	69.1	71.3
Richmond	2	28.3	62.8	64.4	65.4
Top-Ten Average	11.5	40.6	65.8	52.7	66.0
Statewide Average	1.5	30.5	68.1	59.2	70.7

In North Carolina, a voter must have resided at his/her address for 30 days prior to Election Day, and his/her voter registration must be submitted 25 days prior to the election. In 2008, on average, roughly 87% of the eligible voters in North Carolina were registered. Statewide, the registration percentages for Native American's was significantly lower, ranging from a low of only 10% in Gates County, to a high of 70% in Washington County. On average 30% of the eligible Native American voters, throughout the state, were registered to vote in 2008. Of the ten counties with the highest percentages of Native Americans, on average, 40% of the eligible Native American voters were registered, above the state average, yet still well below the averages for other races. In contrast, the average statewide registration for African Americans is 59%, well above that of Native Americans, yet still below the 68% of Caucasian voters registered to vote. A lack of voter registration is one of the few reasons cited by the NC State Board of Elections for the issuing a provisional ballot and may be the leading cause of the elevated number of provisional ballots cast in counties with high Native American populations.

Although voter registration is a key element in the administration of elections, voter turnout, also plays a key role in the process. Statewide, an average of 70% of voters turned out for the 2008 Presidential Election, Warren County reported the highest turnout of nearly 80%, whereas Onslow County reported the lowest, just over 58%. Of the ten counties listed in Table 11, average turnout was 66%, noticeably below the state average. What is more evident in the analysis of Table 11 is that the majority of the counties with significant Native American populations ranked in the bottom fifth

regarding voter turnout. Hoke County, which contains the fifth largest population of Native Americans, was ranked 99th in turnout percentage, followed closely by Robeson county (98th), which not only has the highest population of Native Americans but also, generated the highest rates of provisional ballots cast per thousand total ballots cast (50.7) by county.

It is clear that provisional ballots were cast at an inequitably higher rate in counties with significant Native American populations. The Native American populations in many of these counties are not only registered at a rate that is well below the state average, but they also participate in the electoral process at a disproportionally low rate. The data illustrated in Figure 8 and Table 11, not only support many of the conclusions made by the 2009 ACLU report, but point to possible causes for the elevated provisional ballot rates.

4.2.10 Percent 45-64-Year-Old Age Cohort

To this point, the regression analysis has identified two different components of racial composition as key components in shaping the spatial distribution of provisional ballots. The third variable to enter the regression measured the percent of the population between the ages of 45 and 64 years old in each county. Again, the analysis suggested that an inverse relationship existed between percent 45-64 year old and the number of provisional ballots cast per 1000 total ballots cast. The regression coefficient appears to suggest that if the percentage of the population between 45-64 years old increases by one

percentage point then the provisional ballots per 100 total ballots cast would decrease by 0.86.

According to the U.S. Census Bureau, between 2000 and 2010, 45-64 year olds were one of the fastest growing segments of the population across the nation. In North Carolina, between 2008 and 2010, the 45-64 year old segment of the population increased by roughly 64,412 people or nearly 2%. According to the regression analysis, all other things equal, a 2% increase in the 45-64 year old population would result in a decrease of 1.72 provisional ballot per 1000 total ballots cast, or nearly 7,500 ballots statewide, a significant reduction considering the 2008 U.S. Presidential election outcome in North Carolina which was determined by just over 14,000 votes.

This segment of the population is a very distinct group of voters in that those at the young end of the age spectrum were raised during the height of the civil rights movement and the Vietnam War, while those 55 and older would be considered "baby boomers." The more elderly group's attitude toward civic responsibility is very different from many of the attitudes of the relatively younger voters within this age cohort. However, overall, the part of the population aged between 45-64 tends to participate more consistently in the election process. According to the N.C. State Board of Elections (2009), 45-64 year olds are second only to the elderly (65 and older voters), regarding voter turnout. The middle-aged voters (45-64 year olds), tend to have established more roots in a specific community, have raised a family, or are in the process of raising a family and are more concerned with civic-minded responsibilities such as voting.

Initial observations of Figure 9 suggest that these populations also appear to have a unique spatial distribution displaying distinct regional cleavages where 45-64 years olds appear to be concentrated in the northeastern portion of the state, specifically in counties located on the coast. Additional analysis confirms these observations; seven of the top-ten counties with elevated shares of 45-64 year olds are located in the Coastal Plain. In Dare County, over 40% of the population falls in this age range, the highest in the state, whereas Onslow County, also located in the Coastal Plain, reported that only 26% of the population is between the ages of 45-64.

Furthermore, Figure 9 suggests that the population distribution of this age cohort does not follow the traditional urbanization patterns along the I-85/ I-40 corridor. Of the five most populated counties (Mecklenburg, Wake, Guilford, Durham, Forsyth), none contained more than 34.6% of their residents between the age of 45-64. The lack of concentration along the major urban corridor of the state suggests an inverse relationship exists, not only with provisional ballots per 0/00, but also with many of the factors that contribute to creating population density. As the literature has suggested, the most mobile populations are between the ages of 18-25 and 26-44. The general characteristics of these age ranges include young adults moving to attend college or join the military after high school, as well as, young professionals who have recently graduated college or left the military and are pursuing their careers. Conversely, 45-64 year olds and 65 and older populations are the least mobile.

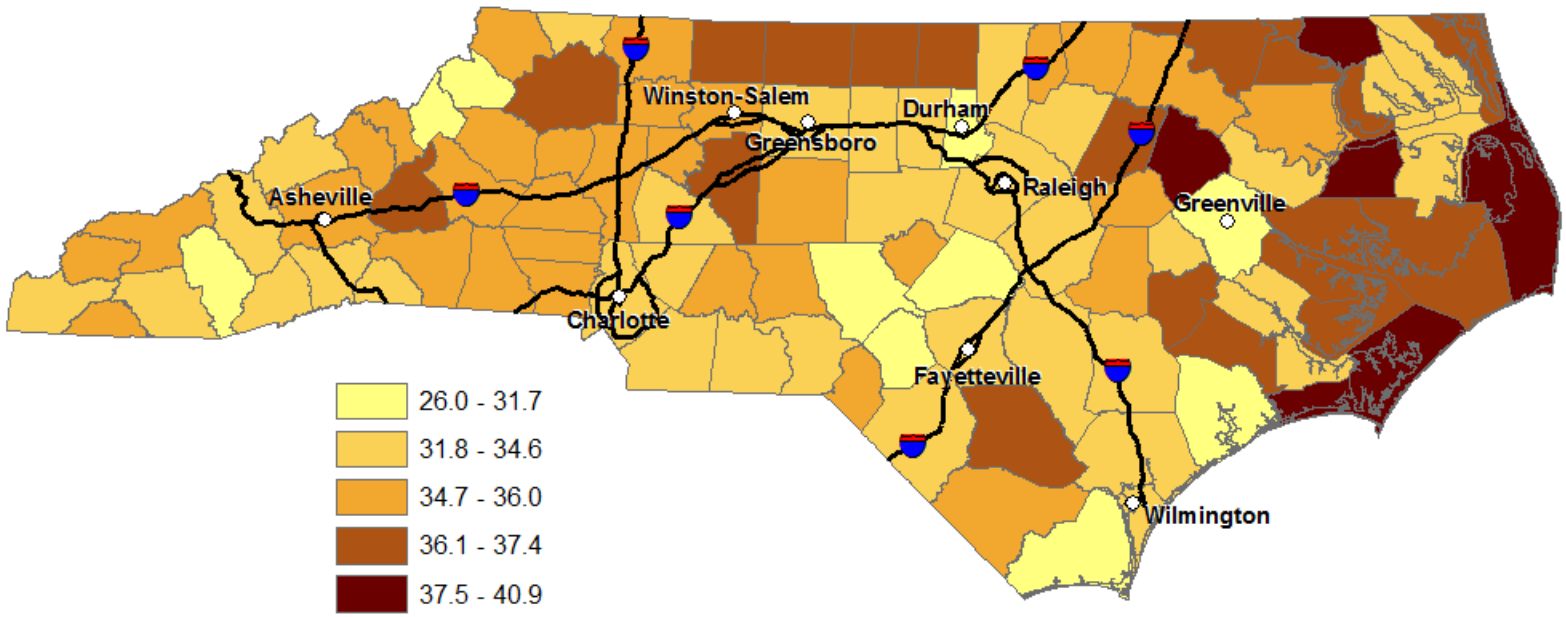

Figure 9. Percent of the Population between 45-64 Year Olds by North Carolina County - 2008

A Geographic Mobility survey, conducted by U.S. Census Bureau (2009), shows that mobility peaks between 22-26 years old and begins to decline as an individual ages, until ages 67-70, where individuals tend to become more mobile. This trends suggests that once the population begins to retire, they also begin to migrate, leaving the 45-64 year old demographic as the least mobile. In theory, this lack of mobility in the 45-64 year old cohort effectively stabilizes the voter registration records, thus reducing the number of provisional ballots issued

Additionally, the twenty-three counties with elevated percentages of 45-64 year olds (Figure 9) rank well below the state averages on many mobility measures. Overall, the 23 counties with a 31.8% or higher of individuals aged between 45-64 years old received roughly 3,000 new voter registration applications in 2008, more than 6,000 fewer than the state average of 9,678 for new registrations per county. Various housing measures, which often serve as a good surrogate indicator for population stability, also support the findings of the regression analysis. Additionally, these 23 counties have above average homeownership percentages, as well as, an above average percentage of families living in the same home for more than a year. Furthermore, the percentage of multi-unit housing in these 23 counties, is well below the state average. For those counties with the higher 45-64 year old shares, all of these factors culminate with a population where 91% of the eligible residents are registered to vote, (above the state average of 87%), and where voter turnout was nearly 2% higher than the state average in 2008. Overall, it seems that the inverse relationship between the percentage of the population between 45-64 years old and provisional ballots per 1000 total ballots cast,

can be attributed, not only, to this group's commitment to civic responsibility, but also to the geographic stability that exists within this age group.

4.2.11 Percent of the Population with a Bachelor's Degree or Higher

The fourth variable to enter the regression model was the percent of the population with a bachelor's degree or higher. The regression coefficient shows that if the percentage of population with a bachelor's degree or higher increases by one percentage point then the provisional ballots per 1000 total ballots cast would decrease by 0.23. Overall, the spatial distribution illustrated in Figure 10 suggests that populations that are more educated live primarily along the I-85/I-40 urban corridor. The geography of this variable appears to mimic that of population density throughout the state, with higher percentages found in the more populated areas and lower percentages in regions that are more rural. Orange County (53%), Wake County (48%), and Durham County (44%) reported the highest percentages of the population with a Bachelor's degree or higher. The large metropolitan areas of North Carolina were well represented in Table 12, which listed the most well educated counties including Charlotte (Mecklenburg County) the Triangle (Wake, Durham, Orange, Chatham Counties), and the Triad (Guilford and Forsyth Counties). These spatial distributions appear to be geographically correlated with the total population distribution, since seven of the counties listed in Table 12 also rank in the top-ten in total population.

