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MEASURING THE CAPABILITIES INFRASTRUCTURE: A COUNTY-LEVEL INDEX OF  
NONPROFIT AND PRIVATE SECTOR ORGANIZATIONAL AND PHYSICAL  
COMMUNITY CAPITAL

A Thesis  
presented in partial fulfillment of requirements  
for the degree of Master of Arts  
in the Department of Sociology and Anthropology  
The University of Mississippi

By

RYAN T. SNOW

May 2018

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## ABSTRACT

Across the United States, citizens' communities provide vastly different access to critical resources that can improve their personal, familial, and collective well-being. Yet, little is known about the organization of the physical and organizational resource infrastructure of these communities, limiting the ability of policymakers, researchers, and citizens to address uneven development, inequality, and poverty. Drawing on 2015 North American Industry Classification System (NAICS) data, this research study creates a tool for measuring the nonprofit and private organizational and physical resource environment of communities at the county-level by aggregating establishment counts for 20 indicators into six standardized thematic dimensions to create the "nonprofit and private sector organizational and physical capital establishments" index (NPOPCE). Along with individual scores for six dimensions, an overall standardized score was created for each county. This project finds that this index corresponds with general rankings of well-being and provides a more nuanced analytic tool for county analysis of organizational and physical capital. The analytical application of each of these indices, the six individual and single overall, were tested by conducting Spearman's Rho correlation tests with four common outcome-based measures of poverty from the American Community Survey 2016 five-year estimates. As a whole, the indices show a strong general relationship with the poverty measures, indicating the overall index's usefulness as a supplement to future multivariate poverty analysis.

## LIST OF ABBREVIATIONS

ACS	American Community Survey
AQI	Air Quality Index
CCF	Community Capital Framework
ECPC	Economic Classification Policy Committee
HDI	Human Development Index
INEGI	Instituto Nacional de Estadística y Geografía
NAICS	North American Industry Classification System
NPOPCE	Nonprofit and Private Organizational and Physical Capital Establishments
NGO	Non-Governmental Organization
SES	Social-ecological system
SIC	Standard Industrial Classification
USDA	United States Department of Agriculture

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I would like to give a final thank you to all of the people that I have met over the last six years who work every single day to make Mississippi a better place for all people. I have learned to love Mississippi, despite all of her blemishes, but it is her people that I will always carry with me.

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## CHAPTER 1: INTRODUCTION

Living and working in a place like Mississippi, the history of systemic poverty and unequal development seep into every element of life; from casual conversations to organizational formations, Mississippi's past is omnipresent. The difference between those who have historically had access to the means to improve their well-being, and those who have not, is stark. However, Mississippi is not alone in facing these challenges, as poverty and uneven development can be found across the United States. Inequality manifests itself in education (Weiss and Roksa 2016), health (Braveman 2012), incarceration (Light 2014), pay (Kristal and Cohen 2017), along racial lines (Bloome 2014), but in these and in so many other ways, inequality inherently places individuals at disadvantages based on a host of factors that are often outside of their immediate control.

So how is it that some groups seem to avoid the “trap” of poverty? What factors lead to these patterns? Are they structural, economic, social, institutional, or a combination? How can we rectify these disparities? This project expands the ability to answer these questions by developing an index that examines the organizational and physical resource environments of communities across the United States. Hopefully, by providing a method to examine the assets that communities already have, the index developed for this thesis can assist in crafting future research and policy for sustainable community development.

Over the last four years, I have had the privilege of working with tremendous people developing actionable solutions to long-standing problems across Mississippi, oftentimes in

some of the state's, and thus the United States', most impoverished areas. Working with the University of Mississippi's McLean Institute for Public Service and Community Engagement and the Center for Population Studies, I have had the privilege to be at the forefront of poverty alleviation efforts and community-based research in this country. From working with the Sunflower County Freedom Project's intensive summer learning and after school program, to assisting with research that benefitted the programmatic strategy of the Tri-County Workforce Alliance's job training programs and the Mississippi Development Authority's development strategy, to playing a critical role in creating and growing statewide entrepreneurship and virtual reality programming for youth with the McLean Entrepreneurial Leadership Program and Entrepreneurial Learning Centers, I have seen these inequalities intimately, but also have had the privilege of being a part of the incredible work being done to help rectify them. What struck me when I first started working in these communities, and only grown more noticeable over the subsequent years, is not just the widely reported outcome differences (poverty, poor health, crime, etc.) between some communities and others, but the structural differences that exist in these places and seem to contribute to the negative outcomes. How do we understand these differences? What role does the asset environment play in building these communities? What data do we have that can help inform policy by answering these questions? These are the questions that this thesis, built on the work of my experience with the McLean Institute, begins to answer.

To examine this, in the project conducted for this thesis, I first discuss and connect four central bodies of literature. The human development, or capabilities approach, pioneered by Amartya Sen (1985, 1988, 1992, 2006, 2009) and Martha Nussbaum (2011), developed into a modern tool by others (Alkire 2002, 2005; Alkire and Foster 2011a, 2011b), and seen in many

modern measures of international development measurement like the Human Development Index (Stiglitz et al. 2009), serves as the project's overall theoretical anchor for understanding human development. However, the weaknesses of this model of measuring development are that it is heavily reliant on outcome-based measures of poverty and is usually only used to study large regions. These shortcomings can be offset by the contributions of other scholars. Cornelia and Jan Flora's (2013) Community Capitals Framework (CCF) provides insight into the role that the accumulation of different capital forms play at the local level. Similarly, thinking about asset building (Green and Haines 2012) as a mechanism for community development provides a methodological precursor to this project's aggregation of county-level data into a representative index. Likewise, the resilience literature (Holling 1973; Walker et al. 2004) demonstrates how both macro and micro forces interact at the community level to impact lives. To summarize, the overarching theory of this project is the human development approach to development, but the closely related theoretical underpinnings of the CCF, asset building, and community resilience all provide for a nuanced approach and allow for a targeted analysis of nonprofit and private organizational and physical capital in communities across the United States.

The index produced by this project is inspired by the County-Level Measure of Social Capital (Rupasingha, Goetz, Freshwater, 2006) referred to as the, "Social Capital Index," that combines various indicators from the North American Industry Classification System (NAICS), and other various datasets to create an index that measures the social capital of each county across the United States. This project does something similar but expands the scope of the analysis to include several more indicators. These additional indicators examine how the nonprofit and private organizational and physical resources of a community can manifest themselves as different forms of capital that contribute to community well-being.

## CHAPTER 2: LITERATURE REVIEW

The central theory of this project is the human development approach, which is internationally regarded as one of the premier mechanisms to measure economic development at the nation state level (Stiglitz et al. 2009). One outcome of this approach, and in some ways an inspiration for this project, is the Human Development Index (HDI). The HDI combines measures of health, education, and living standards in a cumulative measure “to emphasize that people and their capabilities should be the ultimate criteria for assessing the development of a county, not economic growth alone (United Nations n.d.). This project takes this theoretical base and adds more localized community-centric literature, the Community Capitals Framework (CCF), asset building, and resilience, to provide a more complete approach to understanding community development and well-being. The literature review is structured to reflect this. First, it outlines the human development approach and then describes the theory’s two major contributions, a nuanced definition of poverty and the capability approach to studying poverty. Then, this section traces through how the CCF, asset building, and resilience literature connect with the theoretical “umbrella” of the human development approach.

### *Human Development Approach*

The development literature is deeply inter-disciplinary, drawing on the work of sociologists, political scientists, geographers, economists, public health researchers, and others. Generally, all human development researchers seek to examine the forces that relegate part of society to be chronically under-resourced while allowing other groups to flourish (Sen 2006; Wagle 2012; Mitra and Brucker 2014). Few scholars have plunged more deeply into the field

than Amartya Sen, the 1998 Nobel Prize Laureate in Economics. Sen (1988, 2006) was among the first scholars to advocate for a more nuanced interpretation of development focused on the reproduction of poverty. This project uses his work as a theoretical anchor to tie together various theories on development. Sen's work also serves as a useful starting place to examine the work of many contemporary poverty and human development scholars (Alkire 2002, 2005; Nussbaum 2011; Wagle 2012; Dhongde and Haveman 2016). It is useful to divide the theoretical discussion of well-being into two parts: defining poverty and the approaches used to study it and exploring the capability approach favored by Sen and others.

*Defining poverty.* Depending upon the field of research, poverty can be measured in several ways (Wagle 2002; Laderchi et al. 2003). For some social scientists, the concept of economic well-being, a conceptualization of poverty as a lack of income, is the dominant understanding; for others, poverty is interpreted as lacking the capability to attain greater well-being, such as limited access to education or healthcare; and yet other researchers, especially sociologists and anthropologists, see poverty as the result of social, political, and behavioral structures (Wagle 2002). For the sake of simplicity, poverty measurement can be distilled into two distinct types: absolute measures and relative measures (Iceland, 2003).

Absolute measures, like the official U.S. federal poverty line “typically attempt to define a truly basic needs standard and have thresholds that remain constant over time” (Iceland, 2003:5). By definition, relative measures consider poverty relatively to some benchmark, be it another place, group, or time period, prompting the need to regularly reassess the measure (Iceland, 2003). Both of these approaches have strengths and weaknesses as measurement tools, and there are a number of derivations of each one (Laderchi et al. 2003). Similarly, the use of one method over the other can affect the interpretation of poverty. As Iceland (2003) points out,

“if we view poverty in terms of absolute material deprivation, then it is clear that economic growth can play an important role in diminishing it;” however, “if we view poverty as a relative phenomenon, then growth does less to reduce it, and wage inequalities or policies that redistribute income may play a larger role” (2003:8).

These are the two main approaches to poverty measurement, though there are numerous other measures that borrow from these conceptions. Consumption measures compare the level of spending, not earning, that a family or individual does relative to a poverty threshold. Hardship measures are multidimensional indices that attempt to illustrate the combined effect of several deprivations and are generally similar to absolute measures, though they can be adapted to more relative efforts. The multidimensional aspect of hardship measures is something that Sen (1992) long argued for including in measurements of poverty. To Sen, typical “head-count ratio” measures of poverty are flawed because they only show the proportion of poor individuals, not the depth of their poverty (Sen 1992:102; Iceland 2003). If constructed properly, these multidimensional measures can provide nuanced examinations of poverty, especially in areas of cyclically entrenched deprivation.

