Polling Place Closures in Medina and Galveston, Texas: Reprecincting without the Full Protection of the Voting Rights Act

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Dedication

I dedicate this work to my loving wife, Carla Veronica.

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Abstract of Thesis

Polling Place Closures in Medina and Galveston Counties, Texas: Reprecincting without the Full Protection of the Voting Rights Act

Polling place closures create an increased cost of finding a new polling place that causes would be voters to potentially abstain. Voting districts are often redrawn by officials who have partisan leanings and influence over the process. Because of this, it is possible to redraw districts in such a way to target members of the electorate that support another political party by using readily available demographic or voter registration data. Medina and Galveston Counties in Texas were examined due to their histories of voting rights abuses and recent polling place consolidation following the controversial Supreme Court case, Shelby v. Holder, which struck down the necessity of federal oversight in states with a history of voting rights abuses. In this thesis two multinomial logistic regression models were run to assess whether demographic data is correlated with whether the status of a polling place in a given census tract is altered. I find that it is more likely that polling places were closed in areas with higher Hispanic population compared to not changing, and that it was significantly less likely that polling places were opened in areas with higher Hispanic population.

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Chapter 1: Introduction

Where one lives determines where they can vote; when voting locations are changed, there can be a personal cost of greater travel and research time. A voter in rural Arkansas is likely to have a completely different experience than a voter in Manhattan. People often live in neighborhoods with similar ideologies, ethnicities, and racial backgrounds to their own. Because of this, where one lives is frequently a predictor of partisan leaning, and minority neighborhoods frequently become targets of voter suppression.

In the United States, the suppression of minority voters has been widespread. African America men were given the right to vote in 1870; however, this mostly was in name only due to suppression techniques such as literacy tests, poll taxes, and terrorist tactics against black voters. In 1965, the Voting Rights Act forbade such "measures and devices" as a means of suppression. Additionally, it required states with a history of voting rights abuse submit changes in polling practices to the federal government for preclearance. The Voting Rights Act has been considered one of the most effective pieces of civil rights legislation in American history.

Although the Voting Rights Act stopped outright methods of voter suppression, voter suppression still exists. Gerrymandering, strict voter ID laws, and felon disenfranchisement are the primary ways that voter suppression occurs in the United States today.

Gerrymandering, or partisan redistricting, receives considerable attention in both academic and popular media (Chen, 2013). Congressional districts are a territorial subdivision that elects a single member of Congress. The US census determines the

number of congressional districts per state, of which the borders are set by the state. Generally, the state legislature, a partisan body, draws these districts. When these partisans control the process, they manipulate the boundaries of the districts to favor their political party. Essentially, with this method politicians pick their voters.

Comparatively, the adjustment of voter precincts does not receive nearly as much attention (Amos, Smith, & Ste. Claire, 2017). A precinct is a subdivision of a county where all addresses within are assigned to a specific polling place. When the boundaries of the precinct change, those living in the areas that changed must locate their new polling place. Low information voters and voters with marginal interest are less likely to vote due to the costs of finding the new polling place and the costs of increased travel distances. While the discriminatory effects of partisan redistricting have been studied extensively, there have been relatively few studies about the discriminatory effects of partisan reprecincting, who may be affected by it, and where it is taking place.

In 2013, the Supreme Court Case *Shelby v. Holder* (2013) nullified key provisions of the Voting Rights Act that required certain states that historically committed voting rights abuses to submit changes in voting practices to the federal government for approval. Immediately following this decision, at least 868 polling places were closed in the southern United States, with at least 403 closing in Texas (Simpson, 2016).

This study aims to assess whether the decision to reprecinct in Medina County and Galveston County, Texas in 2013 was done with the intention of suppressing minority voters. I developed multinomial logistic regression models to estimate the likelihood of a polling place being added, removed, or unchanged being correlated with

demographic factors. I find that it is likely that there were discriminatory practices, either intentional or unintentional, related to the reprecincting of these counties.

Chapter 2: Literature Review

Space, place, and politics

Political science is chiefly concerned with the interaction of politics, power, and policy. Politics is the set of processes for achieving, exercising, and resisting power, and policy is the intended outcome that power allows one to achieve. Political geography is the interaction between the tenets of political science with space, place, and territory. The issues of politics, power, policy, space, place and territory are intrinsically linked in the study of political geography (Martin Jones, et al., 2014).

In the past political geography had been a rigid study of political territory units, borders, and administrative subdivisions. Modern political geography is defined in an open manner; for example, political geography has been described as a discourse that produces understandings of the world characterized by internal debate, evolutionary adoption of new ideas, and dynamic boundaries (Painter & Alex, 2009). John Agnew defines political geography as "the study of how politics is informed by geography" and further stresses the importance of place. He suggests that political behavior, and specifically voting behavior, is viewed as the product of agency as structured by the historically constituted social contexts in which people live their lives, places (Agnew, 2014).

In a democracy, elections are the key to political power and are thoroughly geographical events. Electoral geography, a subset of political geography that studies how space place and territory contribute to the changes of policy, politics and power of democracies, was revitalized following the 2000 US presidential election due to both the extraordinary closeness of this election and the geographic factors that played a large role

in the outcome. The entrenchment of polarized politics in subsequent elections promoted new geographical research as well. Additionally, new technologies and the popular use of GIS by news media (Shin, 2009) and political websites have generated public interested in the field as well.

Geographical expressions of political identity in the United States

Extensive literature suggests that race and racial prejudice affect political attitudes, candidate preferences (Bobo & Dawson, 2009), political behavior, political ideology, public opinion, and political inclusion (Monforti, Orey, & Conroy, 2009).

Since 1984, African Americans have voted for the Democratic presidential nominee from 80 to over 90% of the time, and roughly 70% of Hispanics have done the same in the most recent elections. Whites have increasingly voted for Republicans in the last four decades (Ansolahehere, Persily, & Stewart, 2010).

People tend to live in neighborhoods of both similar political views and racial identity. This is referred to as the "neighborhood effect." Democrats tend to pack into politically homogenous areas of cities due to complex processes of migration and residential segregation. These areas tend to be diverse in terms of race and ethnicity, while Republicans tend to live in areas that are more spread out, white, and politically heterogeneous (Chen, 2013). Due to the fact that Democrats and minorities tend to live in urban areas, partisan district drawing often further concentrates racial and ethnic groups into minority districts that reduce political influence (Trebbi, Aghion, & Alesina, 2008).

Early history of minority voter suppression in the United States

The United States has a long history of voting rights abuses and suppression against its minority populations. The main target of disenfranchisement and voter suppression historically has been the African American voter.

African American men were finally granted the right to vote under the 15th amendment in 1870 (Webster et al., 2015). However, immediately following the passage of the amendment, many southern states implemented Jim Crow laws. Several measures were taken to prevent African Americans to vote including literacy tests, poll taxes, grandfather clauses, intentional closures of black polling places, gerrymandering, and terrorist violence against black Americans from groups such as the Ku Klux Klan (Murillo, et al., 2017). This de facto disenfranchisement culminated in the civil rights movement of the 1950s and 1960s, and ultimately lead to the Voting Rights Act of 1965.

Voting Rights Act

Both de jure and de facto disenfranchisement of black Americans ceased when the Voting Rights Act of 1965 was passed into law. The law has two types of provisions, general provisions that apply nationwide and special provisions that apply only to certain states and local governments. The law implemented a general prohibition on discriminatory voting laws. Specifically prohibited are "tests or devices" that a person must comply with to vote such as a literacy test, knowledge requirement, or proof of moral character, thus revoking Jim Crow laws.

Additionally, specific previsions applied to certain states that were decided by section 4(b). This "coverage formula" included districts that had used a "test or device" and less than half of the eligible citizens were registered to vote on November 1st, 1964,

1968, or 1972. Section 5 of the Voting Rights Act required covered jurisdictions to receive federal preclearance before implementing changes to their election laws. A covered jurisdiction has the burden of proving that the change does not have the effect of discriminating on the bases of range or language minority status. Preclearance used federal oversight to restrict the implementation of any new discriminatory measures. Preclearance restrictions led to gradual and significant increases in voter participation since 1965, bolstering turnout by four to eight percentage points. (Ang, n.d.)

The effect was nearly immediate: for example, in Mississippi, less than seven percent of eligible African Americans were registered to vote before the Voting Rights Act, and within two years the percent of African Americans registered to vote was as high as 60 percent. (Webster et al., 2015)

Redistricting, partisan gerrymandering, and modern tools of voter suppression

Racialized political processes are tied to race-based geographic and residential segregation. Today, there are efforts to suppress the vote of minorities due to their increased likelihood to vote for Democrats. The primary methods used to suppress minority voters are restrictive photo ID laws, felon disenfranchisement, gerrymandering and reprecincting. Along with African-Americans, Latinos are frequent targets of modern voter suppression as well (Wang, 2012).

Photo ID laws predominately affect the poor, elderly, disabled, and people of color. Many black and Latino men and women lack birth certificates, or the funds to get a required photo ID law (Highton, 2017).

Disenfranchisement laws due to felonies in many states have a significant impact on voting outcomes because of given racial and ethnic variations in the prosecution and

sentencing of drug related crimes (Uggen, Larson, & Shannon, 2016). Minorities and the poor are more frequently sentenced in these crimes, and therefore disenfranchisement is more likely to take votes from Democrats than from Republicans (Uggen & Manza, 2002). These laws vary drastically by state. Some states such as New Hampshire and Maine allowing people in prison to vote, and some states such as Florida and Virginia have in the past permanently disenfranchised those with prior felony convictions (Manza, Uggen, & Behrens, 2012). In these extreme cases, it is possible that many elections could be swayed by the disenfranchisement of voters who would have voted if their rights had been fully restored.

Redistricting is a necessity as the relative and absolute population shifts in the United States. However, since state legislatures frequently control the process, there is potential for abuse. Partisan redistricting, or Gerrymandering, often concentrates racial and ethnic groups into minority districts that reduce political influence (Trebbi et al., 2008). Partisan redistricting significantly contributes to a decline in electoral competitiveness (Forgette, Garner, & Winkle, 2009).

Reprecincting and polling place closures

A precinct is a subdivision of a county where all addresses within are assigned to a specific polling place. Reprecincting refers to the change of the boundaries of a precinct in a given county. This could be done in a variety of ways, either by closing polling places, moving polling places, or altering preexisting districts by simply redrawing boundaries around existing polling places.