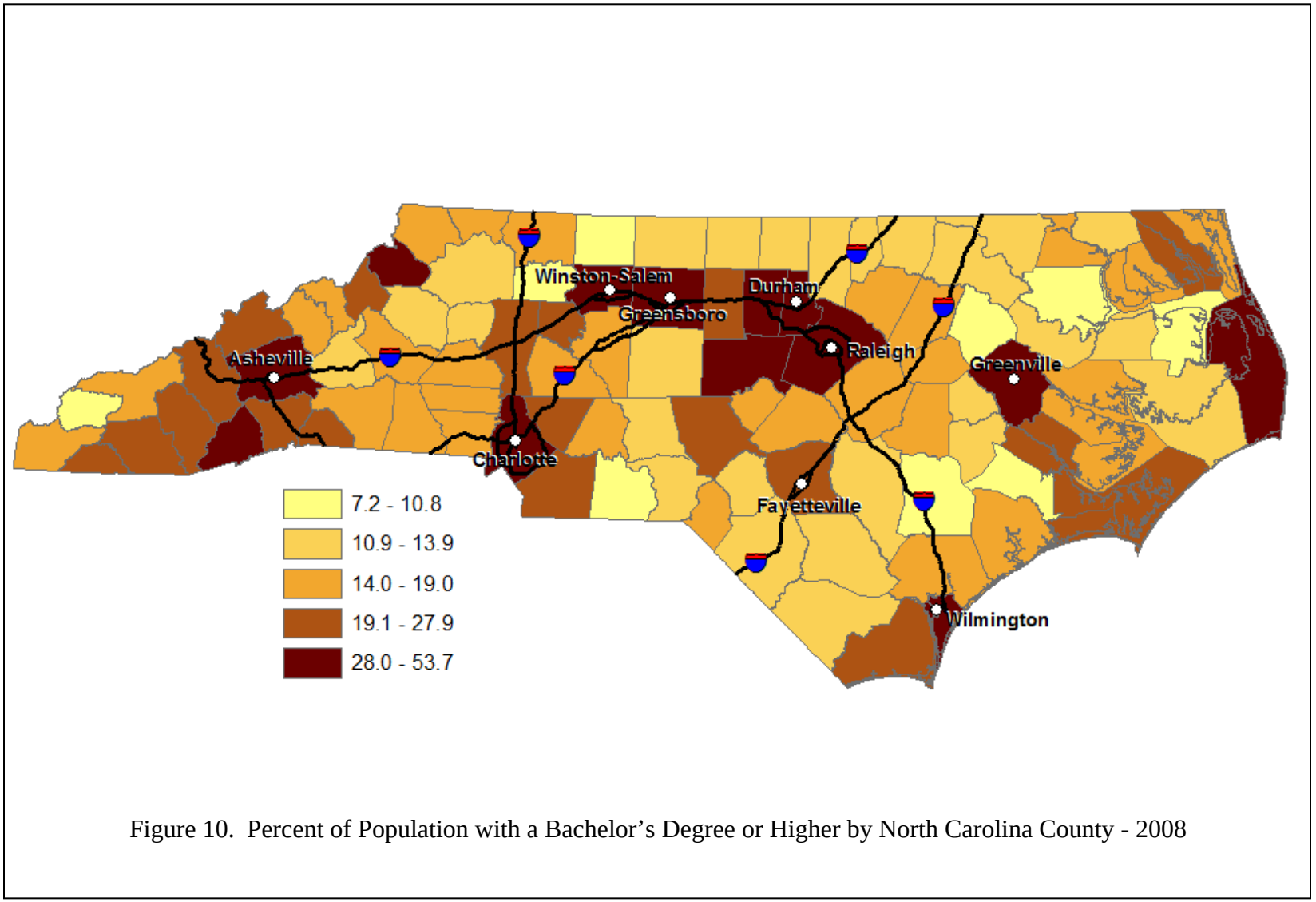

Figure 10. Percent of Population with a Bachelor's Degree or Higher by North Carolina County - 2008

Table 12. Counties with the Highest Percentage of Population with a Bachelor's Degree or Higher

County	Percent of Population with a Bachelor's Degree or Higher
Orange	53.7
Wake	47.5
Durham	44
Mecklenburg	40.5
New Hanover	35.5
Watauga	34.9
Chatham	***33.8***
Guilford	32.2
Dare	***32***
Forsyth	30.8
Buncombe	30.6
Transylvania	***28.9***
Pitt	28.7
Table Average	36.4
State Average	18.4

Although many of the counties in the highest classification are densely populated, a number of counties are not. This raises the question of what other factors may influence the spatial distribution of educational attainment in a county. Each of the counties ranked in the top-ten in total population also contain a college or university. Furthermore, three lesser-populated counties (i.e. Orange, Pitt and Watauga) also contained major institutes of higher education. Exceptions to this rule included Chatham, Dare, and Transylvania Counties. Chatham County's educational attainment level can be attributed to its relative location, as it serves as a bedroom community for "the Triangle" and Research Triangle Park. Conversely, while Transylvania and Dare Counties are rural communities far

removed from any major metropolitan area, each contains above average populations that are 65 years old or older, suggesting that these counties serve as retirement destinations.

The inverse relationship that exists with provisional ballots cast per 1000 total ballots cast partly dispels an earlier hypothesis, which theorized that provisional ballots would be higher in counties, and precincts that included a college or university. Such a hypothesis was based on the premise that counties that include a college or university will also contain high numbers of mobile populations (e.g. 18-24 yrs. olds). As discussed earlier; these mobile populations often have a significant impact on provisional ballot totals. Initially, it appeared that this earlier hypothesis was supported by a number of variables associated with mobility including below average homeownership rates, below average rates of people living in a house for more than a year, and above average percentages of multi-unit housing.

While mobility clearly plays a role in shaping the geography of provisional ballots it is also clear that counties with well-educated populations will cast fewer provisional ballots. Percent of the population with a Bachelor's degree or higher is strongly correlated with both high school graduate rate (0.76) and median household income (0.68), additionally, a negative coefficient existed between percent with a Bachelor's degree or higher and the percent of the population below the poverty line (-0.48).

4.2.12 Percent 65 years old and Older Age Cohort

The final variable to enter the regression analysis once again highlighted the influence age has on the number of provisional ballots cast per 1000 total ballots cast. The regression analysis identified an inverse relationship between the percent of the population 65 years old and older and the number of provisional ballots cast per 1000 ballots cast. The regression coefficient indicated that if the percentage of population 65 years old and older increased by one percentage point, then number of provisional ballots per 1000 total ballots cast will decrease by 0.331.

The spatial distribution of percent 65 years old and older in North Carolina does not match any of the spatial patterns identified for the independent variables previously discussed. Figure 11 illustrates the fragmented and divergent geography that exists when mapping this age cohort. High percentages of elderly populations are found in the Mountain west along the Tennessee border as well as in the eastern Coastal Plain, particularly along the Albemarle and Pamlico sounds. It is theorized that this distinct geography may be a result of two very different phenomena. First, counties with elevated percentages of elderly populations may be experiencing such an influx due to their attractiveness as a retirement communities. When the time comes to retire, many people dream of retreating to the quiet life of a small town, one conveniently located near the amenities of a larger city. Retirees often look for counties with outdoor activities, good weather, top-notch medical care, cultural events, and easy access to major highways.

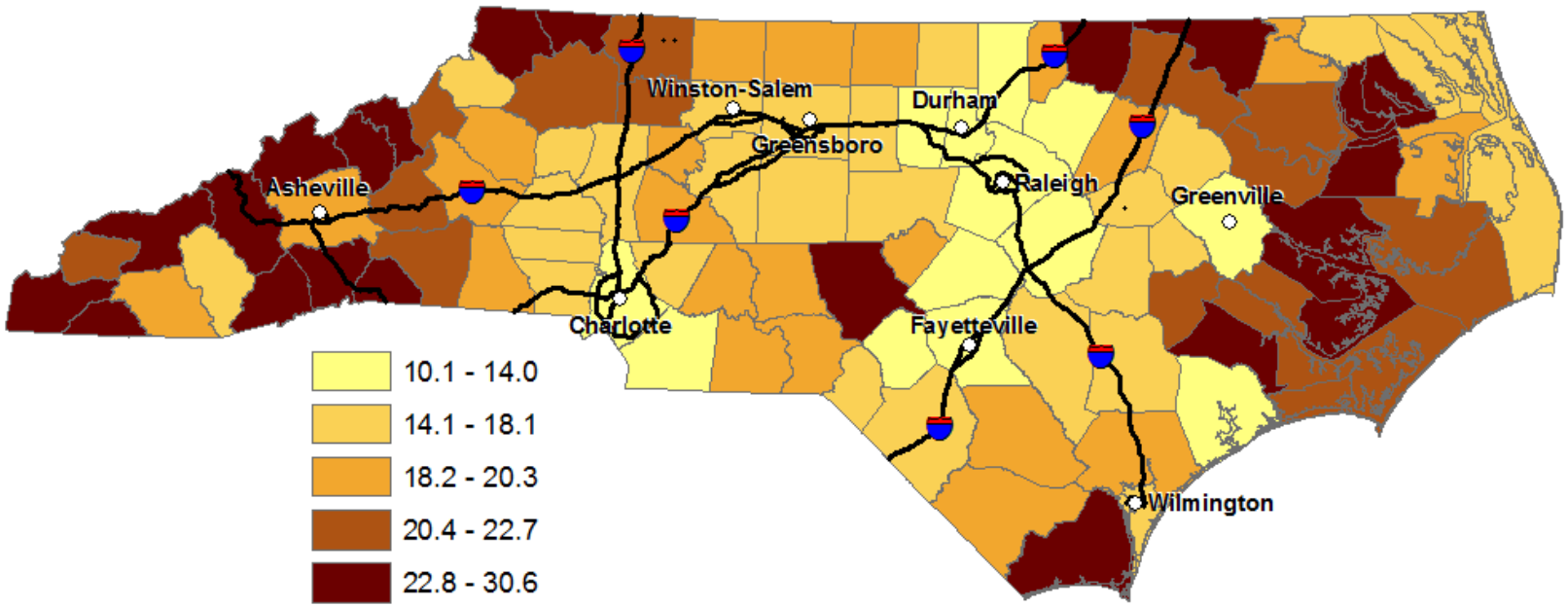

Figure 11. Percent of Population 65 Years old and Older by North Carolina County -2008

These counties include Transylvania (30.6 – Brevard) and Henderson (27.9 - Hendersonville), in the Mountains, Moore County (27.0 - Pinehurst) in the Piedmont, and Pamlico (26.5 - Oriental) and Brunswick (23.7 – Shallotte) counties in the Coastal Plain. By contrast, a number of counties with high percentages of elderly populations may be experiencing the outmigration of younger populations, often do to a lack of job growth and economic stability. Northampton (24.9%) and Warren (23.1%) counties each have higher percentages of populations 65 years old and older yet do not possess the amenities typically associated with retirement communities. Additionally, according to the North Carolina Employment Security Commission, both Northampton (12.5%) and Warren (15.2%) counties experienced unemployment rates well above the state average (10.5%) between 2008-2012, further supporting the notion that younger "employable" populations are leaving many of these counties in search of job opportunities.