Looking at the international level, popular calculations, like the Gross Domestic Product (GDP) aim to measure the economic health of a country yet rely on economic indicators that measure the economic growth of the nation’s economy, not the well-being of its citizens. GDP, the most widely reported statistic on economic growth, is calculated by totaling a country’s private consumption, gross investment, government spending, and net exports ( $GDP=C+I+G+NX$ ). Such measures can be driven by the economic fortunes of a privileged group and do not always fully demonstrate a nation’s resourcefulness, ingenuity, or creativity. The popularity of GDP measurement arose between World War I and World War II and thus

carries a historical presupposition towards manufacturing-based measures of prosperity that often fail to account for well-being, economic welfare, and sustainability (Bleys 2012).

Though this project focuses on county-level measures of development, understanding international calculations demonstrates common conceptions of poverty and development research. Likewise, GDP is often still used at the state and sometimes even county levels as the primary indicator of well-being. On the international level, over the last twenty years and up to the present, researchers have constantly created and reevaluated measures in attempts to address the shortcomings of GDP (Bandura 2008). Similarly, this project does not dismiss typical income or outcome-based measures of well-being, but rather, it develops a more complete picture of the opportunities afforded to households at the county-level.

*Capabilities approach.* The capabilities approach, sometimes referred to as the human development approach, or combined as the human development and capabilities approach, is historically associated with the Human Development Report published by the Human Development Report Office of the United Nations Development Programme (Nussbaum 2011). This approach aims to answer a simple question, “What is each person able to do and to be?” (Nussbaum 2011:18). The approach attempts to identify the opportunities available to each person. Following this idea, and borrowing from Rawlsian ideas of utilitarianism, it holds that a just society strives to provide its people with the maximum freedom for optimizing their well-being, regardless of whether they exercise it (Sen 1992; Nussbaum 2011). People are fundamentally diverse. They are born to different races, genders, sexes, classes, geographies, and circumstances that are more complicated than a basic numerical scale or index can adequately measure.

Though the capability approach attempts to build such an impossible measure, it does so with a fundamental focus that is “*concerned with entrenched social injustice and inequality, especially capability failures that are the result of discrimination or marginalization*” and deliberately includes as much natural diversity as possible in its design (Nussbaum 2011: 19). This nuanced understanding of well-being is useful for the present project’s focus on Mississippi data. Influenced by a history of structured oppression, whole regions of the state live in areas of long-standing deprivation (Cobb 1994). Despite its obvious analytical rigor, the capability method is understandably complex to implement, especially when considering available data sources.

This international capability framework is only the starting theoretical framework for this project. It is not so much the methods of poverty measurement that this project uses; but rather, it is the general conceptual framework regarding entrenched patterns of unequal development and negative outcomes that are useful. As this literature discussion moves on to examining the community capitals, asset development, and resilience development literature, it is useful to think of this discussion of human development and capability as an umbrella for the theoretical frameworks and methodological approaches that follow. They all fundamentally seek to better understand the factors that create opportunities for citizens to improve their well-being.

#### *Community Capitals Framework*

At the most basic level, this project measures the resources available to a community to improve its well-being. A community, according to Flora and Flora (2013) is a shared sense of location, social system, and common identity. They note, though, that in an increasing digital world, community can also be group of people with shared interests rather than shared location (e.g. computer gamers). Likewise, there is often overlap between communities of location and



communities of interest (Flora and Flora 2013). For example, a town in Texas may be a community by town boundaries, but the citizens' shared interests in high school football can create a separate type of community with plenty of intersections. For this project, the county is the community level of analysis. Though a county cannot completely capture all of the interconnected elements of the centralized community, it is the lowest level of government and spatial analysis that has reliable and comparable data (Lobao, Adua, and Hooks 2014). Some argue (Lobao 2016) that analysis at local government (county) level is only growing more important as the federal government continues to decentralize.

This definition of community helps set up an introduction of the Community Capitals Framework or CCF (Flora and Flora 2013). Capital, in its layman's conception, is the amount of financial assets a person or group has that can be exchanged for other resources. Flora and Flora (2013) extend this analysis to other types of capital. These forms of capital include: natural, cultural, human, social, political, financial, and built capital. Capital can be gained, lost, or exchanged and provides a useful conceptual framework for studying complex social developments within communities. It should also be noted that Flora and Flora (2013) have assembled the CCF based on the contributions of other scholars across economics (Becker 1964), sociology (Bourdieu 1986), and related fields.

The basic idea of the CCF is that the more of each capital form that a community can accumulate, the more likely it is that a community can become sustainable; that is, a community that has a healthy ecosystem, economic security, and social inclusion (Flora and Flora 2013). Even the most rural, isolated, and poor communities have resources. By analyzing those resources using the seven "capitals" proposed by the CCF, it is possible to not only determine the current environment of a community, but also its most prudent growth areas (Flora and Flora

2013). Both on their own and holistically, the capitals function to produce better communities if they are well managed, accessible to all community members, and appropriately invested.

For this analysis, many of the indicators can fall under multiple dimensions and are often self-reinforcing, echoing the “spiraling up” effect of community capitals (Emery and Flora 2006), but they are all demonstrations of organizational and physical capital due to the reliance on NAICS business pattern data as the singular dataset. NAICS calculates the number of establishments of each indicator in each county, and these existing recognized organizations and physical structures serve as representations of each of these CCF capital formations. It is through these establishments’ location within communities that these capital forms become available and accessible to citizens. A brief overview of each capital type and its associations to this project is provided below.

*Natural capital.* Natural capital includes all of the physical elements of nature such as water, air, soil, biodiversity, and weather that surround communities. The index built for this project does not explicitly include elements specific to this capital form because of the constraints of NAICS data. However, future research comparing the overall index and individual dimension indices with other multivariate measures of natural capital such as the Air Quality Index (AQI) produced by the U.S. Environmental Protection Agency, National Oceanic and Atmospheric Administration, and National Park Service, could inform the understanding of the relationships between natural and other capital types.

*Cultural capital.* First widely introduced into the sociological discussion by Pierre Bourdieu (1986), cultural capital refers to the values, ideas, concepts, outlooks, and priorities that an individual develops. These factors are constructed by the reciprocal interactions between social institutions and people. It is useful to provide an example of cultural capital. Anderson and

Bertaux (2012) find evidence that the cultural patterns and organizations developed by African-Americans in nineteenth-century Cincinnati allowed African-Americans opportunities to advance despite overwhelming discrimination.

Cultural capital formation can take multiple forms. Community organizations like community-supported agriculture (CSA) groups can provide participants with the cultural opportunities that help assist in the growth of a community (Flora and Bregendahl 2012). Cultural capital, more so than some of these other capital forms, can also have a negative impact on a community if developed disingenuously. Anderson (2014) points out that in boomtowns, rapid population and economic growth can disrupt a community's natural development, stripping it of organic opportunities for long-term growth. Though somewhat limited in the index for the present study, the cultural capital dimension is made up of indicators for musical artists and museums. The presence of these indicators points at the cultural viability of that community. Following the logic of cultural capital, regions with more musical artists and museums would produce citizens with more access to cultural enrichment, thus the ability to develop more cultural capital.

*Human capital.* Human capital, a conception popularized by economist Gary Becker (1962, 1964) refers to the education, skills, health, and self-esteem that individuals accumulate (Flora and Flora 2013). The two simplest examples of human capital, and the impact of their accumulation, are formalized education and healthiness. There are few more direct correlations than the one between formal education and future earnings (Sasson 2016; Johnston 2017). An education dimension was not included in this project for one major reason. The NAICS codes measure nonprofit and private establishments, and because roughly 91% of K-12 students attend public schools in the United States (Department of Education 2017), including an indicator for

only private institutions would drastically undermine the validity of the indicator, dimension, and index. The health dimension, on the other hand, can be measured well using the 2017 NAICS business pattern data, because nearly 80% of healthcare providers are private, nonprofit, and/or religiously affiliated according to the American Hospital Association (American Hospital Association 2018).

*Social capital.* Social capital relies on the mutual trust and reciprocity present in social interactions between individuals. It can be divided into two types. Bonding social capital describes the interactions between individuals in specific groups or communities, while bridging social capital consists of the interactions between social groups (Flora and Flora 2013). Social capital, according to Putnam (1993), refers to the features of social organizations such as networks, norms, and trust that allow for mutually developed cooperation amongst people and groups. Because this analysis is focused on the community rather than individual, it is important to measure the mechanisms that exist at the community level for individuals to build and develop both bonding and bridging social capital.

This theory was the basis of Rupasingha, Goetz, and Freshwater's (2006) Social Capital Index, which served as the inspiration for this thesis project. Several of the components of the Social Capital Index have been included in this analysis, though split into different dimensions. These indicators make up the majority of the organizational dimension. Several of the variables included in the Social Capital Index were excluded from this project because of limited variability or theoretical fit. It should be noted that though these indicators demonstrate the social capital of a community, they are represented by built and organizational entities recognized by NAICS.

*Political capital.* Political capital refers to the organizations, connections, voice, and power that citizens can mobilize to turn shared norms, values, and desires into enforceable rules and regulations (Flora and Flora 2013). Broadly, political capital refers to the resources available to community members to change the current situation through formal institutions of power (Flora and Flora 2013). Considering the case of Mississippi, it is impossible to ignore the ways in which historically unequal power dispersion have impacted the distribution of political power. From slavery to Jim Crow, African-Americans have historically been shut out of corridors of political capital in Mississippi (Cobb 1994). The NAICS includes few indicators representing political capital, and the largest category that would fit, political organizations, is not robust enough to represent an entire dimension with sufficient variability. However, there are a number of political variables that could be studied in the future both together and independently using this project's index as a comparative tool.

*Financial capital.* More similar to the typical conceptions of capital, financial capital refers to the various forms of savings, income, loans, available credit, taxes, and tax exemptions that make up an individual or families' financial situation (Flora and Flora 2013). At the community level, financial capital is measured by poverty, firm diversity, available credit, and changes in income. This index has an entire dimension dedicated to measuring the number of financial establishments in counties. Those indicators include commercial banking, credit unions, and real estate credit institutions.

*Built capital.* Built capital refers to the human-constructed physical infrastructure of a place, though this is only a useful form of capital if it contributes to the development of another form of capital (Flora and Flora 2013). This can include not only physical entities like roads bridges, hospitals, and factories, but also establishments and organizations that allow people

access to other capital forms that can improve their well-being. Furthermore, built capital is inherently self-reinforcing. For example, the construction of a road or bridge provides financial capital to contractors, laborers, while allowing the infrastructure for other capital forms to develop.

### *Asset Development*

Another theoretical building block of this analysis is the work of Gary P. Green and others that focuses on the role asset building plays in community development. Just as this project builds on several theoretical foundations that cross over multiple fields, so does asset building. This theory examines how communities develop based on the organizations present in communities rather than market outcomes or governmental programs (Green and Haines 2012). By emphasizing the resources of place, Green and Haines (2012) note that this conception of community development tends to challenge the conceptions of both conservatives and liberals while emphasizing a form of active community participation that runs counter to the individualistic nature of modern culture and society. Connecting back to the selection of NAICS business pattern data as a source of data, it is important to note that the establishments included in this measure are strictly nonprofit and private entities, only serving to reinforce the role of the nonprofit and private sectors as encouraged by asset building theory.

