Does Government Matter in the Formation of Social Capital?
Exploring Variation in Social Capital across United States Counties

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Abstract

Communities with high levels of social capital have been linked to an array of positive economic and community development outcomes. We test the extent to which government capacity might explain variation in local social capital. The importance of government institutions is compared to variables representing human capital and community diversity, both of which can shape social capital in their own ways. Using both regression models and a Blinder-Oacaxa decomposition, we analyze US county-level data to explore differences in social capital across an area's metropolitan status and region. Our data indicate the productive value of government institutions varies by place, having a stronger influence in non-metropolitan counties over metropolitan counties. These findings contrast with dominant social capital explanatory narratives that tend to draw solely on regional or demographic determinism. We show variation in levels of social capital across geography are the result of both (1) differences in the level of determinants across place *and* (2) differences in the effects of these determinants across place. The implications of our findings are important for development practitioners. Local leaders have been quick to embrace public policies which leverage social capital. But our data suggest such strategies may not be equally effective across all communities.

Introduction

Organized civil society has never flourished apart from active government and inclusive democratic politics. (Skocpol 1996, 25)

Scholars have long argued that social capital has the capacity to transform local community development (Coleman 1988; Putnam 1995). Areas with high levels of social capital have been linked with a range of desirable socioeconomic outcomes including the promotion of positive attitudes towards government (Brehm and Rahn 1997; Letki 2006), increased government performance (Coffé and Geys 2005), and general improvement in economic development outcomes (Flora et al. 1997; Hoyman et al. 2016). There is strong evidence that "place maters" in terms of social capital variation (Tannenwald 1999). Putnam (2000) for example documented how some states like Vermont tend to have high social capital levels, while others like Mississippi are on the lower end. Such findings on place-based variation have been more recently confirmed by Hawes, Rocha, and Meier (2013). However, most research does not explain *why* social capital appears to be linked to place. Why are some geographic areas so endowed with social capital and others so bereft of it (Goetz, Rupasingha, and Loveridge 2012)?

We consider several explanations for why social capital might vary across place, but the focus of our analysis is the role of local government capacity (Skocpol 1996). As the use of public policy to promote social capital continues to rise, the relative importance of strong government institutions is particularly salient. Research on how local governments might shape social capital levels is sparse. Existing literature only tends to explore how public institutions at the national level might play a role, especially in a comparative context (Ahlerup, Olsson, and Yangizawa-Drott 2009; Goldfinger and Ferguson 2009). Our focus on local governing capacity is important because the role of these policy actors has changed dramatically in the last few

decades (Kelleher 2004). Local governments have vastly expanded their policy reach and now act both as architects of economic development (Fleishmann, Green, and Kwong 1992; Logan and Molotch 1987; Morgan 2007) and facilitators of collaborative governance (Frederickson and O'Leary 2014; O'Leary and Bingham 2009).

Research has frequently demonstrated that civil society writ large has an ongoing and symbiotic relationship with strong government institutions (Salamon 1987; 1995). The formation of civic associations - a frequent measure of social capital - cannot be understood without the consideration of government institutions (Skocpol, Ganz, and Munson 2000; Wallis and Dollery 2002). There are several possibilities for how public institutions aid specifically in the formation of social capital (Lecy and Van Slyke 2013). We theorize that local governments, as vehicles for collective action and resource aggregators, are key facilitators in the development of local social capital (Brondizio, Ostrom, and Young 2009; Ostrom 2000; Rothstein and Stolle 2008). To test this theory, we first examine whether levels of social capital vary because counties differ in their *level* of government capacity and other community-level determinants. Second, we consider whether differing levels of social capital can be attributed to *differing productive values* of each determinant across place.

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Literature Review

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Defining Social Capital

Scholars define social capital in many different ways (Adler and Kwon 2002; Coleman 1988; Portes 2000). Some scholars focus on social capital as an individual construct, using measures such as trust in government or civic participation. Putnam, Leonardi, and Nanetti (1993, 167) define social capital as "features of social organizations, such as trust, norms, and networks that can improve the efficiency of society by facilitating coordinated actions." We

utilize this associational definition for our analysis because we are interested in the relationship between social capital and community-level determinants.

Governments as Social Capital Creators

Skocpol, Ganz, and Munson (2000, 542) have noted "an institutional approach to civic life suggests that state, politics, and society are – for better or worse – inevitably intertwined." Governments shape social capital both at the associational and individual levels. Government institutions affect social capital through enduring relationships with voluntary associations (Skocpol 1996). Concurrently, strong and high-performing public institutions also foster feelings of trust between individuals (McLaren and Baird 2006; Nooteboom 2007) and between individuals and the government (Wolak and Palus 2010). Although the relationship appears to be bi-directional, there is strong evidence for connections between interpersonal trust and civic engagement (Brehm and Rahn 1997; Delhey and Newton 2005; Lowndes and Wilson 2001; Wallis and Dollery 2002). Theories on how the government-social capital linkage works in practice are varied and complex. Warner (1999) argues for three primary mechanisms: (1) autonomy - the ability of government to carry out a policy position, (2) linkage - the strength of local community networks, and (3) return on investment - the effectiveness of policy on community outcomes.

Of the three mechanisms suggested by Warner (1999), the bulk of extant social capital research focuses on the role of governments as policy actors. Ostrom (1994; 2000) theorizes that governments use public policy to distribute benefits and allocate costs in collective action issues via punishing rule breakers and resolving community disputes. Governments may encourage or discourage citizens coming together to solve their own collective-action problems (Ostrom 2000; Rothstein and Stolle 2008; Wallis and Dollery 2002). In the words of Levi (1996, 50), "policy

performance can be a *source* of trust, not just a *result*." For Keele (2007), understanding

government's role as policymaker is elegantly simple. Public institutions can, through regulation,

theoretically reduce the two of the most prevalent barriers to social capital: lack of time and

money.

Many studies on the use of policy to leverage social capital have been comparative in

nature (Freitag 2006; Hall 1999; Levinsen, Thøgersen, and Ibsen 2012). These lines of inquiry

have suggested governments who encourage civic participation in the policy process are

associated with higher levels of social capital (Maloney, Smith, and Stoker 2000). In the United

States, some literature suggests participants in federal-level programs are more likely to exhibit

individual-level social capital behaviors than nonparticipants (Rose 2018; Wichowsky and

Moynihan 2008). Research on this topic for local governments tends to involve specific policy

areas. For example, research on local sustainability policies has demonstrated that success is

strongly related to a government's managerial and community network capacity building (Wang

et al. 2012). Local policy interventions can frequently act as social capital catalysts, even with

events as far-flung as natural disaster recovery (Chamlee-Wright and Storr 2011).

