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THE DETERMINANTS OF MUNICIPAL MINIMUM WAGE ORDINANCES:

AN ANALYSIS OF 100 LARGE CITIES FROM 2012-2017

by

Nicholas S. Hilton

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Political Science

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2019

ABSTRACT

The Determinants of Municipal Minimum Wage Ordinances:

An Analysis of 100 Large Cities from 2012-2017

by

Nicholas S. Hilton, Master of Science

Utah State University, 2019

Major Professor: Dr. Peter McNamara

Department: Political Science

The city of Seattle, Washington made headlines in 2014 when its city council enacted the highest minimum wage in the history of the United States. The ruling appeared to begin a trend as similar policies began diffusing in cities across the country. In reality, however, municipal minimum wage ordinances have existed since the early 1990's. Yet, despite over two decade's worth of data on the subject, little research has been conducted to understand the characteristics that influence cities to enact minimum wages in the first place. This study contributes to our understanding of the predictors of minimum wage ordinances by retesting prior variables of significance over a more recent time period, while also introducing a new set of variables to the literature. I find that cities with an increased percentage of residents with bachelor's degrees face an increased likelihood for future policy adoption. Additionally, I find that some age

demographics may be significant predictors in future studies of minimum wage.

(60 pages)

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Nicholas S. Hilton

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INTRODUCTION

The city of Seattle, Washington made headlines in 2014 when it implemented one of the highest minimum wage increases in US history (Cohen, 2014). The ruling requires that all businesses pay employees no less than \$15 per hour by 2021 (Wallace, 2014). The act sparked national conversation and appeared to start a movement as 24 other U.S. cities followed suit and considered similar proposals, 18 of which voted in favor of adoption as of April 2016 (National Employment Law Project, 2016). Further research, however, shows that the adoption of municipal wage ordinances began long before Seattle, yet little is known as to why some cities embrace these policies and others do not (Clain, 2012).

This research examines city characteristics that may increase the odds that cities enact minimum wage legislation. Most municipal-level studies focus on the effects of policy changes, but few studies have examined the factors that actually influence policy implementation in the first place (Clain, 2012; Martin, 2006). This study contributes to our understanding of municipal minimum wage ordinances by testing the influence young populations have on the odds of ordinance enactment. I theorize that cities with larger youth populations face increased odds of enacting wage increases, based on findings in the crisis of democracy literature that have yet to be introduced to studies on minimum wage. First, I survey the literature to develop my theory and identify prominent variables. I then explain

my assumptions and test my predictions using a series of logistic and linear regression models, as well as a classification tree.

A NATIONAL MOVEMENT FOR INCREASED WAGES

The development of city wage ordinances is a relatively new political phenomenon that is rapidly diffusing across the United States. Baltimore, Maryland was the first to enact what was termed a “living wage” in 1994, and within 12 years, over 100 U.S. cities had followed suit (Bernstein, 2004; Martin, 2006). This new term gave birth to the living wage movement, and characterized municipal policies that differ significantly from state and federal wage laws. Rather than simply establishing a price floor for all workers in a geographic region, living wage ordinances focus only on a select set of workers.

The development of limited wage intervention calmed the fears of minimum wage critics and ensured the longevity of the living wage movement, which continues through the time of this study with no signs of stopping (Bernstein, 2004; Clain, 2012; Swarts & Vasi, 2011). While a small number of states do prohibit cities from enacting wage ordinances at all, most have the discretion to make the policy’s coverage as broad or narrow as they see fit (Bergal, 2015; Clain, 2012). It is easy, therefore, to see why academics studying living wage ordinances agree that “no two are the same” (Bernstein, 2004, p. 100). Some living wage ordinances may only apply to part-time employees, some may apply to full-time employees, while others may apply only to employees in specific industries.

Additionally, coalition groups within each city lobby for various exemptions from these laws, which lead to further variation (Bernstein, 2004, pp. 100-114). That being said, however, the coverage of most municipal living wage policies is fairly narrow and they are usually similar in one of three ways. An ordinance may apply only to companies that contract with the city, on businesses receiving city assistance, or they may apply only to employees of the city itself (Adams & Neumark, 2004, p. 211; Bernstein, 2004, pp. 100-111).

The success of the living wage movement has had a variety of political implications, one of which is the development of more all-encompassing wage ordinances. In fact, the movement's growth and success with living wage ordinances has contributed to an expansion of policy coverage, as is seen by the increasing number of cities enacting full-scale minimum wage ordinances (Bernstein, 2004; Reich, Jacobs, & Bernhardt, 2014). These full-scale ordinances, referred to as minimum wage ordinances, apply to all businesses within city limits (Craigie, 2015). Following the successful spread of living wage ordinances, an increasing number of cities began expanding their policies and altered them to cover all businesses and employees within the geographical bounds of the city. This trend started in 2003 with Santa Fe, New Mexico and then ratcheted up significantly after nationwide strikes occurred in 2012 and 2013 when fast-food workers walked off the job in protest of low wages. A variety of online platforms surfaced at this time, encouraging grassroots activism online in favor of \$15 minimum wages at all levels of government, although the organizations lacked a

brick and mortar presence as is normally observed with interest groups (Bernstein, 2004; National Employment Law Project, 2016). As such, the influence of these networking cites will not be present in this analysis because they do not represent any one cohesive group, but rather represent a national presence of hashtags and Facebook posts. All in all, the living wage movement has evolved to include both living wages and city-wide minimum wage ordinances, which are typically analyzed separately in the literature. For the purpose of this study, I analyze the predictors of the city-wide minimum wage ordinances which are increasingly growing in popularity.

THE DETERMINANTS OF MUNICIPAL WAGE ORDINANCES

The spike in the number of cities enacting living wage ordinances since 1994 prompted a number of academic studies. To date, most of these have sought to understand the effects of such legislation, however, their disparate findings have resulted in an overall lack of consensus (Adams & Neumark, 2004; Bartik, 2004; Fairris, 2004; Martin, 2006). An overview of the literature on the aftereffects of any wage policy quickly leaves readers feeling confused, and reveals that no overarching claim can be made without being negated by a number of other studies (Adams & Neumark, 2004). As a result, many academics continue studying the issue while very few consider why cities actually enact any type of wage ordinance in the first place.

Only a handful of quantitative studies have been completed to understand the determinants of living wage enactment at the municipal level (Clain, 2012; Levin-Waldman, 2004, 2008; Martin, 2001, 2006; Swarts & Vasi, 2011). Additionally, due to the even newer emergence of city-wide minimum wage ordinances, an even lesser number of studies have analyzed the predictors of these policies (Doussard & Gamal, 2015), one of which applied the same methodology to the state-wide wage hikes that began growing following the 2012 and 2013 fast food worker strikes (Whitaker, Herian, Larimer, & Lang, 2012). It is important to note, however, that although these two bodies of research analyze different types of wage laws, they each analyze the influence of the same set of predictors.

These studies all agree that political ideology is a significant predictor of wage ordinances and suggest that cities with higher numbers of democrats are increasingly more likely to enact these policies. Due to these findings, this study measures the political ideology of each city using data from a study by Tausanovitch and Warshaw (2013). Additionally, the determinants research presents a variety of significant predicting variables that fall into two camps: variables dealing with the economic conditions of a city, and variables that measure the presence of interest groups (Clain, 2012; Doussard & Gamal, 2015; Levin-Waldman, 2004, 2008; Martin, 2001, 2006; Swarts & Vasi, 2011; Whitaker et al., 2012).