Not only does it appear that the geography of elderly voters can be attributed to two primary factors, it also appears that an inverse relationship exists between population density and percent elderly population. Each of the most populated counties along the I-85/I-40 corridors rank towards the bottom regarding the percentage of the population 65 years old and older (e.g. Wake 99th , Mecklenburg 97th , Orange 95th , Durham 94th , and Guilford 81st).

Furthermore, an inverse relationship also appears to exists between the percent of the population 65years old and older and the spatial distribution of colleges, universities or military bases. The counties that include these types of installations (e.g Buncombe, Pitt, Cumberland, and Onslow Counties) ultimately have higher percentages of younger

residents, specifically 18-24 year olds. Throughout the research, it has been theorized that younger voters, specifically between 18-24 years old, would cast more provisional ballots than other age groups. The premise of this initial hypothesis is based on the tendency of younger voters to be more mobile with fewer "roots" in the community. Conversely, elderly voters tend to have well established associations within local communities, in addition to higher level of involvement in the electoral process. According to the U.S Census bureau, over 1.2 million people in North Carolina were 65 years old or older in November 2008. Additionally, according to the N.C. State Board of Elections, in 2008, over 90% of the population 65 years old and older was registered to vote. A more detailed assessment of the specific provisional ballot data from the 2008 Presidential election supports many of these general hypotheses and further illustrates the disparity that exists regarding the number of provisional ballots cast and each of the four age cohorts. (Table 13)

Table 13. Number of Provisional Ballots by Age Cohort

Age Cohort	Number of Provisional Ballots Cast	Percent of the statewide Provisional Ballots	Percent of the Statewide Voter Registration
18-24	11685	22.3	9.1
25-39	20821	39.8	26
40-64	17208	32.9	45.8
65 +	**2590**	**4.95**	**19.1**

4.2.13 Excluded Variables

Some of the most notable excluded variables from the final regression model included a number of population metrics (total population, voting age population, and registered voter population), a number of political ideology variables (Democrats, Republicans Unaffiliated, etc.), several socio-economic metrics (median household income, homeownership rate, poverty level, etc.) and a number of administrative variables (early voting percentage, full-time staff, etc.).

Counties with larger population totals were thought to be at a greater risk for elevated provisional ballots rates because, in theory, they had greater administrative responsibilities than the more rural counties. It was theorized that this increased administrative burden provided more opportunity for mistakes and discrepancies with voter rolls, thus leading to an increased rate of provisional ballots being cast. Similarly, counties with larger voting age populations would be responsible for dealing with a greater share of the population believing they were eligible to vote, subsequently showing up at the polls often without being properly registered, and once again requiring them to cast a provisional ballot. Conversely, the research has found that often, the more rural counties appear to be subject to greater administrative burdens than the more populated counties often due to smaller full-time staff and a limited pool of resources.

One of the most striking omissions of the regression analysis was the lack of inclusion of either of the two major political parties, i.e. Democrat or Republican. It was hypothesized earlier in the research that political ideology would be a major factor in provisional ballot rates based on the partisan nature of the election process. Moreover,

this lack of inclusion also dispels the belief that the provisional ballot process was simply an exercise in partisan politics, where one party attempted to marginalize and disenfranchise the other. According to the regression analysis, partisan politics does not seem to directly affect the number of provisional ballots cast at the polling place. The exclusion of these political ideologies, as explicit influences, helps to support the notion that provisional ballots are cast by individuals from across a wide range of partisan beliefs, and that no one, single, political ideology is being targeted by these often times controversial ballots.

A number of socio-economic variables were excluded from the final analysis, particularly variables that measured income and homeownership. However, the analysis has suggested that both income and homeownership are key factors, although it has been argued that the percent white population and percent of the population with a Bachelor's degree or higher are effective surrogates for these excluded variables.

Furthermore, the regression analysis excluded both the in-migration and out-migration variables. Throughout the research, it was theorized that migration would have a major influence on the spatial distribution of provisional ballots cast based on the instability these migration metrics often represent regarding voter registration records. However, it appears that a number of other variables served as surrogates for mobility in the final analysis.

Finally, one of the most positive results of the regression analysis, from an election administrator's standpoint, was the exclusion of each of the administrative variables. The regression analysis suggests that the amount of full-time staff, the

technology used at the polls, and new voter registration rates, do not have a statistically significant link to the number of provisional ballot cast per 1000 total ballots cast. Overall, the independent variables included in the regression equation, as well as, the variables excluded from the analysis suggest that elevated provisional ballot rates are instead a complex function of a number of socio-economic variables within each county.

However, in order to ensure fair and legitimate electoral outcomes, election administrators need to strive to provide every eligible voter the opportunity to not only cast a ballot, but also cast a ballot that will ultimately be counted. To this point, the research has focused on analyzing who is simply casting provisional ballot. The next phase of the research will be centered on attempting to identify factors that may influence whether a provisional ballot is counted or not counted. Gaining a complete understanding of who is casting provisional ballots is a necessary first step in comprehending how the provisional ballot process affects potential voters and how this process ultimately affects election outcomes.

4.3 Provisional Ballots NOT COUNTED per 1000 Total Ballots Cast

Of the 52,304 provisional ballots cast in the 2008 Presidential Election in North Carolina, over half, were *not counted* (i.e. 51.2%). For the purposes of this dissertation, *not counted* provisional ballots will be referred to as *ineligible* provisional ballots. It is important to note; ineligible only refers to the status of the provisional ballot cast during the 2008 election and is not a reflection of the individual voter's registration status nor ballots cast in subsequent elections. Each of the ballots that were deemed ineligible in

the final tally were cast by voters at their polling place on Election Day, and then subsequently determined by the individual county Board of Elections to be ineligible, and thus not added to the final election results. In North Carolina, each county is comprised of a bi-partisan three-member Board of Elections and this board is responsible for interpreting election law and ultimately making the final decision regarding any election policies and procedures, including determining if a provisional ballot will count or not count. According to North Carolina Election Law, each county Board of Elections has a predetermined period (i.e. 10 days) to reconcile the election results. Over the course of these 10 days, each county's Board of Elections meets to hear challenges, fix erroneous vote totals and make determinations on each of the provisional ballots cast during the election cycle. This meeting is the final step in certifying the election results from the entire election process.

As discussed earlier, 26,800 provisional ballots were cast and subsequently determined to be ineligible during the 2008 presidential election. On average, each county did ***not count*** 268 provisional ballots, or 6.15 provisional ballots for every 1000 ballots cast, ranging from a low of 1.48 in Polk County to a high of 21.95 in Bertie County.

The geography of ineligible provisional ballots appears to be concentrated in the eastern Coastal Plain. (Figure 12) Bertie County (21.95) and Robeson County (18.19) were the two leading counties regarding ineligible provisional ballots per 1000 total ballots cast, each with rates well above the state average (6.15).

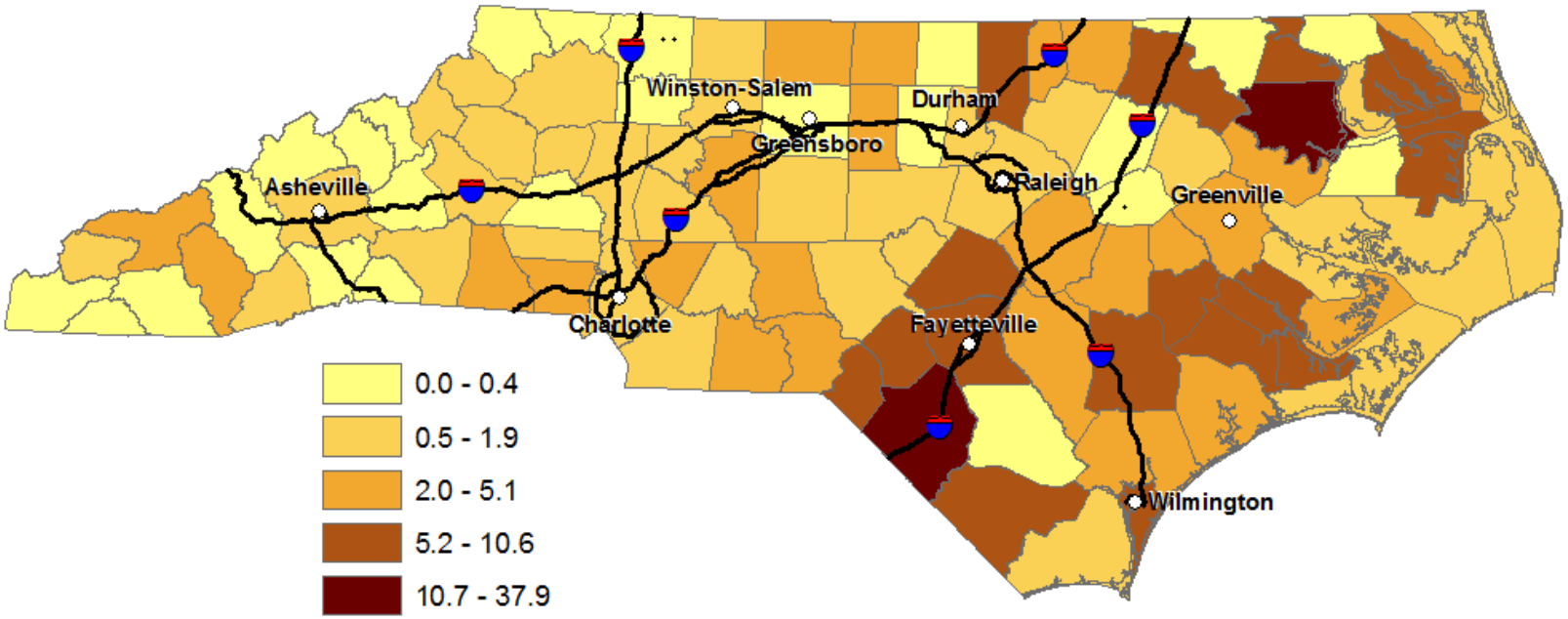

Figure 12. Ineligible Provisional Ballots per 1000 Total Ballots Cast by North Carolina County -2008

Although the socio-demographic profiles of both counties have been well documented, it is worth reiterating that each of these counties is part of the 10% of counties nationwide that are composed of 'majority-minorities." The minority percentage in both counties is roughly 65%, primarily composed of African Americans in Bertie County and Native Americans in Robeson County. Additionally, the demographic profiles of other leading counties regarding ineligible provisional ballots are similar to that of Bertie and Robeson Counties. (Table 14) Hertford County, Scotland County and Halifax County are all comprised of minority majorities (+50%), whereas the average percent white population (65.5%) of the remaining counties in the table is well below the state average (74%). These initial observations seem to support earlier hypotheses that suggested that racial composition, specifically, counties with higher minority population, would rule provisional ballots ineligible at a higher rate than counties with predominately-white populations. The geography of ineligible provisional ballots appears to follow a similar spatial distribution as to that of provisional ballots cast. Low rates of ineligible provisional ballots are observed in Appalachia, extending through the Piedmont, appearing to gradually increase toward the I-95 corridor, culminating in a concentration of ineligible provisional ballots rate found in counties throughout the Coastal Plain. (Figure 12)

This geography of ineligible provisional ballot rates in North Carolina appears to indicate that elevated levels are spatially concentrated in the eastern part of the state, in counties with below average percentages of white populations. Additionally, it appears that the population density within a county may play a role in shaping the spatial

distribution of ineligible provisional ballots per 1000 total ballots cast. Each of the most populated urban counties (Mecklenburg, Wake, Guilford, Durham, Forsyth), as well as many of the suburban "bedroom" communities surrounding these counties display below average rates of ineligible provisional ballots.