We theorize public institution capacity is a key force in social capital creation. This

theory is well-grounded in Putnam's (1995) work, which found that historically strong

government institutions in Northern Italy were associated with higher civic engagement. But it is

important to note that while these findings were considered groundbreaking at the time, other

work has criticized this narrative on the importance of government. Tarrow (1996) and Levi

(1996) for example argue that Putnam's theories were a historical narrative that did not

necessarily fit the quantitative findings. In general, there is a lack of consensus on the idea that

strong government institutions can enhance social capital levels. For example, some evidence

shows many government institutions are ill-equipped to act as social capital builders (Fukuyama 1995; Wacquant 1998). Additionally, the nature of the relationship between government and social capital is not always clear. Of note, Solt (2004) finds that economic development, and not social engagement, has the most powerful association with strong democratic institutions. Similarly, Pierce, Lovrich and Moon (2002) have argued social capital shapes performance of government, and not vice versa.

Variation by Place

Theoretically government capacity should be able to shape social capital levels in a positive manner, but the relative influence of government may change across place. The idea of "place matters" is a frequent narrative in political science and sociology (Dreier, Mollenkopf, and Swanstrom 2004; Goetz, Rupasingha, and Loveridge 2012). There is some preliminary support for this idea in social capital research. Scholars have previously noted differences in social capital levels across both states (Hawes, Rocha, and Meier 2013; Putnam 2000) and counties (Goetz, Rupasingha and Loveridge 2012; Hoyman et al. 2016; Rupasingha, Goetz and Freshwater 2006). Existing literature has also identified that social capital may function differently in the geographic south (Rupasingha, Goetz, and Freshwater 2006) and in metropolitan communities (Hofferth and Iceland 1998). As a starting point, we focus our paper broadly on these two aspects of place: region (South and non-South) and metropolitan status (metropolitan or non-metropolitan).

Metropolitan status. Some research suggests social capital should be higher in rural communities. Rural communities, which were historically dependent upon an agricultural economy, have a cultural norm of dealing with risk through collective action (Durante 2009). Other research suggests rural areas could have lower social capital levels. Because of geographic

distance between neighbors, rural residents may have fewer interactions with each other (Wilkinson and Pickett 2009) and may seek connections outside of their immediate area (Goudy, 1990). As a result, low-income and minority residents of rural areas may have fewer opportunities to participate in local social networks (Stinner et al. 1990). Research on urban areas also paints an unclear picture. Some scholars claim social capital is higher in urban areas. Urban areas may increase contact between diverse individuals, which leads to greater trust (Wilkinson and Pickett 2009). However, Putnam (2007) asserts that urban areas have lower levels of collective action and interpersonal trust. The large number of associational contacts in urban areas may force individuals to limit their social connections (Goudy, 1990) and many connections in urban areas may be weaker (Fallah and Partridge 2007; Granovetter 1973).

Region. Scholars have also noted variation across geographic regions. Putnam, Leonardi, and Nanetti's (1993) classic work argued that Italy's southern region had less well-developed networks and thus lower economic development than the Northern region. Later, Putnam (2002) observed that the American South generally has lower levels of social capital than other regions. In the South, institutionalized racial discrimination hampered the development of generalized trust and limited horizontal social networks across races (Putnam 2000; Uslaner 2008). Testing this phenomenon, Portes and Vickstrom (2011, 468) observe "…the North/South cleavage is so distinct in the geographic distribution of social capital that sheer average temperatures may be used as a proxy…: the lower the temperature, the higher the social capital." Most studies generally confirm the idea that the South has lower levels of social capital. Explanations for this phenomenon rely on differences in regional population characteristics. For example, education and income are generally lower in the South (Goetz and Rupasingha, 2003).

Methodology

This research analyzes the impact of government institutional capacity and other community-level determinants on social capital variation across all 3,143 United States counties. Our use of counties is consistent with the premise that the formation of social capital and associational activity largely occurs at the local level (Rupasingha, Goetz, and Freshwater 2006). Counties and municipalities are becoming increasingly involved in a large number of policy areas (Percival, Johnson, and Neiman 2009), including the use of strategies that seek to promote social capital.[1] Our analysis has two stages. First, we explore the impact of government and other community variables through ordinarily least squares regression. The purpose of the regression is to test the effect of each determinant on levels of social capital. We then use a Blinder-Oaxaca decomposition model, which scholars often use to test for inequalities in health and income outcomes (Jann 2008). The decomposition model examines how observed differences in county social capital can be explained by differing *levels* of determinants and the differing *effects* of determinants across metropolitan status and region.

Variable Operationalization

Social capital. We operationalize social capital using a composite index from the Northeast Center for Rural Development at Pennsylvania State University, developed by Rupasingha and Goetz (2008). This index captures the structural dimensions of social capital,

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[1] Although local governments at the county level are powerful policy actors, there may be some concern about state-level effects. To test this, we created a multi-level model which matches the OLS regression model, except that it allows for intercept variance by state. This showed substantially similar results, with no changes in sign or material changes in coefficient values.

which Sherrieb, Norris, and Galea (2010, 233) define as "the forms and varieties of organizations and networks that are thought to contribute to the development of social capital." The index is available for all United States counties. This is important to note because alternative social capital data sets, like the General Social Survey or the Volunteering Supplements to the Current Population Survey, are more limited in scope.

The index includes four components of associational activity and community participation. The first component includes the number of all associations per 10,000 population.[2] The data encompasses both horizontal associations (which promote interactions between people of similar interests) as well "rent-seeking" organizations (which seek financial gain for their members) (Knack and Keefer 1997). The second component measures the percentage of individuals who voted in presidential elections. The third component is county-level census response rates. Voting and completing the census are forms of "collective action" which serve as proxies for socially cooperative attitudes (Knack 2002). The fourth component is the density of charitable nonprofit organizations drawn from the National Center for Charitable Statistics, excluding those organizations that have an international focus. Rupasingha and Goetz (2008) find the first principal component in the index explained 46% of the variation and had an eigenvalue of 1.824. The mean of the index is zero, and ranges from a low of -3.9 to a high of 14.4.

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[2] This is inclusive of: religious organizations, civic and social associations, business associations, political organizations, professional organizations, labor organizations, bowling centers, physical fitness facilities, public golf courses, and sports clubs.

Government institutions. Scholars operationalize government "strength" or capacity in a variety of ways. (Kwon, Berry, and Feiock 2009; Lobao and Kraybill 2009; Reese and Rosenfeld 2001). For example, Hall (2008) includes the total number of government employees as a measure of capacity. In another study, Reese and Rosenfeld (2001) use a ratio of total general revenue to total general expenditures. Some studies (Chaskin 2001) have defined institutional capacity more broadly as a measure that includes government resources, networks, as well as leadership. For this analysis, we use revenue per capita to measure the capacity of a county government's institutions (Ha, Lee, and Feiock 2016). Government's fiscal capacity is strongly related to social capital variables like volunteering rates (Salamon and Sokolowski 2003) and trust levels (Rothstein and Stolle 2003). In utilizing this way of measuring government, we note that it does not capture the quality (effectiveness/trustworthiness) of a local public institution. However, we theorize a government's ability to affect social capital is a function of local monetary resources. This is one reason why Gargan (1981, 656) describes governing capacity as "the ability of a local government to do what it wants to do." We hypothesize that stronger government institutions, as measured by having more resources, are linked to higher levels of social capital.