Defining an asset, Melvin Oliver (2001), explains that an asset “is a special kind of resource that an individual, organization, or entire community can use to reduce or prevent poverty and injustice” and allows those in poverty to “take control of important aspects of their lives, to plan for their future and deal with economic uncertainty, to support their children’s educational achievements, and to work to ensure that the lives of the next generations are better than their own” (xii). This definition fits well with the ideas proposed by the CCF (Flora and

Flora 2013) in which communities that develop their various forms of capital are better situated to provide opportunities for improving well-being. Likewise, asset building and community resilience theory link well together. As the community resilience literature points out, for communities to be sustainable, they must be resilient, adaptable, and transformative (Walker et al. 2004); all characteristics that benefit from developed assets/forms of capital

Also, the asset building literature has pushed the study of community development toward the creation of comparable tools to measure the development of communities (Goe and Green 2005) and regional growth (Deller et al. 2005). This project expands on those ideas. In doing so, it is forced to make the assumptions that the establishments in a community are being used equally, and that all establishments carry the same weight in contribution to a community's well-being. This is obviously a flawed assumption and worth more examination but does provide a necessary basis for initial analysis.

### *Community Resilience*

The final theoretical foundation of this project is the growing body of work concerning community and ecological resilience (Holling 1973). Community resilience describes the ability of a social-ecological system (SES) to withstand disturbances, shocks, and stressors through systems of self-organization, learning, and adaption in ways that mitigate overall and future vulnerability (Gunderson & Holling 2002; Walker et al. 2004). By linking the social and ecological systems, this concept bridges the gap between several disciplines by honing in on a specific set of variables that reflect changes in the fabric of communities (Cumming et al. 2005).

Three attributes of a SES determine its future ability to fight disturbances: resilience, adaptability, and transformability (Walker et al. 2004). Resilience refers to the amount of change the system can undergo without fundamentally changing, the system's ability to self-organize,

and the capacity of the system to adapt to current and future disturbances (Carpenter et al. 2001, Cumming et al. 2005). Adaptability is the capacity of those in a system to create resilience (Walker et al. 2004). Transformability is the ability to create a new system when ecological, economic, social, or political forces make the existing system unsustainable (Walker et al. 2004). Following this logic, sustainability is not a specific final goal; but rather, its development allows for systems to develop specific interventions to improve well-being.

Biggs et al. (2012) outline seven specific policy practices for enhancing the resilience of a SES: maintain diversity, manage connectivity, manage slow variable and feedback networks, foster an understanding of SES as complex adaptive systems, encourage learning, broaden participation, and promote polycentric governance systems. These principles, like the capital formations in the CFF, are highly interdependent, creating both positive and negative cycles. Important to this project's theoretical basis is the idea of adaptability, because the index measures the ability of a community to adapt through accessing nonprofit and private organizational and physical capital resources. Osbahr et al. (2010) use climate variability in southern Africa as an example of how this theory works in practice. Developing their example, the researchers suggest that the daily processes of adaption that occur as the result of short-term shocks "draw on natural, social, human, as well as financial capital (Osbahr et al. 2010:2). Furthermore, disconnects between the capital forms, say the social capital and knowledge of a local community and the institutions that offer needed financial capital, display the need for adaptive political processes. Osbahr et al. (2010) find that the informal social networks that link individuals within households can only adapt to a certain level and emphasize the importance of linking households to one another, to other organizations, and to larger institutions.



This is just one specific example of how using a community resilience lens can illuminate the underlying forces that both assist and deter development. Though this model is most often applied with non-government organizations (NGOs) in developing countries and with disaster preparedness measurement domestically (Meyer-Emerick 2016), the same principals can be applied more broadly to communities across the United States. Turning the discussion back to Mississippi, as work in the state inspired this project, peer to peer networks have long been crucial for the sustainability of many households in rural areas that often lack formally organized resources (Cobb 1994).

### *Summary of Literature and Research Questions*

This theoretical framework provides a basis for the heavily methodological approach to understanding the nonprofit and private organizational and physical capital of counties across the country by providing an overview of several different development theories. All of these critical perspectives, from the human development approach to the more community focused literature, like the CCF, asset building, and resilience, all demonstrate the need for creating a comparable tool that illustrates what exists in communities to improve citizens' well-being. Likewise, it provides a tool that examines the county-level environment of capital construction in a uniquely comprehensive way. To help address these larger questions, it is helpful to focus in on some central research questions:

1. Is it possible to build an index of nonprofit and private organizational and physical capital that is comparable across counties?
2. What counties, states, and regions have more nonprofit and private organizational and physical capital than others?
3. How well does this index represent the lived experiences of community members?

## CHAPTER 3: METHODS

Originally, this project sought to provide an examination of county-level multidimensional poverty by aggregating sources of existing data to create a more complete representation of lived experiences at the county level. This measure sought to create a comparative poverty index for all 82 counties in Mississippi that measured access to opportunity. However, existing measures, like the County Health Rankings produced by The University of Wisconsin with assistance from the Robert Wood Johnson Foundation, already provide a robust examination of this phenomenon. However, while examining the literature on the Community Capitals Framework (CCF) as presented by Flora and Flora (2013), I noticed that there was a noticeable lack of quantitative research on organizational and built capital accumulation. This project starts to fill some of that gap.

Instead of aggregating multiple data sources to measure the accessibility of resources, this project uses a single data source to form multiple new dimensions to measure the organizational and physical capital ecosystem of communities. This index has uses for researchers, governments, nonprofits, development groups, and urban and regional planners. This is a unique measure for two reasons.

First, many of the typical measurements of access or well-being used in this type of analysis are outcome based rather than input based. For example, to measure the health of a region, researchers commonly refer to rates of obesity, heart disease, diabetes, child mortality, or some other measure that displays what happened as the result of a set of choice or circumstances rather than those circumstances themselves. Though outcome statistics certainly have their

merits, they measure the result of a chain of events, not the underlying environment. By relying on the organizational and built infrastructure of communities for this analysis, this project depicts a more complete picture of the access that people have to the resources that can improve their well-being. Second, by drawing all of data for each dimension from the North American Industry Classification System (NAICS) codes, this analysis makes use of a federally supported, regularly updated, and statistically strong data source that can be easily replicated.

#### *Data Source*

The 20 dimensions that compose this index are drawn from the 2017 North American Industry Classification System (NAICS) codes. The NAICS codes are a cooperative effort of Statistics Canada, Mexico's Instituto Nacional de Estadística y Geografía (INEGI), and the Economic Classification Policy Committee (ECPC) of the United States to group nongovernmental organizations and companies by their industrial production (NAICS). NAICS grew out of the Standard Industrial Classification (SIC) codes which started in 1939 (U.S Office of Management and Budget 2017). As the world's economy rapidly modernized, the SIC codes were not properly organized to adapt quickly enough. Out of this need for change, the NAICS was created in 1992, with the provision that the codes be reviewed every five years and revised appropriately as industries emerged and changed (U.S Office of Management and Budget 2017).

NAICS “divides the economy into 20 sectors,” and then groups industries within these sectors more definitively “based on production criterion” (U.S Office of Management and Budget 2017:3). NAICS is primarily designed to measure economic production, but it also inherently contains data related to the development and production of human, social, and organizational capital. NAICS data are organized at the establishment level. As defined by the 2017 NAICS manual (U.S Office of Management and Budget 2017) an establishment is the

“smallest operating entity for which records provide information on the cost of resources—materials, labor, and capital—employed to produce the units of output” (19). These are generally fixed physical locations where an industrial function is performed (farms, factories, stores, hotels, warehouses). This is a general guideline, as there are a number of instances where an establishment could incorporate several enterprises. For example, a hotel that contains a restaurant and a retail shop would be one physical space that housed two separate establishments. It is important to note that these establishments are not government related entities. Therefore, spaces like courthouses, government job training programs, county offices, or public schools are not included in this index, though they obviously impact the sustainability of communities. Relying on the NAICS data as a single data source provides for comparability, interpretation, and analysis and meets the intended goals for this project. Supplementing this index with government-related data would certainly be a fruitful avenue for future research.

For this project, indicators were grouped theoretically based on a combination of two factors (Table 2). First, the establishments that fit neatly into a specific CCF capital form were grouped together. The finance and cultural capital dimensions are clear examples of this. Second, establishments that did not fit neatly, or did not completely quantify a specific CCF capital type, were grouped together. The health, constructive, organizational, and nonprofit dimensions all fall under this selection category. Health is certainly a large component of human capital but defining the capital form with just a single type of indicator would be inadequate. Likewise, religious, civic and social, and labor could all be considered indicators of social capital and are even included in the Social Capital Index (Rupasingha et al. 2006, using 2014 updates), but again, do not provide a robust enough analysis to completely represent the entire social capital dimension. A similar argument could be made regarding cultural capital, that only two indicators

are inadequate. This is a fair critique. However, because of the limitations presented by the NAICS data set, musical groups and artists and museums were the only two variables that fit the dimension well and had sufficient establishment counts and variability.

The argument for the applicability of this index is that all of these dimensions act as forms of nonprofit and private organizational and physical capital that “spirals up” to help communities sustainably develop productive assets that improve individual and overall well-being (Emery and Flora 2006). Thus, separating the dimensions individually does provide additional insight, but the index is best viewed holistically. As the human development, CCF, asset development, and resilience literature all demonstrate, community development must be multifaceted and interconnected, precisely what this index attempts demonstrate through its multidimensional structure.