Table 14. Counties Ranked by Ineligible Provisional Ballots per 1000 Total Ballots Cast

County	Ineligible Provisional Ballots per 1000 Total Ballots Cast	Percent White	Percent African American	Percent Native American	Other
Bertie	22.0	35.9	62.9	0.6	0.6
Robeson	18.2	35.9	23.8	37.9	2.4
Hoke	16.4	53.7	33.4	9.3	3.6
Hertford	16.1	36.0	61.3	1.2	1.5
Scotland	14.3	49.4	38.3	10.0	2.3
Craven	14.0	72.8	23.7	0.4	3.1
Harnett	13.9	74.1	22.1	0.9	2.9
Halifax	13.6	41.2	53.7	1.4	3.7
Pasquotank	12.8	58.4	38.5	0.4	2.7
Perquimans	12.7	73.3	25.5	0.2	1.0
Duplin	12.2	72.9	25.6	0.4	1.1
Cumberland	12.2	55.5	37.5	1.6	5.4
Columbus	11.0	65.0	30.4	3.3	1.3
Jones	10.6	65.8	32.4	0.5	1.3
Granville	10.6	64.4	33.1	0.9	1.6
Lenoir	10.4	57.6	40.8	0.3	1.3
Tyrrell	10.4	56.9	40.4	0.2	2.5
New Hanover	*10.3*	*81.7*	*15.5*	*0.4*	*2.4*
Table Average	13.4	***58.3***	35.5	3.8	2.2
State Average	6.1	***73.8***	21.6	1.3	3.3

The average population of the eighteen counties with the highest rates of ineligible provisional ballots per 1000 total ballots cast is only 72,797, well below the state average of 92,224 people per county.(Table 15) Only Cumberland, New Hanover, Robeson, and Harnett Counties reported 2008 populations greater than 100,000. The ineligible provisional ballots totals in Cumberland County can be attributed to the high proportion of military personnel residing in the county (i.e. Fort Bragg). As was discussed earlier in the research, high concentrations of military personal are synonymous with higher rates of population mobility (Table 3). High mobility often leads to instability regarding permanent addresses, specifically regarding voter registration information, thus resulting in increased totals of ineligible provisional ballots. It is theorized that the elevated ineligible provisional ballot totals found in New Hanover County are a result of a similar mobility phenomenon but for different reasons. A number of residencies in New Hanover County are seasonal vacation properties along the coast. These "temporary" residencies also result in populations with increased levels of mobility (Table 3), again leading to discrepancies regarding permanent addresses and voter registration data, thus resulting in elevated totals of ineligible provisional ballots. The elevated rates of ineligible provisional ballots identified in Robeson County appear to be a function of the, well documented, minority-majority populations that resides within the county. Harnett County appears to be the only county with a total population over 100,000 that do not have clear explanation for higher rates of ineligible provisional ballots.

Conversely, each of the remaining counties in Table 15 are composed of fewer than 100,000 people including three of the least populated counties in the state, Perquimans (91st), Jones (96th), and Tyrell (100th). It appears that not only is ineligible provisional ballot rates a function of socio-demographic variation, but may also be a function of population density.

Table 15. Counties Ranked by Ineligible Provisional Ballots per 1000 Total Ballots Cast and 2008 Population

County	Ineligible Provisional Ballots per 1000 Total Ballots Cast	2008 Population	2008 Population Rank
Bertie	21.95	19,337	83
Robeson	18.19	129,123	21
Hoke	16.42	43,409	58
Hertford	16.09	23,224	78
Scotland	14.33	36,508	66
Craven	14.03	96,892	28
Harnett	13.87	112,030	24
Halifax	13.63	54,983	48
Pasquotank	12.82	41,111	60
Perquimans	12.71	12,856	91
Duplin	12.20	53,362	50
Cumberland	12.19	312,696	5
Columbus	10.96	54,212	49
Jones	10.62	10,113	96
Granville	10.62	57,044	45
Lenoir	10.42	56,826	46
Tyrrell	10.36	4,087	100
New Hanover	10.35	192,538	10
Table Average	**13.43**	72,797	53
State Average	**6.15**	92,224	-

The next step in the analysis is to conduct a rigorous statistical analysis in an attempt to identify the specific independent variables influencing the number of provisional ballots determined to be ineligible.

4.3.1 Regression Diagnostics

Similar to the previous regression analysis, the first step is to execute a series of diagnostics to attempt to assess the reliability of the regression results. A histogram and a quantile probability plot were utilized to analyze the normality of the distribution of the dependent variable. The research found that the histogram appeared to illustrate that ineligible provisional ballots per 1000 total ballots cast is only slightly non-normally distributed, with a skewness value of 1.3. Furthermore, observations of the Q-Q plot support the initial interpretations of the histogram, suggesting a few outlier data points exist. In order to identify these outlier data points, the research again converted all of the scores for ineligible provisional ballots per 1000 total ballots cast to standard scores (Z-score). The analysis indicated that only Bertie County, with a Z-score of 3.8, was likely an outlier.

Additionally, a number of tests for mulitcollinearity were performed, to identify if multiple independent variables were highly correlated with one another. The research found that little multicollinearity existed between the independent variables in the final regression analysis. The tolerances of each independent variable are above 0.31, and the VIF factors are all below 3.2. Similar to the previous regression analysis, the condition

index for the fourth variable to enter the regression model (i.e. unaffiliated voter registration), generated a score of 55.35, well above the recommended limit of 30.

Testing the normality of the residuals using a P-P plot indicated that the residuals had a relatively normal distribution along the line of best fit. The combination of the histogram and the P-P plot suggest a relatively normal distribution of residuals existed. Finally, a test for homogeneity of variance was calculated and a visual examination of the residual plot indicated that most of the residuals are in a horizontal band suggesting slight heteroscedastiy existed.

The regression analysis indicated that four independent (predictor) variables influenced the geography of ineligible provisional ballots by county. The R-square value of the model is 0.47 (Table 16), suggesting that 47% of the variation in ineligible provisional ballots can be explained by the percent white population, the percent aged 45-64 years old, the percent with a Bachelor's degree or higher and the percent registered as unaffiliated. The F-score, which measures the equations accuracy, was 21.4, with a p-value of 0.00, indicating the regression analysis is significant at the 1 % level.

Table 17 illustrates the specific affect each of the independent variables had on ineligible provisional ballots per 1000 total ballots cast per county. Once again, the following section will analyze the specific impact each of the independent variables had on the ineligible provisional ballots in North Carolina by county

Table 16. Model Summary of Ineligible Provisional Ballots per 1000 Total Ballots Cast by County

	Independent Variables	R Square	Adjusted R Square	Std. Error of the Estimate
1	-% Caucasian Population	0.327	0.320	3.23
2	-% Caucasian Population -% between 45-64 years old	0.374	0.361	3.13
3	-% Caucasian Population -% between 45-64 years old -% with Bachelor's Degree or higher	0.422	0.404	3.02
4	-% Caucasian Population -% between 45-64 years old -% with Bachelor's Degree or higher -% Registered as Unaffiliated	0.474	0.452	2.89

Table 17. Final Regression Analysis of Ineligible Provisional Ballots per 1000 Total Ballots Cast by County

Variables	Unstandardized Coefficients		Standardized Coefficients	t	p-value
		Std. Error			
Constant	31.76	5.41		5.86	0.000
Caucasian Population (%)	-0.175	0.024	-0.766	-7.19	0.000
Population between 45-64 years old (%)	-0.418	0.144	-0.236	-2.90	0.005
Population with a Bachelor's Degree or Higher (%)	-0.192	0.046	-0.421	-4.20	0.000
Population registered as Unaffiliated (%)	0.300	0.098	0.407	3.05	0.003

Where,

PBNC = Ineligible Provisional Ballots per 1000 Total Ballots Cast

WP = Caucasian Population (%)

AGE = 45-64 years old (%)

BA = Bachelor's Degree or Higher (%)

UNA = Unaffiliated Party Affiliation (%)

4.3.2 Percent White Population

The empirical results from the regression analysis found that percent white was the first variable to enter the regression model and the most influential variable in explaining the geography of ineligible provisional ballots based on the magnitude of the standardized coefficient. The relationship between percent white and ineligible provisional ballots was inverse, suggesting that the "whiter" a county became, the fewer the number of ineligible provisional ballots. It appears that racial composition not only has an influence on the number of provisional ballots cast (e.g. total Native American population) but also on rate at which provisional ballots are determined to be ineligible. The B coefficient indicates that as the percent white increases by one percentage point, then ineligible provisional ballots per 1000 total ballots cast will decrease by 0.154. This analysis supports earlier theories that suggested provisional ballots cast in areas with substantial white populations would be less likely to be ruled ineligible relative to areas with more diversity. In North Carolina, counties did *not count* 6.5 provisional ballots for every 1000 total ballots cast, on average. The regression analysis suggests that an 1 %

increase in percent white would result in a decrease of the number of ineligible provisional ballots by nearly 700 ballots statewide.

Earlier analysis suggested that percent white by county served as a proxy for a number of other socio-economic variables including educational attainment, homeownership rate, and poverty rate. A Spearman's correlation coefficient matrix, conducted earlier, supported many of these assumptions. The relationship that exists between percent white and provisional ballots cast as well as ineligible provisional ballots are very similar. On average, counties with elevated white populations also have above average educational attainment levels, above average homeownership rates, and below average poverty rates. The regression analysis again suggests that, when these "more educated, more stable, wealthier" populations cast a provisional ballot, they are ruled ineligible at lower rates than other socio-economic groups.

4.3.3 Percent 45-64 Years Old Age Cohort

Once again, the empirical results of the regression analysis identified an independent variable that was also influential in the earlier analysis. The relationship between the percent of the population between the ages of 45 and 64 years old and the number of ineligible provisional ballots per 1000 total ballots cast is also inverse. The influence of the independent variable in the current analysis is similar to the influence in the previous regression for total provisional ballots. The B coefficient suggests that if the percentage of population between 45-64 years old increases by one percentage point then the number of ineligible provisional ballots per 0/00 will decrease by 0.42. Akin to the

earlier discussion, this relationship would result in a nearly a 7% reduction in the number of provisional ballots *not counted*, or over 1,800 ballots.

Earlier discussion suggested that the population between 45-64 years old serves as a surrogate for migration and mobility. A correlation matrix identified a coefficient of -0.28 between 45-64 years olds and in-migration totals, as well as a coefficient of -0.26 between 45-64 years old and new voter registration applications. Although these correlation coefficients are not very high, they are both statistically significant at the 1% level. These assumptions were supported by U.S. Census Bureau data that found that 46-64 year olds were the least mobile age group and this lack of mobility may play a role in minimizing the number of ineligible provisional ballots cast by this age cohort.