Place variation. We compare the determinants of social capital across metropolitan status and region. The definition of metropolitan status includes all counties within a metropolitan statistical area as determined by the United States Census Bureau.[3] Metropolitan counties are coded as one. All other counties, including micropolitan (suburban) statistical areas and rural

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[3] This includes an urban core population of at least 50,000. The degree of social and economic integration is measured by commuting patterns.

areas, are coded as zero.[4] Overall, 35% of counties are metropolitan and 65% are non-metropolitan. On average, metropolitan counties have social capital scores of -0.39, while non-metropolitan counties have an average score of 0.21. We also compare models across region (Portes and Vickstrom 2011). Southern counties are those in the South Atlantic, East Central, and West Central regions of the United States.[5] Southern counties are coded as one, while all other regions are considered non-Southern and coded as zero. Overall, 46% of counties are Southern and 54% are non-Southern. Social capital scores average -0.73 for Southern counties and 0.61 for non-Southern counties. In general, we believe that social capital will vary by in part because of these geographic measures.

It may be necessary to elaborate on why the authors propose a two category South/non-South definition of region.[6] We conducted several tests to ascertain whether average social

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[4] Micropolitan counties are those that include an urban core size between 10,000 and 50,000 population of at least 10,000, but less than 50,000. See Standards for Defining Metropolitan and Micropolitan Statistical Areas, 65 Fed. Reg. 249 (December 27, 2000).

[5] South Atlantic includes the following areas: District of Columbia, Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, and West Virginia. East Central includes: Alabama, Kentucky, Mississippi, and Tennessee. West Central includes: Arkansas, Louisiana, Oklahoma, and Texas.

[6] The decomposition model requires a dichotomous variable. It would be possible to run the decomposition model multiple times across multiple two category subregions. However, as a preliminary look at place-based variation, we believe a South and non-South definition is

capital scores in Southern states, as defined above, are significantly different than scores in non-Southern states. First, using Putnam's (2000) state-level data, all three sub-regions in our definition of the non-South (West, Midwest, and Northeast) have average social capital scores that do not differ significantly ($p < .05$) from one another. This was determined by fitting a simple OLS regression model with the same social capital index scores as the dependent variable and a regional categorical (factor) variable as the independent variable. Second, in a bivariate regression model with Putnam's (2000) state index scores as the dependent variable and an indicator variable for South as the independent variable, the coefficient for South is negative and statistically significant ($p < .01$).

Other social capital determinants. Finally, we include a few variables that have been identified as determinants of social capital by other studies: socioeconomic status, racial diversity, and income inequality. One of the most important predictors of social capital in the literature is the level of socioeconomic status of residents in a community, particularly as measured by education (Delhey and Newton 2005) and income (Helliwell and Putnam 1999).[7] We measure education levels as the percentage of adults (25 years or older) who have obtained a bachelor's degree or higher. Income is measured as household median income levels. Based on the idea that those with more resources can engage in more social capital generating activities

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appropriate. If the findings suggest regional variation at this level, decomposition analyses at the sub-regional level would be a fruitful avenue for future research.

[7] It should be noted that there are some studies that suggest that income does not always have a positive relationship with social capital (Bjørnskov 2007; Rupasingha, Goetz, and Freshwater 2006).

(Kasarda and Janowitz 1974), higher incomes are consistently predictive of participation in both politics and associational life (Coleman 1988). Including socioeconomic status is important because the variables are likely to be associated with measures of government capacity (Glaeser 2001; Hoyman et al. 2016). Extant literature suggests both income and education will be associated with higher levels of social capital.

Beyond socioeconomic status, a growing body of research explores how community racial heterogeneity affects social capital (Costa and Kahn 2003; Delhey and Newton 2005; Portes and Vickstrom 2011). We measure racial diversity using a Gini-Simpson index. The index is calculated as one minus the sum of the squared proportion of each type of racial group. As the index approaches one, population diversity increases, with the chance of two individuals being from the same racial group decreasing. Research on the relationship between diversity and social capital is mixed. Some, including Putnam (2007), argue that levels of social capital tend to be lower in diverse communities. Theoretical justifications for this rest on a concept called homophily, which is the tendency of people who are similar to one another to interact more frequently than with people who are dissimilar (McPherson, Smith-Lovin, and Cook 2001).[8] At the same time, others posit that diversity is a driver of social capital.[9] Tsai, Laczko, and

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[8] Others have argued also diversity means that individuals are less likely to share values and norms, making it harder to agree upon collective priorities (Coff**é and** Geys 2006).

[9] Hero (2003; 2007) disagrees with Putnam on diversity by offering a meta-level critique. He argues that the gains attributed to social capital go disproportionately to Caucasians. (Hero 2003; 2007). The essence of this argument is that the socioeconomic gains which come from social capital for do not accrue as well to minority groups as they do for majority groups.

Bjørnskov (2010) find that diversity does not lower trust, even when controlling for a variety of socioeconomic variables. Portes and Vickstrom (2011) argue that it is the unequal distribution of resources, and not racial diversity itself, which depresses social capital. While there is no clear consensus, we believe there is sufficient theoretical evidence that diversity should bolster a county's social capital.

A final major community-level determinant of social capital is income inequality (Robison and Siles 1999; Tolbert, Lyson, and Irwin 1998). We measure income inequality using the Gini index. As the index approaches one, a community is approaching perfect inequality. As Putnam (2000, 294) notes: "Inequality and social solidarity are deeply incompatible." Income inequality increases social disparities and class polarization – causing a reaction that lowers generalized trust (Kawachi et al. 1997; Knack and Keefer 1997). Scholars have argued that growing income inequality is at least partially responsible for declines in United States social capital (Putnam 2000; Subramanian, Lochner, and Kawachi 2003). Income inequality may also vary with place in ways that affect aggregate social capital. For example, income inequality could have a stronger effect in rural communities because individuals with limited social contacts are more likely to know and interact with others of radically different incomes (Fallah and Partridge 2007). We expect that as income inequality increases, social capital levels will decline.

Control variables. Finally, we include two control variables. First, because even metropolitan counties can include rural areas, we include the percentage of a county's population that lives in rural areas within the county. This is distinct from the non-metropolitan variable that we use for the split sample. Second, we include the proportion of a county's residents which are Black to account for how visible minority status may affect social capital. Stolle, Soroka, and

Johnston (2008) find that individuals who are members of visible minorities report less

generalized trust. Table 1 below summarizes all variables used in the models.