Economic Conditions

The economic characteristics of a city have been the most significant variables of interest in determinants research, although for different reasons (Clain, 2012; Levin-Waldman, 2004; Martin, 2006). According to one of the most recent studies on living wage ordinances, these are most likely to occur following positive economic conditions as determined by measures of income, unemployment, and the incidence of poverty (Clain, 2012). This finding, however, is disputed by prior determinants research, as well as the research on city-wide ordinances that followed, which find that minimum wage ordinances are most likely to be enacted following periods of economic hardship (Card & Krueger, 1994; Doussard & Gamal, 2015; Levin-Waldman, 2004; Martin, 2001, 2006; Swarts & Vasi, 2011; Whitaker et al., 2012).

Suzzane Clain, from the Economics department at Villanova University, conducted the most recent study on the determinants of municipal living wage legislation. Clain (2012) theorized that municipal minimum wage ordinances are more likely to occur following periods of economic well-being because citizens know they can afford it. While there is no conclusive evidence that minimum wage ordinances are accompanied by significant costs, some cities have certainly experienced negative economic consequences following policy adoption (Adams & Neumark, 2004). According to Clain's (2012) theory, citizens are aware of these

potential costs and weigh them against any potential benefits prior to taking a policy stance.

While Clain's theory and subsequent findings present an ideal form of engaged citizenry, they are disputed by all other determinants research. All other studies on the issue provide empirical evidence that economic hardship is the actual influencing factor spurring policy adoption (Card & Krueger, 1994; Doussard & Gamal, 2015; Levin-Waldman, 2004; Martin, 2006; Swarts & Vasi, 2011; Whitaker et al., 2012). In an analysis of 60 cities, Levin-Waldman (2004) observed that cities with high levels of minority populations and low levels of educational attainment faced an increased predisposition to adopt living wage policies; findings which were further compounded by rising income inequality. Later research confirmed Levin-Waldman's (2004) observation and found that cities with lower average incomes, increased unemployment, and higher incidents of poverty are more likely to enact living wage ordinances (Levin-Waldman, 2008; Martin, 2006).

Clain's theory of mindful and beneficent citizens is also disputed by public choice theory, which suggests that human beings are rationally self-interested, rather than solely altruistic, and that they maximize their benefits while minimizing their costs (Shughart, 2008; Simmons, 2011). If this is the case, then the supporters of wage ordinances are likely to be those who stand to personally gain from the policies. This would be those covered by either living wage ordinances or city-wide ordinances, rather than those who are either (a) not covered by a living wage ordinance, or (b) earn a wage higher than the proposed minimum wage

ordinance. We would expect those who will not benefit from a wage ordinance to reject it on grounds that it raises their costs without providing them with a benefit. Conversely, we would expect ordinance supporters to be those who would be covered by a living wage ordinance, or be those who make less than the proposed city-wide wage increase, which would be those who suffer from things like unemployment, low income, and low educational attainment (Card & Krueger, 1994; Levin-Waldman, 2004, 2008; Martin, 2006).

Additionally, James Buchanan's theory of the fiscal gap suggests that citizens behave in exact opposition to what is presented by Clain (Buchanan, 1999). According to Buchanan, a gap exists in the minds of voters. Rather than thinking of taxes and expenditures simultaneously, the decision process is isolated for each. He explains this by arguing that citizens frequently vote in favor of receiving increased government benefits, while simultaneously voting against the very tax proposals that would fund those benefits (Buchanan, 1999). When applied to the literature on minimum wage, Buchanan's idea contradicts Clain by positing that citizens don't actually consider the costs of minimum wage ordinances at all, and if even if they did, they would vote against any policy that raises their costs.

Despite the abovementioned contradictions to Clain's work, it is still a valuable contribution to the determinants literature in that it suggests more testing is necessary to better understand the influence of economic characteristics on the likelihood of policy adoption. Each study in the determinants literature finds that the economic characteristics of a city are variables of significance,

although for varying reasons. As such, this study retests these variables utilizing the theories that have garnered the most widespread support in the determinants literature: that wage ordinances are most likely to be enacted following periods of economic downturn. Retesting this theory furthers our understanding of how economic city characteristics may influence the passage of minimum wage ordinances.

In accordance with the prior literature, I measure the economic characteristics of each city by analyzing unemployment rates, the percent of the population who are minorities, the percent of the population who fall below the poverty level, the percent of the population with a high school education and the percent with a bachelor's degree (Clain, 2012; Levin-Waldman, 2004, 2008; Martin, 2001, 2006). Additionally, I add a measure of population growth to determine the economic attractiveness of the city. More information on these measures can be found in the data and methodology portion of this study.

Interest Group Power

Early studies on the determinants of living wage ordinances found the presence of interest groups to be a significant variable of interest, and concluded that interest groups are a primary source of diffusion for living wage ordinances across the country (Martin, 2001, 2006). There are a myriad of interest groups that could influence the passage of wage ordinances, however, interest groups would need to be uniform across all cities for comprehensive analysis. Due to the diverse

nature of interest groups, studies on the determinants of wage ordinances have largely only been able to focus on two types of interest groups: the presence of labor unions and the presence of chapters of the Association of Community Organizations for Reform Now (ACORN; Clain, 2012; Martin, 2006).

Unions possess significant collective bargaining power as interest groups, and use that power to influence policy changes to the benefit of their members (Doussard & Gamal, 2015). Additionally, unions are uniquely capable of engaging a wide number of voters directly through their membership, which better enables them to garner public support and influence political decisions (Green, Gerber, & Nickerson, 2003). Labor unions typically work to secure higher wages for their members and as a result have been observed to support living wage ordinances and use their membership to lobby in favor of those ordinances (Clain, 2012; Levin-Waldman, 2004, 2008; Martin, 2001, 2006). Because of this, cities with an increased percentage of union members are expected to face an increased odds of enacting minimum wage legislation. This variable is similar to political ideology in the fact that union members tend to be liberal voters, but it is a unique measure of interest group power as well.

Early studies on the determinants of wage legislation found that the presence of an ACORN chapter increased the likelihood that cities would adopt wage ordinances (Martin, 2001, 2006). ACORN was thought to be significant for the same reasons that union density was significant—it was a liberally oriented interest group. Additionally, it was a relatively easy interest group to observe

across municipalities due to its uniformity as a national network of local chapters.

This is no longer the case, however, because the organization collapsed after an embezzlement scandal in 2010 (Smith, 2010). Consequently, studies taking place after the collapse of ACORN were no longer able to use this measure of community action organizations (Clain, 2012).

Other interest groups may be worth analyzing in future determinants studies so long as they are consistent across each observed city. In many instances, however, analyzing the influence of these organizations may be inappropriate predictors for enactment due to their endogenous relationship with population size and ideology (Clain, 2012). That is not to say that there are no other interest groups that could be included in future determinants research so long as there is a clear theory linking the interest group to the outcome of interest, and so long as the interest group is uniformly present across all cities. Coincidentally, one interest group fits this description and has not yet been introduced to the study of minimum wage ordinances: younger generations.