Table 1. Dimensions, Indicators, and Definitions Table

<b>Dimension</b>	<b>Indicators</b>	<b>Definition</b>
<b>Finance</b>	Commercial Banking (522110)	This industry comprises establishments primarily engaged in accepting demand and other deposits and making commercial, industrial, and consumer loans. Commercial banks and branches of foreign banks are included in this industry.
	Credit Unions (522130)	This industry comprises establishments primarily engaged in accepting members' share deposits in cooperatives that are organized to offer consumer loans to their members.
	Real Estate Credit (522292)	This U.S. industry comprises establishments primarily engaged in lending funds with real estate as collateral.
<b>Health</b>	Office of Physicians Except Mental Health Services (621111)	This U.S. industry comprises establishments of health practitioners having the degree of M.D. (Doctor of Medicine) or D.O. (Doctor of Osteopathy) primarily engaged in the independent practice of general or specialized medicine (except psychiatry or psychoanalysis) or surgery. These practitioners operate private or group practices in their own offices (e.g., centers, clinics) or in the facilities of others, such as hospitals or HMO medical centers.
	Physicians Including Mental Health (621112)	This U.S. industry comprises establishments of health practitioners having the degree of M.D. (Doctor of Medicine) or D.O. (Doctor of Osteopathy) primarily engaged in the independent practice of psychiatry or psychoanalysis. These practitioners operate private or group practices in their own offices (e.g., centers, clinics) or in the facilities of others, such as hospitals or HMO medical centers.
	Dentists (621210)	This industry comprises establishments of health practitioners having the degree of D.M.D. (Doctor of Dental Medicine), D.D.S. (Doctor of Dental Surgery), or D.D.Sc. (Doctor of Dental Science) primarily engaged in the independent practice of general or specialized dentistry or dental surgery. These practitioners operate private or group practices in their own offices (e.g., centers, clinics) or in the facilities of others, such as hospitals or HMO medical centers.
	General Medical and Surgical Hospitals (622110)	This industry comprises establishments known and licensed as general medical and surgical hospitals primarily engaged in providing diagnostic and medical treatment (both surgical and nonsurgical) to inpatients with any of a wide variety of medical conditions
	Fitness and Recreational Sports Center (713940)	This industry comprises establishments primarily engaged in operating fitness and recreational sports facilities featuring exercise and other active physical fitness conditioning or recreational sports activities, such as swimming, skating, or racquet sports.

<b>Constructive Capital</b>	New Single-Family Housing (236115)	This U.S. industry comprises general contractor establishments primarily responsible for the entire construction of new single-family housing, such as single-family detached houses and town houses or row houses where each housing unit (1) is separated from its neighbors by a ground-to-roof wall and (2) has no housing units constructed above or below. This industry includes general contractors responsible for the on-site assembly of modular and prefabricated houses. Single-family housing design-build firms and single-family construction management firms acting as general contractors are included in this industry.
	Electrical Contractors (238210)	This industry comprises establishments primarily engaged in installing and servicing electrical wiring and equipment. Contractors included in this industry may include both the parts and labor when performing work. These contractors may perform new work, additions, alterations, maintenance, and repairs.
	Plumbing, Heating, and AC Contractors (238220)	This industry comprises establishments primarily engaged in installing and servicing plumbing, heating, and air-conditioning equipment. Contractors in this industry may provide both parts and labor when performing work. The work performed may include new work, additions, alterations, maintenance, and repairs.
<b>Organizational Capital</b>	Religious Organizations (813110)	This industry comprises (1) establishments primarily engaged in operating religious organizations, such as churches, religious temples, and monasteries, and/or (2) establishments primarily engaged in administering an organized religion or promoting religious activities.
	Civic and Social Organizations (813410)	This industry comprises establishments primarily engaged in promoting the civic and social interests of their members. Establishments in this industry may operate bars and restaurants for their members.
	Labor Organizations (813930)	This industry comprises establishments primarily engaged in promoting the interests of organized labor and union employees.
	Other Social Advocacy Organizations (813319)	This U.S. industry comprises establishments primarily engaged in social advocacy (except human rights and environmental protection, conservation, and wildlife preservation). Establishments in this industry address issues, such as peace and international understanding; community action (excluding civic organizations); or advancing social causes, such as firearms safety, drunk driving prevention, or drug abuse awareness. These organizations may solicit contributions and offer memberships to support these causes.



	Other Individual and Family Services (624190)	This industry comprises establishments primarily engaged in providing nonresidential individual and family social assistance services (except those specifically directed toward children, the elderly, persons diagnosed with intellectual and developmental disabilities, or persons with disabilities).
<b>Nonprofit</b>	Grantmaking Foundations (813211)	This U.S. industry comprises establishments known as grantmaking foundations or charitable trusts. Establishments in this industry award grants from trust funds based on a competitive selection process or the preferences of the foundation managers and grantors; or fund a single entity, such as a museum or university.
	Other Grantmaking Foundations (813211)	This U.S. industry comprises establishments (except voluntary health organizations) primarily engaged in raising funds for a wide range of social welfare activities, such as educational, scientific, cultural, and health.
<b>Cultural Capital</b>	Musical Groups and Artists (711130)	This industry comprises (1) groups primarily engaged in producing live musical entertainment (except theatrical musical or opera productions) and (2) independent (i.e., freelance) artists primarily engaged in providing live musical entertainment. Musical groups and artists may perform in front of a live audience or in a studio and may or may not operate their own facilities for staging their shows.
	Museums (712110)	This industry comprises establishments primarily engaged in the preservation and exhibition of objects of historical, cultural, and/or educational value.

Note: Titles of indicators come directly from NAICS titles. Numbers in parenthesis are indicators NAICS codes. Definitions come directly from the 2017 NAICS Manual (Office of Management and Budget 2017). Table constructed by author.



### *Poverty Related Variables and Analysis*

The forms of capital demonstrated in this index, based on the CFF (Flora and Flora 2013), allow individuals, families, and communities to achieve better outcomes for themselves and those around them. Likewise, as Flora and Flora (2013) and Green and Haines (2012) point out, these forms of capital correlate with, and should provide mechanisms to triumph over, common forms of poverty. Therefore, the next portion of this analysis examines how the entire overall index and the individual dimensions correlate with four typical outcomes related to poverty: median household income, percent of county population below the poverty line, percent of county population with a high school education, and percent of county population with a Bachelor's degree (Mogull 2015; Mitra and Brucker 2017, Montez et al. 2017.)

It is useful to briefly outline these four outcomes and provide a brief overview of how they were gathered from the American Community Survey (ACS). The ACS collects yearly data on various characteristics related to the social, economic, demographic, and housing characteristics of the U.S. population (U.S. Census Bureau 2008). These data are reported in one-year and five-year windows, with the five-year time period providing more thorough and nuanced data. This project makes use of 2016 five-year estimates for the four poverty dimensions included in this analysis.

Median household income is the middle point of the reported household incomes for all sampled households. Regularly included as a poverty-related outcome, median household income accounts for outlying incomes that exist on both ends of the income spectrum better than average income (Guzman 2017). Poverty status is determined by a set of income thresholds that vary by family size and do not vary geographically; for example, a family of four with two children is considered impoverished if their income is \$24,858 dollars or less regardless of

whether they live in rural Mississippi or urban Manhattan (US Census Bureau Census 2017). According to the United States Census Bureau (2008), median household income includes the wage or salary income, the farm/nonfarm self-employment income, the interest or dividend income, Social Security income, retirement or disability income, public assistance income, and other associated types of income (VA payments, child support, gambling winnings, etc.) that have been gained by the householder and all residents over the age of 15 over the previous 12 months. The percentage of the population that has graduated from high school and earned a Bachelor's degree are consistently applied measures of educational attainment (Montez et al. 2017, Goldsmith et al. 2017)

#### *Other Data Sources*

Though the bulk of the project for this thesis was to create the index and verify its usefulness against common poverty related outcomes, this thesis also sought to answer a few of the basic questions that this tool could engage with. First, it looked to consider how rurality impacted the index. This project recoded the United States Department of Agriculture's (USDA) 2013 Rural-Urban Continuum Codes to create a binary metropolitan and nonmetropolitan variable. Within this data set, each county is assigned one of nine codes. Counties with codes one through three were recoded as "metro" counties, and counties with codes four through nine were recoded "nonmetro." This is a common way of delineating these codes (Yang et al 2011; Porter et al. 2009)

The second preliminary analysis that this project undertook was an initial analysis of how the racial characteristics of a county associated with the nonprofit and private organizational and physical capital index. This project took the white-only data from the 2016 ACS five-year estimates and created a binary variable for the percentage of each county that was non-white by

dividing the county's total population by its white only population and subtracting that percentage from 100.

### *Analysis*

Data sources, the 2017 NAICS data used to create the index ([census.gov/programs-surveys/cbp/data/datasets.html](https://www.census.gov/programs-surveys/cbp/data/datasets.html)), the 2016 five-year ACS poverty outcome measures ([factfinder.census.gov](https://factfinder.census.gov)), the 2013 USDA Rural-Urban Continuum Codes for separating metro and nonmetro counties ([ers.usda.gov/data-products/rural-urban-continuum-codes/](https://ers.usda.gov/data-products/rural-urban-continuum-codes/)), and the 2016 five-year ACS white-only racial numbers ([factfinder.census.gov](https://factfinder.census.gov)) were all downloaded from publicly available websites. All of the datasets were organized and sorted in Microsoft Excel and analyzed via IBM's SPSS Statistics. Each of the 20 indicators based on the NAICS codes represent a count of the number of establishments across each industry by county. Rates per 1,000 persons were calculated for each indicator in all of the counties based on the Census Bureau's 2016 Population Estimates. These indicators were standardized using SPSS. The standardized scores for each indicator were added together to develop dimension scores, and each of these six dimension scores was also standardized within SPSS. The dimension, indicators, and indicator definitions are displayed in Table 2. The six standardized dimensions were then added together and standardized again to create a single index that measures the built and organizational index of each county in the United States.

Each of these dimensions, from the overall index to the individual dimension was then correlated with the four common outcomes related to poverty using both Pearson's  $r$  and Spearman's Rho correlation methods. However, because both the individual states in the national data (Table 7) and the individual counties in the Mississippi data (Table 11) were ranked, Spearman's Rho was the more appropriate correlation measure and is what is displayed in the tables (Tabachnick and Fidell 1996). These correlations were tested at a .001 significance level.

Confidence intervals were also calculated for each correlation using the bootstrapping method set for 1,000 samples and a 90% confidence interval. The confidence intervals are displayed in the tables. Bootstrapping accounts for the sampling error produced by the procedures used to calculate the poverty related outcome data from the ACS.

Considering the correlation calculations for metro status and race, similar analysis was conducted after the correlations with the poverty related outcome measures. Typically, to measure the partial effect of a variable, a partial Pearson's R correlation is appropriate. However, because the dispersion of the Z-Scores for the overall index and individual dimensions were not normal, with high measures of skewness and kurtosis for several dimensions, partial Pearson's R correlations were not possible (Leon-Guerrero and Grankfort-Nachmias 2013). Nonetheless, because the z-scores that were being compared were ranked from one to 50, calculating Spearman's Rho as a measure of correlation was suitable (Leon-Guerrero and Grankfort-Nachmias 2013). These Spearman's Rho correlations are similarly able to control for metro status and race by selecting for specific cases in SPSS.

#### *Other Methodological Notes*

This project underwent several exploratory iterations before becoming what is now here in this document. To assuage some of the questions that may come up regarding different choices that were made, it is useful to include a brief summary of the methodological decisions that occurred.