<center><INSERT TABLE 1 ABOUT HERE></center>

Research Limitations

Before presenting our findings, it is important to acknowledge the two major limitations

of this research. First, there are perennial concerns about endogeneity that are often raised in any

study of social capital. For example, social capital improves the performance of government

(Easterly, Ritzen, and Woolcock 2006), increases capability of acquiring jobs through weak ties

(Granovetter 1973), and reduces income inequality (Ram 2013). But all of these variables

represent potential determinants for aggregate levels of social capital. We have attempted to

address the issue of endogeneity through the use of lagged variables, but such concerns will

always be a limitation of this kind of data analysis. As noted in many studies on the determinants

of social capital, causal relationships are usually ambiguous (Bjørnskov 2007; Delhey and

Newton 2005).

<center>**Findings and Results**</center>

Descriptive Statistics

Table 2 displays summary data for each variable. Counties are divided into three

categories: all counties, counties by metropolitan or non-metropolitan status, and counties by

South or non-South region. To determine whether there were statistically significant differences

in social capital between South and non-South counties, as well as between metropolitan and

non-metropolitan counties, we used independent-samples t-tests. The differences between all

samples were statistically significant ($p < 0.05$) for all variables, except for differences in

government capacity by metropolitan status, which was marginally significant ($p < 0.10$). There

is a large mean difference in particular for our government variable between South and non-South regions. The descriptive statistics thus hint at variance by place across the bulk of the model variables.

<center><INSERT TABLE 2 ABOUT HERE></center>

Bivariate Correlations

The bivariate correlations in Table 3 demonstrate the relationships between the social capital index, government capacity, and other community determinants. Most variables are correlated with social capital in the expected direction. Strong government institutions are associated with higher social capital levels (0.23). The most powerful community characteristic variable is population diversity, which displays an unexpectedly negative association (-0.45). Table 3 also shows an interesting preliminary look at place-based variation. Both being a metropolitan county (-0.20) and in a Southern region (-0.48) are inversely correlated with social capital scores.

<center><INSERT TABLE 3 ABOUT HERE></center>

OLS Regression

We next consider how the relative power of our independent variables change when controlling for place effects. Model 1 in Table 4 includes all variables *except* metropolitan status and region, while Model 2 includes both geographic variables.[10] The inclusion of place variables raises the explanatory power of the models from an adjusted R^2 of 0.38 to 0.43. Both being in the South and being in a metropolitan county are associated with notable declines in the social capital index. The relative power of government institutions in raising social capital declines

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[10] A mean variance inflation factor of 2.14 suggests minimal collinearity issues.

(from 0.24 to 0.16) when including metropolitan status and region. The positive effects of

education remain roughly the same in both models, but other community correlated variables

also see notable shifts in coefficient values. For example, the strong effects of income inequality

decline markedly (from -10.29 to -7.01) when controlling for place. And while the coefficient

size is small, a county's proportion of Black residents is a positive force for social capital and

nearly doubles when moving from Model 1 to Model 2.

<center><INSERT TABLE 4 ABOUT HERE></center>

Table 4 also displays also some counter-intuitive results as it suggests higher incomes

may lower county-level social capital. Although this effect declines after accounting for

geography (from -0.51 to -0.31), it remains an unexpected result. While we had hypothesized

that a positive relationship would emerge, there is research supporting that higher incomes can

depress social capital creation (Bjørnskov 2007). These results are consistent with research

showing no positive effects from income after controlling for community-level characteristics

(Rupasingha, Goetz, and Freshwater 2006). Some scholars have theorized that households

replace community-oriented associational activity with private sector leisure pursuits as incomes

rise (Galaskiewicz, Mayorova, and Duckles 2013). The findings may also reflect an "ecological

fallacy" whereby correlations at the individual level do not hold at the group level (Kramer

1983). Social capital research is particularly susceptible to this phenomena, although it is

minimized by controlling for regional effects (Puntscher et al. 2016).

To explore how coefficients may differ across place, we divide counties into metropolitan

(Model 1), non-metropolitan (Model 2), non-South (Model 3), and South (Model 4). Table 5

shows the detailed results of these models. To test whether the beta coefficients are different

across samples, we used a Chow test.[11] For this analysis, the test considers the contribution of each independent variable when including metropolitan status and region. All beta coefficients are significantly different across metropolitan and non-metropolitan counties ($p < 0.01$). This means that the effects of government, along with all other community determinant and control variables, are statistically different across metropolitan status. Concerning the regional models (South and non-South), the differences in the coefficients for government institutions and education are not significantly different, but differences in other variables remain significant ($p < 0.01$).

<center><INSERT TABLE 5 ABOUT HERE></center>

These preliminary findings suggest that the positive effect of government institutions changes across the metropolitan status of a county, but may not change across region. While the relative effects of government are not significant across region, public institutions still appear to be a consistently positive force for social capital development. Government is the only determinant variable which both acts as a positive social capital force and retains significance within all 4 models. Similar to government, differences in education coefficients are not significant across region. But the coefficient differences for education across metropolitan status are statistically significant, with coefficient values higher in non-metropolitan counties. Other findings of note include the effect of high income inequality in non-metropolitan counties. The coefficient is large (-11.37) and eight times the size of the coefficient for metropolitan counties (-1.36). A few other community determinant variables also show results that are contrary to

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[11]A Chow test examines the difference in the magnitude of the beta coefficients in regression models by testing a fully interacted model.

expectations. The negative influence of diversity is much higher in non-metropolitan (-0.64) and non-Southern (-4.12) counties.[12] Finally, the data again show that higher income levels have a negative association with social capital. But it is interesting to note the coefficient is not significant in metropolitan counties and declines when moving from the non-South (-0.46) to South (-0.15) models.

Blinder-Oaxaca Decomposition

The descriptive statistics and regression models suggest that both the *level* of determinants and the *effect* of the beta coefficients are different across place. Perhaps unsurprisingly, the strength of government institutions varies across Untied States counties. But more interestingly, the effect of strong government institutions as a factor for social capital creation varies at the metropolitan level. To parse out these effects, we created two Blinder-Oaxaca decompositions which measure differences between metropolitan and non-metropolitan counties and differences between South and non-South counties. The Blinder-Oaxaca decomposition in Table 6 decomposes the gap in mean outcomes as a gap in endowments (E) and a gap in coefficients (C). For purposes of this research, we will refer to these endowments as characteristics. The gap in characteristics (E) measures the expected change in levels of social capital if metropolitan counties had the same characteristics as non-metropolitan counties. The second element (C) measures the expected change in social capital if the effect of the

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[12] We also note that (although the coefficient values are small) having more Black residents is associated with higher levels of social capital, but high amounts of overall diversity tend to suppress social capital. This offers some tentative support for homophily theories on the relationship between diversity and social capital.

characteristics (β coefficients) were the same in metropolitan counties as in non-metropolitan counties. A second decomposition parses the same question, but compares effects across Southern and non-Southern counties.

