Preferences and Place: Why Preferences for Funding Education Vary Across the Urban-Rural Divide

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Abstract

The persistent urban-rural divide creates a host of economic disadvantages and interstate inequalities, including but not limited to underfunded public education. This paper examines why rural (non-metropolitan) areas have lower levels of public good provisions compared to metropolitan areas—specifically on education. The amount spent per pupil is consistently higher in urban areas (approximately 1000 dollars per year) than in rural communities, even when other economic and social factors are comparable. This paper will highlight the dynamics driving public preferences in non-metropolitan areas, where individuals do not collectively demand more from government but rather reject more spending on public goods. Aside from ideology, I argue that non-metropolitan residents rationally express lower preferences for public spending on education, because they have fewer abilities to bear the additional taxes associated with the increased spending, compared to metropolitan counterparts. I argue that the case of financing public education tests the hypothesis that preferences are derived from a complex calculation of cost and benefit, leading to rational under-investment. The alternative hypothesis is that under-spending is primarily a result of different political ideologies across place. The goal of this paper is to inform our understanding of the dynamics that shape preferences for public spending across geography.

I utilize two waves of nationally representative survey data to measure public preferences for education spending, analyzing differences in taxation preferences based on place. Employing a hierarchical regression analysis on the 2015 and 2016 US Cooperative Congressional Election Survey, this paper explores individual attitudes towards spending on public education and how that preference is shaped by where a person lives. Responses are tested through multivariate regression, specifically hierarchically modeling, to determine the relationship between individual and county-level variables on funding preferences. To study the interplay between institutional and individual factors in determining preferences for spending, this model will analyze the effects of social, individual, and economic variables on individual preferences for spending in rural communities, compared to urban and suburban. Aggregate level data includes estimates of poverty, population, education, and race. Using this model, I seek to determine the factors that are associated with attitudes towards public investment in education.
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1 Overview

For governments, education is one of the costliest goods provided to citizens. Among OECD countries with an average of 6.1 percent of GDP spending on education in 2011, the United States spent roughly 6.9 percent of its GDP on total education expenditures entailing both postsecondary and elementary-secondary education (Kena et al., 2015). This amounted to an estimated $1.2 trillion dollars for the 2013-2014 school year (Kena, Musu-Gillette, Robinson, Wang, Rathbun, Zhang, Velez, & Barmer, 2015). To justify the hefty cost of this good, scholars and activists argue that education plays a fundamental role for society and economies; serving as a justification of the treatment of education as a publicly-provided good, rather than through private markets. The functions of education in society ensures a trained and active labor force and creates avenues for socialization in a democratic system (Woessmann, 2016; Glaeser, Ponzetto, & Shleifer, 2006). Underlying these broad roles of education is the policy goal of equity where, both vertically and horizontally, citizens are provided with the comparable opportunities and resources. At the juxtaposition of cost and objective is the debate of how to maintain the balance between efficiency and equity in the education systems of modern welfare states.

It has been argued that education does not actually have any of the defining elements of a public good (non-rival and non-exclusionary) and all those of private goods (De Fraja, 2014). From the approach of pure fiscal efficiency, education as a private good would ensure that firms respond to consumer (student and families) needs and demands. In this case, educational outcomes would be improved due to competition among schools. However, as already noted, there are underlying policy goals and objectives for education beyond the case for efficiency and a return on investment. Thus, public education is a means to correct for systematic market failures. Furthermore, education is a form of income redistribution and intergenerational social mobility (Hanushske, Leungb, Yilmaz, 2003; Bernasconi, Profeta, 2012). There is an investment nature to education—society pays upfront costs for young people to become educated, and eventually, find gainful employment and become productive members of society. However, this means that those who consume education are not the main financiers of this good (De Fraja, 2014). Rather, it is a joint venture for parents, families, and the state. Scholars have referred to the public financing of education as an intergenerational loan to “finance the accumulation of human capital” (Becker, Murphy, 1988; Boldrin, 2004, 41). Core to this relationship is redistribution, in which policy mechanisms enable the transfer of income from older to younger generations—all with the underlying agreement that this initial payout will secure a return on investment. Studies about the duties of the modern welfare state often do not include education into the analysis of public investments into skills formation through redistribution (Iversen, 2005; Iversen, Soskice 2001, 2009). However, following in the footsteps of Busemeyer (2010), this paper seeks to further fill the gap in empirical research about education in terms of the political economy of redistribution. In particular, this paper analyzes the micro-level logic that determines demand for public
To study public preferences for educational redistribution, the statistical models of this project are based on past research that analyzes individual preferences for redistribution (Alesina, Giuliano, 2009). Under the larger umbrella of education, there is notable complexity in forms of governance, funding formulas, and schooling types. However, this project simply asks individuals to respond to “taxes for public schooling.” This is a valid approach because it follows the past literature modeling public preferences (Alesina, Giuliano, 2009) to drive our understanding of the social determinants of opinion. Using survey data, this project will analyze individual preferences for redistribution by gauging attitudes towards taxes for education. Within the literature, this study will supplement research about public opinion for redistribution and taxes for publicly provided goods such as education.

Alesina and Giuliano (2009) argue, for example, that within the modern welfare state, there are two main objectives of welfare spending. The first is to correct for income inequality, essentially taking from the rich and giving to the poor. The second is to create systems of social insurance, ensuring universal benefits for qualifying individuals. However, the authors note that in surveys it is often not possible to distinguish between the two objectives when analyzing preferences for redistribution. We see this paper as a step in the direction of distinguishing between the two. In particular, this is done through the application of taxes for one publicly provided good: education. This project seeks to draw out a distinction between the two objectives, arguing that public education through schools is an equity driven policy. Due to this, it is in its nature redistributive, moving income from concentrated brackets of society to educate society’s most vulnerable: children. In addition, this paper will analyze heterogenous preferences across place for public investment in education.

The following outlines the layout of this paper. Section II provides an overview of the literature about education finance and public preferences. Section III provides an overview of the model and theory. Section IV provides an analysis of data, analysis, and discussion of findings.

2 Literature

Contemporary news articles and opinion pieces tell the story of an American public with very diverse opinions about the state of education in this country (Zinshteyn, Richmond, 2015). This is unsurprising considering the scale and variety of education in the US; a system composed of over 13,000 school districts ranging from small, rural districts to large, urban schooling zones. At the heart of school funding issues, is the underlying question of who and how schools should be funded. The larger objective of this paper is to draw out conclusions about what drives citizens’ opinions about redistribution through taxes for education. Thus, the literature is divided into three main categories: school funding challenges, setting policy preferences for
redistribution, and the role of public opinion on policy outcomes.