The Young and The Crisis of Democracy

Age has been found to be a significant predictor of political activity (Campbell, 2003). Senior citizens, for example, under the banner of the American Association of Retired Persons (AARP), are considered one of the largest and most effective interest groups in the country (Campbell, 2002). No rational politician would consider cutting social security benefits due to the expected outcry from the

AARP. Simply put, policy makers are receptive to increased voter participation, and when specific groups increase their participation, they are more likely to see their preferred policies enacted (Campbell, 2003; Griffin & Newman, 2005).

Despite age playing such a large role in other political issues, however, studies on the determinants of wage ordinances have yet to consider age as a primary variable of interest.

The age groups within municipal populations have been considered as secondary variables of interest in some determinants research, and in fact, limited evidence suggests that cities with increased numbers of younger populations are more likely to adopt minimum wage ordinances (Levin-Waldman, 2004, 2008). These studies, however, give no theoretical background for the inclusion of the age variable and also present conflicting evidence by suggesting that cities with large numbers of elderly populations are more likely to enact living wage ordinances (Levin-Waldman, 2004, 2008). These conflicting findings and the overall lack of theory resulted in the variable of age being dropped from consequent studies (Clain, 2012; Doussard & Gamal, 2015; Swarts & Vasi, 2011; Whitaker et al., 2012). A theory for the inclusion of an age variable, however, can be found using a public choice framework and the crisis of democracy literature (Clain, 2012; Dalton, 2016).

First and foremost, young people have more to gain from municipal minimum wage ordinances than their older counterparts. They have less work experience and fewer years of education, which limits their earning potential and makes them more susceptible to unemployment (Mincer, 1974; U.S. Bureau of

Labor Statistics, 2013). Additionally, young people frequently work low-paying jobs while accruing significant amounts of student loan debt, the average of which is approximately \$27,000 for a bachelor's degree (Gorman, 2015). Based on these significant financial hurdles, I expect young citizens to be more favorable of minimum wage ordinances simply because they promise higher wages. While there is little conclusive evidence that minimum wage laws actually produce economic benefits (Adams & Neumark, 2004), the mere hope for higher wages is enough to spur young people to action.

I analyze the influence of young citizens at the city level, by first assuming that all individuals are rationally self-interested (Mitchell, 1994). This is a central tenet of rational choice literature, which asserts that individuals consistently seek to maximize their personal benefits while minimizing costs (Buchanan, 1999; Shughart, 2008). A particularly poignant example of this characteristic and its political ramifications is found in a study that analyzed citizen's preferences before the 2004 presidential election. The study surveyed citizens and found they favored electoral systems that promoted their preferred outcomes (Aldrich, Reifler, & Munger, 2014). In this instance, citizens sought to maximize their benefits by rigging the system in their favor, regardless of the costs imposed on those with alternative preferences. Therefore, based on the rationality of individuals, I expect that young voters at the local level will advocate for minimum wage ordinances regardless of any potential costs imposed on other groups.

An initial consideration of this theory may seem to contradict empirical evidence on voter turnout and political activity, which indicates that voter turnout is extraordinarily low at the local level, and young voters, in particular, are largely absent from the political arena (Dalton, 2016, pp. 64-65). I argue, however, that young voters matter for two reasons. First, even if it is true that young voters are largely absent from the political arena, they are rational and likely to mobilize when the benefits of action are high. In this case, youth populations are likely to advocate for minimum wage ordinances at the city level, and very few of them actually need to mobilize in order to have an impact due to lower turnout overall. Therefore, young populations can be an influential interest group at the local level because there are fewer political participants overall and less competition. As a result, when there are larger number of young voters in a city, who are upset by low wages, they are better able to successfully lobby for minimum wage ordinances. Fewer competitors in the formal political arena, however, is only a portion of the equation.

The second portion of the equation that makes young populations matter stems from growing body of research in the crisis of democracy literature, which suggests that young people are actually very politically involved, but in ways that have not been previously considered by political commentators and researchers (Dalton, 2016). In Russell J. Dalton's (2016) *The Good Citizen: How a Younger Generation is Reshaping American Politics*, he addresses the commonly held belief that American democracy is in trouble due to falling participation rates in younger

populations. While many political commentators disparage young Americans and blame them for their lack of participation, Dalton gives a more hopeful message and finds that not only are young Americans becoming more politically involved, but that younger generations across the world are becoming more politically involved, just in different ways than the generations that came before them (Dalton, 2016). Dalton's contribution is one of a number of studies in both sociological and political literature that shows how norms of political behavior are changing across generations (Anduiza, Jensen, & Jorba, 2012; Dalton, 2013; Norris, 2002; Stolle & Micheletti, 2013; Zukin, Keeter, Andolina, Jenkins, & Delli Carpini, 2006).

Social modernization has led to a change in generational citizenship norms over time (Dalton, 2016, p. 56). As outlined in Appendix A, American's views of what makes a good citizen have transformed due to changing social conditions, such as rising levels of education and higher living standards. Older Americans, who grew up during different social conditions than their younger counterparts, tend to have duty-based norms of citizenship. They tend to view good citizens as those who do things like serve in the military, vote in elections, and respectfully defer to government officials. Younger Americans, on the other hand, are more likely to view themselves as good citizens if they are more engaged with their communities through things like protests, community service, and direct political action. These differences in citizenship values have been observed across

generations, and lead members of separate generations to act different politically (Dalton, 2016, p. 56-59; Norris, 2002; Zukin et al., 2006).

According to Dalton, members of Generation X and Millennials are more likely to care for the social well-being of others, and this trait is expected to be even stronger among Millennials in particular (Dalton, 2016). Additionally, members of younger generations are more likely to promote active government policies than members of earlier generations such as the Baby Boomers (Dalton, 2016). With this in mind, it is assumed that the Americans in Generation X and the millennial generation will be more likely to favor minimum wage ordinances because these policies are viewed as helpful for low earning people. Indeed, this may be part of the reason that minimum wage ordinances began diffusing in the first place during the early 1990's, as members of generation x began reaching political age (Fry, 2018). However, no study on the determinants of municipal wage ordinances has sought to understand the impact of millennials now that they have reached political age.

Based on these findings in the literature, I theorize that the presence of millennials is a significant predictor of municipal minimum wage ordinances because they are maximizing their preferences on two fronts. On the one hand, they generally stand to gain more from policy adoption and therefore can be expected to advocate for minimum wage ordinances in order to receive these perceived benefits. Additionally, however, millennials are more likely to favor minimum wage ordinances due to their predisposition towards having engaged

citizenship norms, which favor active government policies that promise to care for the less advantaged in society. This study therefore contributes to the determinants literature by examining the influence generational differences have on the adoption of municipal minimum wage ordinances in the United States, a phenomenon that has yet to be considered as a possible predictor of municipal minimum wage ordinances

DATA DESCRIPTION AND METHODOLOGY

Most of the research on the determinants of municipal wage ordinances took place before millennials reached political age in 2016 (Clain, 2012; Levin-Waldman, 2004, 2008; Martin, 2001, 2006) and the remaining study that could have captured at least part of the millennial influence do not test any age variables (Doussard & Gamal, 2015). This leaves a significant gap in our understanding of their influence, which is especially problematic considering the fact that millennials and post-millennials have rapidly bypassed previous generations in terms of population size, as observed in *figure 2* (Dalton, 2016, pp. 10-13; Fry, 2018). As a result, this study analyzes the impact of younger generations by examining the 100 largest cities in the United States from 2012-2017. The 100 largest cities are the focus of this study because they provide the most updated and accurate data for observation at the city level, the data of which can be notoriously difficult to find. Additionally, the time frame for this study was selected because it provides

the most recent measurements available that capture the full influence of millennial voters.