<center><INSERT TABLE 6 ABOUT HERE></center>

<center><INSERT FIGURES 1 AND 2 ABOUT HERE></center>

Variation across metropolitan status. The mean index of social capital for metropolitan counties is -0.39, while the mean social capital index for non-metropolitan counties is 0.21, a difference of 0.59 ($p < 0.01$). The average social capital level is lower for metropolitan areas, but these counties tend to have higher values of community determinants which are associated with aggregate social capital increases. The decomposition demonstrates this by showing metropolitan counties would see a slight decline in social capital (of -0.09, $p < 0.05$) if they had that same levels of characteristics as non-metropolitan counties. A detailed decomposition, which allows us to compute the individual contributions of the predictor community determinant variables, confirms the importance of metropolitan status. Higher levels of government capacity provide a small but statistically significant effect which favors non-metropolitan counties. If metropolitan counties had the same levels of government capacity as non-metropolitan counties, their social capital index scores would see a slight increase (0.01, $p < 0.01$).

Table 7's metropolitan decomposition also offers some confounding results on the effects of household income and diversity characteristics. If metropolitan communities had the same income level and population diversity characteristics as non-metropolitan communities, social capital scores would increase respectively by 0.15 ($p < 0.01$) and 0.22 ($p < 0.01$). This is an intriguing result because it suggests *higher* household incomes and *higher* racial diversity actually *dampens* social capital in metropolitan counties. But while having more overall diversity

appears as a negative factor for metropolitan communities, this doesn't hold true when looking at just the Black population. Having a higher proportion of Black residents helps metropolitan counties. If metropolitan counties had the same (lower) levels of Black residents as non-metropolitan counties, social capital scores would decline slightly by -0.04 ($p < 0.01$).

Differences due to coefficients seek to explain how place-based variation is explained by differences in the productive value of each variable. If we were to apply the coefficients from non-metropolitan counties to metropolitan counties, social capital in metropolitan counties would increase by 0.43 ($p < 0.01$). This is notable because it means 73% of variation in social capital across metropolitan status is attributable to placed-linked changes in coefficient values. The productive value of government capacity is stronger in non-metropolitan counties than metropolitan counties. If metropolitan areas had the same coefficients for government as non-metropolitan areas, we would expect an increase in social capital index values of 0.55 ($p < 0.01$). These data hint that the relative effectiveness of government capacity in shaping social capital is stronger in non-metropolitan areas. Across other determinants, the strongest difference due to coefficients comes from income inequality. Income inequality has a stronger negative effect on social capital in non-metropolitan counties than in metropolitan counties (-2.92, $p < 0.01$). This finding is supported by other research that indicates income inequality is more visible in non-metropolitan areas (Fallah and Partridge 2007).

Variation across region. The story at the regional level is that non-South counties have higher average social capital index values (0.61) than South counties (-0.73). A large part of the regional difference is because non-South counties have levels of community determinant characteristics which are associated with increasing social capital values. If South counties had the same levels of the tested characteristics as non-South counties, their social capital index

scores would improve by 0.44 (p < 0.01). Thus about one third of the difference (1.34, p < 0.01) in social capital index scores between South and non-South can be explained by differences in community-level characteristics. The effects of government capacity levels are much more pronounced across region (0.13, p < 0.01) than across metropolitan status (0.01, p < 0.01). In terms of social capital differences due to levels of government, region appears to hold more explanatory power than metropolitan status. In terms of our other community determinants, a few trends stand out. The unusual effect of household income continues, suggesting that the South's lower income paradoxically is an advantage in building social capital. Education demonstrates the largest characteristic-based difference across South and non-South. Social capital would on average increase by 0.21 (p < 0.01) in South counties if they had the same education characteristics as non-South counties. The decomposition also shows that a portion of the mean difference in social capital across region is attributed to differences in levels of population diversity. Unexpectedly, the non-South's lower population diversity helps the region in terms of generating higher social capital scores.

Differences in coefficient productive values explain the bulk of variation in regional social capital variation (0.71, p < 0.01). In the aggregate, differences in the productive value of coefficients across region explain 53% of the total difference in social capital between South and non-South. Although this is a notable amount, it is much less than the percentage of variation explained by coefficient differences for metropolitan status. The decomposition also shows that neither government nor education coefficients are statistically significant at the regional level. The productive value of government institutions does not change across South and non-South, even though (as previously noted) differences in government characteristics do explain some of the regional variation. Income inequality is only marginally significant, but is notable simply

because of the size of the effect for non-South counties. Higher levels of income inequality decrease social capital, but this negative effect is stronger in the non-South than it is in the South. It is also important to note that the positive effect of a county's Black population share is stronger in the non-South, but that the negative effect of overall diversity is also stronger.[13] In general, the results help highlight the complex nature of place-linked social capital variation.

Discussion and Conclusions

Social capital is often seen as a positive force for community and economic development by government actors (Oh, Lee, and Bush 2014; Ponzetto and Troiano 2018). Research demonstrating that localities with high levels of social capital enjoy a variety of positive socioeconomic outcomes may help drive that assumption (Engbers, Rubin, and Aubuchon 2017). However, our findings suggest that "place matters" in the use of social capital as a development tool. Multiple community-level factors shape county social capital levels, but the level *and* productive value of these determinants waxes and wanes across metropolitan status and region. Critically, while resource-rich governments seem to consistently aid the development of social capital, their effectiveness depends at least partially on geographic context. We think this finding is of particular note because harnessing social capital through government resources is both a costly and long-term development approach. Local governments that leverage policy to raise social capital are likely to be more effective in non-metropolitan counties. Such results provide quantitative evidence for scholars who argue the use of policy to promote social capital is likely to be more effective in smaller jurisdictions (Engbers and Rubin 2018).

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[13] These results could be indicative of how overall diversity may shape social capital differently by region than the presence of a single large "visible minority" group.

Our findings offer a first step in deconstructing the relationships between place and government institutions in generating social capital. The evidence for metropolitan status as a force that changes the productive value of community-level social capital variables is strong, but the models suggest more research is needed on the question of regional variation. The characteristics of non-South counties enable higher average social capital scores (Portes and Vickstrom 2011; Putnam 2000; Rupasingha, Goetz, and Freshwater 2006). But if we were to apply the productive value of some community determinants in non-South counties to Southern counties, social capital levels would not improve. For example, our data hint that government capacity may be equally effective in both the South and the non-South. But region is significant for other variables like income inequality. Lowering income equality is a notably effective policy method for increasing social capital, and the decomposition suggests this approach is particularly effective for non-South counties.

In some ways our data reinforce theories of path dependency, which frequently occur in the development literature (Martin and Sunley 2006). Those areas endowed with the institutional, social, and economic resources that drive the formation of social capital, develop additional social capital. The ability to foster social capital comes from not only a large amount of government capacity and other community characteristics, but also from the fact that location magnifies or suppresses the effects of these determinants. As measured by government revenues per capita, non-metropolitan areas tend to have higher institutional capacity in aggregate. Applying this higher level of non-metropolitan government capacity to metropolitan counties slightly increases metropolitan social capital. Importantly, our data should not necessarily deter governments from using policy to promote social capital in metropolitan counties. Instead we

believe the results demonstrate a need for practitioners to carefully consider the efficiency and cost effectiveness of such approaches.