2.1 School Funding Challenges
Understanding the ways in which various streams of funding impacts outcomes and equity is a larger exploration of federalism, a major factor in analyzing school funding challenges. Education in the United States exists within the greater framework of federalism, or the division of powers between the federal government and states. This system, historically referred to as “layer cake” or “picket fence,” is built around the notion of autonomy and separated powers (McDonnell, 2008). In the case of education, federalism has served as both avenues for and challenges to success, a feature of this system documented in the literature.

Cameron and Hofferbert (1974) illustrate that education in a federalist system, tends to reflect wealth-related inequalities. In particular, poor regions with unique linguistic and demographic composition are found to be “on their own” resulting in less financial support of education (Cameron and Hofferbert, 1974). Studies also offer insight into the advantages of local control, in particular, the incentives for community members to invest in their community and provide sufficient tax revenue for schools (Gregory, Kaufman, 2010). Gregory and Kaufman (2010) argue that state governments will be able to develop more creative solution for “failing schools” relative to federal oversight. This argument recalls the element of autonomy that underlies the education system in the US. Specially, autonomy for local governing boards to address the unique needs of a community, as well as engage families and community members in this process.

In their work on inequality in public school funding across the US, Moser and Rubenstein (2002) analyze funding across states through a time-series approach. Findings suggest that states that maintain a higher percentage of revenue by the state government tend to have a more equitable distribution of resources than states in which districts were more dependent on local revenues. By comparing states with higher proportions of state revenue relative to districts with higher proportions of local revenue, the authors conclude that the amount of school districts in a state and the share of revenue by the state government is related to the equality of education funding across all districts (Moser, Rubenstein, 2002). In this case, higher state funding translates into more equal spending on education across districts.

2.2 Setting Policy Preferences
Our construction of political events and public policy is driven by the information we receive, the political parties which we support, and the ideologies to which we subscribe. For example, party affiliation and ideology have been well-studied in understanding policy preferences. Scholars assert that strict allegiance to ideology is not actually a key factor in understanding the preferences of the general public in
supporting or opposing political decision or leaders. Rather, mass public opinion can be characterized by a lack of understanding and incoherent opinions (Converse, 1964). While studies continue to argue for a lack of mass polarization, empirical evidence supports the concept that ideological identification is mostly driven by party affiliation (Fiorina, Levendusky, 2006). Zamir (1998) lays out a contrasting characterization of citizens in their preferences towards public funds for provisions of services. Whether as a consumer or a citizen, the preferences of citizens reflect their needs and wants in each of these roles. Essentially, Zamir argues that public preferences are reflective of egotistic or altruistic motives in respect to public goods (1998).

Hasenfeld and Rafferty (1989) show that the relationship between welfare states and public opinion hinge on the demographic characteristics of individuals. The authors show that income, education, and race all played key roles in determining a person’s support for public policies—in particular, economically and socially vulnerable groups are the most likely to support the welfare state based on a high sense of identification to values of social equality and collective responsibility. Feldman and Zaller (1992) demonstrate that American’s ideological justification for the welfare state is rooted in general value systems, primarily classical liberalism. The authors show that individuals exhibit internal value conflicts over the design of the welfare state, but to a lesser degree social welfare conservative exhibit this value conflict less than welfare liberals (Feldman and Zaller, 1992).

Gilens (2009) demonstrates that a gap remains in policy preference due to class, particularly between low and high-income Americans. The author finds that the gap is far larger than expected and carries over into a wide array of issues ranging from welfare to religious value issues (Gilens, 2009). Jæger (2006, 330) additionally demonstrated that “as income goes up, the propensity to support further redistribution goes down.” In this case, the author notes that those engaged in labor markets and independent of programs are less likely to support policies of redistribution. In addition, Iversen and Soskice (2006) make a strong argument for the stratified influence of the middle-class, particularly as a moving ally between the poor and affluent. The authors state, in reference to elections, that “the middle class, which tends to decide who governs, has an incentive to ally with the poor to exploit the rich, but also an incentive to support the rich to avoid being exploited by the poor” (2006, 178).

Finally, Alesina and Giuliano (2009) analyze the determinants of preferences for redistribution in the modern welfare state by arguing that this economic transfer serves two purposes: to correct for income inequality (rich to poor) and provide social insurance. The authors further test the assertion by Piketty (1995) that preferences are based on individual history. Alesina and Giuliano (2009) find that preferences are determined by personal characteristics such as age, gender, race and socioeconomic level, in addition to the political ideology and perception of fairness. This finding comes in direct contrast to policy scholars who argue that preferences are based in their own individual consumption of goods (Meltzer, Richards, 1981).
2.3 The Role of Opinion on Policy

This final portion of the literature review seeks to answer the question: why does public opinion matter in policy outcomes? Clemente and Roulet (2015) develop a theoretical model to explain how public opinion can lead to the deinstitutionalization of a practice. The authors argue that a spiral of silence is formed when minority members fear their minority opinion status. Stimson (2015) argues that a gap exists between the demand of voters and what voters supply through activities such as voting. However, according to Stimson, public opinion matters, drives politics, and that change happens when people care (2015).

Canes-Wrone (2015) argue that while contemporary debate tends to portray elected officials as unresponsive to public opinion, research has found the contrary. In particular, the author finds that public opinion is directly associated with government action—specifically related to the majority position. Canes-Wrone further asserts that income and wealth are two major indicators in determining the influence of opinions in policy-making (2015). This study shows that while public opinion does indeed weigh-in on policy outcomes, there exists considerable variation in who impacts policy.

Fladmoe (2012) investigates the nature of public opinion on education in Nordic countries, asking the question: is political opinion characterized by consensus or conflict? The author finds that variation exists among the countries of study (Norway, Sweden and Finland) around the issue of education. These results suggest that social democratic policies create a feedback look into public opinion and perceptions of the system itself. Whereas in Finland, education is a non-controversial issue, the remaining countries of interest approach education policy through political debate and controversial rhetoric; arguably, more in line with the American system. However, in Finland, the education system does not receive the same level of political response from the public due to its management by technocrats and international recognition as an effective system (Fladmoe, 2012).