*Use of principal component analysis.* Before splitting the indicators into aggregate dimensions based on theory, this project attempted to use Principal Component Analysis (PCA) to organize the indicators into statistical reliable groupings. PCA is a common approach for sorting through large datasets to uncover associations (Tabachnick and Fidell 1996). However,

the results of that analysis, when tested with Eigenvalues of both the normal “1” and a reduced value of “0.95” did not adequately explain a large portion of the variation nor provide reasonable categorical associations between dimensions. Therefore, the dimensions were created by combining theoretically similar indicators.

*Indicator exclusion.* Some variables that were included in first drafts of this index, such as bowling centers, all of the transportation establishments, and new multifamily housing, were eventually excluded because of insufficient variation or prohibitively small establishment counts. Likewise, consumer lending, colloquially referred to as “payday lending” was included in several initial drafts of this index but was eventually excluded because of the predatory nature of such establishments (Younghee et al. 2014; Negro, Visentin, and Swaminathan 2014). Consumer lending organizations often target areas with limited access to other options (Kubrin et al. 2011) and then charge community residents exorbitant rates. In some areas, communities have reacted to these establishments by developing internal lending systems that serve the people that commercial banks are unable or unwilling to (Ager 2014). Thus, consumer or “payday” lending often operates contrary to CCF and was excluded from this analysis.

#### *Index regions*

All index measures were tabulated at the county level but were also averaged to form both state and regional measures. All fifty states were calculated, and then each state was grouped into one of the United States Department of Agriculture’s (USDA) Rural Development Regions displayed in Table 1. These regions provide an additional layer of analysis for understanding how the overall index and the separate dimensions relate to one another by geographic region. Washington D.C. was excluded from the analysis because of extremely high scores in the organizational and nonprofit dimensions that skewed its comparability.

Table 2. USDA Rural Development Regions

<b>Western</b>	<b>North Central</b>	<b>Northeast</b>	<b>South</b>
Alaska	Illinois	Connecticut	Alabama
Arizona	Indiana	Delaware	Arkansas
California	Iowa	Maine	Florida
Colorado	Kansas	Maryland	Georgia
Hawaii	Michigan	Massachusetts	Kentucky
Idaho	Minnesota	New Hampshire	Louisiana
Montana	Missouri	New Jersey	Mississippi
Nevada	Nebraska	New York	North Carolina
New Mexico	North Dakota	Pennsylvania	Oklahoma
Oregon	Ohio	Rhode Island	South Carolina
Utah	South Dakota	Vermont	Tennessee
Washington	Wisconsin	West Virginia	Texas
Wyoming			Virginia

Source: USDA Rural Development Regions. Table constructed by author

*Community Engagement Meeting*

This project was inspired by work in communities across Mississippi; therefore, it was paramount that it be shared with, and receive feedback from grassroots community partners. On March, 23<sup>rd</sup>, 2018, this project, along with two other student-led academic efforts to inform community development, was presented to a diverse group of community partners in Clarksdale, Mississippi. These partners worked in areas across the state but are largely focused on the systemically impoverished Delta region (Cobb 1994). Feedback was gathered via a student-led discussion session and a paper survey. Largely, these partners were extremely receptive to this project, though they expressed that the tool was most useful if it was easily accessible. More complete results from this event are available in the Appendix.

Linking the methods of this project back to its goal, this index demonstrates the capital accumulation that each county in the United States has in a comparable fashion. By identifying trends within states and broader regions and applying simple statistical tests, the analyses conducted by this project provide a unique and useful tool, verifies its legitimacy, and begins to



ask some probing questions. The following chapter outlines the major findings of this analysis and segues into a final discussion of this project's implications for future research.

## CHAPTER 4: FINDINGS

The central goal of this project was to create a comparable county-level measure of counties' organizational and physical resource environment. Not only does this project provide that tool, but it also performs some preliminary analysis concerning geographic distribution and the relationships between the indices, poverty-related outcomes, and racial characteristics. The county was the unit of analysis for this project, but showing the data at national, regional, and state levels helps compare overall and individual index scores. To walk through how these findings will be presented, this section will first look at the overall rankings and average scores nationally by state, nationally by region, and then by county in Mississippi. Then it will transition to a discussion of the correlations between the indices and the poverty related outcomes at the national level including the role metropolitan status and race plays. Then, those same analyses will be discussed at the county level for Mississippi.

### *Overall Findings*

Nationally, the index scores for each state were ranked (Table 3) based on the average county scores (Table 4). Massachusetts ranks first, with top average scores in both the organizational and built capital dimensions. Colorado (2<sup>nd</sup>), North Dakota (3<sup>rd</sup>), Montana (4<sup>th</sup>), and Kansas (5<sup>th</sup>) make up the top five overall index scores. On the other end, Georgia has the weakest overall score, ranking no better than 33<sup>rd</sup> in any of the six dimensions. The other states with the weakest overall scores hail from the southern region: Alabama (46<sup>th</sup>), South Carolina (47<sup>th</sup>), Kentucky (48<sup>th</sup>), and Mississippi (49<sup>th</sup>). Of the ten states with the weakest overall scores, all of them can be considered “southern” (Cooper et al. 2008)

Table 3. NPOPCE Total and Dimension Ranks by State and Region (N=3125 Counties)

State	Overall	Constructive	Finance	Health	Organizational	Nonprofit	Cultural
North Central Region	3	2	1	4	4	3	2
Northeast Region	2	3	4	1	1	2	3
Southern Region	4	4	3	3	3	4	4
Western Region	1	1	2	2	2	1	1
Alabama	46	48	26	36	21	46	45
Alaska	34	23	49	44	44	31	15
Arizona	38	39	50	22	9	41	38
Arkansas	42	44	12	34	37	45	41
California	12	28	45	5	3	11	24
Colorado	2	2	9	17	29	4	2
Connecticut	10	29	46	2	2	9	28
33Delaware	18	27	35	8	5	26	29
Florida	30	32	43	13	11	43	42
Georgia	50	41	42	40	33	48	50
Hawaii	17	22	39	4	7	20	21
Idaho	19	5	8	21	47	39	19
Illinois	33	33	10	41	18	38	44
Indiana	35	37	22	26	22	15	31
Iowa	22	17	5	35	40	22	20
Kansas	5	19	3	29	42	6	1
Kentucky	48	47	25	25	41	47	47
Louisiana	43	46	29	24	28	42	46
Maine	14	11	34	19	25	7	5
Maryland	15	20	18	3	10	14	35
Massachusetts	1	1	41	7	1	2	4
Michigan	28	25	15	20	19	30	30
Minnesota	20	12	7	49	27	17	10

Table 3. NPOPCE Total and Dimension Ranks by State and Region (N=3125 Counties) (Continued)

State	Overall	Constructive	Finance	Health	Organizational	Related	Cultural
Mississippi	49	50	23	42	39	35	49
Missouri	41	36	11	50	31	37	37
Montana	4	3	6	37	48	3	3
Nebraska	6	7	2	32	45	25	18
Nevada	32	40	44	33	34	19	6
New Hampshire	24	13	48	15	17	16	16
New Jersey	8	21	38	1	4	33	39
New Mexico	31	26	20	30	36	21	22
New York	21	31	36	16	8	12	14
North Carolina	36	24	37	38	16	28	33
North Dakota	3	9	1	31	49	23	13
Ohio	39	43	32	28	14	34	40
Oklahoma	40	35	17	47	32	40	23
Oregon	13	15	16	11	20	8	8
Pennsylvania	26	38	31	9	6	29	36
Rhode Island	16	16	47	6	12	10	11
South Carolina	47	45	40	45	15	44	43
South Dakota	7	6	4	48	50	18	7
Tennessee	45	49	28	27	24	49	32
Texas	37	34	21	46	26	36	25
Utah	27	10	30	10	46	50	34
Vermont	11	8	33	18	35	1	12
Virginia	25	30	13	14	30	13	27
Washington	23	14	24	23	13	24	17
West Virginia	44	42	27	39	38	27	48
Wisconsin	29	18	14	43	23	32	26
Wyoming	9	4	19	12	43	5	9

Note: Washington D.C. is excluded because of skewed outlier inputs. The dimension variables come from the 2017 North American Industry Classification System data on industries with additional calculations by author

Table 4. NPOPCE Total and Dimension Standardized Means by State and Region (N=3125 Counties)

<b>State</b>	<b>Overall</b>	<b>Constructive</b>	<b>Finance</b>	<b>Health</b>	<b>Organizational</b>	<b>Nonprofit</b>	<b>Cultural</b>
North Central Region	0.18507	0.17413	0.51265	-0.13037	-0.09349	0.03681	0.08743
Northeast Region	0.24806	0.13141	-0.40875	0.40479	0.4444	0.18942	0.03275
Southern Region	-0.34098	-0.36297	-0.26185	-0.06487	-0.0624	-0.14186	-0.16274
Western Region	0.43474	0.67386	-0.16438	0.21628	0.05826	0.2308	0.29268
Alabama	-0.46851	-0.60562	-0.25308	-0.11776	0.02135	-0.22445	-0.25618
Alaska	-0.17814	0.14452	-0.75601	-0.22364	-0.31102	-0.06225	0.14651
Arizona	-0.27145	-0.40041	-0.83405	0.14047	0.65482	-0.1871	-0.19629
Arkansas	-0.35656	-0.48566	0.12783	-0.10953	-0.20196	-0.21592	-0.20213
California	0.48447	-0.00594	-0.62612	0.73999	1.25769	0.17288	-0.00886
Colorado	1.11731	1.60607	0.14895	0.21927	-0.1148	0.71389	0.92545
Connecticut	0.57329	-0.01259	-0.68345	0.89132	1.41154	0.2425	-0.04329
Delaware	0.35528	0.00405	-0.40934	0.61801	0.98418	0.0132	-0.08247
Florida	-0.07858	-0.1529	-0.59187	0.4328	0.51833	-0.21008	-0.21867
Georgia	-0.61693	-0.42199	-0.58139	-0.16334	-0.16965	-0.25818	-0.30304
Hawaii	0.38315	0.14751	-0.53101	0.76368	0.69322	0.11038	0.03057
Idaho	0.30032	1.03518	0.1494	0.16763	-0.32998	-0.14935	0.08375
Illinois	-0.16108	-0.17933	0.14827	-0.16926	0.11907	-0.14576	-0.25209
Indiana	-0.18276	-0.34493	-0.20285	-0.01576	-0.00211	0.15171	-0.13264
Iowa	0.21334	0.27956	0.63671	-0.11766	-0.22615	0.08053	0.03297
Kansas	0.84025	0.19898	1.44624	-0.03537	-0.26512	0.34874	0.94325
Kentucky	-0.5273	-0.60039	-0.24765	-0.0006	-0.2503	-0.24802	-0.27172
Louisiana	-0.43576	-0.52236	-0.28495	0.02609	-0.10069	-0.19198	-0.25994
Maine	0.44791	0.81309	-0.38453	0.18127	-0.04518	0.33118	0.52005
Maryland	0.43554	0.16496	-0.1255	0.77338	0.58284	0.15474	-0.17304
Massachusetts	1.48161	1.73459	-0.55739	0.68593	1.48731	0.72093	0.56107
Michigan	0.05622	0.08254	-0.0279	0.17119	0.11457	-0.05951	-0.08384
Minnesota	0.26016	0.55254	0.17219	-0.30678	-0.05594	0.14359	0.32607