Our central research question is whether the strength of government institutional capacity is important in the formation of social capital. As we chronicled in the literature review, this is an important question because current theory suggests capacity acts as a framework for community collective action. Overall the regression models and decomposition analysis support existing theories on the role of government. Southern and metropolitan counties, with lower levels of government expenditure capacity, have disadvantages in the production of social capital. However, these lower levels of government capacity do not fully explain metropolitan and regional differences in social capital variation. The influence of other variables is also key. For example, lower levels of education work to dampen social capital. However, the ability of education to change social capital levels do not change across South and non-South counties. The story changes if we use the lens of metropolitan status. Higher education levels work to raise social capital in metropolitan counties, even though the productive value of education is higher in non-metropolitan counties.

Our findings highlight a need for more research in several areas. The data illuminate that government capacity is more effective in non-metropolitan counties, but additional exploration is needed to determine why this occurs. The models also raises counterintuitive questions on the relationship between variables like household income and community diversity. Despite the pervasive theory that higher incomes should raise county social capital, we find consistent evidence to the contrary. More research is needed to explore whether these findings hold across other categories of place. Additionally, it seems diverse counties tend to be associated with lower social capital, but the negative productive effects of diversity are *lower* in Southern counties.

This is an interesting finding because Putnam (2000) has argued historically institutionalized patterns of racism magnify the negative effects of racial diversity in the South. At the same time, there is no difference in the productive effects of diversity across metropolitan status. Such findings are evidence against literature which uses conflict theory as a lens to explain lower social capital in diverse metropolitan communities.

In conclusion, research has long hinted that government institutional capacity is key in the formation of social capital. The use of social capital has become something of a "one size fits all" prescription which seeks to cure the community and economic development ailments of localities. But while strong public institutions positively shape social capital across all geographic contexts, the relative effectiveness of government capacity does vary by immutable qualities of place. Concurrently, the data also show that several community-level determinants are key for social capital development which are (in theory) changeable by policy action and less bound to place. Our data represent a call for practitioners and scholars to think about the use of government resources to promote social capital in a more nuanced manner. Ultimately, our findings show policy actors must be cognizant of the role of place in determining how community-level determinants might alter the effectiveness of social capital strategies.

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Table 1. Model Overview

Model Variables	Operationalization	Source
Dependent Variable		
Social Capital	Index of associational network density and individual trust measures.	Rupasingha and Goetz, 2002
Independent Variables		
Government	Dollars of total government revenue per capita.	Census of Governments, 1997
Education Levels	Percentage of population with a bachelor's degree or more.	Census, 2000
Household Income	Household median income, expressed in units of $10k.	Census, 2000
Racial Diversity	Diversity index ranging from 0 to 1, as the index increases the level of diversity in the county increases.	Gini-Simpson Index, 2000
Income Inequality	Inequality index ranging from 0 to 1, as the index increases the level of income inequality in the county increases.	Gini Index, 2000
Control Variables		
Rural Population	Percentage of a county's population living in rural areas.	Census, 2000
Black Population	Percentage of a county's population which are black.	Census, 2000

Table 2. Model Descriptive Statistics

Model Variables	All Counties				Metropolitan Status			Region		
					Metro	Non-Metro	Mean	South	Non-South	Mean
	Min	Max	Mean	SD	Mean	Mean	Δ	Mean	Mean	Δ
Dependent Variable										
Social Capital	-3.904	14.379	0.000	1.392	-0.385	0.209	-0.594	-0.727	0.614	-1.341
Independent Variables										
Government	0.000[14]	22.528	2.981	1.256	2.923	3.013	-0.09	2.608	3.296	-0.687
Education Levels	4.900	63.700	16.498	7.793	20.479	14.334	6.145	14.798	17.934	-3.135
Household Income	1.523	9.121	3.628	0.897	4.253	3.289	0.964	3.375	3.843	-0.468
Racial Diversity	0.008	0.751	0.246	0.181	0.288	0.223	0.065	0.453	0.173	0.280
Income Inequality	0.314	0.605	0.434	0.038	0.426	0.439	-0.013	0.416	0.419	-0.003
Control Variables										
Rural Population	0.000	100.000	59.924	30.896	40.954	70.235	-29.281	61.329	58.738	2.591
Black Population	0.000	0.865	0.088	0.145	0.105	0.079	0.026	0.168	0.021	0.146

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[14] There are 4 counties with $0 county government revenue per capita because they are New York City boroughs.

Table 3. Model Bivariate Correlations

#	Model Variables	1	2	3	4	5	6	7	8	9	10
1	Social Capital	1.00									
2	Government	0.23***	1.00								
3	Education Levels	0.20***	0.25***	1.00							
4	Household Income	0.12***	0.18***	0.67***	1.00						
5	Racial Diversity	-0.45***	0.09***	0.10***	-0.06***	1.00					
6	Income Inequality	-0.28***	-0.08***	-0.09***	-0.56***	0.39***	1.00				
7	Rural Population	0.18***	-0.12***	-0.50***	-0.44***	-0.33***	0.04**	1.00			
8	Black Population	-0.33***	-0.10***	-0.09***	-0.21***	0.64***	0.44***	-0.09***	1.00		
9	Metropolitan[1]	-0.20***	-0.03*	-0.38***	0.51***	0.17***	-0.17***	-0.45***	0.09***	1.00	
10	South[1]	-0.48***	-0.28***	-0.20***	-0.26***	0.44***	0.46***	0.04**	0.50***	0.07***	1.00

[1] Metropolitan/south is coded as "1" and non-metropolitan/non-South as "0."
Significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Table 4. OLS Regression Models Including/Excluding Place Variables

Model Variables	Model 1 All Counties		Model 2 Counties with Place	
	Coefficient	Sig.	Coefficient	Sig.
Independent Variables				
Government	0.240 (-0.016)	***	0.161 (-0.016)	***
Education Levels	0.087 (-0.004)	***	0.076 (-0.004)	***
Household Income	-0.509 (-0.041)	***	-0.314 (-0.042)	***
Racial Diversity	-3.165 (-0.155)	***	-2.632 (-0.153)	***
Income Inequality	-10.290 (-0.788)	***	-7.009 (-0.791)	***
Control Variables				
Rural Population	0.009 (-0.001)	***	0.008 (-0.001)	***
Black Population	0.007 (-0.002)	***	0.013 (-0.002)	***
Place Variables				
Metropolitan[1]	- -	-	-0.416 (-0.050)	***
South[1]	- -	-	-0.654 (-0.050)	***

[1] Metropolitan/south is coded as "1" and non-metropolitan/non-South as "0."
Significance: *** p < 0.01, ** p < 0.05, * p < 0.10
Standard errors are in parenthesis.