Reed (2001) explicitly analyzes attitudes towards equal educational opportunities in the American school system. In particular, the author seeks to examine the determinants for equal educational opportunity measures, finding that attitudes towards equality and taxation play fundamental roles in public opinion around education. While there are inherent issues of funding schools due to the federalist structure, Reed finds that attitudes towards education are often based on local experiences, specifically perceptions of satisfaction and performance. The author further argues that attitudes towards education are linked to localist sentiments, which is driven by funding inequalities from variation in property tax bases.

Klugman, Walters, Stuber, and Rosenbaum (2011) utilize survey data to analyze public support for school reform measures (vouchers and finance) in relation to other contentious welfare policies. The authors find that clear cleavages exist among support for education policies based on socio-economic factors. Regarding finance reform measures, the authors find that social status effects tend to be more ambiguous. For example, they find no effect between income and opinion on finance reform. The
authors conclude by arguing that educational policy should be studied outside schools, through further analyzing the political and social processes that shape opportunities and subsequently opinions by the public.

3 Model

In this section, I present a simple model of education supply and demand. This is the core theory of this paper. The model presented here is based on the work of Ansell (2010) on the expansion of education through redistributive spending. In this model, individuals rationally decide whether they prefer more public education, in other words, increased public spending. In a decentralized system, public education is funded through a formula of local, state, and federal taxes. However, the bulk of education finance relies on local taxes. Thus, the extension of this model focuses on the decentralized nature of public education finance.

Education is demanded by citizens as a form of ensuring labor-force participation and, in turn, some form of social mobility. However, there is an alternative to public education through private avenues. This would mean that an individual might still consume education while preferring to pay less through public finance schemes. On the individual level, citizens must choose between a trade-off in private and public expenditures. Collectively, increased public expenditures on education raise taxes for citizens and create redistribute benefits for all sectors.

In the past, models of the demand for education have grouped citizens into income groups (high, middle, and low). This is important for understanding aggregate redistribution for education. These models typically find that the demand for education is elite-driven by high income groups. For middle-income groups, education is a benefit in its shift from low-skilled to high-skilled employment, increasing income for this middle group. The poor benefit from education regardless of continued low-skilled labor due to the assumed positive externalities generated through the expansion of education. The following model assumes that preferences for education are endogenous, meaning that preferences are affected by an individual response resulting from external factors. For this extension of the model, I argue that those factors are place-based, rooted in where an individual lives and works. The goal of this extension of the model is to examine preference heterogeneity among individuals based in place.

3.1 A Simple Model of Decentralized Redistribution

The key elements to the simple model are wages, taxes, and income. I alter the model slightly to consider decentralized finance as a factor in driving preferences. Like Ansell, I focus on the role of political institutions and labor market structures on the preferences of groups to target redistribution. Individuals choose to expand education through jurisdictional taxation. Some individuals have more wealth than others in this
model, and it is assumed that individuals with more wealth effectively permit the expansion of education. In this model, individuals are grouped by income (high, middle, and low). Well-known in the literature, wealth is a factor in education attainment. Thus, individuals, presumably in the high-income group, already attain some form of wealth based on some unequal distribution of wealth. Ansell argues that it is through the taxation on the wealthy which gives education finance policy a progressive bite (2010, 31). I will build on this idea that to understand the progressive nature of tax policy, we must understand relative wealth rather than absolute wealth – this will be explained in my extension of the model. Individuals who receive education will fall into two main segments of the labor markets, skilled or unskilled, a variable that is operationalized as a function of wage. For the sake of this simple model, individuals are either fully skilled or unskilled (Ansell, 2010).

Skilled and unskilled labor, $w_s$ and $w_u$, are directly related to relative productivity and relative abundance. In other words, the economy of this model is segmented, and the value of labor is directly the overall output of that labor in relation to the premium placed on type of labor. It is assumed that the overall productivity of skilled labor, $\sigma_s$, is always higher than the productivity of unskilled labor, $\sigma_u$. Skill expansion is what drives down the premium on this segment of the labor market; that is, more skilled labor drives down the economic value, or the overall financial benefit. Based on this assumption, there is an incentive to reduce the expansion of skilled labor to ensure a high financial benefit to those already within this segment of the labor market. In this model, labor supply elasticity is expressed by $a$ (unskilled labor supply parameter) and $b$ (skilled labor supply parameter). These parameters reflect the degrees to which scarcity effects wages; relative abundance of skilled labor would in turn imply a relative scarcity of unskilled labor (Ansell, 2010). This is due to the notion that the expansion of education would move individuals from the unskilled segment of the labor market to the skilled segment, driving down the premium on that labor group. Naturally, this is directly related to the proportion of the population who are skilled, $S \in [0, 1]$. Accounting for these parameters, Ansell builds the initial labor market equilibria for skilled and unskilled wages, as factors of relative abundance and productivity.

\[
\begin{align*}
    w_s &= \sigma_s - bS \\
    w_u &= \sigma_u + aS
\end{align*}
\]

Skilled or unskilled wages will increase or decrease based on the productivity of each labor segment in addition to the skill premium on labor which is reflected by the proportion of workers currently in each segment. Skilled wages will decrease with the relative abundance of skilled laborers yet increase with productivity. The same is true for the wages of unskilled labor. This model incorporates the assumption that individuals who receive skilled wages (related to education) already have higher wealth than those who receive unskilled wages. Ansell argues that this assumes the
expansion of education begins with the wealthiest members of society extending to the poorest. In this case, everyone has a inverse skill index, \( S \in [0, 1] \), where \( s_i = 0 \) (receives education first) and \( s_i = 1 \) (receives last). The following wealth \( q_i \) parameter lays out this relationship.

\[
s_i = f(q_i), f'(q_i) < 0; f(min(q_i) = 1; f(max(q_i) = 0)
\]

According to this model, the inverse skill index is directly related to the proportion of the population that are skilled, \( S \). Earning skilled wages will increase from the richest to the poorest as \( S \) increases. This indicates that individuals will be earning skilled wages \( w_s \) or unskilled wages \( w_u \). The following equations lay out this relationship.

\[
s_i \leq S \leftrightarrow w_j = w_s
\]
\[
s_i > S \leftrightarrow w_j = w_u
\]

Using these equations, Ansell (2010) constructs the following income equations:

\[
y_i = q_i + w_j(s_i(q_i), S)
\]
\[
y_i = q_i + \sigma_s - bS(s_i \leq S)
\]
\[
y_i = q_i + \sigma_u + aS(s_i > S)
\]

What we find is that education serves as a positive benefit for those who receive education first (less wealthy) and a net negative for those already educated (wealthier). The receipt of education generates an increase in income for those who receive it for the first time. In addition, for unskilled laborers there is a constant benefit as unskilled labor becomes scarcer, as long as the labor supply elasticity of unskilled labor, \( a \), remains greater than zero.