Although there is significant discussion in academic and popular media around redistricting and its implications for elections and political representation (Chen, 2013),

the changing of voting precincts and polling places has not received similar treatment. Amos et al. (2017) theorize that while redistricting is highly politicized and partisan, the changing of local voting places appears to be much more innocuous and administrative in nature, and thus flies under the radar. As a result, there have been few studies about who is affected by reprecincting and how they are affected. There have been only three major geographical studies of note: one in Atlanta (Haspel & Gibbs Knotts, 2005), one in Los Angeles (Brady & McNulty, 2011), and one in Manatee County, Florida (Amos et al., 2017).

The primary reason given for the closure of polling places and consolidation of precincts are staff and budgetary concerns (Brady & McNulty, 2011). The studies in Atlanta (Haspel & Gibbs Knotts, 2005) and Los Angeles (Brady & McNulty, 2011) both show that polling place consolidation and reprecincting was done in a random fashion, and those who had changed precincts were not statistically different from those who had no changes. These results seem to further the idea that there is little harm in reprecincting, but there are major distinctions in these two cases that are likely not the norm. In Atlanta, there was an increase in polling places after districts were broken up, suggesting coverage was intentionally increased in any given precinct. In Los Angeles, preexisting precincts were not divided, and many voters did not have to change their polling place. Additionally, the commission that oversaw reprecincting in Los Angeles was intentionally nonpartisan. Amos et al. argue that these conditions are unlikely to be the norm in the United States because most counties have partisan commissions in charge of reprecincting. Brady and McNulty issue a stern warning that an unscrupulous official could indeed close polling places in such a way to attempt to disenfranchise certain

groups. Although changes to precincts can be benign or designed to increase turnout, this process can be used to reduce access to polling places and limit voter participation.

Figure 2.1 An example of reprecincting from Amos et al., 2017. New precincts overlay old precincts with bold lines. Note that some existing districts are split into entirely new ones, requiring that the voter gain knowledge of the location of the new polling place and increase their distance and travel time to the polls.

In Manatee County, the number of polling places were reduced prior to the 2014 general election. Additionally, reprecincting was done in such a way that preexisting precincts were broken up so that the most affected were African American and Hispanic communities. Overall, it was estimated that Republicans were 3.5% less likely to be assigned a new polling place. They estimate that this effect may have increased Republican turnout by .2% and decreased Democrat turnout by .2%. Those in charge of reprecincting in Manatee County were known Republican partisans. This study

demonstrates the willingness of officials to both reprecinct in a partisan way and target minority voters by targeting their neighborhoods via the changing of precincts.

It is likely that most counties in the United States have similar formative conditions that allowed partisan reprecincting to occur Manatee County, meaning there is significant risk to minority voting rights in most counties in the United States. Any decision to alter the location of polling stations may have a disruptive effect on a voter's likelihood to vote (Amos et al., 2017).

Shelby v. Holder and the "Great Polling Place Closure"

The Supreme Court decision of Shelby v. Holder (2013) nullified section 4(b) of the Voting Rights Act of 1965 which mandated that certain states with a poor history of voting rights had to submit changes in voting practices and procedures to the federal government for approval before they were implemented, also known as preclearance. Changes could only be approved if the jurisdiction could show that the changes would not hurt minority voters (Lang & Hebert, 2018). Without section 5 of the Voting Rights Act, potentially discriminatory measures such as polling place closures, changing elections to at-large elections, and cancelling elections can now only be challenged with case-by-case litigation (Webster et al., 2015). Following this decision, there have been at least 868 polling places closed in states that were formerly covered under preclearance by the Voting Rights Act (Simpson, 2016).

In Texas, at least 403 polling places closed in advance of the 2016 general election following the Supreme Court decision of Shelby v. Holder (Simpson, 2016). Additionally, within hours of Shelby nullifying key portions of the Voting Rights Act, the Texas attorney general immediately stated his intent to pursue strict photo ID laws

(Abbott, 2013). The timing and the potential discriminatory nature of these changes prompted further examination.

Effects of Polling Place Closures on Voters

Polling place closures generally increase distance to the polling place. Increased distance to the polling place is often a predictor of lower turnout, especially among non-habitual voters; however, this relationship is non-linear and not entirely clear (Dyck & Gimpel, 2005). Among those who have voted in previous elections, increased distance to the polling place is not a large factor in abstaining from voting. Instead, the cost of finding and going to a new polling place is a significant factor that causes would be habitual voters to abstain by creating artificial inaccessibility (Brady & McNulty, 2005, 2011). If polling places are less accessible, those with marginal interest and motivation are less likely to vote (Gimpel & Schuknecht, 2003). When polling places are closed, and precincts are consolidated, there is generally a drop off in election day voting and an increase in convenience voting methods such as early voting or absentee voting. In most cases, this increase in convenience voting does not make up for election day voters lost due to reprecincting (Brady & McNulty, 2011).

Chapter 3: Methods

This study focuses on Medina and Galveston Counties due to both their relatively high number of polling place closures, and prior history of voting rights abuses against minorities. Both counties have implemented voting centers that allow for any polling place to be used regardless of precinct on election day following the *Shelby v. Holder* court decision. This change has been made without federal oversight in counties with a history of voting rights abuse.

Figure 3.1 Location of the study areas within Texas.

While these two counties were chosen to be representative of counties that lost the full protection of the Voting Rights Act, the methods used in this study could be applied to all counties in the United States.

Medina County is a rural county outside of San Antonio with an estimated population of 49,283 ("US Census: Medina County, Texas," 2016). In Medina, 93.7% of the county is white, with 44.3% being white and not of Hispanic or Latino descent. Slightly more than half of the county (51.4%) identifies as Hispanic and 2.8% identify as black.

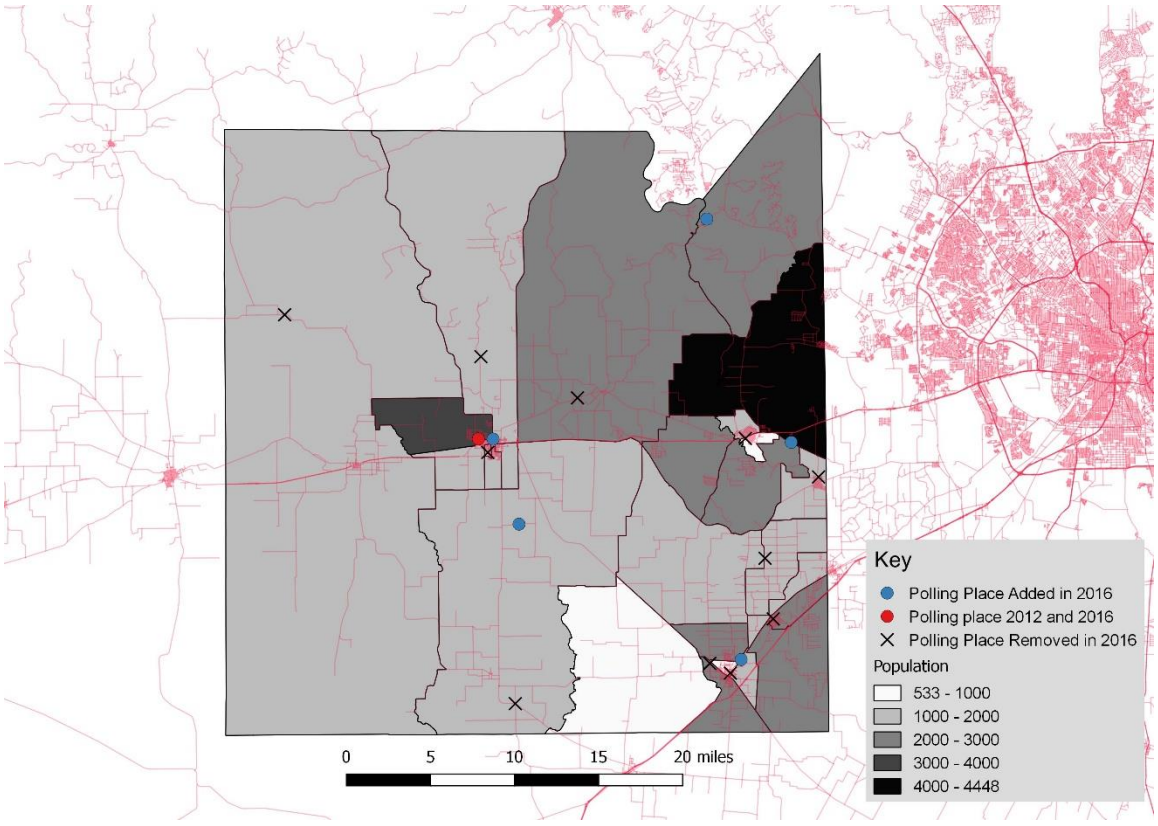

Figure 3.2 Overview of Galveston County Population, along with polling places used in the 2012 and 2016 elections.

Medina County had a 54% polling place reduction (13 were open in 2012, and only 6 were open in 2016) following Shelby v. Holder (Simpson, 2016). Medina County

was previously in violation of the Voting Rights Act for failing to provide voting information in Spanish. Federal oversight has previously shaped the implementation of and compliance with language assistance provisions. Language assistance provisions have a direct effect on Latino representation in government, and have been found to increase turnout in many local elections (Marschall, 2015).

Galveston County is a mixed urban and suburban county in the outskirts of Houston. It has an estimated population of 329,431 ("US Census: Galveston County, Texas," 2016). Nearly one quarter (24.1%) of the county identifies as Hispanic, 13.5% as black, and 80.1% as white.