Table 5. OLS Regression Models by Metropolitan Status and Region

Model Variables	Model 1 Metropolitan		Model 2 Non-Metropolitan		Model 3 South		Model 4 Non-South	
	Coefficient	Sig.	Coefficient	Sig.	Coefficient	Sig.	Coefficient	Sig.
Independent Variables								
Government	0.225	***	0.247	***	0.191	***	0.150	***
Education Levels	0.086	***	0.092	***	0.066	***	0.070	***
Household Income	0.103	-	-0.406	***	-0.149	**	-0.456	***
Racial Diversity	-0.640	***	-3.106	***	-0.793	***	-4.119	***
Income Inequality	-1.357	-	-11.370	***	-2.039	*	-5.165	***
Control Variables								
Rural Population	0.007	***	0.010	***	0.007	***	0.010	***
Black Population	-0.049	-	0.695	***	0.027	-	1.966	***
Constant	-2.309	***	4.428	***	-0.964	-	2.837	***
Model Summary								
Adjusted R2	0.263		0.420		0.176		0.367	
Observations	871		2,011		1,421		1,683	

Significance: *** p < 0.01, ** p < 0.05, * p < 0.10

Table 6. Blinder-Oaxaca Decomposition by Place

Decomposition Details	Metropolitan vs. Non-Metropolitan		South vs. Non-South	
Mean Prediction (Non-Metro, Non-South)	0.209	***	0.614	***
Mean prediction (Metro, South South)	-0.385	***	-0.727	***
Raw Differential	0.593	***	1.341	***
Differences Due to Endowments	**-0.090**	****	**0.444**	******
Government	0.005	***	0.131	****
Education Levels	-0.351	***	0.208	****
Household Income	0.150	***	-0.070	**
Racial Diversity	0.215	***	0.127	****
Income Inequality	-0.060	***	0.070	*
Rural Population	-0.006		-0.019	**
Black Population	-0.044	***	-0.004	
Differences Due to Coefficients	**0.430**	******	**0.709**	******
Government	0.547	***	-0.105	
Education Levels	0.719	***	0.050	
Household Income	-1.066	***	-1.036	***
Racial Diversity	0.056		-1.107	***
Income Inequality	-2.924	***	-1.415	*
Rural Population	0.404	***	0.198	**
Black Population	-0.100	***	0.325	***
Constant	2.793	***	3.801	***

Significance: *** p < 0.01, ** p < 0.05, * p < 0.10

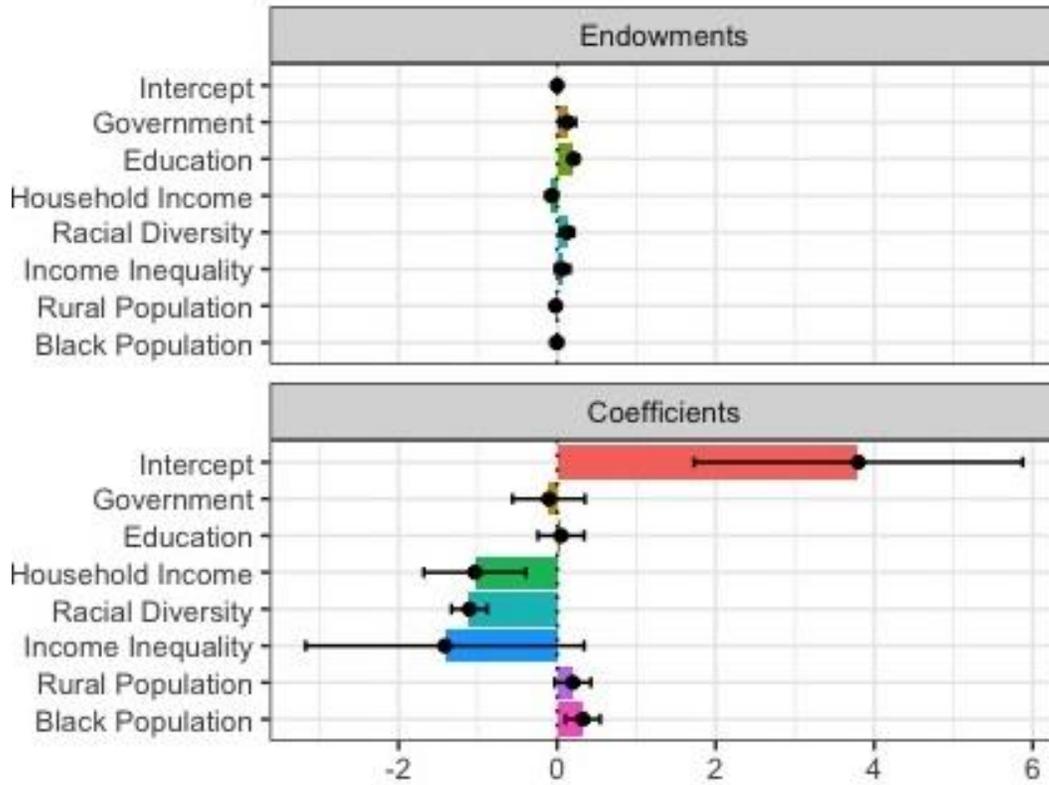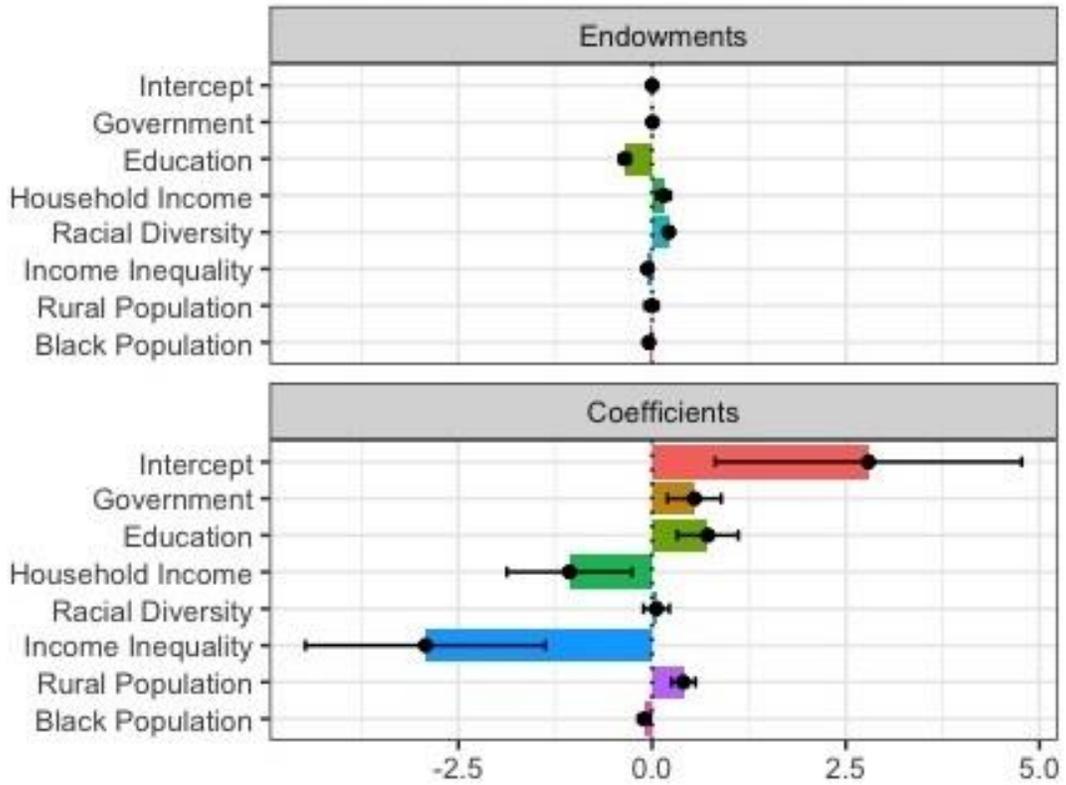**Figure 1. Blinder-Oaxaca Decomposition by Place: South vs. Non-South**