Now, we consider the role of taxation as a factor in the endogenous preferences of individuals to expand education. To expand education, citizens must agree to a taxation on their income. This results in a total cost for education \( (cS) \). In the following model, it is an assumed that this taxation is through a flat tax on income (Ansell, 2010). In reality, this is a simplification that deserves more attention to understand heterogeneity in preferences. However, we will lay out this model parameter and then outline my extension on this point. The population of a country is one in this taxation parameter, allowing us to denote the flat tax \( (T) \) as a tax rate \( (t) \) applied to average income \( \bar{y} \). This generates the following equation: \( T = t\bar{y} = cS \). This model is two-generational, in which parents decide to determine their preferences for taxation in the zero period \( (0) \) and children are educated in the first period \( (1) \).

\[
t\bar{y} = cS \leftrightarrow t = \frac{cS_1}{\bar{y}_0}
\]
Based on the following equation, we can determine the utility of families in their estimation of the value of education. Utility is comprised of income in the zero period, the net of taxes, and income of period one. It is assumed that families are deciding to discount (denoted by \( \delta \)) between period zero and period one. They are trying to determine the outcome of income (unskilled \( w_u \) or skilled \( w_s \) labor activity) that is most likely for their children during period one as a factor of their preference for taxation during period zero. In addition to the expected return on education due to which segment of labor market their children will fall, there are levels of externalities generated by education ((denoted by \( g \)). Ansell assumes that education only produces positive externalities, whereby all citizens benefit from the education of one citizen. This is an understandable assumption, but for the analysis of rational under-investment (Castle, 1993), it is necessary to analyze the effect of potential negative externalities based on place. An analysis of externalities are further explained in our extension of this model. In the following utility function, we see that utility is a function of taxation of income in the zero period alongside expected income and externalities in the first period. In addition, Ansell (2010) takes the derivative of the utility function with respect to the level of public education provision \( (S_1) \). We find that parental income, weighted by relative income, in the zero period is negative indicating that the greater the income, the more share of tax burden. Second, we find that perceived utility of education is driven by expected income and positive externalities in period one.

\[
U_i = [1 - \frac{cS_1}{y_0}]y_{i0} + \delta[q_{i1} + w_{j1}(S_1) + g(S_1)]
\]

\[
\frac{\partial U_i}{\partial S_1} = -c \frac{y_{i0}}{y_0} + \delta \frac{\partial w_{j1}(S_1)}{\partial S_1} + g
\]

Ansell argues that while externalities remain purely positive in this model, the impact of the provision of education on income in period one is a function of which income group an individual initially falls into. Thus, the model further distinguishes between the three main income groups (high, middle, and low). Consider the impact of education provision on high income earners and we find that the effect is largely a net negative for this group. Expanding education for this group results in high taxes and negative impact due to the decreasing premium on skilled labor resulting from an increasing proportion of the population that now falls into this labor segment.

\[
\frac{\partial U_H}{\partial S_1} = -c \frac{q_H + w_{s0}}{y_0} + \delta[-b + g]
\]

In contrast, we find that middle income families largely benefit from the expansion of education. As this group moves from unskilled to skilled labor, we find that they experience an increase in income. While the cost of education, relative to
unskilled wages remains low, the benefit from education expansion potentially moving this group into skilled labor in period one is a net benefit.

\[ \frac{\partial U_M}{\partial S_1} = -c \frac{q_M + w u_0}{y_0} + \delta \left[ \sigma_s - b S_1 \right] - \left[ \sigma_u + a S_1 \right] + g \]

Finally, we find that the low income additionally benefits from increased spending on education, regardless of their lack of movement out of the unskilled labor. Ansell argues that even if this group does not receive education, they benefit from the positive externalities collectively generated as well as relative small loss of tax income through the cost of education.

\[ \frac{\partial U_L}{\partial S_1} = -c \frac{q_L + w u_0}{y_0} + \delta \left[ a + g \right] \]

According to this model, Ansell argues that we find an “ends against the middle” pattern. The main target beneficiaries of education, the middle class, will benefit from the expanded education while the high income continue to remain in a disadvantaged position and the poor in an “ambiguous position.” (2010, 36). This model provides us with a starting point for considering variation in preferences for education. Based on these findings, we would assumedly find the middle-class to be the persistent champions of expanding education. Arguably, it would be irrational to have a mainly benefitting middle-class demand less expansion of government. The following section analyzes a few modifications to this model that provide insight into shifting preferences for education.

### 3.2 Modeling Place-Based Preferences for Redistribution

Working off the model of Ansell, there is a necessary distinction that can be made to understand why an individual who benefits from government would oppose expanded public goods. In regard to education, most taxation is through some form of decentralized finance. In fact, the push to decentralization in governance and financial autonomy has become an increasingly international trend. In fact, UNESCO (United Nations Education, Scientific, and Cultural Organization) states “decentralized governance” as one of their thematic priorities (2017). In this case, we need to account for jurisdictional variation. Furthermore, this variation at the local level will provide some insight into heterogeneous preferences for education explanation. We extend the model to account for this variation in terms of taxation. The total cost of education \((cS)\) will no longer be a function of national average income, but rather the average income of each jurisdiction (denoted by \(p\)). This means that tax rates will shift across place, generally the average income is lower than in non-metropolitan areas than in metropolitan areas.
Furthermore, we need to consider the impact of wealth distribution across place. While, we find higher absolute incomes in metropolitan areas, the same cannot be said for non-metropolitan areas. This would mean that being in the middle-income group would have very different income standing depending on place. This simple distinction generates an array of outcomes that could significantly reshape the way that various groups voice demand for education. The following utility functions, based on income, provide insight into variation in preference outcomes. Consider, the above outlined utility functions based on income in the context of rural place. For the middle-income group at the aggregate level, they now experience the ceiling to income in a rural place. This would indicate that, like the high-income group at the national level, the middle-income are now faced with the lion’s share of tax burden in addition, to decreased productivity ($\sigma$) due to global integration of markets and skilled labor.