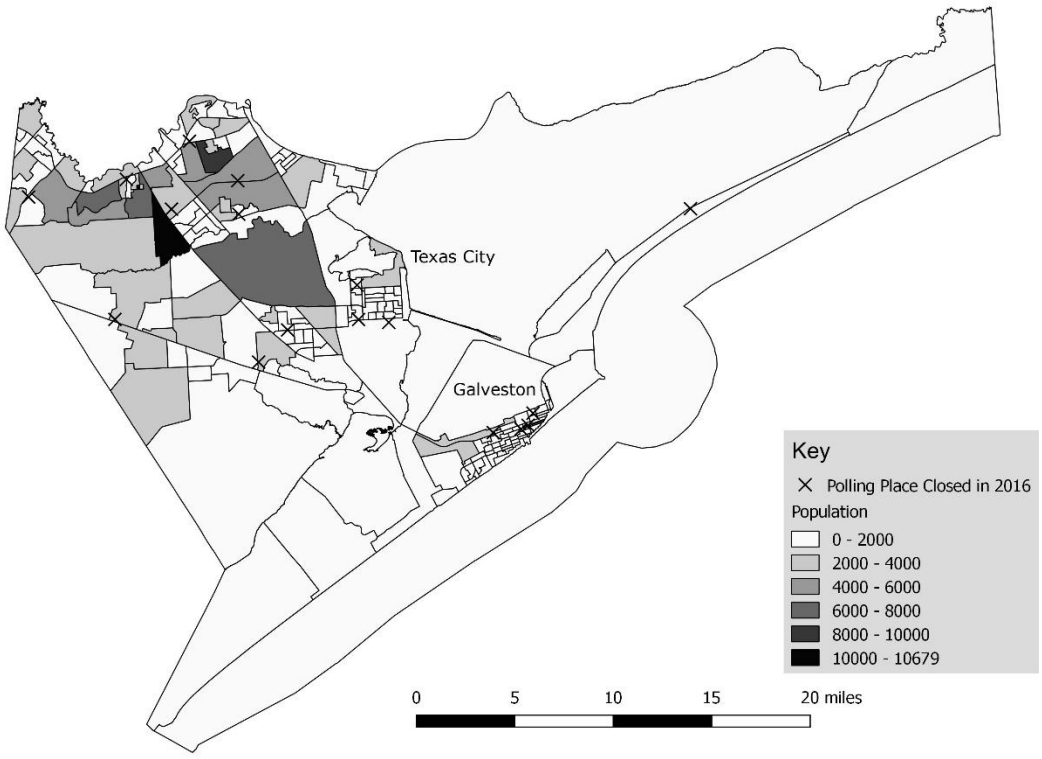

Figure 3.3 Overview of the population of Galveston County, along with closed polling sites

Galveston County had a 16% polling place reduction (there were 45 in 2012, and only 38 in 2016) (Simpson, 2016). There has also been a history of abuses against minority voters in Galveston County. In the months following the *Shelby* decision, the county enacted a plan previously rejected by the Department of Justice to reduce the number of constables and justices of the peace from 8 to 4. This plan was previously rejected because it reduced minority representation despite a growth in both the Latino and Black communities. Additionally, the Galveston City Council attempted to switch several seats from district representation to at-large representation in 2015, but this change was ultimately not implemented due to backlash within the community.

Research Questions

Are the electoral commissions in Medina and Galveston Counties intentionally targeting minority voters when deciding which polling places to close and open? Are demographic factors correlated with the decision to add, close, or not change a polling place?

Hypothesis

I assume that it is likely that these counties are likely targeting minority voters due to a combination of three facts: the timing of polling place changes after *Shelby v. Holder*, the partisan makeup of the electoral commissions of these counties, and prior voting rights abuses in these counties.

Multinomial Logistic Regression and justifications for this study

I developed two multinomial logistic regression models to estimate factors contributing to polling place changes in a given census tract in Medina and Galveston

Counties between 2012 and 2016, the last presidential election year before and the first presidential election year after *Shelby v. Holder*.

Logistic regression is a generalized linear regression model where the dependent variable is categorical with two possible categories. Multinomial logistic regression is a variation of logistic regression where the dependent variable has multiple categories that have no natural ordering. Independent variables are used to predict the dependent variable.

Logistic regression transforms the dependent variable into a logit variable. Logit, in general, is the logarithm of the odds of an event happening:

$$\log\left(\frac{\pi}{1-\pi}\right)$$

Equation 3.1 The logit, where pi is the probability of an event happening

The logit is a link to the linear regression model, and it is assumed that the logit is related to the independent variables linearly:

$$\log\left(\frac{\pi}{1-\pi}\right) = \alpha + \beta x$$

Equation 3.2 The logit link to linear regression, where pi is the probability of an event happening, alpha is the intercept and b is the slope

Multinomial logistic regression approaches multinomial data by choosing one of the response categories of the dependent variable as a reference case. The logit in a multinomial model is the natural log of the odds that the dependent variable is equal to the reference case. The log odds are then calculated for all coefficients relative to this reference case. Because the coefficients are log odds, they can be exponentiated to determine the odds of the dependent variable belonging to a given response category as opposed to the reference category (Starkweather & Moske, 2011).

Due to the multinomial nature of the data, multinomial logistic regression cannot be represented with just one equation. J – 1 equations are required to describe a variable with J response categories. Multinomial logistic regression can be visualized as a set of independent binary logistic regressions.

$$\log\left(\frac{\pi_1}{\pi_J}\right) = \alpha + \beta_1 x$$

$$\log\left(\frac{\pi_2}{\pi_J}\right) = \alpha + \beta_2 x$$

…..

$$\log\left(\frac{\pi_{J-1}}{\pi_J}\right) = \alpha + \beta_{J-1} x$$

Equation 3.3 A series of equations representing multinomial logistic regression

Multinomial logistic regression operates on a few assumptions. The first assumption is that the data has low levels of multicollinearity, meaning that one independent variable cannot be linearly predicted from another in the model. If there are high levels of multicollinearity, it becomes difficult to determine the impact of several variables. A second assumption is that when modeling choices, multinomial logistic regression follows the assumption of the independence of irrelevant alternatives (IIA). IIA means that an unavailable choice should not affect the selection of available choices. Notably, multinomial logistic regression does not assume normality, linearity, or homoscedasticity (the size of all error terms are the same).

Multinomial logistic regression is a useful tool that has been used in many political geographical studies, testing for a wide range of variables such as likelihood to vote (Dyck & Gimpel, 2005) (Amos et al., 2017), political party choice (Arzheimer & Evans, 2012), urban noise levels (Geraghty & Mahony, 2015), urban growth (Hu & Lo,

2007), and many more. It is an appropriate tool to use if the dependent variable is categorical without order, and the assumptions are not violated.

How to interpret Multinomial Logistic Regression Results

To interpret the coefficients produced by the multinomial logistic regression model they are exponentiated. The exponentiated coefficients are referred to as odds ratios. As mentioned previously, these values represent the odds of the dependent variable being in a given category rather than the reference case for the model. For example, a value of 1.37 in a given category means that it is 1.37 times as likely (37% more likely) that a given category is chosen over the reference case.

Odds ratio values less than one can be difficult to interpret. A simple way around attempting to interpret these values is to flip the case to assess the probability that the reference category is chosen over a given category. For example, an odds ratio of .31 could be alternatively assessed by flipping the categories, and instead examining an odds ratio of 1/.31, or 3.23, which would mean that it is 3.23 times more likely the reference case is chosen over a given case.

Data

The first model uses 4 independent variables: proportion of Hispanic population in a given census tract, proportion of white population in a given census tract, total population in a census tract, and a dummy variable representing whether the census tracts are in Galveston or not. The dependent variable in the study is an indicator of change in polling places in a census tract with three levels: polling place removed, polling place unchanged (also includes if there was no polling place and none was added) and polling place added.

The second model uses 4 independent variables: Hispanic population of a given census tract, white population of a given census tract, total population in a given census tract, and a dummy variable representing whether the census tracts are in Galveston or not. As before, the dependent variable of this model is the indicator of polling place change.

The demographic data on race and heritage come from the US Census American Community Survey ("US Census: American Community Survey," 2016). This data is used because it is the closest representation of the electorate around the 2016 election. Additionally, the data are freely available and robust, so it is likely to be used by the county electoral commissions as well.

The American Community Survey (ACS) only surveys 1 in 40 houses, compared to all households in the decennial census. Because of this, there is a larger margin of error for the ACS population estimates. However, due to both the time frame represented and the rapid population growth in both counties I believe that the American Community Survey more accurately assesses the conditions of the people living in these counties, even with a larger potential for error compared to the decennial census which was taken in 2010.

Polling place location data has been acquired from election announcements in both Medina ("Medina County Republican Party: Polling Locations," 2016) and Galveston Counties ("Galveston County Votes: Voting Locations," 2016). Historical polling places from the 2012 election were found using archived webpages of election announcements. Polling places modeled in this study are election day polling places.

The dependent variable, change in polling place, was determined by inspecting the census tracts in Medina and Galveston Counties and determining whether there had been a change in a polling place within the boundaries from 2012 to 2016. There are three response categories. If a polling place was removed in 2016, the census tract was placed into the "Polling Place Removed" category. If one or more polling places was added in 2016 to a given census tract, it was placed in the "Polling Place Added" category. If there was a polling place present in 2012 and in 2016, or if no polling place was present in 2012 and one was not added in 2016, the census tract was placed in the "No Change" category. If a polling place was on the boundary of two or more precincts, it was assessed as belonging to both.

Analysis

Two multinomial logistic regression models were developed to assess whether polling site changes between 2012 and 2016 can be explained by demographic variables. This analysis is done over census blocks in both Medina and Galveston Counties. Census tracts are chosen over voting precincts due to both vote centers being implemented (meaning that a citizen could vote at any potential polling place in the county), and the focus on demographic data in the regression analysis.

Because Republicans control the government of Texas and the governments of Medina and Galveston counties, if suppression is attempted via the closure of polling places it would likely be aimed against the Hispanic population of these counties who are more likely to vote for Democrats. Additionally, it would be less likely that the closure of polling places would affect the white population of Medina and Galveston Counties if

they were closed to suppress the vote because predominately white communities would be less likely to be targeted by polling place changes.

The control variable in this model is the population count. It is assumed that it would be more likely that polling places would be added and less likely that they would be removed from census tracts if the population were higher.

Caveats

This study is performed on aggregated data, and as such is prone to a loss of accuracy from the necessity of aggregation. Additionally, the small sample size of this study increases variance in the results.

African American population proportion was omitted from the model due to a lack of a representative sample in most census tracts. On average, the population of a given census tract in these counties is about 1620, while the average black population in these census tracts is about 192, with 34 out of 219 tracts having no African Americans present.

Additionally, African American population introduced significant multicollinearity to the model. That is because the proportion of white, Hispanic, and African American people in a census tract sum to approximately one, creating perfect collinearity in the model. This violates the assumptions of multinomial logistic regression. Therefore, one group must be omitted for analysis to be possible (Næs & Mevik, 2001).

It is important to note that the results of this study could not be directly extrapolated to other counties because conditions can vary significantly in other counties in terms of geography, political structures, motivations of county officials, etc. It is also

important to note that this study only applies for the given years, and these trends cannot be assumed to be true for other years not included in the timeframe of the study.

Finally, convenience voting methods are not considered in this study. Although convenience voting methods such as early voting and absentee voting are allowed in both Medina and Galveston Counties, this study has not considered the implications of convince voting on reprecincting due to both the complications that arise from discerning who is likely to use these methods from a geographical standpoint and the motives of the voters doing so.

Chapter 4: Results

Qualitative Analysis

In Medina County, the widespread closure of polling places is noted. Note in figure 4.1 and 4.2 the southeastern town of Natalia, with 89.8% Hispanic population, has had its only polling place closed. However, there is not a clear spatial pattern to closures in the county. It is difficult to determine a spatial pattern to polling place changes based on white population proportions and white population (figures 4.3 and 4.4).