As determined by the data outlined in Appendix B, all members of the millennial generation have now reached political age as of 2016. This enables the study of their influence on minimum wage ordinances using 2010 census data, which also have not been utilized in any determinants research to date (Clain, 2012). As such, generational composition is the primary variable of interest for this study and the influence of each generation will be compared against the other variables of interest presented in the determinants literature; namely, measurements of economic vitality and the presence of other interest groups and demographics.

I consider two dependent variables across 10 different models, which are outlined in Figure 1. One dependent variable is categorical and measures whether or not a city enacts a minimum wage ordinance at any point from 2012 to the time of this study. The second dependent variable is continuous and measures the percent increase of minimum wages for cities that enacted them. In other words, my second dependent variable measures the effect of each independent variable on the magnitude of minimum wage increases across my sample. Data for these two variables were gathered from the National Employment Law Project (2016) and the UC Berkeley Labor Center's (2019) inventory of local minimum wage ordinances, as were measurements of state minimum wage laws. Unless otherwise

stated, all remaining information on the specifics of each wage ordinance were gathered directly from city records.

My principle model is a full logistic regression that measures 17 independent variables against the dependent variable of whether a city enacts a minimum wage ordinance. This data set includes observations for 100 U.S. cities, 15 of which enacted minimum wage ordinances. Due to this limited number of observations, and an even smaller set of cities within my sample that enacted minimum wage, I run three other logistic regressions that further divide my data into categories. Doing so enables an increase in the degrees of freedom present for analysis, and improves the accuracy of inferences from my results. These separate categories for these models are outlined in Figure 1 and are (a) economic variables, (b) demographic variables, and (c) generational variables, the last model of which will drop the measure of post-millennials as a means of comparison.

In addition to the traditional logistic regression methods, I run a classification tree to better filter out possible interactions or collinearity between my variables. This is a nuanced approach to studying the predictors of minimum wage enactment that has yet to be implemented in the literature. Additionally, this method may improve the quality of my results while also improving their overall interpretability by presenting findings in a more intuitive graphic form. The results of this classification tree will therefore be compared to the results from each other model to look for and identify patterns in the data that can improve our overall understanding of the determinants of minimum wage ordinances.

To analyze my second dependent variable, the magnitude of wage change, I apply three linear regressions that incorporate the same variable categories as mentioned above. A detailed description of these categories can also be found in Figure 1. I use this method to bypass the limitations of linear regression, which cannot be completed if there are more predictors than there are observations. Fifteen of the cities within my sample enacted minimum wage ordinances between 2012 to 2017, and there are a total of 17 independent variables in question. The large number of predictors and relatively low number of observations for analysis therefore requires the categorization of variables in order to determine any existing relationship between them and the magnitude of minimum wage increases in my sample of cities.

In the final stage of my analysis, I will re-evaluate my models and findings to analyze the relationships between my most significant variables against both dependent variables. This will be done in the form of both a logistic and linear regression, which are highlighted in Figure 1. Doing this enables me to compare the significance of each finding deemed significant by prior models, thereby furthering an overall understanding of the predictors of minimum wage ordinances by identifying not only the significant variables, but identifying those who are most significant when compared to each other. This process is commonly used in studies of public health, and is applied as a means to add rigor to my findings.

Data used to identify the 100 largest cities by 2010 population and to obtain measurements of population growth were gathered from the City Mayors Statistics (2018) ranking of the 100 largest cities. Measurements for purchasing power were gathered using state-level regional pricing data provided by the Bureau of Economic Analysis (2019) within the U.S. Department of Commerce. Data on the percent of union members was gathered using state-level data provided by Hirsch, Macpherson, and Vroman's (2001) dataset on union density by state. Data for city ideology was gathered from the American Ideology Project created by Tausanovitch and Warshaw (2013), with the exceptions of measurements for cities within Kentucky, Massachusetts, and Oregon. Missing ideological measures for these cities were gathered using state elections results for the November 2008 presidential election (Kentucky State Board of Elections, 2019; Massachusetts Secretary of the Commonwealth, 2019; Oregon Secretary of State, 2008; Tausanovitch & Warshaw, 2013). All other measurements were gathered from the American Fact Finder using 2010 Census data, including generational measurements which were gathered by collapsing age variables according to the generational measurements provided by the Pew Research Center (Fry, 2018; U.S. Census Bureau, 2010).

Variable	General Log Reg	Classifica- tion Tree	Economic Log Reg	Demograph- ic Log Reg	Generation- al Log Reg	Economic Linear Reg	Demographic Linear Reg	Generational Linear Reg
Dependent Variables								
Min. Wage Enact	X	X	X	X	X			
% Increase						X	X	X
Independent Variables								
Economic	Per Capita Income	X	X	X		X		
	% Below Poverty Lvl.	X	X	X		X		
	% Popula- tion Growth	X	X	X		X		
	Unemploy- ment %	X	X	X		X		
Demographic	% Bach	X	X		X		X	
	% HS	X	X		X		X	
	% Union	X	X		X		X	
	% White	X	X		X		X	
Generational	Post Millennial	X	X			X		
	Millennial	X	X			X		X
	Gen X	X	X			X		X
	Boomers	X	X			X		X
	Silent	X	X			X		X
	Median Age	X	X			X		X
Control	Dem 2008	X	X	X	X	X	X	X
	Purchasing Power	X	X	X	X	X	X	X
	State Min Higher	X	X	X	X	X	X	X

Figure 1. All models and corresponding variables.

My two primary hypotheses are outlined below. In addition to these, I have a secondary interest in a variety of relationships in accordance with prior literature. I expect that a decline in economic measurements will be associated

with increased odds of policy adoption. Similarly, I expect that an increase in the liberal ideology of a city and an increase in the density of union members will be associated with increased odds of policy adoption. In all, I expect to find that cities with low levels of per capita income, higher levels of poverty, lower levels of population growth, and higher unemployment will face increased odds for enacting minimum wage ordinances. Additionally, I expect that cities with larger populations of minorities, low levels of education, and a higher density of union members will face increased odds of policy adoption. I control for political ideology, state minimum wage laws, and purchasing power across all models.

Table 1

Primary Hypotheses for Minimum Wage Enactment

Primary Null Hypothesis (Minimum Wage Enactment)	An increased percentage of millennials in a municipality will not be associated with increased probability for policy adoption.
Primary Alternative Hypothesis (Minimum Wage Enactment)	Cities with an increased percentage of millennials will be associated with an increased probability for policy adoption.

Table 2

Primary Null Hypotheses

Primary Null Hypothesis (Magnitude of Wage Change)	Of the cities that enact minimum wage ordinances, those with an increased percentage of millennials in a municipality will not be associated with an increased magnitude of wage change.
Primary Alternative Hypothesis (Magnitude of Wage Change)	Of the cities that enact minimum wage ordinances, those with an increased percentage of millennials will be associated with an increased magnitude of wage change.