In addition, externalities are generated at the local level. Should these externalities be negative, due to the migration of children to more skilled labor markets, many of the benefits in the previous model diminish. This would mean that the middle-class are now rationally voicing less demand for expanded education; a phenomenon that could be categorized as rational under-investment. Rational under-investment theory extends Human Capital Theory to account for the structure of the economy and communal benefits from investing in public education. According to this theory, individuals form opinions based on economic factors that impact themselves and their community. An example of short-term factors includes changing tax burdens whereas long-term factors would include familial ties, migration effects, and job availability that impact preferences for spending. Accordingly, the long-term effects are now generating negative externalities, resulting in decreased production. Based on the model of this paper, rational under-investment would mainly be a middle-class, non-metropolitan phenomenon. The following formula highlights this phenomenon.

$$\frac{\partial U_M}{\partial S_1} = -\frac{q_M}{\bar{y}_0} + \delta([-\sigma_s - bS_1] - [-\sigma_u + aS_1] + g_p)$$

Based on the above discussion, we generate hypotheses that further our understanding of the heterogeneous preferences of the middle-class. Place-based variation is the key to understanding the shift in preferences. The impact on the political demands of individuals is a condition of individual and place-based considerations. In some places, it could be that the high-income groups have a larger role in determining the depth and expansion of education. However, when we analyze heterogeneity, it is necessary to understand the relative standing of individuals within the jurisdiction of
taxation. Being middle-class in one class could be a very different experience of being middle-class is another place. In this case, preferences are endogenous and driven by place-based relative wealth and labor market outcomes. The inclusion of the jurisdiction as a factor in taxation preferences could also be a function of comparing and contrasting goods around you; this means that individuals only set a reference point for certain goods based on what they perceive as benefits around them as well as the outcomes of those benefits. Each of which could lead individuals to demand less education than would be beneficial. In fact, it could be that these same individuals in another place would demand more education.

This implies that individuals with the same income, across place, would value education differently. In a metropolitan space, where globalization has not driven down the premium on labor to the same degree as in non-metropolitan areas, we would find that external factors drive preferences for spending on education. This implies that the demand-side impact on education decreases as counties get less metropolitan, providing hypothesis one:

**Hypothesis 1:** Individuals in areas with increased economic opportunity (decreased unemployment rate) will prefer to invest more in public education.

The focus of this paper, however, will be two additional key factors in relation to decentralized finance. Preferences are no longer based on aggregate redistribution but are now a function of local redistribution. This means that individuals are in a situation where preferences are subject to local level effects, but the adjacent jurisdictional funding can be observed. Individuals will receive the local benefit of a public good in that jurisdiction; meaning the externalities are localized within that jurisdiction. However, adjacent to this jurisdiction is another where the externalities of benefits are also localized. This means that individuals can observe those effects and ultimately choose between jurisdiction. In this model, we are mainly concerned with how the observation of benefits in the adjacent jurisdiction would drive preferences in your own jurisdiction. This modification is about the efficiency of taxation; the perception that payment and outcomes are relative to what others around you are paying and experiencing. The would shift the utility function of individuals for the demand for education. The relative demand of education \( Q_i \), an element that would modify taxation for the cost of education, is a function of the position of one
jurisdiction to another. This would shift the preference to the individual as a taxpayer and a voter, meaning that there is a feedback loop effect onto the total cost of education. The relative demand of education also highlights the sense of fairness of taxation in a decentralized system. This includes the cost of education and outcome relative to adjacent jurisdictions and the division of taxation among governing levels.

\[ U_i = \left[ \left[ 1 - \frac{cS_1}{y_0} \right] y_0 \right] Q_1 + \delta \left[ q_{i1} + w_{j1}(S_1) + g(S_1) \right] \]

Based on this modification to the model, we would find that we can shift the total cost of education relative to surrounding jurisdiction—with the latter effect on the utility of education. This implies that the perception of efficient spending, relative to other jurisdictions, would increase the demand side of education, providing hypothesis two:

*Hypothesis 2: Individuals who perceive taxation as unequal across jurisdictions (spending more than average) will prefer to invest less in public education.*

In addition, we extend this modification to account for the division of governance inherent in decentralized spending. The relative demand of education highlights the sense of fairness of taxation in a decentralized system. That is, local taxation relative to adjacent jurisdictions will shift the demand for education based on the perceptions of unequal spending. However, this could be remedied through a shift to centralized taxation schemes—a return to Ansell’s flat tax model. This implies that that demand-side impact of more fairness (preference for centralized, federal taxation) increases the overall demand for education, providing hypothesis three:

*Hypothesis 3: Individuals who perceive taxation as unequal across jurisdictions will prefer to invest less in public education.*

### 3.3 Data

Survey data is the most effective in answering the questions put forth by the research. Survey data provides insight into the individual perceptions, beliefs, and preferences based on a series of questions designed for latter quantitative methods. For this dissertation, data has been previously collected and is available for analysis. Two main sources will provide data for the quantitative portions of this dissertation: The Cooperative Congressional Election Study and the US Census data through the Department of Agriculture Economic Research Service. CCES is a 50,000+ person national stratified sample survey administered by YouGov/Polimetrix. Half of the questionnaire consists of Common Content asked of all 50,000+ people. The common content segment of the survey asks about general political attitudes, various demographic factors, assessment of roll call voting choices, and political information.
In addition, half of the questionnaire consists of Team Content designed by each individual participating team and asked of a subset of 1,000 people. This paper uses two waves of survey questions, administered in 2015 and 2016, as part of the larger CCES survey. In the modules, survey questions focused on the attitudes towards public education, including funding preferences, and the nature of federalism that impacts public education. Respondents of each survey have been geocoded to locate those in rural and non-rural parts of the country. The inclusion of county level variables will provide some insight into the broader institutional context in which goods are funded and how this impacts preferences.