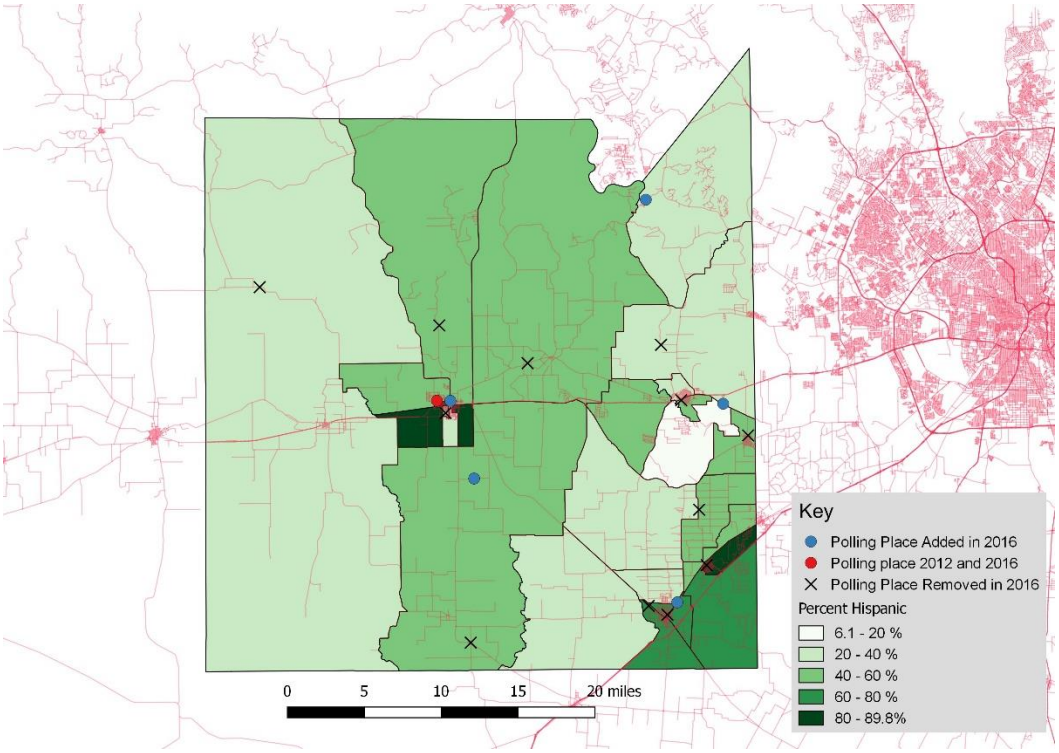

Figure 4.1 Medina County: Census tracts by percent Hispanic

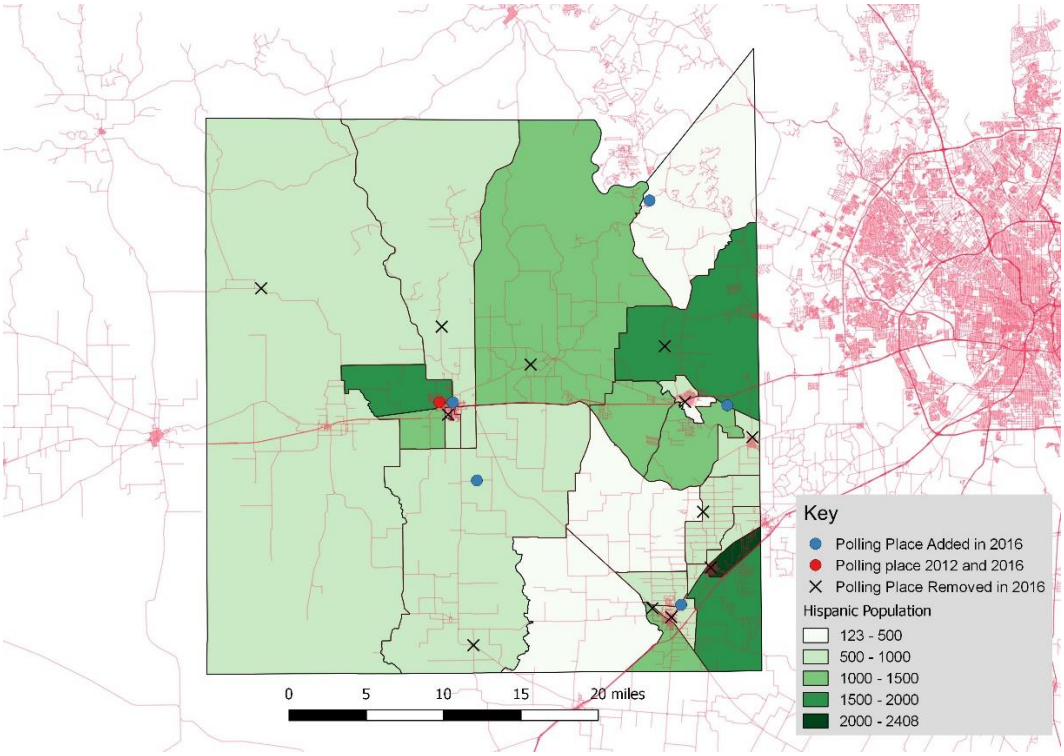

Figure 4.2 Medina County: Census tracts by Hispanic population

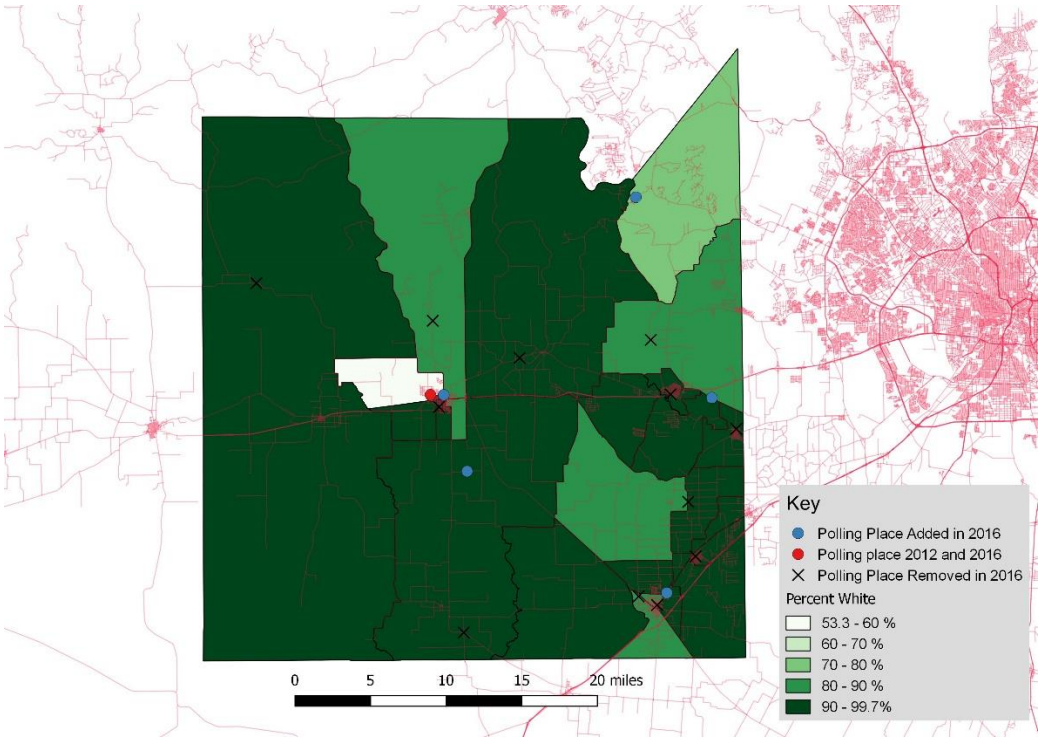

Figure 4.3 Medina County: Census tracts by percent white

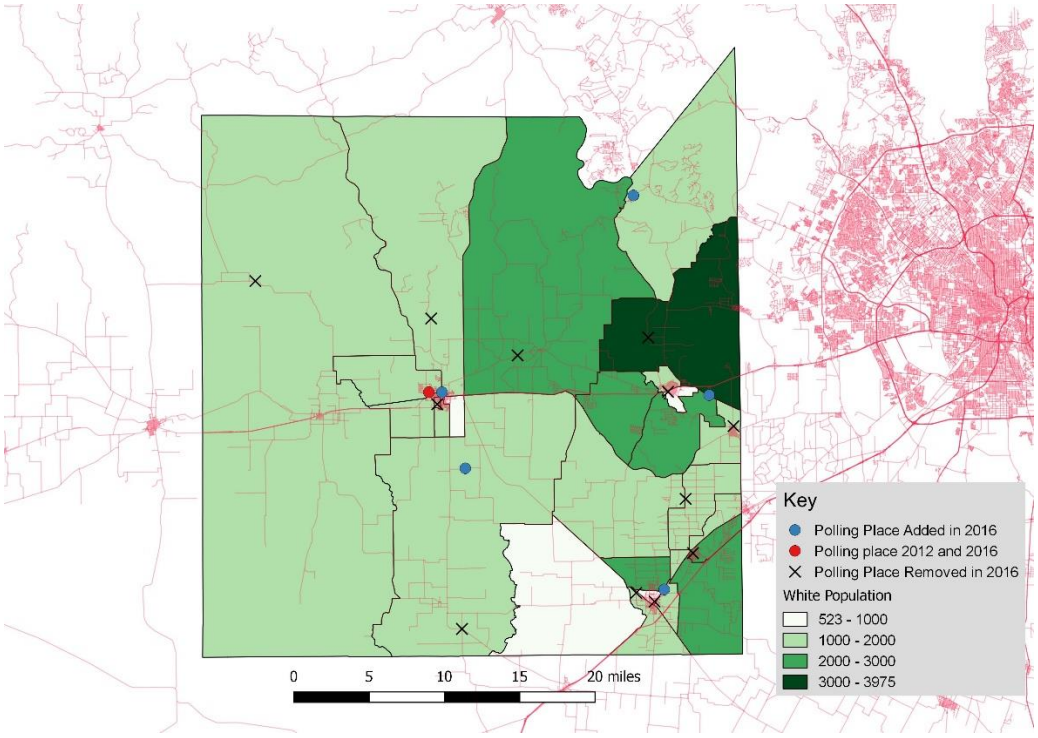

Figure 4.4 Medina County: Census tracts by white population

In the census tracts that make up Texas City there are multiple polling place closures with no new additions (Figure 4.5, 4.6, 4.7, and 4.8). It is notable that there is a relatively high Hispanic population and low white population in these areas, although this spatial trend is not clear. Additionally, there is not a clear pattern of polling place changes that is notable by visual inspection in the Galveston City area (Figures 4.9, 4.10, 4.11, 4.12).