Table 4. NPOPCE Total and Dimension Standardized Means by State and Region (N=3125 Counties) (Continued)

State	Overall	Constructive	Finance	Health	Organizational	Nonprofit	Cultural
Mississippi	-0.5602	-0.71023	-0.21259	-0.2058	-0.21893	-0.08616	-0.28732
Missouri	-0.33116	-0.32819	0.13382	-0.34815	-0.14637	-0.12344	-0.19602
Montana	0.86884	1.3986	0.40034	-0.13153	-0.33339	0.71921	0.67245
Nebraska	0.76718	0.91583	1.78676	-0.09968	-0.31571	0.01808	0.10406
Nevada	-0.14871	-0.40672	-0.60624	-0.10204	-0.17861	0.12592	0.45828
New Hampshire	0.14556	0.40766	-0.7535	0.42173	0.1222	0.14608	0.13089
New Jersey	0.60064	0.15458	-0.50402	1.43666	1.07915	-0.07767	-0.19757
New Mexico	-0.09686	0.02192	-0.17212	-0.04038	-0.19566	0.09445	0.01249
New York	0.2284	-0.13578	-0.48606	0.33868	0.69322	0.16635	0.15643
North Carolina	-0.19807	0.10371	-0.49759	-0.13857	0.12783	-0.0284	-0.16122
North Dakota	0.88592	0.86791	1.94922	-0.0904	-0.34415	0.0746	0.19873
Ohio	-0.2728	-0.47587	-0.32163	-0.02755	0.27819	-0.07833	-0.20156
Oklahoma	-0.33055	-0.31451	-0.09919	-0.2737	-0.14874	-0.17387	0.00355
Oregon	0.4813	0.37598	-0.08213	0.44911	0.08923	0.32514	0.36245
Pennsylvania	0.10023	-0.36062	-0.29747	0.52185	0.70154	-0.05642	-0.17489
Rhode Island	0.42606	0.33622	-0.69472	0.72022	0.48954	0.1754	0.32123
South Carolina	-0.50075	-0.49099	-0.53435	-0.23397	0.1835	-0.2127	-0.24757
South Dakota	0.62068	0.99401	0.93243	-0.29582	-0.34959	0.12687	0.43588
Tennessee	-0.45025	-0.6366	-0.27173	-0.02358	-0.04032	-0.26768	-0.139
Texas	-0.2594	-0.24171	-0.1757	-0.26874	-0.04945	-0.09617	-0.01723
Utah	0.09702	0.81404	-0.29465	0.48942	-0.32892	-0.33537	-0.16233
Vermont	0.53265	0.88052	-0.38097	0.21451	-0.18011	0.89966	0.24593
Virginia	0.14502	-0.06985	0.04827	0.42604	-0.12405	0.15584	-0.04074
Washington	0.21166	0.38528	-0.24088	0.0542	0.30666	0.05029	0.12517
West Virginia	-0.44147	-0.42892	-0.25645	-0.14776	-0.21858	-0.01374	-0.28614
Wisconsin	-0.05216	0.21415	-0.01183	-0.20978	-0.02746	-0.07388	-0.0314
Wyoming	0.5777	1.13192	-0.14906	0.44828	-0.2967	0.35365	0.33166

Note: Washington D.C. is excluded because of skewed outlier inputs. The dimension variables come from the 2017 North American Industry Classification System data on industries with additional calculations by author.

Likewise, the overall and individual indices were calculated for each of the four USDA Rural Development Regions based on the average index scores for the counties in each of the four regions (Table 3 and Table 4). The Western Region had the strongest overall score, with top scores in the constructive, nonprofit, and cultural rankings. The Southern Region, as the individual state results would suggest, had the weakest overall index score and ranked either worst or second worst in each of the six dimensions.

Using Mississippi as a preliminary example for this project, these same analyses was performed at the county level for the entire state (Table 5 and Table 6). In Mississippi, Sharkey received the strongest overall score, with an extremely high (three standard deviations outside the mean value) score in the nonprofit dimensions. The rest of the top five strongest scores are in counties with much larger populations. Hinds (2<sup>nd</sup>), Lee (3<sup>rd</sup>), Lauderdale (4<sup>th</sup>), and Lafayette (5<sup>th</sup>) range in size from 53,014 (Lafayette) to 234,234 (Hinds) people but are all well above the state average of 36,456 persons. Therefore, Sharkey's small population (4,594) indicates that its high score is likely an outlier. This relationship between population and overall score can be seen at the other end of the ranking as rural counties rank weakly in the overall index. The weakest score was from Greene county, with Benton (81<sup>st</sup>), George (80<sup>th</sup>), Claiborne (79<sup>th</sup>), and Walthall (78<sup>th</sup>) counties rounding out the bottom five overall scores. All of these, other than George (population 23,432) had a population lower than 15,000 in the 2016 Population Estimates. The role of population, and the related agglomeration effects of resource clustering (O'Sullivan 2012; Partridge and Rickman 2008) is certainly an area worthy of more investigation but is currently outside the scope of this project.

Table 5. NPOPCE Mississippi County Rankings (N=82 Counties)

County	Overall	Constructive	Finance	Health	Organizational	Nonprofit	Cultural
Adams	17	8	42	5	25	40	14
Alcorn	16	56	22	8	23	20	17
Amite	72	66	70	51	48	61	62
Attala	48	39	58	31	46	59	60
Benton	81	80	59	80	76	80	80
Bolivar	9	26	21	19	18	4	15
Calhoun	74	78	65	52	54	65	66
Carroll	66	12	81	81	77	15	36
Chickasaw	39	47	51	24	53	25	39
Choctaw	76	9	78	74	71	76	76
Claiborne	79	81	67	57	80	81	81
Clarke	60	79	14	65	36	54	55
Clay	26	46	19	25	38	13	34
Coahoma	6	63	7	4	52	19	4
Copiah	42	43	50	36	35	35	46
Covington	53	20	40	53	44	58	59
De Soto	28	29	41	27	5	41	26
Forrest	15	33	12	13	9	27	41
Franklin	61	61	5	79	63	71	72
George	80	75	80	68	50	63	64
Greene	82	76	79	77	75	79	79
Grenada	19	50	17	2	41	57	58
Hancock	43	38	60	37	33	45	20
Harrison	11	17	24	14	2	32	19
Hinds	2	40	29	7	1	5	9
Holmes	30	82	33	58	55	3	30
Humphreys	65	31	39	76	74	78	78
Issaquena	46	3	1	82	81	82	82
Itawamba	62	5	77	59	49	62	63
Jackson	24	44	63	21	4	42	25
Jasper	77	64	61	70	58	66	67



Table 5. NPOPCE Mississippi County Rankings (N=82 Counties) (Continued)

County	Overall	Constructive	Finance	Health	Organizational	Nonprofit	Cultural
Jefferson	55	58	75	61	82	6	31
Jefferson Davis	70	60	76	42	62	70	71
Jones	23	11	69	28	7	17	24
Kemper	59	22	52	60	72	77	77
Lafayette	5	35	20	3	14	7	32
Lamar	22	28	23	15	16	38	48
Lauderdale	4	7	16	6	6	10	18
Lawrence	68	67	72	45	51	64	65
Leake	73	74	64	56	40	56	57
Lee	3	16	6	1	8	30	7
Leflore	12	14	3	17	42	23	12
Lincoln	21	18	46	23	15	9	33
Lowndes	18	4	37	12	11	37	23
Madison	7	6	2	11	10	22	27
Marion	33	2	47	35	24	48	50
Marshall	47	30	55	69	37	44	6
Monroe	20	15	36	16	21	43	16
Montgomery	34	55	11	49	65	14	35
Neshoba	38	21	13	55	27	36	47
Newton	37	32	10	38	39	55	56
Noxubee	71	36	62	72	70	75	75
Oktibbeha	25	51	28	29	20	12	22
Panola	35	45	38	33	26	24	38
Pearl River	57	57	68	43	19	46	49
Perry	45	49	32	32	66	73	74
Pike	14	23	9	9	13	29	42
Pontotoc	52	71	49	54	31	39	13
Prentiss	32	19	25	26	43	33	44
Quitman	27	59	54	62	78	2	29
Rankin	10	1	34	10	3	31	43
Scott	54	24	48	48	34	53	54

Table 5. NPOPCE Mississippi County Rankings (N=82 Counties) (Continued)

County	Overall	Constructive	Finance	Health	Organizational	Nonprofit	Cultural
Sharkey	1	37	4	22	73	1	28
Simpson	50	27	66	34	30	51	52
Smith	75	53	57	73	59	67	68
Stone	49	48	30	64	69	26	40
Sunflower	31	41	18	71	45	11	10
Tallahatchie	69	69	73	67	56	21	37
Tate	58	52	56	44	29	50	51
Tippah	56	42	82	39	28	49	8
Tishomingo	29	62	26	40	67	28	2
Tunica	36	72	35	78	79	16	3
Union	41	34	71	30	22	47	11
Walthall	78	77	74	50	64	72	73
Warren	13	10	43	20	17	18	5
Washington	8	13	8	18	12	8	21
Wayne	67	70	45	63	47	60	61
Webster	51	54	27	41	61	69	70
Wilkinson	40	68	44	46	68	74	1
Winston	44	25	31	47	32	52	53
Yalobusha	63	65	15	75	60	68	69
Yazoo	64	73	53	66	57	34	45

The dimension variables come from the 2017 North American Industry Classification System data on industries with additional calculations by author.