In conjunction with this data, US Census data at the county level will be utilized. This data will be at the aggregate level regarding poverty, population, education, and race. Poverty estimates are model-based estimates from the U.S. Census Bureau’s Small Area Income and Poverty Estimate (SAIPE) program. Population estimates will be collected from the U.S. Census Bureau, 1990 and 2000 Censuses of Population, and County Population Estimates. County unemployment rates are from the Bureau of Labor Statistics (BLS) Local Area Unemployment Statistics (LAUS) program and median household is from the U.S. Census Bureau’s Small Area Income and Poverty Estimate (SAIPE) program. Education data is collected from the U.S. Census Bureau and the decennial Censuses of Population (1970, 1980, 1990 & 2000) and from the Census Bureau’s American Community Survey (2011 & 2015). The estimated rural population in the United States is between 17 and 20 percent.
Table 2: Descriptive Overview of 2015 CCES Survey

<table>
<thead>
<tr>
<th>Place</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban (Code 1,2,3)</td>
<td>829</td>
<td>82.9</td>
<td>82.9</td>
</tr>
<tr>
<td>Rural (Code, 4,5,6,7,8,9)</td>
<td>171</td>
<td>17.1</td>
<td>100.00</td>
</tr>
<tr>
<td>Total</td>
<td>1,000</td>
<td>1,000</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Descriptive Overview of 2016 CCES Survey

<table>
<thead>
<tr>
<th>Place</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban (Code 1,2,3)</td>
<td>1,056</td>
<td>86.0</td>
<td>86.0</td>
</tr>
<tr>
<td>Rural (Code, 4,5,6,7,8,9)</td>
<td>172</td>
<td>14.0</td>
<td>100.00</td>
</tr>
<tr>
<td>Total</td>
<td>1,228</td>
<td>1,228</td>
<td></td>
</tr>
</tbody>
</table>

For both multivariate regressions, the dependent variable is a basic measure of tax preferences for public education. The dependent variable is outlined below and serves as a proxy for their preference of the public provision of spending on public education. Welch (1985) argues that preferences for taxes are the “most concrete expression of willingness to pay for new or expanded services.” Following this rationale, Busemeyer, Garritzmann, Neimanns & Nezi (2017) asked respondent about their willingness to pay additional taxes in order to measure their preference for financial investment in education. Due to the nature of this variable, the regression will be an multinomial logit analysis. Relative risk ratios (0-1) are estimated for each model.

Table 4: Descriptive Overview of 2015 Dependent Variable

<table>
<thead>
<tr>
<th>Decision</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase taxes for public schools</td>
<td>299</td>
<td>29.9</td>
<td>29.9</td>
</tr>
<tr>
<td>Decrease taxes for public schools</td>
<td>222</td>
<td>22.2</td>
<td>52.1</td>
</tr>
<tr>
<td>Keep taxes the same</td>
<td>475</td>
<td>47.5</td>
<td>99.6</td>
</tr>
<tr>
<td>Skipped</td>
<td>4</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>1,000</td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>
### Analysis

The models presented in this paper are a simple empirical approach to heterogeneity in preferences across place. In this section, I run a series of multinomial logistical regressions to analyze variation across place. Controlling for other factors, I show that place-based considerations shift demand for the expansion of education through increased taxation. The findings offer some evidence of the theory outlined above, although there are limitations to conclusions that can be made. In subsequent work, we will expand on these initial findings to improve empirical evidence.

#### 4.1 Empirical Setup

The empirical strategy used in this paper is to analyze the individual and collective determinants for education finance preferences. Each model is run for a metropolitan and non-metropolitan sample. An obvious limitation of this approach is the sample size of the non-metropolitan respondents, roughly 17 percent of the overall samples. However, this approach gives us a baseline understanding of variation in political determinants for the expansion of education. The main difficulty in the empirical portion of this analysis comes from the nature of the dependent variable. As is common in surveys, the dependent variable (increase, decrease, or keep taxes the same) is a categorical variable. The main point of interest from this variable is the movement of individual preference between each outcome. While it is common practice to use ordinal logistical regression, analysis of the underlying assumption (proportionality between outcomes) was minimally violated. In turn, this paper relies on a multinomial logistical estimation technique that frees analysis of the proportionality assumption but is less parsimonious than other models.

With the multinomial logit (MNL) model, we model preferences among taxation options as a function of social, economic, and demographic characteristics. Each model is statistically significant at the 1% level (p=0.00) and utilizes the variable response “keeping taxes the same” as the reference option. Estimates are the relative risk ratios

<table>
<thead>
<tr>
<th>Increase or Decrease Taxes</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase taxes for public schools</td>
<td>502</td>
<td>40.8</td>
<td>40.8</td>
</tr>
<tr>
<td>Decrease taxes for public schools</td>
<td>248</td>
<td>20.2</td>
<td>61.1</td>
</tr>
<tr>
<td>Keep taxes the same</td>
<td>476</td>
<td>38.8</td>
<td>99.8</td>
</tr>
<tr>
<td>Skipped</td>
<td>2</td>
<td>0.16</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>1,228</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 5: Descriptive Overview of 2016 Dependent Variable
for each dimension (increase taxes and decrease taxes) of the dependent variable in reference to the base group, keep taxes the same. Relative risk ratios (RRR) provide us with an understanding of the probability of an outcome compared to the probability of the base reference group. The interpretation of the relative risk ratio of the alternative outcome relative to the reference group is expected to change by a factor of the respective parameter estimate, given the variables in the model are held constant. A rule of thumb is that a coefficient greater than one (1) indicates a higher likelihood to be in the alternative group (increase or decrease taxes) than in the reference group (keep the same). The same is true in the opposite direction; a coefficient less than one (1) indicates a higher likelihood to be in the reference group (keep the same) than in the reference group (increase or decrease taxes). The following tables display parameter estimates, marginal effects, and measures of fit including statistical significance and standard error.

For the first model, the key independent variables are relative spending and comparative outcomes in education to other jurisdictions. This model aims to test hypothesis two, individuals who perceive taxation as unequal across jurisdictions (spending more than average) will prefer to invest less in public education. Alternative independent variables are at the county level, testing at a broader level the notion of rational under-investment, or the idea that education could generate negative externalities which drive down the demand for education. Control variables include education, ideology, income, homeownership, being a parent, and employment status. All county level variables (poverty rate, median household income, and unemployment rate) are from 2015.
## 4.2 Model 1