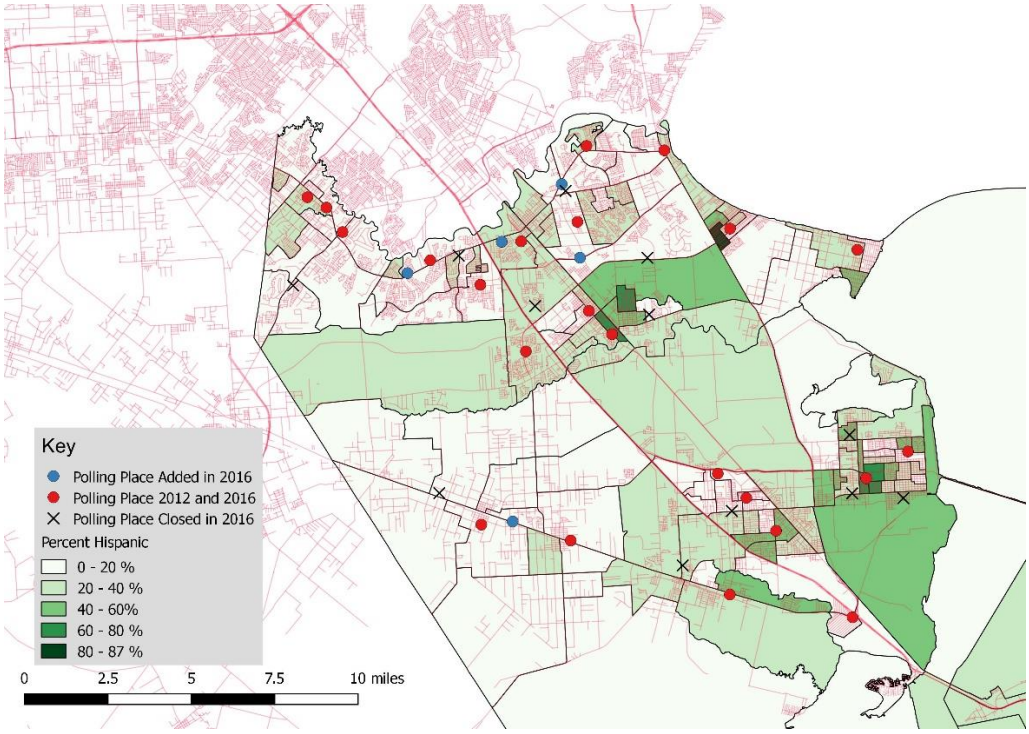

Figure 4.5 Northern Galveston County: Census tracts by percent Hispanic

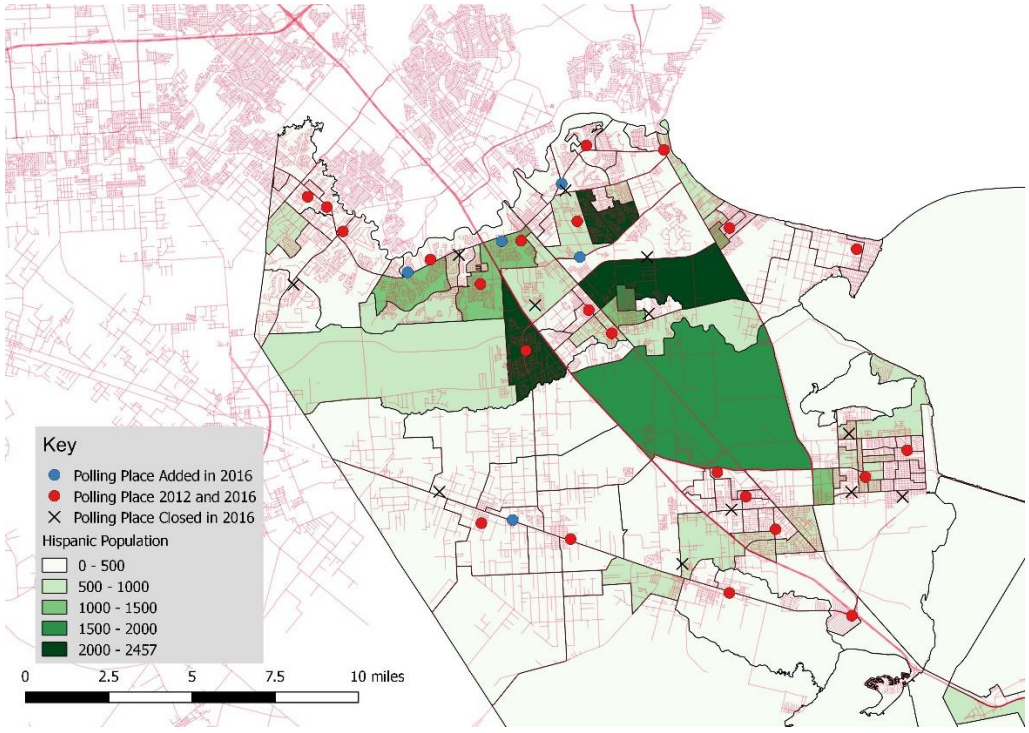

Figure 4.6 Northern Galveston County: Census tracts by Hispanic Population

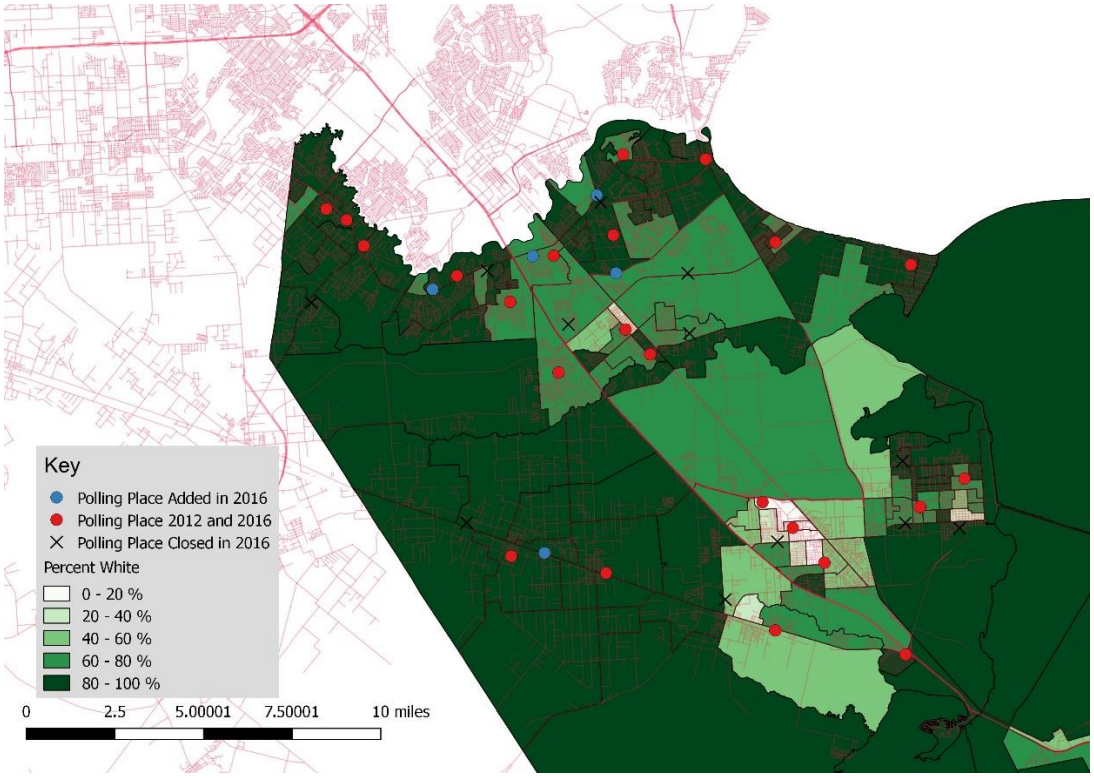

Figure 4.7 Northern Galveston County: Census tracts by percent white

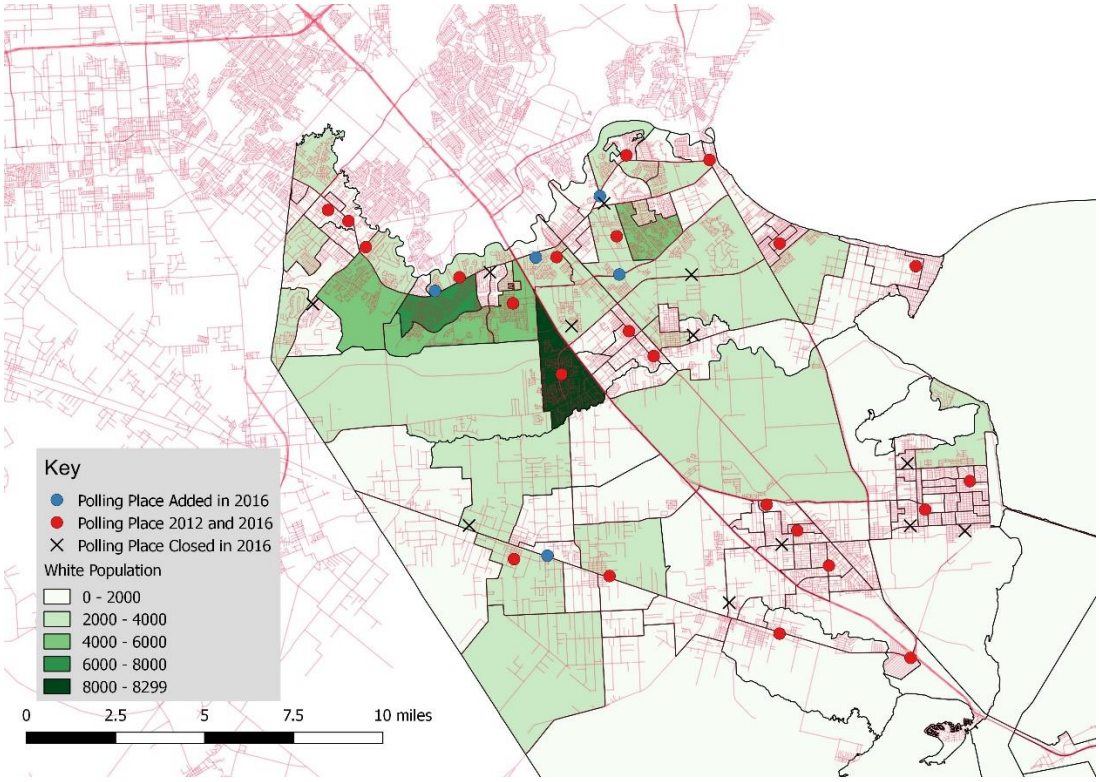

Figure 4.8 Northern Galveston County: Census tracts by white population

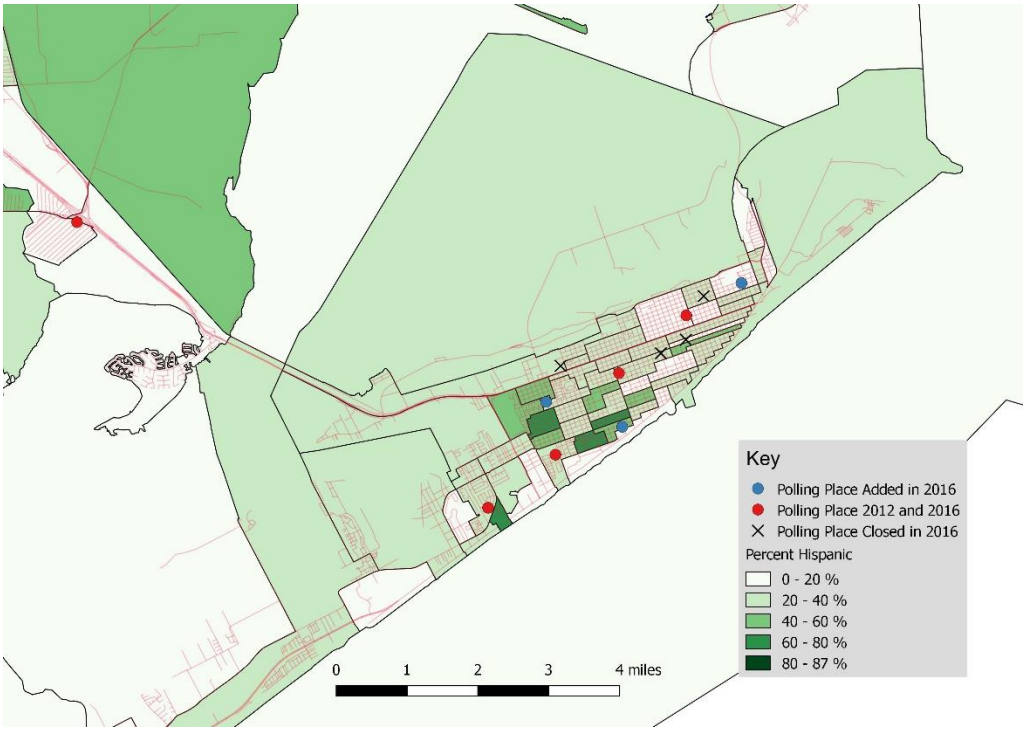

Figure 4.9 Southern Galveston County: Census tracts by percent Hispanic