RESULTS

Two of the initial regression models presented results that were statistically significant at the 95% confidence interval. These models included the general logistic regression with all variables, and the economic logistic regression. The general model found that each measure of education was significant, as well as the presence of the silent generation; while the economic logistic model found that ideology was a significant predictor. This information is outlined in figure six, which also highlights the significant variables found by the classification tree that include both measures of education, percent population growth, and the percent of union members. The figure also highlights the variables found to be significant

at the 90% confidence interval because these variables were used to structure one last logistic regression to address the issue of multicollinearity.

I use all variables that showed any level of statistical significance at or above the 90% confidence interval to create one final logistic regression. This practice is commonplace in public health studies seeking to explore the interplay between variables of any significance. These variables are noted in figure 6 along with the results of the final regression, which has been shaded red to improve overall interpretability. The results of this final logistic model reveal each measure of education to be statistically significant, as well as the median age of the population and the percent population growth. Interestingly, the silent generation lost significance under this model, which indicates its lesser importance for understanding the relationships in this sample of data, while the median age variable increased in significance.

In addition to one final logistic regression, I use the same practice to create a final linear regression to measure the impact of my most significant variable (the percent of residents with bachelor's degrees) on the magnitude of wage increases. To measure this, and because this linear regression was limited to 15 observations of cities that had enacted minimum wage increases, only the most significant variable found from the final logistic regression of statistically significant variables was included: the percent of residents with a bachelor's degree. This maximizes degrees of freedom and makes best use of the small number of observations that actually enacted minimum wage ordinances. This regression, however, resulted in

no statistical significance despite the increased degrees of freedom provided by the model, but is shaded red in Figure 2 nonetheless.

Variable	General Log Reg	Log Reg Sig. Variables	Class Tree*	Economic Log Reg	Demographic Log Reg	Generational Log Reg	Simple Linear Reg Sig. Var.	Demographic Lin Reg	Economic Lin Reg	Generational Lin Reg
% Bach	X	XXX	2		•			•		
% HS	X	X	3							
Silent	X	•								
Median Age	•	X								
% Pop Growth	•	XX	4							
% Union			1							
Dem 2008				X		•				
% White								•		
% Below Poverty Lvl	•									

Figure 2. All models, variables, and relative significance.

Appendix C displays the significant findings from the classification tree.

The classification tree uses algorithmic statistical techniques that analyzed all independent variables to classify cities that enacted minimum wages from those that did not. It found that the percent of union members was the most significant variable, followed by the percent of residents with bachelor's degrees and those with high school diplomas. The percent population growth of each city was also deemed significant, but to a lesser extent than all other variables.

The classification tree analyzed all data and grouped them according to the branches on the tree. Therefore, by starting at the most significant variable, union percent, it is evident that 45 of the cities in my dataset did not enact minimum wage ordinances. The remaining cities that did enact city-wide minimum wage

ordinances had union percentages that were higher than 7.2%. Appendix D outlines how two branches of the tree interact with one another. As can be seen, the upper right category of the plot captures the majority of the cities that enacted minimum wage ordinances, and these cities held higher rates of union percent and the percent of residents with bachelor's degrees.

Table 3

Classification Tree Predictive Accuracy

Category	Statistic
Percent Correctly Classified	82%
Specificity	94.12%
Sensitivity	13.11%
Area Under Curve (AUC)	.77

Confusion Matrix		
	0	1
0	80	5
1	13	2

Figure 3. Confusion matrix for classification tree.

Table 3 and Figure 3 above display the predictive accuracy and the confusion matrix for the classification tree, which indicate that the model fits my data well and correctly classified 82% of my data. The model does well to classify which cities *do not* enact minimum wage over those that do, however, there are some false negatives. Thirteen of the fifteen cities that enacted minimum wage

were misclassified. Despite the high number of false negatives as evidenced by the low sensitivity in Table 5, the model does show accurately that union membership and percent bachelor's degrees are important.

ANALYSIS

This study was initiated under two assumptions based on theoretical contributions from the rational choice literature and literature on the crisis of democracy. In terms of the former, I initiated this study under the assumption that people are generally rationally-self-interested. As such, people can be expected to support public policies that maximize their benefits while minimizing their costs. Under this assumption, I anticipated finding that cities with higher youth populations would face an increased odds of enacting city-wide minimum wage ordinances, due to the fact that youth populations are more likely to work jobs that are at or below minimum wage rates. Similarly, I expected that cities with depressed economic characteristics would face higher odds of enacting minimum wage ordinances.

While most of my economic measures, such as per capita income and unemployment, were not found to be statistically significant, I did find significance for population growth. According to my most rigorous logistic model, which included all variables with at least some significance, cities in my sample with a 1% increase in population growth were observed to face a 55% decrease in the odds for policy enactment. These results are displayed in Table 7 and suggest

that cities experiencing population growth are less likely to enact city-wide minimum wage ordinances. It is interesting, however, that my other economic measures were not found to be statistically significant. This could be due to multicollinearity (between population growth and the other economic measures) and my small sample size. Future studies, therefore, should consider the variable of population growth over a wider sample size to better discern its predictability.

In terms of age, none of the generational variables were found to be statistically significant other than the presence of the silent generation, which lost significance in the later more rigorous models. The significance of the variable for median age, however, was determined to be significant and provides support for the rational-choice-based assumption that younger citizens are more likely to favor minimum wage ordinances. As is seen in Table 4, cities with a 1% increase in median age faced over a 45% decreased odds for enacting minimum wage ordinances. Although the impact of millennials in particular was not significant, taken altogether, it is evident that a higher concentration of younger individuals increases the odds of enacting municipal minimum wage ordinances. This is likely due to their perceived gains from policy enactment because their older counterparts generally work higher paying jobs. Additionally, however, this finding also provides support for my second assumption that cities with larger populations of youthful citizens face increased odds of enacting city-wide minimum wage ordinances.

The finding that cities with lower median ages face increased odds of policy adoption is congruent with the crisis of democracy literature, which suggests that younger citizens have different norms of citizenship than their older counterparts. According to Dalton (2016), younger citizens (and millennials in particular) are more likely to favor active government policies that attempt to care for the less fortunate. While I find no support in my final models for the assertion that millennials have any measurable effect (or any generation for that matter), I do find limited evidence supporting these claims through the significance of the median age variable. This suggests that younger populations do have a measurable impact on the odds of policy adoption for the cities in my sample, and suggests that future studies should include measures of age in their analysis.

It is also important to note that median age variable is perhaps the best measurement of age demographics considering the presence of multicollinearity among my generational variables, which naturally add up to one in the population. While I did attempt to control for this by dropping the post millennial generation, the multicollinearity could be manifesting itself nonetheless, which suggests that the variable may yield different results in future studies over a larger sample size.

My final and most significant set of findings concern my educational measures, although they do present an interesting puzzle. My results suggest that cities with lower numbers of high school graduates are more likely to enact minimum wage ordinances. At the same time, I find that cities with a 1% increase in residents with bachelor's degrees face increased odds of policy adoption by 24%.

What could be happening between these two groups? Why would people on both ends of the educational spectrum support minimum wage ordinances? It makes sense for those without high school diplomas to support minimum wage ordinances because they stand to gain more in higher wages. We would expect those with bachelor's degrees, however, to either be indifferent towards or against minimum wage ordinances if we only use a rational-choice framework.