Table 6. NPOPCE Total and Dimension Standardized Means for Mississippi Counties (N=82 Counties)

County	Overall	Constructive	Finance	Health	Organizational	Nonprofit	Cultural
Adams	-0.00387	-0.37093	-0.21023	1.11661	-0.20999	-0.21814	-0.09724
Alcorn	0.02976	-0.86664	0.07193	1.04791	-0.19786	0.20884	-0.14944
Amite	-1.12267	-0.95531	-0.6224	-0.6545	-0.3191	-0.50004	-0.41994
Attala	-0.81151	-0.66599	-0.46216	-0.14187	-0.31304	-0.50004	-0.41994
Benton	-1.38222	-1.13973	-0.46552	-1.35578	-0.3979	-0.50004	-0.41994
Bolivar	0.22061	-0.57302	0.0847	0.65304	-0.16149	0.8225	-0.11715
Calhoun	-1.15915	-1.11815	-0.55251	-0.65686	-0.33728	-0.50004	-0.41994
Carroll	-1.06144	-0.40445	-1.01522	-1.40479	-0.3979	0.36156	-0.41994
Chickasaw	-0.61346	-0.78606	-0.35191	-0.00549	-0.33122	0.00786	-0.41994
Choctaw	-1.18781	-0.37782	-0.86898	-1.12141	-0.38578	-0.50004	-0.41994
Claiborne	-1.23916	-1.16106	-0.59438	-0.7362	-0.42215	-0.50004	-0.41994
Clarke	-0.98167	-1.13578	0.15704	-0.85714	-0.27667	-0.50004	-0.41994
Clay	-0.3339	-0.77947	0.11552	-0.01924	-0.29485	0.3811	-0.41994
Coahoma	0.33053	-0.94549	0.31665	1.38596	-0.33122	0.2202	0.40454
Copiah	-0.71922	-0.72723	-0.30626	-0.29251	-0.27667	-0.19326	-0.41994
Covington	-0.84434	-0.52381	-0.17087	-0.68965	-0.30091	-0.50004	-0.41994
De Soto	-0.36374	-0.58312	-0.18248	-0.05821	0.26283	-0.24541	-0.30334
Forrest	0.04594	-0.60279	0.21183	0.89996	0.11129	-0.03529	-0.41994
Franklin	-1.01326	-0.92516	0.41898	-1.34315	-0.36153	-0.50004	-0.41994
George	-1.35149	-1.06325	-0.95763	-0.92334	-0.3191	-0.50004	-0.41994
Greene	-1.45441	-1.09877	-0.92861	-1.15829	-0.3979	-0.50004	-0.41994
Grenada	-0.06725	-0.81776	0.14287	1.70865	-0.30091	-0.50004	-0.41994
Hancock	-0.72061	-0.64983	-0.46813	-0.31967	-0.27061	-0.30979	-0.20215
Harrison	0.17684	-0.50528	0.02958	0.83007	0.53561	-0.14888	-0.1687
Hinds	0.69134	-0.66887	-0.03721	1.05781	1.12966	0.69673	-0.00479
Holmes	-0.42691	-1.16119	-0.07321	-0.73685	-0.33728	1.42219	-0.41994
Humphreys	-1.04325	-0.60121	-0.1636	-1.14144	-0.3979	-0.50004	-0.41994
Issaquena	-0.75628	-0.14143	0.76221	-1.59773	-0.43427	-0.50004	-0.41994

Table 6. NPOPCE Total and Dimension Standardized Means for Mississippi Counties (N=82 Counties) (Continued)

<b>County</b>	<b>Overall</b>	<b>Constructive</b>	<b>Finance</b>	<b>Health</b>	<b>Organizational</b>	<b>Nonprofit</b>	<b>Cultural</b>
Itawamba	-1.0221	-0.32796	-0.82883	-0.76248	-0.3191	-0.50004	-0.41994
Jackson	-0.31298	-0.76125	-0.50845	0.5701	0.27495	-0.25021	-0.27694
Jasper	-1.19541	-0.95091	-0.48203	-1.00136	-0.34335	-0.50004	-0.41994
Jefferson	-0.87015	-0.91042	-0.7862	-0.80646	-0.44033	0.67783	-0.41994
Jefferson Davis	-1.10781	-0.92394	-0.81343	-0.40616	-0.36153	-0.50004	-0.41994
Jones	-0.30049	-0.40405	-0.60924	-0.06322	0.15978	0.27574	-0.27193
Kemper	-0.97301	-0.5364	-0.35429	-0.80309	-0.39184	-0.50004	-0.41994
Lafayette	0.38635	-0.61595	0.10795	1.6066	-0.11906	0.6647	-0.41994
Lamar	-0.16034	-0.57459	0.04819	0.81553	-0.13725	-0.20877	-0.41994
Lauderdale	0.46672	-0.36421	0.1509	1.09453	0.24464	0.51123	-0.16269
Lawrence	-1.07747	-0.9569	-0.62667	-0.50192	-0.32516	-0.50004	-0.41994
Leake	-1.13546	-1.05459	-0.51386	-0.72779	-0.29485	-0.50004	-0.41994
Lee	0.55624	-0.4786	0.3454	1.78338	0.13553	-0.08636	0.05361
Leflore	0.12255	-0.4441	0.46898	0.68395	-0.30091	0.08221	-0.08668
Lincoln	-0.14835	-0.50888	-0.25458	0.34325	-0.11906	0.51971	-0.41994
Lowndes	-0.00438	-0.2986	-0.14231	0.91502	-0.00995	-0.20474	-0.25092
Madison	0.29726	-0.33701	0.52282	0.92369	0.06279	0.09708	-0.32229
Marion	-0.5332	0.03265	-0.2632	-0.28258	-0.20393	-0.50004	-0.41994
Marshall	-0.76554	-0.58348	-0.39458	-0.99295	-0.27667	-0.25451	0.14219
Monroe	-0.12389	-0.44733	-0.12155	0.77634	-0.17968	-0.25348	-0.1377
Montgomery	-0.54345	-0.86557	0.24733	-0.62545	-0.37366	0.36835	-0.41994
Neshoba	-0.61299	-0.52514	0.20674	-0.72472	-0.22211	-0.20014	-0.41994
Newton	-0.60538	-0.60206	0.27684	-0.32159	-0.29485	-0.50004	-0.41994
Noxubee	-1.12212	-0.61721	-0.48447	-1.06213	-0.38578	-0.50004	-0.41994
Oktibbeha	-0.32491	-0.82368	-0.03354	-0.12805	-0.17362	0.38688	-0.21688
Panola	-0.56906	-0.77669	-0.14286	-0.20962	-0.21605	0.01654	-0.41994
Pearl River	-0.93239	-0.90271	-0.59698	-0.45187	-0.16756	-0.34013	-0.41994
Perry	-0.75586	-0.81503	-0.07163	-0.14353	-0.37972	-0.50004	-0.41994
Pike	0.05713	-0.54015	0.27906	1.02214	-0.08269	-0.05854	-0.41994

Table 6. NPOPCE Total and Dimension Standardized Means for Mississippi Counties (N=82 Counties) (Continued)

County	Overall	Constructive	Finance	Health	Organizational	Nonprofit	Cultural
Pontotoc	-0.84	-1.02614	-0.29599	-0.70313	-0.25848	-0.21468	-0.09328
Prentiss	-0.46595	-0.51942	0.0011	-0.03704	-0.30091	-0.15156	-0.41994
Quitman	-0.35001	-0.91183	-0.36399	-0.80909	-0.41003	1.84787	-0.41994
Rankin	0.20531	0.04134	-0.09344	0.97809	0.2992	-0.14428	-0.41994
Scott	-0.85636	-0.54866	-0.28368	-0.61969	-0.27061	-0.50004	-0.41994
Sharkey	0.91764	-0.64349	0.44649	0.55212	-0.3979	3.34022	-0.41994
Simpson	-0.82515	-0.57375	-0.57932	-0.21397	-0.25848	-0.50004	-0.41994
Smith	-1.1836	-0.8401	-0.44571	-1.10566	-0.34941	-0.50004	-0.41994
Stone	-0.81189	-0.80708	-0.04763	-0.83216	-0.38578	-0.01163	-0.41994
Sunflower	-0.46325	-0.68596	0.14027	-1.01079	-0.30091	0.48289	-0.04488
Tallahatchie	-1.08384	-1.0086	-0.76549	-0.92233	-0.33728	0.1032	-0.41994
Tate	-0.93312	-0.83079	-0.4007	-0.48364	-0.24636	-0.50004	-0.41994
Tippah	-0.90582	-0.68755	-1.06059	-0.3454	-0.2403	-0.50004	0.03735
Tishomingo	-0.36853	-0.9275	-0.00205	-0.38273	-0.37972	-0.04788	0.61526
Tunica	-0.59802	-1.02727	-0.09505	-1.21574	-0.41003	0.3529	0.55645
Union	-0.68583	-0.60586	-0.62408	-0.1329	-0.18574	-0.50004	-0.06335
Walthall	-1.23575	-1.11716	-0.76585	-0.65255	-0.36759	-0.50004	-0.41994
Warren	0.10209	-0.39985	-0.22839	0.64587	-0.13725	0.24213	0.21725
Washington	0.2751	-0.44279	0.28832	0.66312	-0.02207	0.60138	-0.2098
Wayne	-1.07489	-1.02467	-0.23766	-0.82726	-0.31304	-0.50004	-0.41994
Webster	-0.82699	-0.85185	-0.02104	-0.39683	-0.36153	-0.50004	-0.41994
Wilkinson	-0.62737	-0.98549	-0.23558	-0.51265	-0.38578	-0.50004	0.68947
Winston	-0.75442	-0.55399	-0.0685	-0.5184	-0.26454	-0.50004	-0.41994
Yalobusha	-1.03118	-0.95184	0.15643	-1.1218	-0.34941	-0.50004	-0.41994
Yazoo	-1.04112	-1.04433	-0.35588	-0.87622	-0.34335	-0.17783	-0.41994

The dimension variables come from the 2017 North American Industry Classification System data on industries with additional calculations by author.

## *National Findings*

*Poverty-related outcomes.* Looking at the poverty related outcomes measures, at the national level (Table 7) the overall index and six individual dimensions all correlate consistently at a test p-value of .001 with all four measures: median household income, percent of population below the poverty line, percent of population without a high school degree, and percent of population with a Bachelor's degree. The one dimension that does not correlate with a poverty outcome at the .001 p level, finance, still weakly correlates in the predicted direction.

*Metro status.* Nationally, the direction of the correlations remained the same for both the metro and nonmetro counties, though there were differences in the strength of some of those correlations. Generally, the overall national and national metro tables are consistent. Notable differences between the national metro (Table 7) and national nonmetro correlations (Table 8) include the relationship between the percentage of people with Bachelor's degrees' measure, the overall index, and most of the individual dimensions. Considering the overall national (Table 7) and the overall nonmetro correlations (Table 9) there are again distinct differences in the strength of the correlations between the percent with a Bachelor's degree and the other indices.