<table>
<thead>
<tr>
<th></th>
<th>(1)Decrease Taxes</th>
<th>(2)</th>
<th>(3)Increase Taxes</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Metro</td>
<td>NonMetro</td>
<td>Metro</td>
<td>NonMetro</td>
</tr>
<tr>
<td>Education</td>
<td>0.956</td>
<td>0.923</td>
<td>1.296***</td>
<td>1.248</td>
</tr>
<tr>
<td></td>
<td>(-0.66)</td>
<td>(-0.56)</td>
<td>(4.20)</td>
<td>(1.40)</td>
</tr>
<tr>
<td>Ideology</td>
<td>1.094</td>
<td>1.050</td>
<td>0.744***</td>
<td>0.945</td>
</tr>
<tr>
<td></td>
<td>(1.16)</td>
<td>(0.35)</td>
<td>(-4.48)</td>
<td>(-0.34)</td>
</tr>
<tr>
<td>Income</td>
<td>2.005**</td>
<td>1.867</td>
<td>0.840</td>
<td>0.144</td>
</tr>
<tr>
<td></td>
<td>(2.67)</td>
<td>(0.95)</td>
<td>(-0.61)</td>
<td>(-1.17)</td>
</tr>
<tr>
<td>Home Owner</td>
<td>0.674*</td>
<td>0.772</td>
<td>0.917</td>
<td>0.897</td>
</tr>
<tr>
<td></td>
<td>(-2.54)</td>
<td>(-0.73)</td>
<td>(-0.78)</td>
<td>(-0.26)</td>
</tr>
<tr>
<td>Parent</td>
<td>1.207</td>
<td>1.765</td>
<td>1.621*</td>
<td>0.813</td>
</tr>
<tr>
<td></td>
<td>(0.82)</td>
<td>(1.32)</td>
<td>(2.52)</td>
<td>(-0.36)</td>
</tr>
<tr>
<td>Not Working</td>
<td>1.528*</td>
<td>0.722</td>
<td>1.078</td>
<td>0.341*</td>
</tr>
<tr>
<td></td>
<td>(2.14)</td>
<td>(-0.78)</td>
<td>(0.41)</td>
<td>(-2.08)</td>
</tr>
<tr>
<td>Spending Comparison</td>
<td>1.315*</td>
<td>0.939</td>
<td>0.663***</td>
<td>0.379**</td>
</tr>
<tr>
<td></td>
<td>(2.42)</td>
<td>(-0.22)</td>
<td>(-3.58)</td>
<td>(-3.11)</td>
</tr>
<tr>
<td>Outcome Comparison</td>
<td>0.609***</td>
<td>0.723</td>
<td>1.162</td>
<td>1.418</td>
</tr>
<tr>
<td></td>
<td>(-4.44)</td>
<td>(-1.20)</td>
<td>(1.33)</td>
<td>(1.09)</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>0.993</td>
<td>0.935</td>
<td>1.038</td>
<td>1.008</td>
</tr>
<tr>
<td></td>
<td>(-0.27)</td>
<td>(-1.16)</td>
<td>(1.74)</td>
<td>(0.13)</td>
</tr>
<tr>
<td>Median Income</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>(1.72)</td>
<td>(0.97)</td>
<td>(0.90)</td>
<td>(1.23)</td>
</tr>
<tr>
<td>Unemployment Rate</td>
<td>1.186</td>
<td>1.357</td>
<td>1.135</td>
<td>0.843</td>
</tr>
<tr>
<td></td>
<td>(1.60)</td>
<td>(1.54)</td>
<td>(1.33)</td>
<td>(-0.71)</td>
</tr>
</tbody>
</table>

| N                            | 817               | 168       | 817              | 168       |

Exponentiated coefficients; t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
First, we find that education is only statistically significant in metropolitan jurisdictions. As individual education increases in this jurisdiction, we find that the relative risk for increasing taxes relative to keeping taxes the same would be expected to increase by a factor of 1.296, holding other variables constant. This indicates that the more educated an individual, particularly in a metropolitan area, the greater the likelihood to support increased taxes on education. Education is not significant in the model for decreasing taxes. Ideology, as is the case with education, is also significant in the model for increasing taxes in the metropolitan jurisdiction. This indicates that as ideology shifts to more conservative, metropolitan respondents are less likely to support increasing taxes. We now turn to income. The variable for individual income in the metropolitan model indicates that an increase in income raises the relative risk of opting to decrease taxes for education, relative to keeping them the same. Home ownership in the metropolitan jurisdiction indicates that being a home owner in an urban place increases the relative risks of decreasing taxes—meaning you would be more likely to oppose a decline in taxes for education.

The core of this analysis was an examination of the hypothesis that preferences for taxation would shift based on the perception of funding in adjacent districts. In this case, individuals would observe spending around their district as a baseline for their preference. We find that this variable is a factor in the preferences of both metropolitan and non-metropolitan respondents. For individuals in non-metro jurisdictions, the perception that they are spending more than the average district on a good reduces their likelihood of opting to increase taxes for education. The same is true for respondents in metropolitan jurisdictions, but to a larger extent. In turn, the perception that schools are performing better than average schools reduces the likelihood of metropolitan individuals from decreasing taxes, relative to keeping them the same. While these findings are not direct support for the second hypothesis, they indicate a relationship between individual preferences for spending as a factor of relative spending in other jurisdictions. At the very least, these initial findings warrant further analysis of this relationship.

For the second model, the key independent variables are related to decentralized finance for education, primarily the opinion that lack of local control and unequal resources among schools are problematic. This model aims to test hypothesis three, individuals who perceive taxation as unequal across jurisdictions (problems due to local control) will prefer to invest less in public education. This would reflect a notion of unfairness in current taxation schemes. Control variables include education, ideology, income, homeownership, being a parent, and employment status. All county level variables (poverty rate, median household income, and unemployment rate) are from 2015.
## 4.3 Model 2