Figure 2. Blinder-Oaxaca Decomposition by Place: Metropolitan vs. Non-Metropolitan

Appendix Table Set 1. Classification of States

A1. Baseline Model

Region	Estimate	Std. Error	t value	Pr(>|t|)
Confederacy	-1.0735	0.2201	-4.877	0.0000133***

Residual standard error: 0.641 on 46 degrees of freedom
Multiple R-squared: 0.3408, Adjusted R-squared: 0.3265
F-statistic: 23.78 on 1 and 46 DF, p-value: 0.00001328

A2. Midwest Baseline Model

Region	Estimate	Std. Error	t value	Pr(>|t|)
Northeast	-0.2019	0.2580	-0.783	0.4381
Confederacy	-1.1846	0.2580	-4.592	0.0000366***
West	-0.1719	0.2580	-0.666	0.5087

Residual standard error: 0.6499 on 44 degrees of freedom
Multiple R-squared: 0.3519, Adjusted R-squared: 0.3077
F-statistic: 7.962 on 3 and 44 DF, p-value: 0.0002385

A3. West Baseline Model

Region	Estimate	Std. Error	t value	Pr(>|t|)
Midwest	0.1719	0.2580	0.666	0.508715
Northeast	-0.0300	0.2771	-0.108	0.914280
Confederacy	-1.0127	0.2771	-3.655	0.000683***

Residual standard error: 0.6499 on 44 degrees of freedom
Multiple R-squared: 0.3519, Adjusted R-squared: 0.3077
F-statistic: 7.962 on 3 and 44 DF, p-value: 0.0002385

A4. Northeast Baseline Model

Region	Estimate	Std. Error	t value	Pr(>|t|)
Midwest	0.2019	0.2580	0.783	0.438074
Confederacy	-0.9827	0.2771	-3.546	0.000941***
West	0.0300	0.2771	0.108	0.914280

Residual standard error: 0.6499 on 44 degrees of freedom
Multiple R-squared: 0.3519, Adjusted R-squared: 0.3077
F-statistic: 7.962 on 3 and 44 DF, p-value: 0.0002385

A5. Old Confederacy Baseline Model

Region	Estimate	Std. Error	t value	Pr(>|t|)
Midwest	1.1846	0.2580	4.592	0.0000366***
Northeast	0.9827	0.2771	3.546	0.000941***
West	1.0127	0.2771	3.655	0.000683***

Residual standard error: 0.6499 on 44 degrees of freedom
Multiple R-squared: 0.3519, Adjusted R-squared: 0.3077
F-statistic: 7.962 on 3 and 44 DF, p-value: 0.0002385

Appendix Table Set 2. South Region Definition

A6. Dichotomous South/Non-South Model

Region	Estimate	Std. Error	t value	Pr(>|t|)
South	-1.0550	0.1850	-5.702	0.000000808***

Residual standard error: 0.6043 on 46 degrees of freedom
Multiple R-squared: 0.4141, Adjusted R-squared: 0.4014
F-statistic: 32.51 on 1 and 46 DF, p-value: 0.0000008083

A7. Midwest Baseline Model

Region	Estimate	Std. Error	t value	Pr(>|t|)
Northeast	-0.3756	0.2626	-1.430	0.159790
South	-1.3031	0.2274	-5.729	0.000000842***
West	-0.4145	0.2486	-1.667	0.102534

Residual standard error: 0.5956 on 44 degrees of freedom
Multiple R-squared: 0.4556, Adjusted R-squared: 0.4185
F-statistic: 12.27 on 3 and 44 DF, p-value: 0.000005774

A8. West Baseline Model

Region	Estimate	Std. Error	t value	Pr(>|t|)
Midwest	0.41455	0.24862	1.667	0.102534
Northeast	-0.03899	0.26770	-0.146	0.884865
South	-0.88858	0.23328	-3.809	0.000429***

Residual standard error: 0.5956 on 44 degrees of freedom
Multiple R-squared: 0.4556, Adjusted R-squared: 0.4185
F-statistic: 12.27 on 3 and 44 DF, p-value: 0.000005774

A9. Northeast Baseline Model

Region	Estimate	Std. Error	t value	Pr(>|t|)
Midwest	0.37556	0.26263	1.430	0.159790
South	-0.92757	0.24816	-3.738	0.000532***
West	0.03899	0.26770	0.146	0.884865

Residual standard error: 0.5956 on 44 degrees of freedom
Multiple R-squared: 0.4556, Adjusted R-squared: 0.4185
F-statistic: 12.27 on 3 and 44 DF, p-value: 0.000005774

A10. South Baseline Model

Region	Estimate	Std. Error	t value	Pr(>|t|)
Midwest	1.3031	0.2274	5.729	0.0000371***
Northeast	0.9276	0.2482	3.738	0.000532***
West	0.8886	0.2333	3.809	0.000429***

Residual standard error: 0.5956 on 44 degrees of freedom
Multiple R-squared: 0.4556, Adjusted R-squared: 0.4185
F-statistic: 12.27 on 3 and 44 DF, p-value: 0.000005774

Appendix Table 3. Regional Classifications

Region Label	Old Confederacy Models	South Region Models
South	Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia	Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia, West Virginia, Maryland, Oklahoma, Kentucky, Delaware
Midwest	Missouri, Kansas, Nebraska, South Dakota, North Dakota, Minnesota, Iowa, Wisconsin, Illinois, Indiana, Michigan, Ohio, West Virginia, Oklahoma, Kentucky	Missouri, Kansas, Nebraska, South Dakota, North Dakota, Minnesota, Iowa, Wisconsin, Illinois, Indiana, Michigan, Ohio
Northeast	New Jersey, Pennsylvania, New York, Vermont, New Hampshire, Maine, Massachusetts, Connecticut, Rhode Island, Maryland, Delaware	New Jersey, Pennsylvania, New York, Vermont, New Hampshire, Maine, Massachusetts, Connecticut, Rhode Island
West	California, Nevada, Utah, Arizona, New Mexico, Colorado, Wyoming, Montana, Idaho, Oregon, Washington	California, Nevada, Utah, Arizona, New Mexico, Colorado, Wyoming, Montana, Idaho, Oregon, Washington