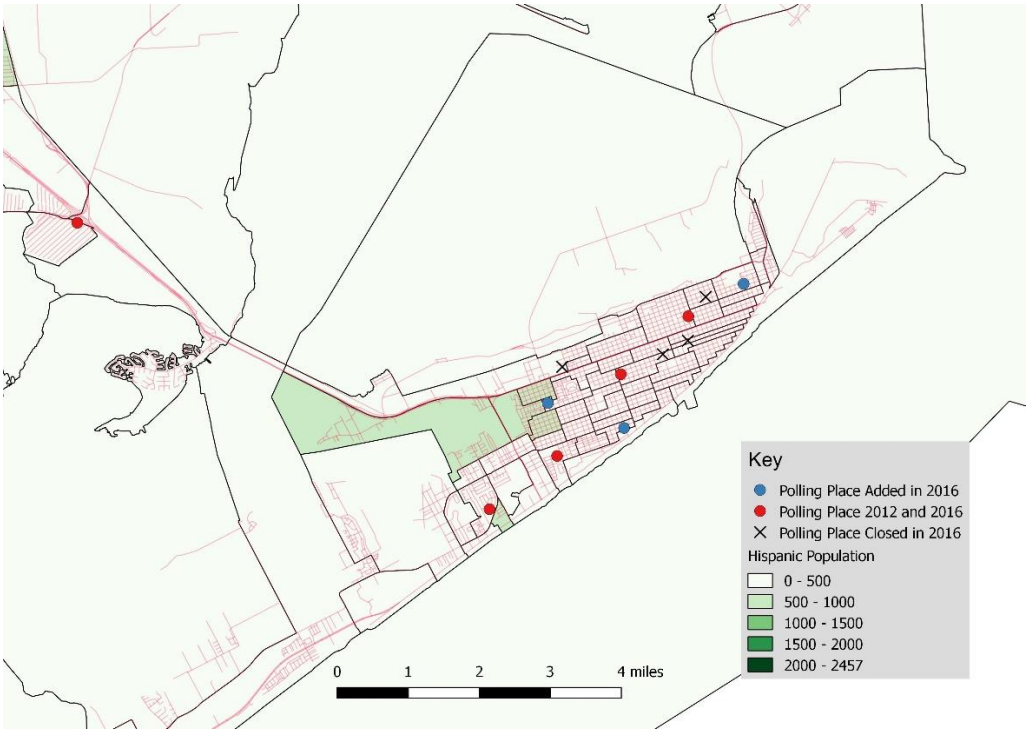

Figure 4.10 Southern Galveston County: Census tracts by Hispanic population

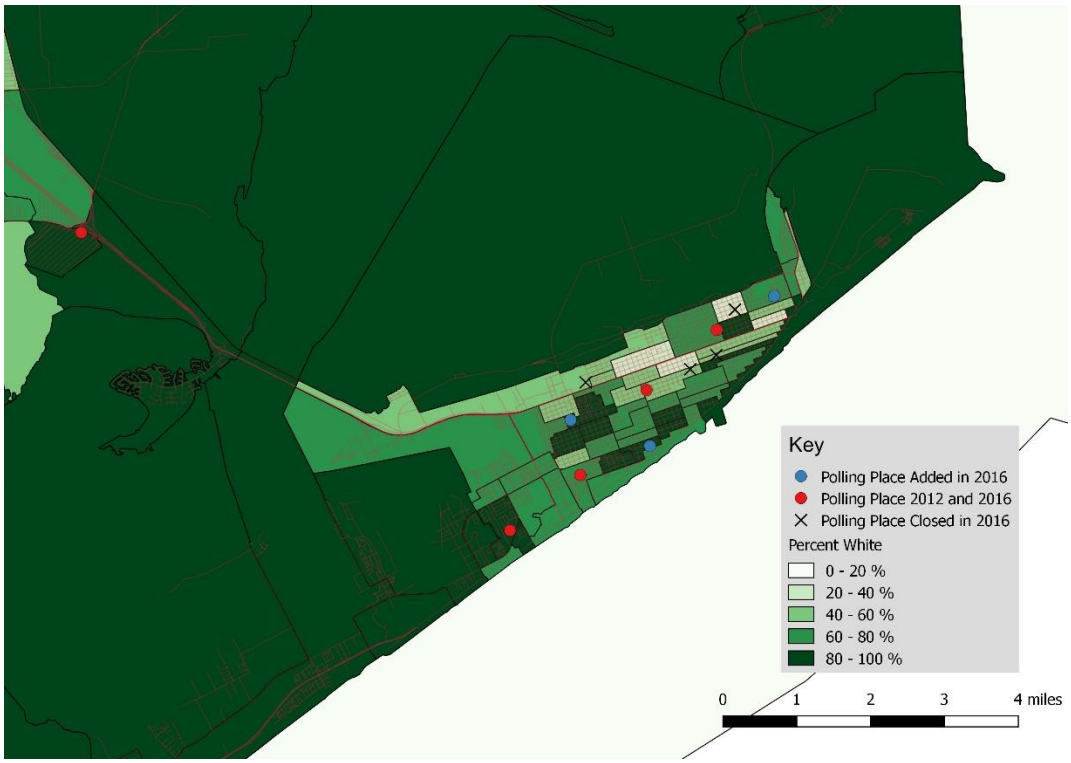

Figure 4.11 Southern Galveston County: Census tracts by percent white

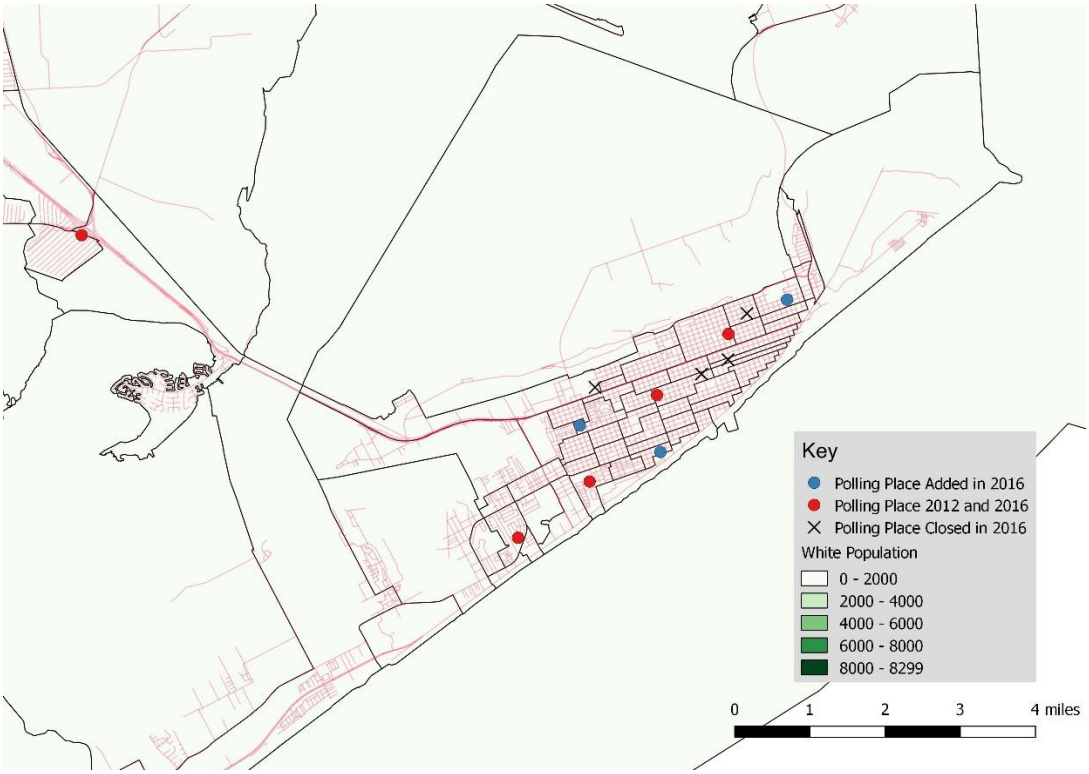

Figure 4.12 Southern Galveston County: Census tracts by white population

Multinomial Logistic Regression Results

The results of the two models are displayed as two tables: the first representing population proportions, the second representing population counts.