4.3.4 Percent of the Population with a Bachelor's Degree or Higher

Next, the stepwise regression identified Bachelor's degree or higher as the third variable to enter the analysis, also with an inverse relationship to the dependent variable. This variable is also the last of three variables that were also identified as influencing total provisional ballots cast in the previous regression analysis in section 4.2.7. As with the two previous variables, an increase in the percent of the population with a bachelor's degree or higher will result in fewer ineligible provisional ballots. The B coefficient indicates that a one percentage increase in the population with a Bachelor's degree or higher would result in a decrease of roughly 850 ballots *not counted* or nearly 3.5%.

Once again, the percent of the population with a Bachelor's Degree or higher has been identified as serving as a surrogate for a number of socio-economic measures,

specifically income. The Spearman correlation matrix has shown that as the percent of the population with a bachelor's degree or higher increases, the median household income (0.684) also increases and subsequently the percent of the population below the poverty level (-0.479) decreases. Additionally, the educational attainment level was moderately correlated with voter registration, with a coefficient score of 0.58. Subsequently as the level of education increased in a county, the rate at which the population registered to vote also increased. As a result, these populations often have a better understanding of the procedures that govern the process as well as a greater ability to remedy possible discrepancies due to more consistent and in-depth involvement in the electoral process.

4.3.5 Percent of the Population Registered as Unaffiliated

The final variable to enter the regression analysis was the percent of the population registered as Unaffiliated. The B coefficient was 0.30, indicating, for the first time in this analysis, a positive relationship existed between the independent variable and the number of ineligible provisional ballots per 1000 total ballots cast. The B coefficient suggested that a 1 % increase in the number of voters registered as unaffiliated would increase the ineligible provisional ballots by nearly 5% or an additional 1,200 ballots.

In 2008, nearly 1.4 million voters were registered as Unaffiliated, or over 23% of the total voter registration in the state.

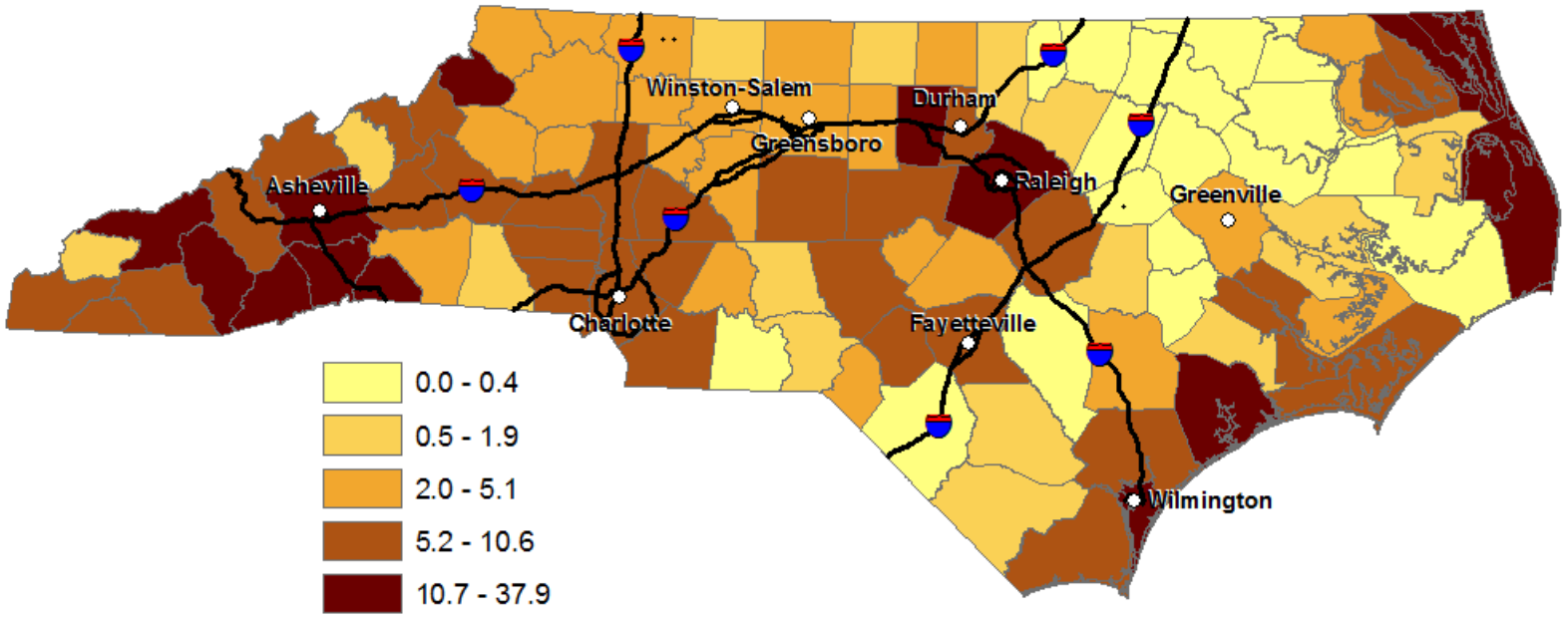

Figure 13. Percent of Population Registered to Vote as Unaffiliated by North Carolina County -2008

The spatial distribution of unaffiliated voters is very different from any of the patterns we have previously seen or discussed. (Figure 13) Preliminary observations suggest that unaffiliated voters are scattered throughout the state, with clusters found on the northeastern coast and southwestern mountains. A number of other counties including Durham, New Hanover, Onslow, Wake and Watauga also contain above average percentages of voters registered as unaffiliated, but do not appear to be spatially clustered. A Cluster and Outlier analysis, or Local Moran's I, was conducted through ArcView GIS. This analysis not only confirmed what was previously observed, that spatial clusters exist along the northeastern coast and the western mountains, but also identified a cluster located in the inland northeastern coastal plain, encompassing Bertie, Edgecombe, Halifax, Hertford, Martin, Northampton, and Washington counties. The aforementioned cluster is actually a concentration of counties in the lowest classifications, with population percentages registered as unaffiliated between 8.3% and 14%. As previously mentioned, the geography of unaffiliated voters does not follow traditional population patterns along the interstate corridors nor does it follow any of the regionalism that has been observed with many of the previously discussed variables. It is important that we attempt to distinguish the factors that shape the geography of unaffiliated voters and how this spatial distribution affects the geography of ineligible provisional ballots.

Unaffiliated voters consider themselves independent political thinkers, they tend to vote for a specific candidate or take a particular stance on a specific issue, although initially it was theorized that Unaffiliated voters would be comprised of 18-25 years olds

who have yet to identify with one of the traditional political ideologies of the Democratic and Republican parties. It appears as if the age distribution of unaffiliated voters varies as much as the age distributions of the traditional parties. Over the past 20 years, election administrators have witnessed an increase in the registration of unaffiliated voters. Much of this increase has been a function of the ever-changing election laws, particularly laws which govern partisan primary elections. In the late 1980's, in an attempt to generate interest and participation, the North Carolina Republican Party decided to "open" their primary to unaffiliated voters, subsequently followed by the Democratic Party in the mid 1990's. These changes had a significant impact on the registration status of many of the registered voters throughout the state. Prior to these changes, unaffiliated voters felt disenfranchised, they could not participate in either party's primary, although they were eligible to vote in the general election. In essence, prior to these modifications, unaffiliated voters were forced to vote for candidates in the general election in which they had no influence in picking during the primary process. This newfound ability to influence both the primary and general election outcomes allowed many voters who did not fully prescribe to the ideology of either party the ability to remain independent yet participate in the election process to the same extent as registered voters in each of the traditional parties.

The spatial clusters illustrated in Figure 13 cannot be easily explained by population measures nor socio-economic indices. We find high percentages of unaffiliated voters in both rural counties (e.g. Currituck and Camden) as well as urban counties (e.g. Durham and Wake), in counties with high percentages of whites (e.g. Polk,

Transylvania, Dare) as well as counties with elevated percentages of minorities (e.g. Swaim and Jackson) and in counties where the age distribution is much younger than the state average (e.g. Watauga and Onslow).

It has been well documented that much of the area identified as spatially clustered with low percentages of unaffiliated voters is comprised of elevated minority populations. These populations are considered traditionalist, the economy of the area is based on agriculture, specifically cotton and tobacco production. Many of these voters or potential voters still identify with the traditional ideology of the Democratic Party. Furthermore, the low educational attainment and low median incomes of this areas does not cultivate a population of independent free thinkers, normally associated with unaffiliated status.

Research suggests that, similar to North Carolina, throughout the country partisan de-alignment has been taking place and voters are less likely to retain long-term partisan identities. These voters will ultimately shift to unaffiliated or independent status. The literature also suggests that this shift to political independence is a result of voters who are both better educated and better informed than earlier generations. Nevertheless, many of these unaffiliated voters, can also be poorly informed politically and relatively uninterested and uninvolved in politics. This disinterest could be the main cause of the relationship that exists between ineligible provisional ballots and unaffiliated status. As voters become less interested in the electoral process, they often participate at lower rates. This lack of participation often results in a lack of knowledge of the electoral process and an apathetic approach toward updating registration information and staying informed on the ever-changing election polices. It appears that this underlining apathy of

unaffiliated voters plays a major role in influencing the number of ineligible provisional ballots.

To this point, the empirical results of the stepwise regression analysis suggest that inverse relationships identified between percent white, percent 45-64 years old, and percent with a Bachelor's degree or higher all helped to reduce the number of ineligible provisional ballots. However, the positive relationship identified with unaffiliated voter registration status actually increases the rate at which provisional ballots are *not counted*.

Overall, the regression analysis has allowed us to identify specific populations whose voting rights are being marginalized through the provisional ballot process as well as provided a context for understanding what ballots were cast and not counted. With that in mind, the final phase of the research will be focused on conducting a third regression analysis using provisional ballots *counted* per 1000 total ballots cast as the dependent variable.

4.4 Provisional Ballots COUNTED per 1000 Total Ballots Cast

As we have discussed, of the 52,304 provisional ballots cast in the 2008 Presidential Election in North Carolina, just under half were *counted* (48.8%). Similar to the previous analysis, for the purposes of this dissertation we will refer to counted provisional ballots as eligible provisional ballots. Once again, eligible, simply refers to the status of the provisional ballot cast in the 2008 Election. Each of these eligible provisional ballots were cast by voters at their polling place on Election Day, then subsequently determined by the individual county Boards of Elections to be eligible, and

subsequently added to the final election results. This provisional ballot process lead to 25,504 additional votes that were initially not included in the Election night results, but subsequently added during the canvass, 10 days after the election. It is worth repeating, that in 2008, the North Carolina Presidential election was decided by just over 14,000 votes, and was thus significantly impacted by the over 25,000 provisional ballots that were subsequently counted.

Throughout the research we have discussed different aspects of the provisional ballot process, each important in their own right, but we have yet to discuss the aspect that has the most immediate impact on election outcomes, the number of actual provisional ballots that were counted in the election. Since the Help America Vote Act was passed in 2002, mandating the use of provisional ballots, these ballots have been seen as a beneficial component to the electoral process. Although these ballots were primarily designed to protect voters who would have otherwise have been disenfranchised, in some cases they have caused disputes in certifying election results based on concerns that ambiguities existed throughout the process.