If we solely use a rational-choice framework to analyze the predictors of minimum wage ordinances, the influence of those with bachelor's degrees is surprising. After all, if these people favor enacting a minimum wage, then they are supporting a policy that provides others with benefits while potentially imposing costs on themselves. Augmenting this view with the literature on engaged citizenship, and considering the significance of the median age variable, however, suggests that young voters are maximizing their preferences on two fronts. On the one hand, young citizens without high school degrees are influencing the passage of minimum wage ordinances because they stand to gain economically. On the other hand, young citizens with bachelor's degrees are influencing the passage of minimum wage ordinances based on their preferences for active government policies that seek to care for the less fortunate.

Table 4

Significant Findings

Variable	Odds Ratio	95% CI		Percent	95% CI	
		2.5%	97.5%		2.5%	97.5%
% Bachelor's	1.246	1.103	1.407	24% inc	10.3% inc	40.7% inc
% High School	.844	.705	.994	15.6% dec	29.5% dec	.6% dec
Median Age	.544	.336	.880	45.6% dec	66.4% dec	12% dec
% Pop Growth	.448	.255	.789	55.2% dec	74.5% dec	21.1% dec

Lastly, as expected, political ideology remains a significant predictor of policy adoption as is the density of union membership. This is consistent with prior determinants research and explained by the fact that minimum wage ordinances are liberal policies and the sole purpose of unions is to improve the wages and conditions for their workers.

The 15 cities that adopted minimum wage ordinances share little else of significance in common other than the findings mentioned above. As previously stated in the literature, “no two [ordinances] are the same” (Bernstein, 2004, p. 100). This variation is evident among this sample through the fact that some cities include both a minimum wage and a subminimum wage for tipped employees, while some include incentives for healthcare coverage, the use of local consumer price indexes as opposed to regional or nation, or the use of different phases of wage increases. That being said, it is noteworthy that nine of the 15 cities are located in the western United States, and the majority of those (six) are found within the state of California.

Table 5

Cities That Enacted Minimum Wage Ordinances

Number	City
1	Albuquerque, New Mexico
2	Chicago, Illinois
3	Kansas City, Missouri
4	Lexington-Fayette, Kentucky
5	Los Angeles, California
6	Louisville, Kentucky
7	Oakland, California
8	Portland, Oregon
9	Sacramento, California
10	San Diego, California
11	San Francisco, California
12	San Jose, California
13	Seattle, Washington
14	St. Louis, Missouri
15	Washington, DC

CONCLUSION

I find no evidence to support my hypothesis that an increased percentage of millennials in a municipality will be associated with increased odds for policy adoption. Similarly, I find no evidence to support my hypothesis that cities with an increased percentage of millennials will be associated with an increased magnitude of minimum wage changes. As a result, I fail to reject each of my primary null hypotheses regarding the impact of millennial voters. Interestingly, however, my results indicate that the age composition within city populations may still be a significant predictor of minimum wage ordinances. Cities with a lower median age were observed to face an increased likelihood for enacting minimum wage

ordinances. This finding suggests that future studies of the determinants of minimum wage ordinances should consider age as a possible predictor.

In terms of my secondary variables of interest, I find evidence supporting the hypothesis that cities are more likely to enact minimum wage ordinances following periods of economic downturn, or at least during periods of declining economic growth. This contributes to our understanding of minimum wage ordinances by finding support for the original economic theories presented in the determinants literature, rather than the theory advanced by Clain (2012), which posited the opposite relationship. My most significant findings, however, suggest that minimum wage ordinances are more likely to be enacted among cities with higher rates of bachelor's degrees. Perhaps then, considering the ever-growing number of bachelor's degrees being awarded throughout the United States, the incidence of cities enacting minimum wage ordinances will continue its upward trajectory.

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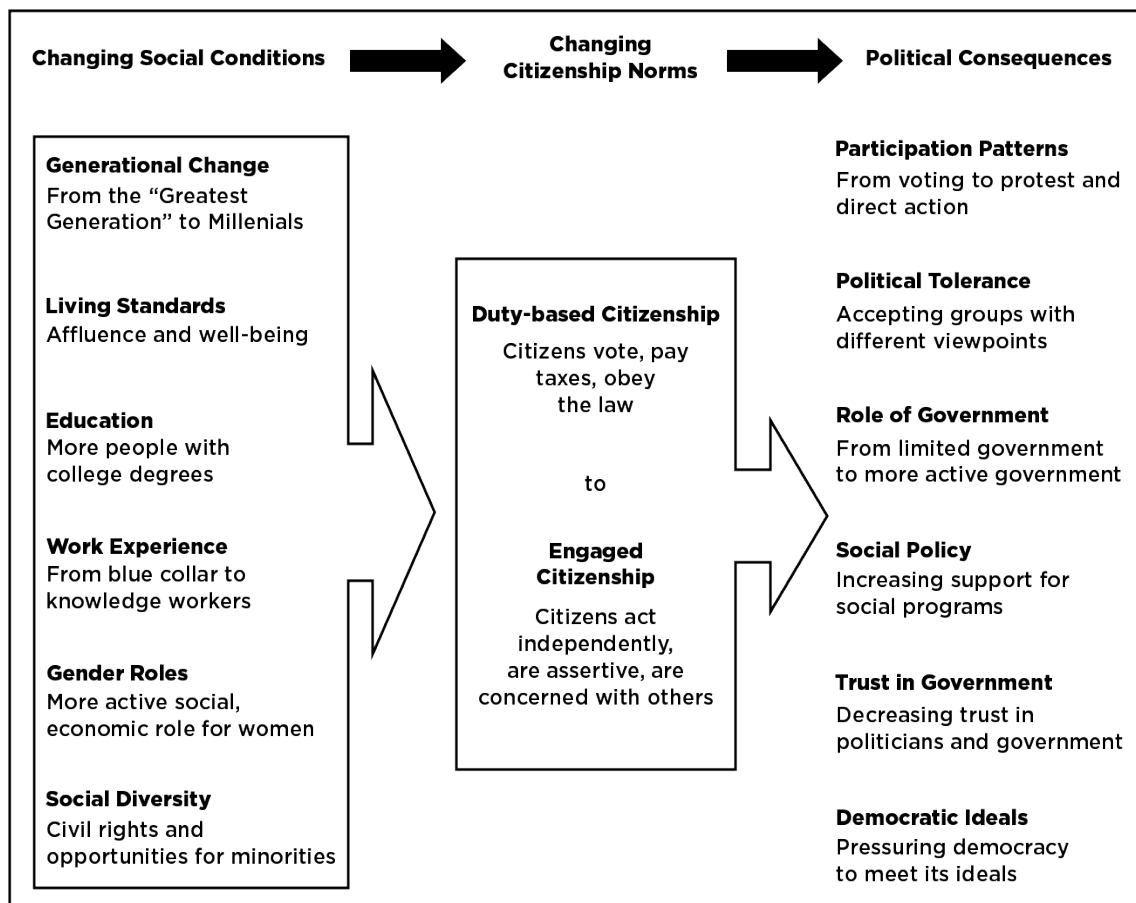
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APPENDICES