	Dependent variable:	
	Poll Removed	Poll Added
Hispanic Population Proportion	1.056	0.716
	(0.824, 1.289)	(0.202, 1.230)
	p = 0.096*	p = 0.451
White Population Proportion	0.864	1.012
	(0.649, 1.078)	(0.655, 1.368)
	p = 0.000***	p = 0.000***
Total Population	1.012	1.026
	(0.985, 1.039)	(0.996, 1.056)
	p = 0.000***	p = 0.000***
Galveston	0.127	0.317
	(-1.008, 1.263)	(-2.231, 2.866)
	p = 0.136	p = 0.507
Constant	2.144	0.198
	(-0.208, 4.496)	(-4.375, 4.771)
	p = 0.074*	p = 0.359
Akaike Inf. Crit.	259.765	259.765
Note:	*p<0.1; **p<0.05; ***p<0.01	
	McFadden Pseudo R= 0.09036	

Table 4.1 Model 1, using population proportions

If the resulting odds ratios are less than one, the inverse case is instead examined (refer to section 3.5) for ease of interpretation. For the sake of interpretation, a unit of population is modeled as 100s of people, and a unit of population proportion is modeled as 10%.

Keeping all other variables constant, if there is a 10% increase in the Hispanic population proportion in a census tract of the two counties, it is 1.06 times more likely that a polling place is removed in a given census tract compared to no change, which is statistically significant ($p = .095$).

If there is a 10% increase in the Hispanic population proportion in a census tract of the two counties, it is 1.40 times more likely that there is no change compared to a polling place being added. However, this is not statistically significant ($p = .451$).

If there is a 10% increase in the white population proportion in a census tract of the two counties, it is 1.16 times more likely that there is no change in a given census tract compared to a polling place being removed. This coefficient is statistically significant ($p < 0.01$).

If there is a 10% increase in the white population proportion in a census tract of the two counties, it is 1.01 times more likely that a polling place is added compared to no change in a given census tract, which is statistically significant ($p < 0.01$).

If there is a 100 person increase in total population in a census tract of the two counties, it is 1.02 times more likely that a polling place is removed compared to no change, and it is 1.05 times more likely that a polling place is added compared to no change in a given census tract. Both coefficients are statistically significant ($p < 0.01$).

If the Galveston variable is "1", it is 7.88 times more likely there is no change in a given census tract compared to a polling place being removed, although this relationship is not statistically significant ($p = 0.136$).

If the Galveston variable is “1”, it is 3.17 times more likely there is no change in a given census tract compared to a polling place being added, however, this relationship is not statistically significant (p = 0.507).

	Dependent variable:	
	Poll Removed	Poll Added
Hispanic Population	1.066	0.767
	(0.938, 1.195)	(0.452, 1.083)
	p = 0.010***	p = 0.288
White Population	0.962	0.933
	(0.820, 1.104)	(0.721, 1.146)
	p = 0.000***	p = 0.000***
Total Population	1.024	1.139
	(0.910, 1.139)	(0.941, 1.336)
	p = 0.000***	p = 0.000***
Galveston	0.177	0.199
	(-0.979, 1.332)	(-2.388, 2.785)
	p = 0.103	p = 0.466
Constant	0.618	0.171
	(-0.587, 1.822)	(-2.331, 2.674)
	p = 0.315	p = 0.629
Akaike Inf. Crit.	258.717	258.717
Note:	*p<0.1; **p<0.05; ***p<0.01	
	McFadden Pseudo R= 0.09433	

Table 4.2 Model 2, using population counts

Keeping all other variables constant, if there is a 100 person increase in the Hispanic population in a census tract of the two counties, it is 1.07 times more likely that a polling place is removed in a given census tract compared to no change, which is statistically significant (p = .01).

If there is a 100 person increase in the Hispanic population in a census tract of the two counties, it is 1.30 times more likely that there is no change compared to a polling place being added. However, this is not statistically significant ($p = .288$).

If there is a 100 person increase in the white population in a census tract of the two counties, it is 1.04 times more likely that there is no change in a given census tract compared to a polling place being removed. This coefficient is statistically significant ($p < 0.01$).

If there is a 100 person increase in the white population proportion in a census tract of the two counties, it is 1.07 times more likely that there is no change in a given census tract compared to a polling place being added. This coefficient is statistically significant ($p < 0.01$).

If there is a 100 person increase in total population in a census tract of the two counties, it is 1.02 times more likely that a polling place is removed compared to no change, and it is 1.14 times more likely that a polling place is added compared to no change in a given census tract. Both coefficients are statistically significant ($p < 0.01$).

If the Galveston variable is "1", it is 4.65 times more likely there is no change in a given census tract compared to a polling place being removed, although this relationship is not statistically significant ($p = 0.315$).

If the Galveston variable is "1", it is 5.85 times more likely there is no change in a given census tract compared to a polling place being added, however, this relationship is not statistically significant ($p = 0.629$).

Chapter 5: Discussion

It was difficult to determine correlation between demographics and polling place closures based on visual inspection of maps, demonstrating the need for statistical analysis. Based on the results of the models, demographics are correlated with whether a polling place was added to or removed from a given census tract. Although correlation does not imply causation, it appears that it is possible that there was discriminatory targeting of minorities, either intentional or unintentional, when polling place locations were altered prior to the 2016 election.

Total Population and the "Galveston" variable

For an increase in the total population in a given census tract, the more likely it is that a polling station is added compared to being unchanged. This result is intuitive, as areas where more people live should be more likely to receive polling place coverage.

For an increase in total population, it is also slightly more likely that a polling place would be removed as well, although less likely than one being added. This is likely because polling place were already present in areas with higher population.

The Galveston variable reflects that a polling place was more likely to be removed rather than changed and more likely to be added rather than changed in Medina County, which is true given the percentage removed in Medina (54%) and Galveston (18%).

Population Proportions

The higher the proportion of Hispanic population in a given census tract, the more likely it is that a polling place had been removed compared to no change. Additionally, it is much less likely that a polling place is added when Hispanic population percentage

increases (Figures 5.1, 5.2). Conversely, the opposite is true for the white population proportion: as it increases, it is less likely that a polling place would be removed compared to unchanged, and more likely that a polling place would be added compared to unchanged (Figures 5.1, 5.2). These trends suggest that the Hispanic population of these counties have could have been intentionally targeted.

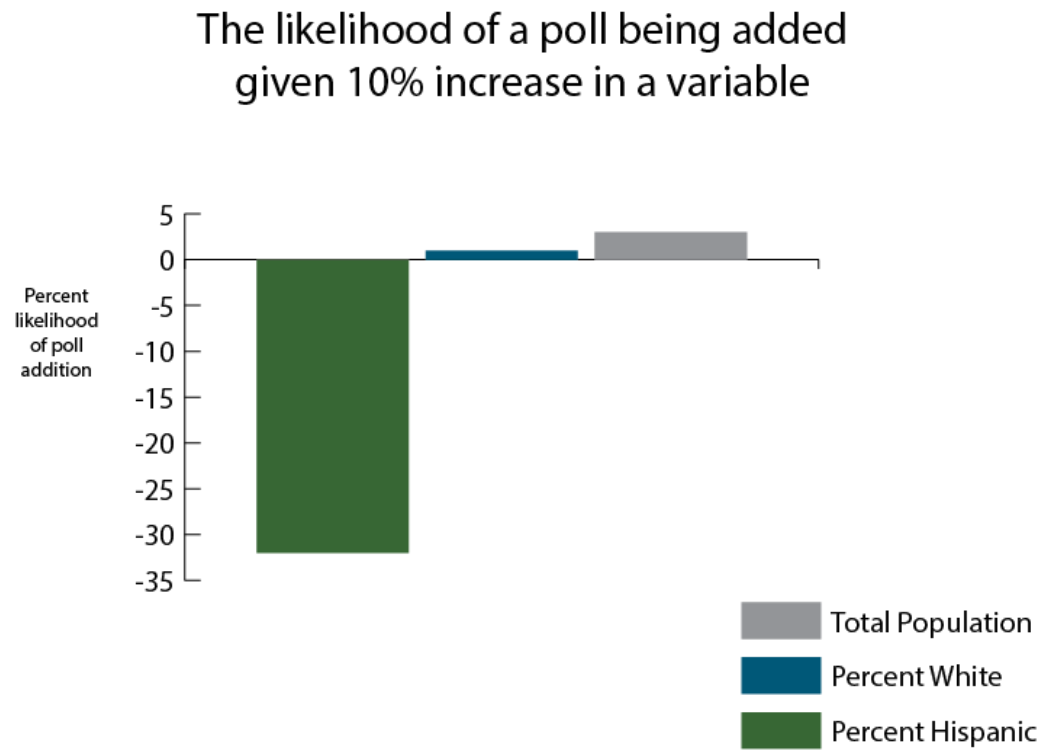

Figure 5.1 Likelihood of a poll being added given a 10% increase in population percentage. Note that total population models a 100 person increase.