An average of 5.85 eligible provisional ballots were counted for every 1000 total ballots cast in North Carolina and these totals ranged from a low of 0.14 in Haywood County to a high of 32.47 in Robeson County. At the outset, it appears clear that the rates at which eligible provisional ballots are counted is very different from the rates at which ineligible provisional ballots were cast. The distribution of eligible provisional ballots suggests a distinct lack of spatial clustering (unlike the maps for provisional ballots cast or ineligible provisional ballots). (Figure 14)

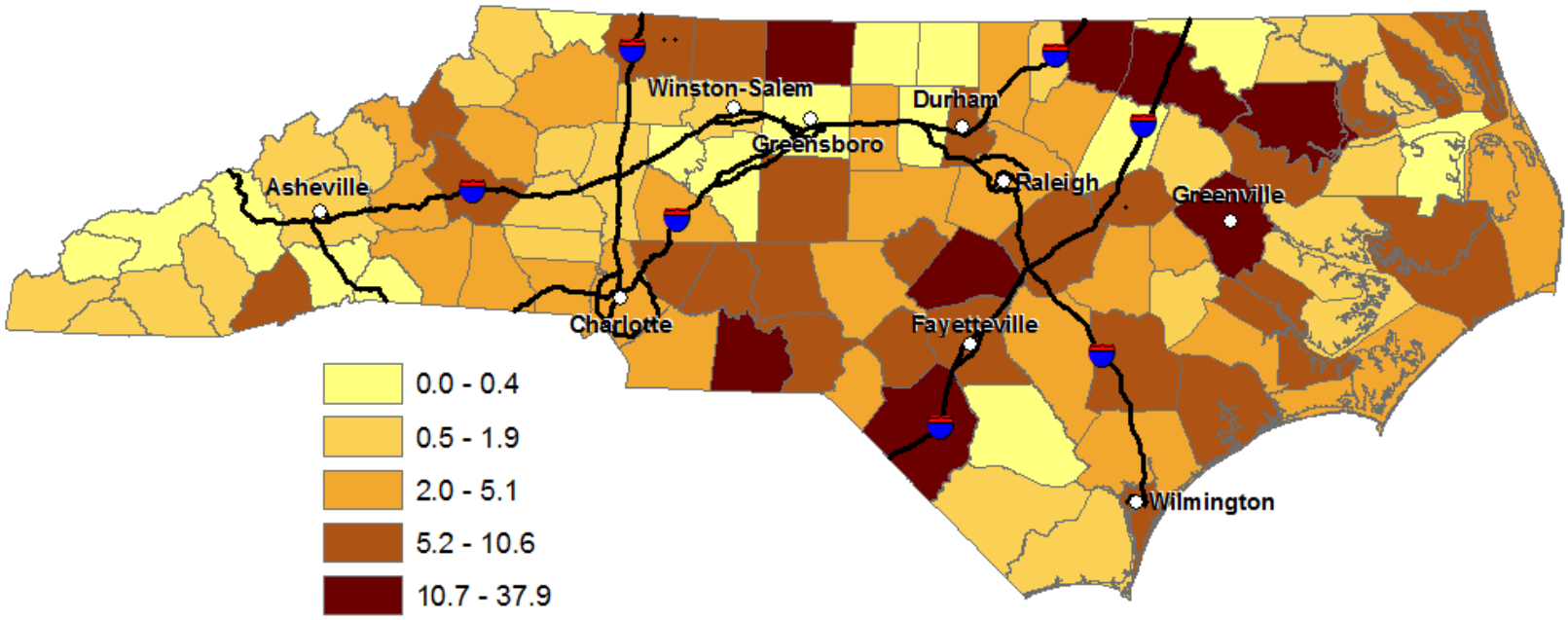

Figure 14. Eligible Provisional Ballots per 1000 Total Ballots Cast by North Carolina County

Counties with elevated rates are found across the state, neither concentrated in a particular region nor along the I-40/I-85 urban corridor. Although it appears that a lack of spatial clustering exists, we do observe a number of counties with elevated rates found along the I-95 corridor in eastern North Carolina. Consistent with previous findings, low rates of eligible provisional ballots are again observed in the rural counties of Appalachia.

According to Figure 14, the leading eight counties all counted more than 12.09 eligible provisional ballots per 1000 total ballots cast including Robeson (32.47), Bertie (16.79), Halifax (16.36) and Harnett (13.29) counties. Additionally, Anson County (17.88), Pitt County (13.32) Rockingham County (12.94) and Warren County (12.88) each *counted* provisional ballots at a comparably high rate. Elevated rates of eligible provisional ballots are found in counties with minority majorities (e.g. Robeson 64.1% and Bertie 64.1%) as well as counties with overwhelming white populations (e.g. Surry 94.4% and Stokes 93.8%). The research observed high rates of eligible provisional ballots in counties with higher percentages of 45-64 year olds (e.g. Currituck 37.2%) as well as in counties with smaller proportions of this age cohort (e.g. Onslow 26%). Furthermore, it appears as if the party affiliation varies just as indiscriminately, the research witnessed elevated rates of eligible provisional ballots in counties with higher rates of registered Libertarian's (e.g. New Hanover 0.12%) as well as counties with very low rates of Libertarian's (e.g. Martin 0.01%). Similarly, high rates of provisional ballots counted were seen in counties with high percentages of voters registered as unaffiliated (e.g. Transylvania 28%) as well as counties with low percentages of unaffiliated voters (e.g. Bertie 9.2%). Finally, the research observed high eligible provisional ballots totals

in counties with greater percentages of the population with a Bachelor's degree or higher (e.g. Transylvania 28.9%) to counties that appear to be less educated (e.g. Anson 7.2%).

4.4.1 Regression Diagnostics

The regression diagnostics of the final analysis are similar to the diagnostics discussed in the previous regression models. The research found that the histogram appeared to illustrate that provisional ballots counted per 1000 is only slightly non-normally distributed, indicating a skewness value of 2.3, again a result of outlier data points. Additionally, once again, the Q-Q plot appears to indicate the existence of outlier data points, thus supporting the observations of the histogram. Once again, the dependent variable was converted to z-scores to identify outlier data points. The standardized scores indicated that only Robeson County, with a score of 5.7 appeared to be a significant outlier regarding the distribution of eligible provisional ballots by county.

Analogous to earlier discussion, tolerance, variance inflation factor (VIF) and condition indexes were used to test for mulitcollinearity between independent variables. The findings suggested that the current analysis has the least amount of multicollinearity, where each of the tolerances were above 0.93, and the variance inflation factors are below 1.1. Akin to prior analysis, the condition index's for each variable were below the recommended limit of 30, indicating that it none of the independent variables are correlated. Visual inspection of the P-P plot indicates a slight s-shape along the line of best fit. This s-shape indicated that the residuals have a relatively normal distribution, with a slight skew along the line of best fit. The combination of the histogram and the P-

P support a relatively normal distribution of residuals, yet also account for the skewness caused by Robeson County (outlier). Finally, a test for homogeneity of variance was performed. A visual examination of the residual plot indicated that all of the residuals, excluding the outlier (Robeson County) are found in a tight horizontal band around zero, indicating homogeneity.

The summary of the final regression analysis indicated that three independent (predictor) variables play a role in shaping the spatial distribution of eligible provisional ballots by county in North Carolina. The R-square value of the model is 0.27 (Table 18) suggesting that 27% of the variation in eligible provisional ballots is explained by the percent of the Native American population, the percent white population, and the percent aged 25-44 years old. The F-score, which measures the overall equation accuracy, was 11.6, with a p-value of 0.00, indicating the regression analysis is significant at the 1 % level.

Table 18. Model Summary of Eligible Provisional Ballots Counted per 1000 Total Ballots Cast by County

	Independent Variables	R Square	Adjusted R Square	Std. Error of the Estimate
1	-Percent Native American Population	0.154	0.146	4.28
2	-Percent Native American Population -Percent White Population	0.217	0.201	4.14
3	-Percent Native American Population -Percent White Population -Percent between 25-44 years old	0.264	0.241	4.04

Table 19 illustrates the specific effect each of the independent variables had on eligible provisional ballots per 1000 total ballots cast per county and this will be followed by an in-depth analysis of the specific impact each variable had on the spatial distribution of eligible provisional ballots counted in North Carolina.

Table 19. Final Regression Model of Eligible Provisional Ballots per 1000 Total Ballots Cast by County

Variables	Unstandardized Coefficients		Standardized Coefficients	t	p-value
		Std. Error			
Constant	2.02	4.014		0.50	0.616
Native American Population (%)	0.304	0.087	0.317	3.49	0.001
White Population (%)	-0.069	0.025	-0.254	-2.80	0.006
Population between 25-44 years old (%)	0.252	0.101	0.218	2.49	0.015

$$\boldsymbol{PBC} = 2.02 + 0.30\ \boldsymbol{NA} + 0.069\ \boldsymbol{WP} - 0.25\ \boldsymbol{AGE}$$

Where,

PBC = Provisional Ballots *Counted* per 1000 Total Ballots Cast

NA = Native American Population (%)

WP = White Population (%)

AGE = 25-44 years old (%)

4.4.2 Percent Native American Population

Throughout each of the regression analyses, at least one variable measuring some kind of racial composition was identified as the most influential in shaping the spatial distribution of the dependent variable. Similar to the regression analysis conducted earlier regarding provisional ballots cast per 1000 total ballots cast, the percent Native American population variable was identified as influencing the eligible provisional ballots per 1000 total ballots cast. However, in this case the percent Native American population was the most influential variable in predicting the geography of eligible provisional ballots cast per 1000 total ballots cast based on the standardized coefficient score (0.317). Curiously, while the percent Native American population is a key variable in predicting provisional ballots that were determined to be eligible and subsequently counted, it was not included in the final regression model for determining if a provisional ballot was ineligible. The influence of percent Native American population on the regression model regarding eligible provisional ballots suggests that these populations appear to be experiencing more discrepancies throughout the electoral process relative to other races. As has been discussed throughout the research, the socio-economic profiles (e.g. education and income) of counties with elevated percentages of Native Americans are well below the state averages. This lack of formal education appears to be rooted in the limited education and economic opportunities available to the population within these communities. The economic foundations of the counties with elevated percentages of Native Americans, 10% >, (e.g. Robeson, Swain, Jackson, Scotland, Hoke) are all based in blue-collar industries such as construction, manufacturing and transportation, as well

as a long tradition of agriculture production, industries that provide little incentive to purse the minimum education, let alone any higher education. This economic underpinning has resulted in some of the lowest median household incomes in the state, moreover, the unemployment rates of these counties are also amongst the highest in the state, reaching nearly 13% on average. Throughout the literature, the link between low income, low formal education and low levels of political participation has been made abundantly evident.

The research has suggested that minority populations have experienced barriers throughout the electoral process that often lead to the casting of a provisional ballot. Additionally, the research has theorized that the lack of formal education and lower median incomes found within Native American communities may be inhibiting the ability of these populations to understand the electoral process and continuously participate in it. Through the regression analysis regarding provisional ballots cast and eligible provisional ballots, it appears that Native Americans whom are casting provisional ballots are doing so based on a "correctable inconsistency" with their voter registration record, these inconsistencies may be the inability to update their voter registration status or educate themselves on changing polices or polling locations. Whatever the cause, once the provisional ballot has been cast and subsequently reviewed, the regression analysis indicates that these inconsistencies appear to be mediated, and as a result, the provisional ballots are subsequently being counted.