<table>
<thead>
<tr>
<th></th>
<th>(1) (Decrease Taxes)</th>
<th>(2)</th>
<th>(3) (Increase Taxes)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Metro</td>
<td>NonMetro</td>
<td>Metro</td>
<td>NonMetro</td>
</tr>
<tr>
<td>Education</td>
<td>1.102</td>
<td>0.594*</td>
<td>1.196***</td>
<td>1.002</td>
</tr>
<tr>
<td></td>
<td>(1.57)</td>
<td>(-2.51)</td>
<td>(3.44)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Ideology</td>
<td>1.191*</td>
<td>1.228</td>
<td>0.688***</td>
<td>1.077</td>
</tr>
<tr>
<td></td>
<td>(2.14)</td>
<td>(1.29)</td>
<td>(-5.83)</td>
<td>(0.53)</td>
</tr>
<tr>
<td>Not Working</td>
<td>0.883</td>
<td>1.754</td>
<td>1.098</td>
<td>0.999</td>
</tr>
<tr>
<td></td>
<td>(-0.67)</td>
<td>(1.19)</td>
<td>(0.59)</td>
<td>(-0.00)</td>
</tr>
<tr>
<td>Family Income</td>
<td>0.778</td>
<td>0.300</td>
<td>0.852</td>
<td>0.276</td>
</tr>
<tr>
<td></td>
<td>(-0.90)</td>
<td>(-0.95)</td>
<td>(-0.64)</td>
<td>(-1.15)</td>
</tr>
<tr>
<td>Parent</td>
<td>1.038</td>
<td>0.539</td>
<td>1.280</td>
<td>0.326*</td>
</tr>
<tr>
<td></td>
<td>(0.20)</td>
<td>(-1.05)</td>
<td>(1.54)</td>
<td>(-2.19)</td>
</tr>
<tr>
<td>Home Owner</td>
<td>0.716</td>
<td>0.779</td>
<td>1.498**</td>
<td>1.594</td>
</tr>
<tr>
<td></td>
<td>(-1.80)</td>
<td>(-0.56)</td>
<td>(2.91)</td>
<td>(1.41)</td>
</tr>
<tr>
<td>Lack of Local Control Problem</td>
<td>1.000</td>
<td>0.938</td>
<td>0.751**</td>
<td>0.504*</td>
</tr>
<tr>
<td></td>
<td>(0.00)</td>
<td>(-0.25)</td>
<td>(-3.19)</td>
<td>(-2.47)</td>
</tr>
<tr>
<td>Unequal Resources Problem</td>
<td>0.757**</td>
<td>1.174</td>
<td>1.757***</td>
<td>1.981**</td>
</tr>
<tr>
<td></td>
<td>(-2.68)</td>
<td>(0.67)</td>
<td>(7.30)</td>
<td>(3.19)</td>
</tr>
<tr>
<td>Median Income</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>(0.27)</td>
<td>(1.00)</td>
<td>(-0.04)</td>
<td>(-0.78)</td>
</tr>
<tr>
<td>Unemployment Rate</td>
<td>1.012</td>
<td>0.793</td>
<td>0.919</td>
<td>0.853</td>
</tr>
<tr>
<td></td>
<td>(0.19)</td>
<td>(-1.34)</td>
<td>(-1.37)</td>
<td>(-1.31)</td>
</tr>
</tbody>
</table>

Exponentiated coefficients; \(t\) statistics in parentheses

\(* p < 0.05, \** p < 0.01, \*** p < 0.001\)
From the second model, we find that education is significant in both regression models. In non metropolitan places, as education increases, we find a decrease in the likelihood of preferring a tax reduction compared to keeping taxes the same. In the same way, in metropolitan places, as respondent education increases, we find a significant likelihood of preferring an increase in taxes compared to keeping taxes the same. Ideology is significant in metropolitan areas as a factor for respondent likelihood of tax preferences. As ideology becomes more conservative for metropolitan respondents, we find a decreasing likelihood for preferring a tax increase for education. This variable is not significant in the non-metropolitan model, an outcome that could speak against the notion that rural individuals are mainly ideologically driven.

Again, we find that home ownership in metropolitan areas increases the likelihood of preferring a tax increase compared to keeping taxes the same. In contrast, being a parent in a non-metropolitan areas decreases the likelihood of increasing taxes for education. While this finding is minimal, it could speak to the concept of rational under-investment, where not all externalities generated from education are positive. Finally, we find that the idea of a lack of local control as a factor in education, reduces the likelihood of increasing taxes in both metropolitan and non-metropolitan places, with the former having a more substantial effect. This could provide some support for hypothesis three, that preferences shift based on the perception that problems arise from a decentralized education finance system. Furthering this point, we find that individuals who perceive unequal resources as a problem increase their likelihood of preferring to increase taxes for education. While this is highly significant in the metropolitan model, the magnitude is considerably larger in the non-metropolitan model. This could be a factor of the efficiency of taxes noted in the extension of the model and actually provide some support for hypothesis two. Again, these findings are only minimally supportive of each hypothesis but warrant additional investigation.

4.4 Sensitivity Analysis and Limitations

To test the sensitivity of the multinomial logit regression, we first test the overall fit of the model. In this case, we used the values of AIC and BIC to compare model fits, between a multinomial logit and individual binomial logit regressions. For both models, we find that the non-metropolitan model is superior (lower AIC and BIC) compared to the metropolitan model.

The most important assumption of the multinomial logit regression is that of the independence of irrelevant answers (IIA). This assumption “means that, all else being equal, a person’s choice between two alternative outcomes is unaffected by what other choices are available” (Cheng, Long, 2007, 583-484). In the case of this model, the Hausman tests of IIA assumption does not indicate any violations of this assumption. Furthermore, in testing the correlation of variables, there are no serious signs of multicollinearity. A limitation of this survey is the sample size (n=1000). In particular, for the application of multinomial logit regressions, a larger sample size ensures more
accurate estimates.

5 Conclusion

The extension of Ansell’s model illustrates the complexity in determining public preferences for redistribution and taxes for public goods. In accordance with the findings of Busemeyer (2010), education continues to be a strong effect on the preferences for educational spending preferences. However, this appears to vary across place. Furthermore, ideology matters in preferences for increasing and decreasing taxes. Yet, according to these models, we find that this variable could vary across place.

Finally, we find little support that income is a significant predictor for preferences for educationally focused tax levels. This is directly in line with the findings of Busemeyer (2010) and Klugman, Walters, Stuber, and Rosenbaum (2011). Specifically, Busemeyer (2010) found that the “individual position in the distribution of income does not impact preferences for education spending” (p. 20). This illustrates an interesting dynamic between income levels in relations to public education and redistribution.

In particular, scholars assert that the political economy equilibrium is a function of power between income groups. This is characterized by higher spending in education when the poor are more influential and lower spending in education when the wealthy are more influential (Bernasconi, Profeta, 2007). Thus, the dynamics of power are essential in understanding the level of current spending and to what degree individuals perceive their own ability to influence. At a time of increasing income inequality and greater political polarization, individual preferences appear to be, not only a function of redistributive dynamics, but variation across place in spending, outcomes, and resources.

The survey question for this project asks respondents about levels of taxes for education, a detail that could induce certain reactions based on cultural attitudes about generating revenue. However, future research will include questions about spending to more accurately measure preferences for education funding. Furthermore, cross-country comparisons about attitudes around taxes comparing metropolitan and non-metropolitan places could further our understanding of the determinants for redistribution preferences.

This study reflects the complexity in individual preferences for public policy and spending for redistribution. The objective of this research is to bring forth insights about collective decision-making in places riddled with changing economic, social, and political dynamics that create challenges for the public financing of public goods. In particular, this work highlights the unique role that place plays in determining levels of redistribution and fairness—variables that appear to vary depending on place and providing some insight into the heterogeneity of preferences.
6 Works Cited