Appendix A

The Changing American Public



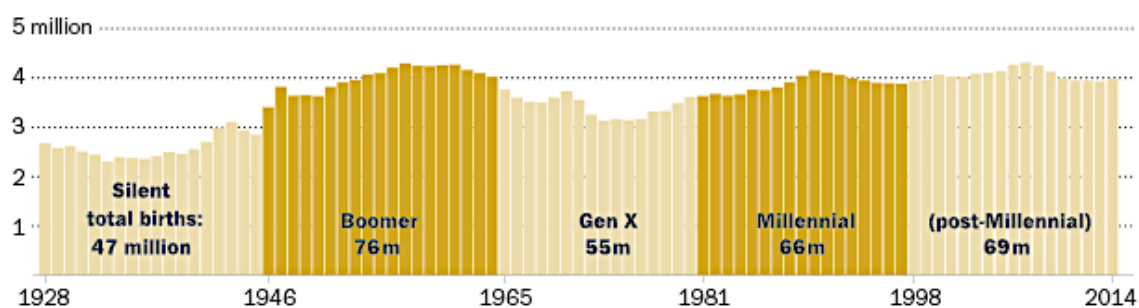
Note. From *The Good Citizen: How a Younger Generation is Reshaping American Politics* (2nd ed, p. 5), by R. J. Dalton, 2016, Los Angeles, CA: SAGE Publications, Inc. Copyright © 2016 by CQ Press. Reprinted with permission.

Appendix B

Births Underlying Each Generation

Births Underlying Each Generation

Number of U.S. births by year and generation



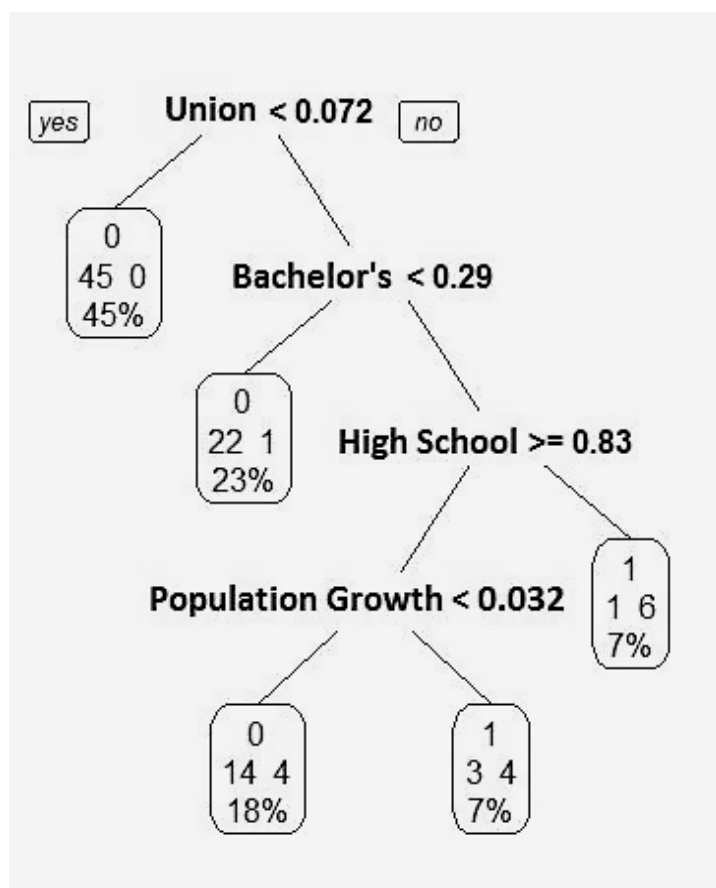
Source: U.S. Dept. of Health and Human Services National Center for Health Statistics

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Note. From “Millennials Projected to Overtake Baby Boomers as America’s Largest Generation,” by R. Fry, 2016, Pew Research Center (<https://www.pewresearch.org/fact-tank/2018/03/01/millennials-overtake-baby-boomers>). Reprinted with permission.

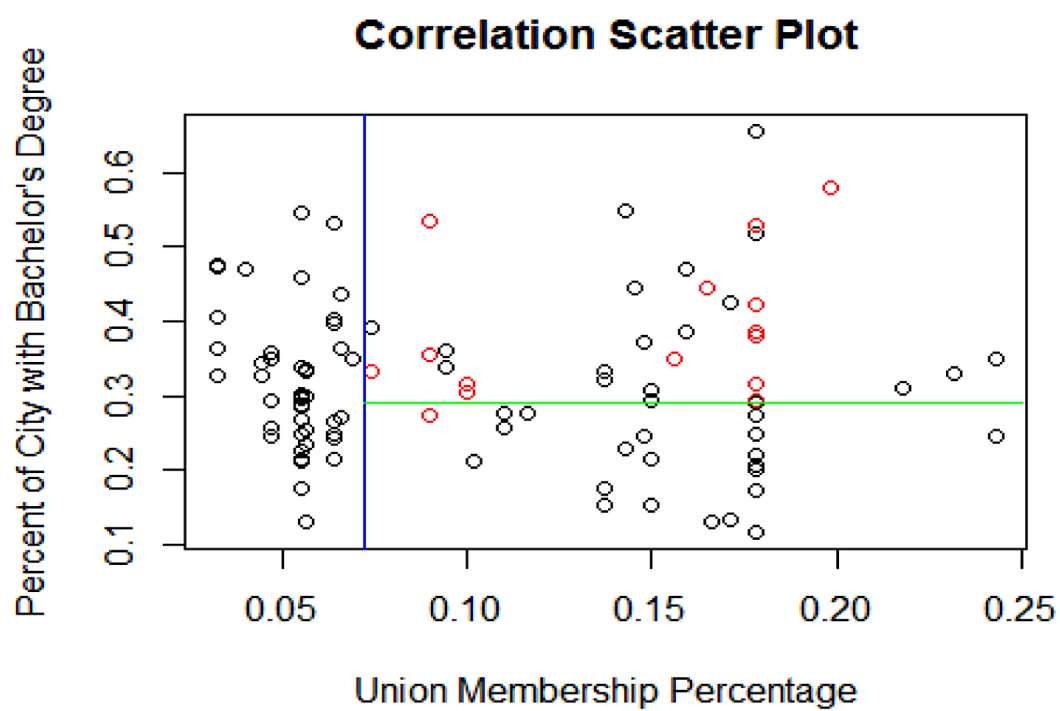
Appendix C

Classification Tree Findings



Appendix D

Correlation Scatter Plot for Classification Tree



Appendix E

Additional Tables

Table 6

Full Logistic Regression Model Parameter Estimates

Coefficient	Estimate	SE	z-value	Sig. Level
Intercept	-1.741e+01	8.227e+01	-0.212	0.8324
Percent White	-1.741e+01	8.227e+01	-0.212	0.8324
Purchasing Power	-1.055e-01	9.971e-02	-1.058	0.2902
Percent Below Poverty Level	3.376e+01	1.844e+01	-1.831	0.0671
Percent Population Growth	6.646e+01	4.033e+01	-1.648	0.0994
State Minimum Wage Higher	2.856e+00	1.784e+00	1.601	0.1094
Union Percent	1.762e+00	1.118e+01	0.158	0.8748
Unemployment Rate	2.953e+01	3.066e+01	0.963	0.3355
Per Capita Income	4.283e-05	1.233e-04	0.347	0.7284
Percent Bachelor's	2.578e+01	1.159e+01	2.225	0.0261
Percent High School	-3.105e+01	1.506e+01	-2.062	0.0392
Percent Democrat	5.995e+00	4.489e+00	1.336	0.1817
Post Millennial	6.434e+01	7.725e+01	0.833	0.4049
Millennial	5.853e+01	8.229e+01	0.711	0.4769
Generation X	1.112e+02	7.340e+01	1.515	0.1298
Boomers	1.732e+02	1.129e+02	1.534	0.1249
Silent	2.788e+02	1.191e+02	2.342	0.0192
Median Age	2.331e+00	1.317e+00	-1.769	0.0768