4.4.3 Percent White Population

The empirical results of the regression analysis of eligible provisional ballots per 1000 total ballots cast once again identified percent white population as influencing the dependent variable. At this point, it is clear that inverse relationship identified regarding percent white population plays a significant role in shaping the entire provisional ballot process (i.e. cast, ineligible, and eligible). Based on the standardized coefficient score (-0.254), it appears as if the percent white population has had the least influence regarding eligible provisional ballots compared to the standardized coefficients of each of the previous regression analysis.

The research has previously discussed the positive correlation that existed between percent white population and homeownership rate (0.51), as well as the moderately to strong negative correlation existed between the percent white and the percent of the population below the poverty line (-0.47). The research again suggests that percent white population is serving as a surrogate for other socio-economic variables such as mobility (homeownership) and income (poverty), each of which are often key components in influencing voter participation, election turnout, and more importantly, provisional ballots.

These results imply that percent white population will have an inverse effect on all aspects of the provisional ballot process (cast, ineligible, eligible) as well as reiterating the influence of mobility and income regarding whether a provisional ballot is actually determined to be eligible and subsequently added to final election outcome.

4.4.4 Percent 25-44 Years Old Age Cohort

To this point, the research has identified two different age cohorts (e.g. 45-64 years old and 65 + years old) as having an inverse relationship in shaping the spatial distribution of provisional ballots cast per 1000 total ballots cast. The current regression analysis, regarding the eligible provisional ballot cast, identified the percent of the population between the ages of 25 and 44 years old as having a positive relationship in shaping the geography of the provisional ballot measure. The unstandardized regression coefficient appears to suggest that if the percentage of the population between 25-44 years old increases by one percentage point then the eligible provisional ballots per 1000 total ballots cast would increase by 0.25.

According to the U.S. Census Bureau, between 2000 and 2008, North Carolina experienced a 3% increase in the population between the ages 25-44 years old. According to the regression analysis, keeping all other things equal, a 3% increase in the 25-44 year old population would result in an increase of 0.75 eligible provisional ballot per 1000 total ballots cast, or 3,230 ballots statewide. More importantly, the addition of 3,230 eligible provisional ballots to the final vote total would have represented almost one-fourth of the margin of victory (13,968) in the 2008 U.S. Presidential election outcome in North Carolina.

The spatial distribution of percent 25-44 year olds appears to indicate that geography of elevated percentages of 25-44 year olds follow traditional population patterns along each of the interstate corridors (e.g. I-85, I-40, I-95). (Figure 15)

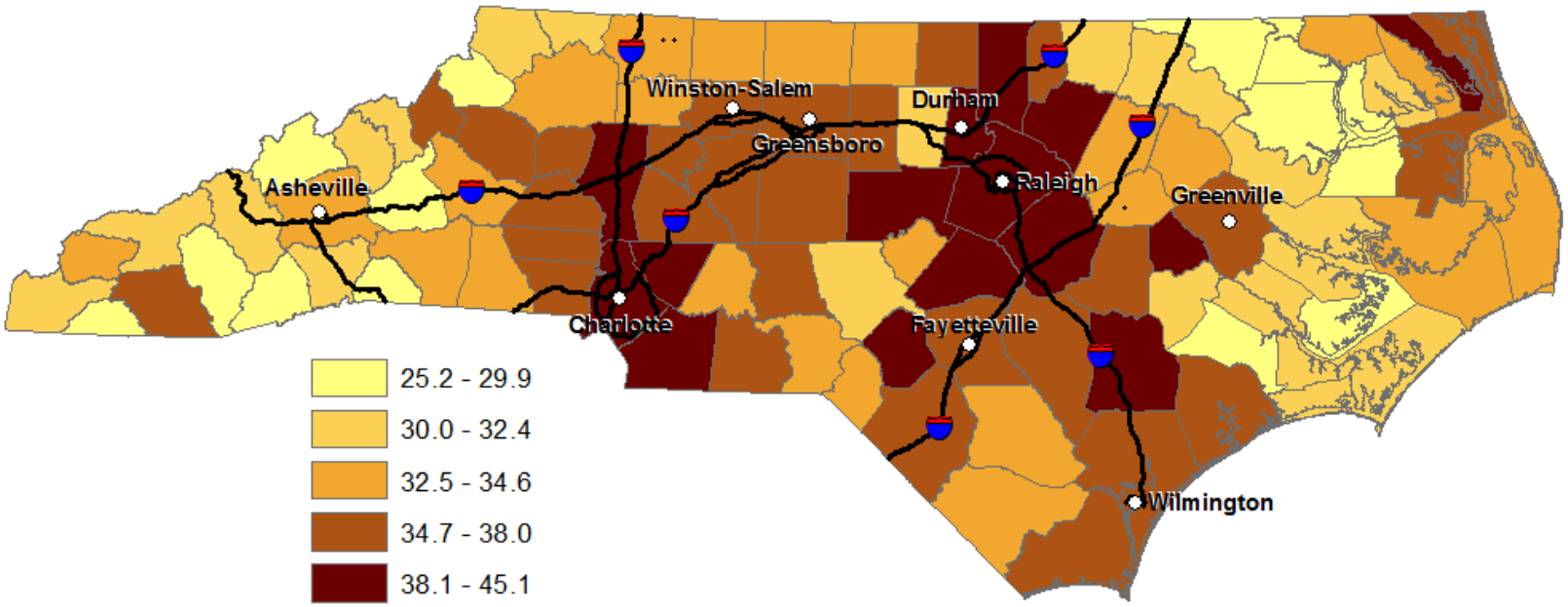

Figure 15. Percent of the Population Between 25-44 Years Old by North Carolina County

Furthermore, initial observations of Figure 15 also appear to suggest distinct spatial clustering surrounding Wake County and Mecklenburg County, the two largest urban counties in the state. The research theorizes that concentrations of 25-44 year olds may be attributed to the commuter or "bedroom" communities established in the counties surrounding the primary city centers, particularly Raleigh in Wake County and Charlotte in Mecklenburg County. A "bedroom" community is defined as a suburban town with little to no major employment centers. People only seem to sleep there when they are not working closer to the primary city where many of the jobs are. Typically, bedroom communities are primarily composed of retail and services (e.g. banks, grocery stores, malls, etc.) for the residents. Often, bedroom communities are attractive because of the affordability relative to living in the primary city, in addition to a perception of lower crime rates, betters schools, better services. These bedroom communities are a relatively recent phenomena that coincided with the creation of the interstate highway system, which caused many people to move out of central and inner-city to the suburbs. Sometimes determining bedroom communities can be difficult; two of the most telling statistics associated with these communities are mean travel time to work and property tax rates. The top-ten counties regarding percent 25-44 year old population each contain attributes traditionally associated with bedroom communities suggesting this age cohort may be correlated to this suburban phenomena. (Table 20)

Table 20. Top-Ten North Carolina Counties Percent 25-44 Year Old Population

County	Percent between 25-44 years old	Eligible Provisional ballots per 1000 total ballots cast	Mean travel time to work (minutes)	2008 Property Tax Rate (/$100)	Core City
Hoke	45.1	10.1	26.4	0.73	Fayetteville
Johnston	43.8	10.6	31.3	0.78	Raleigh
Union	43.4	4.6	29	0.67	Charlotte
Harnett	42.3	13.3	29.2	0.73	Fayetteville
Mecklenburg	42.2	5.1	26	0.81	Charlotte
Wake	41.8	4.6	24.7	0.53	Raleigh
Durham	41.8	8.5	21.2	0.75	Durham
Franklin	40.4	5.7	33.2	0.88	Raleigh
Cabarrus	40.3	12.1	27	0.63	Charlotte
Greene	40.3	4.8	27.6	0.76	Greenville
Top-Ten Average	42.1	7.9	27.5	0.72	
State Average	34.3	5.9	24.2	0.61	

To this point, the research has suggested that a significant association exists between the percent of the population 25-44 years old and suburban bedroom communities, but is yet to address how does this relationship affect the provisional ballot process, more importantly, influence eligible provisional ballots.

The most recent regression analysis has identified the percent 25-44 year old population as having a positive relationship with the number of eligible provisional ballots per 1000 total ballots cast. Yet, prior regression analyses regarding provisional ballots cast and ineligible provisional ballot did not identify this age cohort as influencing the final regression results. This lack of inclusion in these prior analyses appears to indicate that the 25-44 age cohort is not casting provisional ballots at an overwhelmingly

high rate, yet when they do cast provisional ballots, they are being counted at a high enough rate to influence the model. This research suggests that the underlying cause of the relationship between 25-44 years olds and eligible provisional ballots is based on the apparent proclivity for this age cohort to commute from residential communities (e.g. bedroom communities) into city centers for work. It is theorized that a daily commute often prohibits registered voters the ability to arrive at their assigned polling place in time to cast their ballot. This research suggests that the many of the 25-44 year olds, who appear to be casting provisional ballots, are not only commuters, but civic minded, electorally conscious, registered voters who understand the basic electoral policies such as the requirement to vote in the county of residence. It is theorized that many of these "civic-minded commuters" do not have the ability to arrive at their assigned polling place by the closing (7:30p.m.) therefore they are essentially stopping at the first polling place they encounter within their county of residence on their commute home. Once arriving, the voters are being informed that they are in the wrong location, yet are not willing to, or do not have the time to get to their proper polling location, therefore they forced to cast a provisional ballot. Subsequently, the local Board of Elections appears to be determining that these provisional ballots should count because the voter was otherwise properly registered and simply did not have the time, or willingness to get to his/her assigned polling location.

4.5 Summary

To summarize, it appeared that the geography of provisional ballots cast, ineligible provisional ballots, and eligible provisional ballots can be explained by a small subset of independent variables. The three regression equations determined that the electoral geography of provisional ballots in North Carolina is explained by just seven independent variables in total that included the percent of the white population, the percent of the Native American population, the percent 45-64 year olds, the percent of the population with a Bachelor's degree or higher, percent 65 years old and older, the percent registered Unaffiliated, and percent 25-44 years old.

Regarding the geography provisional ballots cast per 1000 total ballots cast, it appeared that only percent Native American population was positively related to the dependent variable suggesting that as percent Native American population grows, the number of provisional ballots cast will increase in a similar fashion. Conversely, the percent white population, percent 45-64 year olds, percent with a Bachelor's degree or higher and percent 65 years old and older each had an inverse relationship with the rate at which provisional ballots are cast. These findings support the earlier hypothesis that racial composition could be a key component in explaining the electoral geography of provisional ballots cast. Both the percent white and the percent Native American population had the two highest standardized coefficient scores in the equation suggesting they were the most influential independent variables.

Second, the regression analysis for ineligible provisional ballots per 1000 total ballots cast suggested a similar geography and explanation. The analysis indicated that a

similar inverse relationship existed between the dependent variable and percent white, percent 45-64 year old and percent with a Bachelor's degree. Additionally, the analysis identified the percent of the population registered to vote as unaffiliated as having a positive relationship with ineligible provisional ballots while the percent Native American population and the percent 65 years old and older were not statistically significant factors.