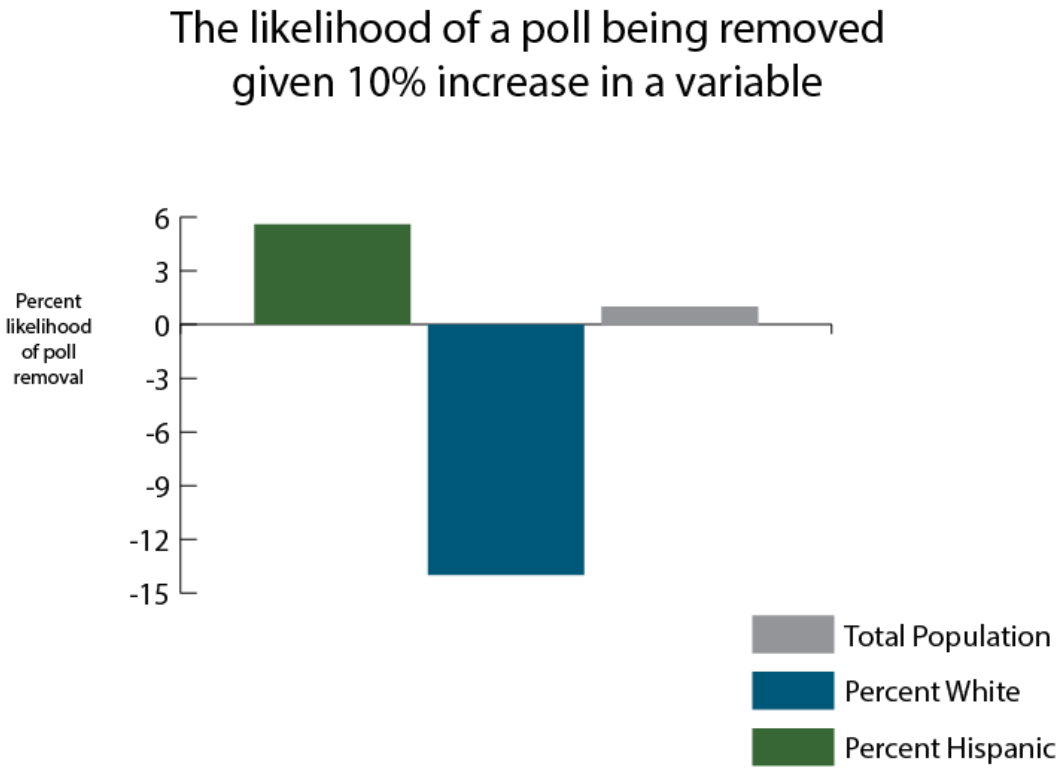

Figure 5.2 Likelihood of a poll being added given a 10% increase in population percentage. Note that total population models a 100 person increase.

Population Counts

The higher the Hispanic population in a given census tract, the more likely it is that a polling place had been removed compared to no change, and the less likely it is that a polling place had been added compared to no change (Figures 5.3, 5.4). This trend is similar to the one seen in the population proportion model.

The higher the white population, the less likely it is that a poll is removed from a given census tract. Additionally, the higher the white population, the less likely it is that a polling place would be added to a census tract, though to much less of a degree than an increase in Hispanic population (Figures 5.3, 5.4). A possibility is that areas with many white people already have polling places, so most likely they would remain unchanged.

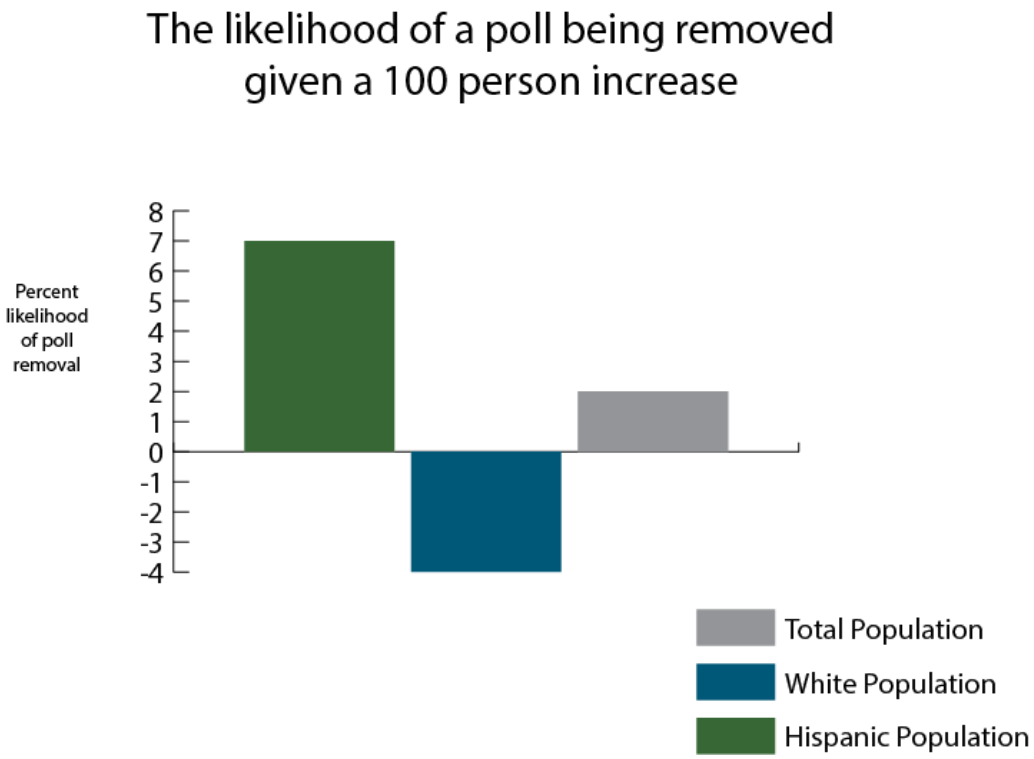

Figure 5.3 Likelihood of a poll being removed given a 100 person increase in population.

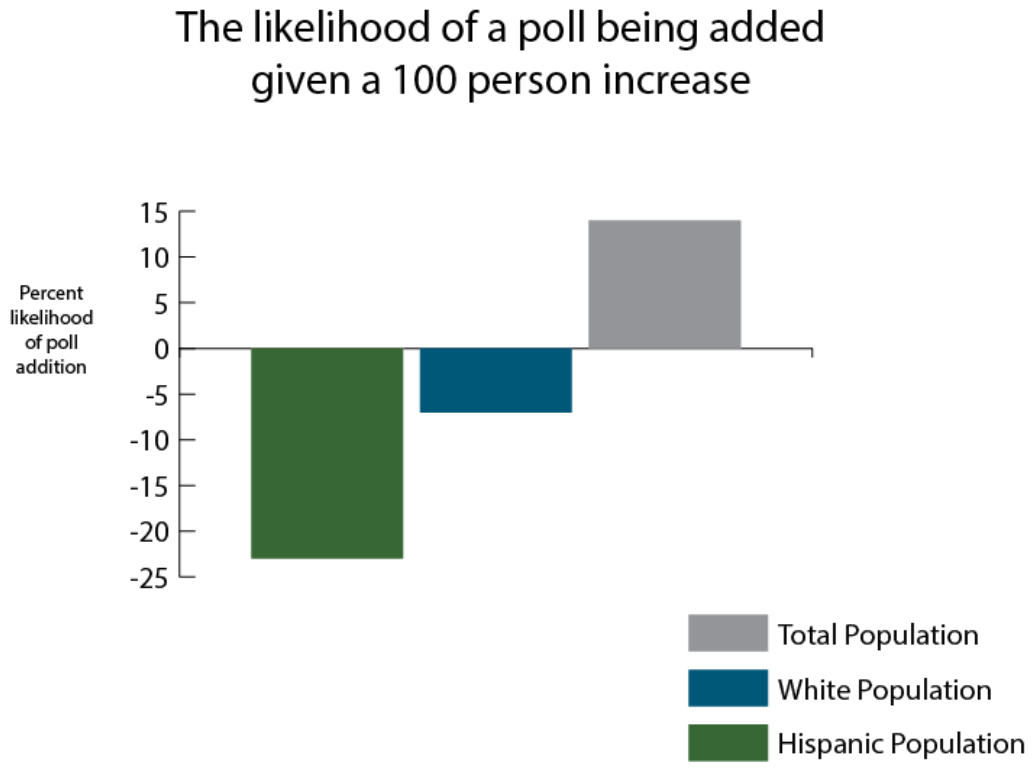

Figure 5.4 Likelihood of a poll being added given a 100 person increase in population.

Implications

Because polling places are more likely to be removed and less likely to be added in areas with higher Hispanic population, it is more likely that a Hispanic voter would experience both increased distances to polling places and disruption to routine voting practices compared to a white voter. It is more likely that people with marginal interest in voting may abstain altogether when it becomes more difficult to vote, meaning there is potential for reductions in Hispanic turnout in both Medina and Galveston Counties.

Due to the difficulties of proving discriminatory intent, along with the partisan nature of electoral commissions, it is likely that polling place closures and reprecincting are used as tools to suppress the vote in many counties across the United States. It is difficult to address this issue without the protection of federal law.

Potential model improvements

There is potential for a variety of improvements to this study. More counties could be studied and incorporated into the model to increase the sample size and model accuracy by reducing variance. Additional counties could also provide a country wide comparison of polling place changes and accessibility, allowing for a broader geographical analysis of reprecincting.

A spatially explicit study that examines the cost of transportation and finding the new polling places would be necessary to determine the extent that reprecincting has on voter turnout overall.

Policy Discussion

Targeting minority voters is illegal under the Voting Rights Act; however, following Shelby v. Holder the burden of proof has now shifted on those who are affected

rather than the local governments. Previously, the local governments had to prove that their voting practices were not discriminatory. Due to this change, it is much easier for subtle discriminatory changes in voting practices to occur.

The implications of this study reveal the necessity for federal voting rights policy that protects minorities. I believe it is necessary for section 4(b) of the Voting Rights Act to be reassessed. I further believe that federal oversight should not only return to the counties previously covered under the nullified coverage formula, but also should be applied to any county with partisan county commissioners. There is significant potential for polling changes with discriminatory intent that could easily go by unnoticed.

Chapter 6: Conclusion

Reprecincting in Galveston and Medina counties is more likely to affect the Hispanic population of these counties, and less likely to affect the white population. If a habitual polling place is changed due to reprecincting, those who have marginal interest in voting may choose to abstain altogether.

There are few studies related to partisan reprecincting, where it is happening, and who is being affected, and factors that determine which polling sites are moved or closed. The results of this study show that reprecincting in Medina and Galveston Counties disproportionately affected minority voters and could have intentionally been used as a method to repress minority turnout.

Further analysis in this area would include a similar study of polling sites in many, if not all, counties of the United States. It is possible that demographic data be correlated with and even drive the decisions to change polling sites in many states.

Additionally, further analysis could involve a spatially explicit study that compares the voter registration record of previous years, so that distance to the polling place could be determined for each individual and increases or decreases can be measured. Additional regression models can be built to determine whether the changed distance appears to be a factor in non-voting in habitual voters.

This study demonstrates the need for further analysis of reprecincting in the United States, and the extent to which voters have been affected by reprecincting. Furthermore, partisan reprecincting demonstrates the need for the full power of the Voting Rights Act to protect minority voter rights and safeguard access to polling stations.

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site&authtype=crawler&jrnl=15408450&AN=47693240&h=k%2BM5hjQnxIcY8vV6mgokTYXO%2FtSveW%2BORrE%2F3e

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