Table 7

Full Logistic Regression Odds Ratios

Coefficient	Odds	Lower 95% CI	Upper 95% CI
Percent White	1.00036341	0.999476151	1.0012515
Purchasing Power	0.89989747	0.740142913	1.0941339
Percent Below Poverty Level	0.71344575	0.497049876	1.0240518
Percent Population Growth	0.51448199	0.233396726	1.1340850
State Minimum Wage Higher	17.38590806	0.527217308	573.3305685
Union Percent	1.01777595	0.817473175	1.2671583
Unemployment Rate	1.34357042	0.736656427	2.4505066
Per Capita Income	1.00004283	0.999801081	1.0002846
Percent Bachelor's	1.29404910	1.031141741	1.6239892
Percent High School	0.73310986	0.545779575	0.9847383
Percent Democrat	1.06178520	0.972360040	1.1594345
Post Millennial	1.90294676	0.418676077	8.6491838
Millennial	1.79550449	0.357873976	9.0083006
Generation X	3.04019962	0.721282803	12.8144102
Silent	16.25050913	1.575217205	167.6461163
Median Age	0.09722362	0.007354636	1.2852344

Table 8

Findings of Logistic Regression Using Only Significant Predictors

Coefficient	Estimate	SE	z-value	Sig. Level
Intercept	24.2008	10.0517	2.408	0.016057
Percent Bachelor's	22.0066	6.2035	3.547	0.000389
Percent High School	-17.7773	8.7709	-2.027	0.042678
Median Age	-0.6092	0.2456	-2.481	0.013112
Silent	65.2828	38.2911	1.705	0.088212
Percent Below Poverty Level	-11.9500	7.9045	-1.512	0.130588
Percent Population Growth	-80.2795	28.8373	-2.784	0.005371

Table 9

Odds Ratios from Logistic Regression Using Only Significant Predictors

Coefficient	Odds	Lower 95 % CI	Upper 95 % CI
Percent Bachelor's	1.2461586	1.1034924	1.4072696
Percent High School	0.8371323	0.7049138	0.9941506
Median Age	0.5437650	0.3360205	0.8799474
Silent	1.9209659	0.9069538	4.0686856
Percent Below Poverty Level	0.8873644	0.7600087	1.0360612
Percent Population Growth	0.4480749	0.2546169	0.7885224

Table 10

Results from Economic Logistic Regression

Coefficient	Estimate	SE	z-value	Sig. Level
Intercept	-4.831e+00	4.253e+00	-1.136	0.2560
Percent Population Growth	-2.302e+01	2.323e+01	-0.991	0.3219
Unemployment Rate	-1.074e+01	1.810e+01	-0.593	0.5530
Per Capita Income	6.593e-05	4.078e-05	1.617	0.1059
Percent Below Poverty Level	-3.218e+00	9.637e+00	-0.334	0.7384
Percent Democrat	1.406e+00	9.207e-01	1.527	0.1267
Percent Population Growth	5.271e+00	2.679e+00	1.968	0.0491
Purchasing Power	-1.250e-02	4.121e-02	-0.303	0.7616

Table 11

Odds Ratios from Economic Logistic Regression

Coefficient	Odds	Lower 95 % CI	Upper 95 % CI
Percent Democrat	5.271081	0.02103985	10.52112

Table 12

Results from Demographic Logistic Regression

Coefficient	Estimate	SE	z-value	Sig. Level
Intercept	-3.82249	10.68761	-0.358	0.7206
Percent White	0.01993	0.02547	0.782	0.43
Purchasing Power	-0.01129	0.05771	-0.196	0.8449
Union Percent	11.82220	7.79251	1.517	0.1292
Percent Bachelor's	7.75891	4.70922	1.648	0.0994
Percent High School	-4.88545	8.19719	-0.596	0.5512
Percent Democrat	3.17473	2.63450	1.205	0.2282

Table 13

Results from Generational Logistic Regression Model

Coefficient	Estimate	SE	z-value	Sig. Level
Intercept	-3.82249	10.68761	-0.358	0.7206
Post Millennial	-49.877489	46.461357	-1.074	0.2830
Millennial	-46.682864	53.102219	-0.879	0.3793
Generation X	-6.492547	26.877004	-0.242	0.8091
Boomers	-10.412327	47.222432	-0.220	0.8255
Median Age	-0.770801	0.756616	-1.019	0.3083
State Minimum Wage Higher	1.386005	0.886232	1.564	0.1178
Percent Democrat	3.569924	2.162605	1.651	0.0988
Purchasing Power	0.008024	0.035798	0.224	0.8226

Table 14

Linear Regression with Percent Bachelor's Degree

Coefficient	Estimate	SE	z-value	Sig. Level
Intercept	0.1430	0.1920	0.745	0.470
Percent Bachelor's Degree	0.7417	0.4818	1.539	0.148

Table 15

Generational Linear Regression

Coefficient	Estimate	SE	t-value	Sig. Level
Intercept	-0.8687999	2.9837996	-0.291	0.781
Millennial	2.8089329	4.5370659	0.619	0.559
Generation X	7.2538879	6.2944663	1.152	0.293
Boomers	12.0843674	17.2022801	0.702	0.509
Silent	9.5331357	8.7275185	1.092	0.317
Median Age	-0.1600033	0.1895902	-0.844	0.431
State Minimum Wage Higher	0.2097140	0.3012912	0.696	0.512
Percent Democrat	0.5295540	0.5192495	1.020	0.347
Purchasing Power	-0.0007475	0.0077823	-0.096	0.927

Table 16

Economic Linear Regression

Coefficient	Estimate	SE	t-value	Sig. Level
Intercept	1.125e-02	6.646e-01	0.017	0.987
Purchasing Power	-1.008e-02	7.341e-03	-1.373	0.212
Percent Below Poverty Level	2.746	2.358	1.164	0.282
Percent Population Growth	.960	5.752	1.732	0.127
State Minimum Wage Higher	1.396e-01	1.751e-01	0.797	0.451
Unemployment Rate	1.443	3.977	0.363	0.727
Per Capita Income	8.503e-06	9.938e-06	0.856	0.421
Percent Democrat	2.992e-01	4.626e-01	0.647	0.53

Table 17

Demographic Linear Regression

Coefficient	Estimate	<i>SE</i>	<i>t</i> -value	Sig. Level
Intercept	3.334519	2.114140	1.577	0.1534
Percent White	-0.010668	0.005594	-1.907	0.0930
Purchasing Power	-0.013870	0.008695	-1.595	0.1493
Union Percent	-0.453817	1.424129	-0.319	0.7581
Percent Bachelor's	2.434982	1.070743	2.274	0.0526
Percent High School	-1.770618	1.901137	-0.931	0.3789
Percent Democrat	-0.326040	0.491914	-0.663	0.5261