The research suggested that the exclusion of both the percent Native American population regarding ineligible provisional ballots again underscores the success of the provisional ballot process. The findings indicate that this populations (i.e. Native Americans) are not casting provisional ballots erroneously, but appear to be cast provisional ballots based on a "fixable discrepancy." As a result, the provisional ballots are subsequently determined to be eligible and counted towards the final election results

Finally, the regression analysis for eligible provisional ballots that were actually counted in the election identified the percent Native American population and percent 25-44 age cohort as positive in the model, suggesting that as these populations increase, the number of provisional ballots counted will also increase. These findings contradicted many of the early hypotheses that suggested that larger minority populations as well as younger populations might lead to fewer counted provisional ballots. These initial hypotheses were based on the premise that minority populations would be less knowledgeable regarding the provisional ballot process, thus not completing all the requirements in order to be eligible and younger populations would be more mobile and less likely to be properly registered in their county of residency in order to be eligible.

Conversely, the findings of the regression analysis of eligible provisional ballots suggest that the process is doing exactly what it was intended to do, providing a fail-safe from disenfranchisement for populations that may have encountered difficulties (e.g. wrong polling place or out-dated residential address) up until the time they attempt to cast a ballot on Election Day.

Similarly to the previous two regression analyses, percent white population was identified as having an inverse relationship with the dependent variable, indicating that as this population increases the number of counted eligible ballots will decrease. The research suggests that the more germane interpretation of the findings would be to speculate how provisional ballots would be affected in the absence of these populations. Throughout the analysis, the research has suggested that the percent white, percent 45-64 year old cohort and the percent Bachelor's degree or higher have served as surrogates for stability and income. Based on the interpretation of the regression analysis, it appears that counties with higher shares of minority populations, higher shares of younger potential voters and a less well-educated population will lead to dramatic increases in the total number of provisional ballots cast, the total number of eligible provisional ballots and the number of ineligible provisional ballots cast. This antithetical interpretation of the findings of the regression analyses supports many of the earlier hypotheses.

CHAPTER V

CONCLUSION

The geography of provisional ballots is a subfield of electoral geography that has been largely overlooked in the literature despite its increasing importance as a key component in shaping election outcomes. In 2008, North Carolina had the second closest U.S. Presidential election in the nation where the margin of victory for President Obama was a mere 14,000 votes over Republican candidate John McCain. Approximately 52,000 votes were cast by provisional ballot in the North Carolina election, and nearly half of these ballots were subsequently certified and officially counted in the final election results. Although the total number of provisional ballots cast accounted for less than 1 % of the total votes cast across the state, the number of provisional ballots counted was nearly double the margin of victory, clearly indicating that provisional ballots, specifically ballots counted, played some role in determining the outcome of the Presidential election. However, what remains less clear are the key factors that best explain the geography of provisional ballots by county in North Carolina. This dissertation is one of the first attempts to conduct a comprehensive statewide analysis of the spatial distribution of provisional ballots by county.

A significant portion of the existing research regarding provisional ballots is conducted from a political science perspective and, consequently the spatial dimension has been frequently overlooked. Only a limited amount of research has focused on how

provisional ballots spatially vary and much of this research is limited to simple state-by-state comparisons or case studies of a small number of counties or precincts. However, the existing literature does provide an appropriate platform for a more rigorous state-wide analysis at the county scale particularly given the large number of studies that have suggested that certain socio-demographic variables and specific election administrative protocols may by key factors in determining provisional ballot outcomes.

This dissertation addressed two key questions regarding provisional ballots in the 2008 Presidential Election in North Carolina. First, what are the fundamental geographic patterns at play regarding the spatial distribution of provisional ballots by county in North Carolina? Second, what are the key determinants or predictor variables that best explain this spatial distribution?

Regarding the first research question, it was hypothesized that an analysis of the electoral geography of absolute provisional ballot totals might essentially mimic the geography of North Carolina's population and voter registration rates by county. However, the spatial distribution of provisional ballots was more nuanced and was largely attributable to a complicated mix of socio-demographic and economic forces. While total population and voter registration rates are powerful determinants of the electoral map of provisional ballots, other explanations such as elevated mobility rates (e.g., Cumberland and Onslow County) and minority-majority population compositions (e.g., Hertford and Robeson County) also played key roles in shaping the state map of provisional ballots.

When analyzing the spatial distribution of provisional ballots per thousand total ballots cast, the electoral map changes dramatically, and race becomes a significant factor in shaping the geography of provisional ballots. Those counties with disproportionately high numbers of provisional ballots tend to be minority-majority counties (e.g., Robeson, Bertie and Halifax County) that have large percent shares of Native American or African American populations. By contrast, most of the counties with a low number of provisional ballots cast per thousand tended to be counties with low percent minority populations. Overall, it appeared clear that the total county population was only one factor in determining the geography of provisional ballots by county. Other key factors seemed to include the socio-demographic mix and various economic forces.

To better understand how these determinants fully played out, a regression analysis was performed on how many provisional ballots were cast per thousand by county but also for how many provisional ballots were ultimately ruled eligible and not eligible. Consequently, the dependent variables for the three regression equations included:

- Total provisional ballots cast per 1000 total ballots cast
- Total ineligible provisional ballots cast per 1000 total ballots cast
- Total eligible provisional ballots cast per 1000 total ballots cast

The statistically significant independent variables for each of these three dependent variables are listed in Table 21 and illustrate how some variables feature more prominently than others in the analysis. The electoral geography of provisional ballots cast per 1000 by county was largely determined by the percent white, the percent Native

American population, the percent of the population between 45-64 years old, percent of the population with a bachelor's degree or higher, and the percent of the population 65 years old and older. It has been argued that racial composition plays a key part in shaping the geography of provisional ballots but it was not anticipated that the Native American population would play such a significant role. Much of the literature has stressed the key role that the share of African American and Hispanic populations play in shaping electoral geographies but only a limited amount of the literature has focused on the role of Native Americans in the electoral process.

Table 21. The Key Independent Variables for Each of the Three Provisional Ballot Regression Models

Provisional Ballots Cast per 0/00	**Ineligible Provisional Ballots per 0/00**	**Eligible Provisional Ballots per 0/00**
Percent White Population (-)	Percent White Population (-)	Percent Native American Population (+)
Percent Native American Population (+)	Percent 45-64 year old cohort (-)	Percent White Population (-)
Percent 45-64 year old cohort (-)	Percent Bachelor's Degree or Higher (-)	Percent 25-44 year old cohort (-)
Percent Bachelor's Degree or Higher (-)	Percent Registered Unaffiliated (+)	
Percent 65 and Older cohort (-)		

Turning our attention to the geography of ineligible provisional ballots by county, the key determinants included percent white, the percent of the population between 45-64 years old, the percent with a bachelor's degree or higher and the percent registered as unaffiliated. Rather surprisingly, the regression analysis did not include any variables that captured minority population shares by county but instead stressed the key role that education levels, age and percent white play in mitigating the number of ineligible

provisional ballots cast by county. Of course, the same inverse relationships applied for these same three independent variables in the first regression equation which analyzed total provisional ballots cast per thousand.

The final regression analysis analyzed the geography of those provisional ballots that were ruled eligible and, thus, were actually counted in the 2008 U.S. Presidential Election in North Carolina. The three key independent variables included the percent Native American population, percent white populations and the percent of the population between 25-44 years old. Once again, racial composition (e.g. percent Native American and percent white) was prominently featured, suggesting that these two variables are very powerful factors in determining the eligibility of a provisional ballot. Given the consistently inverse nature of the relationship between percent white and each provisional ballot measure, it appears that unconventional, provisional ballot voting patterns may be similar to traditional voting patterns. The influence the percent white population (which appears to be acting as a surrogate for a number socio-demographic factors) has on the provisional ballot process suggests that populations that have experienced few to no barriers regarding the electoral franchise and are well versed with the electoral process are less likely to need to cast a provisional ballot in the first place.

By contrast, the positive relationship that exists between percent Native American population and percent 25-44 year olds regarding the number of eligible provisional ballots cast per thousand may be cause for limited celebration. While minority populations are more likely to cast provisional ballots (Native Americans), it appears that the Native American and 25-44 year old age cohort metrics are more pivotal in

explaining the geography of eligible provisional ballots relative to the geography of provisional ballots that were ruled ineligible (not counted). It is true that ethnic and younger populations tend to cast provisional ballots at higher than normal rates but a substantive share of these votes seem to be based on "fixable discrepancies" and are therefore ultimately counted in the final vote. The analysis implies that the process is doing exactly what it is intended to do, providing a fail-safe from disenfranchisement for populations that have encountered various unexpected administrative difficulties on Election Day.

Overall, the results of this dissertation indicate that geography matters, the empirical assessment has shown that age, race and education are key components in gaining a better understanding of the electoral geography of the provisional ballot process. Agnew (1996) suggested that in electoral geography, context counts, "context" referred to the events that will influence politics and political behavior across multiple geographic scales. I believe that an understanding of the electoral geography of provisional ballots is an important step in gaining "context" of the influences that shaped the outcome of the 2008 Presidential election in North Carolina. Following the result of the Presidential election, scholars have discussed and sometimes disagreed upon the influence minorities voters and younger voters had on the election outcome. These discussions have been focused on the traditional ballots cast at the polling place on Election Day or during early voting. Generally, scholars have yet to discuss the impact unconventional ballots (e.g. provisional ballots) had on these election results, moreover, what shaped those unconventional ballots. The findings of this dissertation do not simply

restate the obvious; they provide insight into a realm of electoral geography (provisional ballots) that continuously plays a role in determining the winner of elections, but that has yet to be fully investigated. Furthermore, much of the literature has suggested that the spatial distribution of provisional ballots is simply a product of varying administrative procedures. This dissertation has determined that, during the 2008 Presidential election in North Carolina, it appears that socio-demographic factors such as age, race and education, are the most influential components in determining the spatial distribution of these unconventional, sometimes controversial provisional ballots. These findings are again cause for limited celebration, although election administrators can have limited reassurance that administrative procedures are not disenfranchising potential voters, these findings may also provide little motivation for counties to continuously improve their administrative processes.

Of course, the range of ongoing research initiatives regarding the geography of provisional ballots are highly varied and numerous. For example, one of the most obvious areas of future research would be a more disaggregated analysis of provisional ballots in North Carolina at the precinct level. It is not yet been established that the key determinants of provisional ballots at the county scale are replicable at the level of precincts. Furthermore, are the patterns and explanations that have emerged in North Carolina consistent with findings in other states. Furthermore, it seems clear that certain North Carolina counties warrant more in-depth case studies including a more detailed analysis of the role of the Native American population in Robeson County in shaping provisional ballot outcomes. Similarly, future case studies might be conducted in

Cumberland County and Onslow County regarding the role that highly transient military populations play in shaping the electoral geography of provisional ballots.

This dissertation is a first step towards an improved understanding of the spatial distribution of provisional ballots in North Carolina. Overall, the findings underscore the important role that provisional ballots play in determining electoral outcomes. Better understanding the provisional ballot process is vital because casting a vote is a fundamental human right and an essential pillar of democracy.

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