*Racial characteristics.* Nationally, there is a significant, but slight, negative relationship between the percentage of a county that is nonwhite and the nonprofit and private organizational and physical capital score of that county (Table 10). There are stronger negative relationships with both the constructive and finance dimensions and weakly positive relationships between the percentage of a county that is nonwhite and the health, organizational, nonprofit, and cultural dimensions.

Table 7. National NPOPCE and Poverty Related Outcomes (N=3125)

	<b>Overall</b>	<b>Constructive</b>	<b>Finance</b>	<b>Health</b>	<b>Organizational</b>	<b>Nonprofit</b>	<b>Cultural</b>
Median Household Income	.388** [.363, .416]	.423** [.398, .448]	0.013 [-.016, .043]	.256** [.227, .283]	.331** [.304, .358]	.223** [.195, .251]	.246** [.218, .273]
% Below Poverty	-.455** [-.470, -.421]	-.558** [-.580, -.536]	-.237** [-.264, -.209]	-.155** [-.183, -.127]	-.097** [-.126, -.067]	-.166** [-.196, -.135]	-.224** [-.253, -.195]
% High School Education	.551** [.531, .574]	.546** [.524, .568]	.280** [.253, .306]	.280** [.251, .306]	.190** [.161, .218]	.253** [.224, .280]	.276** [.247, .302]
% Bachelor's Degree	.623** [.604, .643]	.451** [.427, .474]	.106** [.076, .133]	.489** [.466, .513]	.445** [.420, .469]	.371** [.344, .395]	.358** [.331, .382]

Notes: Correlations are computed using Spearman's Rho. Bootstrap confidence intervals are calculated to the 90% level. Median household income, % Below Poverty, % High School Education, and % Bachelor's Degree all come from the American Community Survey Five-Year Estimates. The dimension variables come from the 2017 North American Industry Classification System data on industries with additional calculations by author.

\*\*Correlation is significant at the 0.01 p level.

Table 8. National Metro NPOPCE and Poverty Related Outcomes (N=1165)

	<b>Overall</b>	<b>Constructive</b>	<b>Finance</b>	<b>Health</b>	<b>Organizational</b>	<b>Nonprofit</b>	<b>Cultural</b>
Median Household Income	.319** [.275, .366]	.433** [.393, .474]	0.011 [-.035, .060]	.231** [.184, .281]	.232** [.184, .278]	.180** [.133, .227]	.146** [.100, .194]
% Below Poverty	-.245** [-.292, -.199]	-.519** [-.556, -.482]	-.146** [-.193, -.096]	-.111** [-.159, -.062]	-.043** [-.092, -.006]	-.147** [-.198, -.097]	-.139** [-.190, -.092]
% High School Education	.409** [.369, .449]	.413** [.372, .454]	.295** [.250, .336]	.288** [.240, .333]	.208** [.159, .255]	.265** [.216, .311]	.253** [.205, .301]
% Bachelor's Degree	.680** [.651, .709]	.293** [.246, .340]	.195** [.147, .240]	.588** [.554, .619]	.573** [.538, .605]	.460** [.418, .502]	.385** [.337, .430]

Table 9. National Nonmetro NPOPCE and Poverty Related Outcomes (N=1960)

	<b>Overall</b>	<b>Constructive</b>	<b>Finance</b>	<b>Health</b>	<b>Organizational</b>	<b>Nonprofit</b>	<b>Cultural</b>
Median Household Income	.448** [.416, .479]	.519** [.489, .546]	0.247** [.212, .283]	.150** [.111, .185]	.096** [.060, .135]	.179** [.144, .214]	.285** [.247, .321]
% Below Poverty	-.535** [-.563, -.505]	-.603** [-.628, -.577]	-.394** [-.427, -.361]	-.120** [-.159, -.080]	-.027 [-.013, .064]	-.143** [-.180, -.106]	-.257** [-.294, -.222]
% High School Education	.612** [.586, .638]	.631** [.606, .654]	.400** [.368, .432]	.220** [.178, .258]	.041** [.002, .079]	.216** [.178, .252]	.281** [.245, .316]
% Bachelor's Degree	.641** [.617, .665]	.616** [.592, .639]	.319** [.285, .353]	.339** [.303, .373]	.119** [.082, .156]	.289** [.254, .324]	.353** [.319, .385]

Notes: Correlations are computed using Spearman's Rho. Bootstrap confidence intervals are calculated at the 90% level. Median household income, % Below Poverty, % High School Education, and % Bachelor's Degree all come from the American Community Survey Five-Year Estimates. The dimension variables come from the 2017 North American Industry Classification System data on industries with additional calculations by author.

\*\*Correlation is significant at the 0.01 p level.



Table 10. National NPOPCE and Racial Characteristics (N=3125)

	<b>Overall</b>	<b>Constructive</b>	<b>Finance</b>	<b>Health</b>	<b>Organizational</b>	<b>Nonprofit</b>	<b>Cultural</b>
% of County	-.115**	-.318**	-.319**	.119**	.269**	.076**	.022
Population Non-White	[-.146, -.084]	[-.348, -.288]	[-.346, -.293]	[.087, .148]	[.240, .299]	[.044, .106]	[-.010, .052]

Notes: Correlations are computed using Spearman's Rho. Bootstrap confidence intervals are calculated to the 90% level. The dimension variables come from the 2017 North American Industry Classification System data on industries with additional calculations by author.

\*\*Correlation is significant at the 0.01 p level.

\*Correlation is a significant at the 0.05 p level.

### *Mississippi Findings*

*Poverty-related outcomes.* In Mississippi (Table 11) there are relatively weak correlations between the overall index and the median household income and percentage of the county below poverty, but significantly strong relationships between the overall index and education outcomes. Similarly, the organizational dimension had significantly strong relationships with all four of the outcomes.

*Metro status.* Considering Mississippi, it should be noted that the sample sizes for both groups are smaller in Mississippi (82 counties); however, the data do point out some interesting conclusions (Tables 12 and 13). The strength of the correlations between the overall index and each of the outcome measures is different in Mississippi than in the national data. Similarly, the educational attainment outcomes had dramatically stronger relationships with nearly all of the indices in the metro counties. In the Mississippi metro counties, the role of nonprofit and private organizational and physical capital seems extremely highly correlated with desired outcomes in education, including an extremely strong correlation value of  $r=.858$  between the overall index and the percent of the population with a Bachelor's degree.

*Racial characteristics.* Considering the racial history of Mississippi (Cobb 1994), testing the role that race places in nonprofit and private organizational and physical capital resources is an important component of this initial analysis (Table 14). There is a slightly positive relationship between the percentage of county that is nonwhite and the overall index, though it is not statistically significant. The only significant correlations are the negative relationship between organizational capital and the percentage of the county that is non-white and the positive relationship between the nonprofit dimension and the percentage of the county that is nonwhite.

Table 11. Mississippi NPOPCE and Poverty Related Outcomes (N=82)

	<b>Overall</b>	<b>Constructive</b>	<b>Finance</b>	<b>Health</b>	<b>Organizational</b>	<b>Nonprofit</b>	<b>Cultural</b>
Median Household Income	.166 [-.028, .345]	.203 [.000, .372]	-.017 [-.021, .172]	.263* [.066, .429]	.542** [.382, .672]	.011 [-.200, .196]	.169 [-.017, .341]
% Below Poverty	.017 [-.173, -.213]	-.105 [-.278, .085]	-.125 [-.084, .319]	-0.095 [-.279, .103]	-.340** [-.498, -.149]	.127 [-.066, .305]	-.085 [-.266, .095]
% High School Education	.337** [.159, .501]	.303** [.123, .451]	.162 [-.014, .323]	.432** [.263, .574]	.554** [.394, .684]	.146 [-.042, .351]	.137 [-.038, .301]
% Bachelor's Degree	.651** [.519, .749]	.395** [.198, .557]	.407** [.247, .546]	.595** [.444, .700]	.554** [.386, .684]	.465** [.313, .615]	.377** [.204, .530]

Notes: Correlations are computed using Spearman's Rho. Bootstrap confidence intervals are calculated to the 90% level. Median household income, % Below Poverty, % High School Education, and % Bachelor's Degree all come from the American Community Survey Five-Year Estimates. The dimension variables come from the 2017 North American Industry Classification System data on industries with additional calculations by author.

\*\*Correlation is significant at the 0.01 p value level

Table 12. Mississippi Metro NPOPCE and Poverty Related Outcomes (N=17)

	<b>Overall</b>	<b>Constructive</b>	<b>Finance</b>	<b>Health</b>	<b>Organizational</b>	<b>Nonprofit</b>	<b>Cultural</b>
Median Household Income	.510* [.128, .750]	.684** [.354, .857]	.167 [-.300, .536]	.537* [.164, .759]	.652** [.306, .825]	.031 [-.380, .499]	.130 [-.338, .570]
% Below Poverty	-.395 [-.702, .047]	-.559* [-.811, -.138]	-.172 [-.526, .293]	-0.466 [-.751, -.017]	-.498* [-.781, -.033]	.113 [-.337, .486]	-.027 [-.447, .425]
% High School Education	.792** [.558, .905]	.748** [.424, .919]	.515* [.103, .759]	.828** [.585, .933]	.765** [.493, .878]	.323 [-.079, .701]	.096 [-.038, .541]
% Bachelor's Degree	.858** [.685, .933]	.639** [.250, .868]	.634** [.217, .863]	.749** [.457, .877]	.723** [.486, .871]	.664** [.348, .876]	.236 [-.232, .626]

Table 13. Mississippi Nonmetro NPOPCE and Poverty Related Outcomes (N=65)

	<b>Overall</b>	<b>Constructive</b>	<b>Finance</b>	<b>Health</b>	<b>Organizational</b>	<b>Nonprofit</b>	<b>Cultural</b>
Median Household Income	.033 [-.186, .253]	.103 [-.122, .309]	-0.063 [-.279, .170]	.133 [-.107, .356]	.429** [.201, .628]	-.050 [-.259, .194]	.107 [-.118, .372]
% Below Poverty	.161 [-.067, .365]	.030 [-.186, .26-]	.205 [-.036, .416]	.051 [-.182, .294]	-.223 [-.436, .021]	.147 [-.095, .357]	-.043 [-.278, .203]
% High School Education	.178 [-.043, .378]	.213 [.009, .401]	.100 [-.098, .290]	.285* [.063, .489]	.410** [.207, .593]	.089 [-.137, .323]	.073 [-.144, .285]
% Bachelor's Degree	.600** [.415, .735]	.379** [.152, .580]	.402** [.221, .562]	.568** [.402, .694]	.440** [.212, .619]	.447** [.244, .616]	.353** [.150, .538]

Notes: Correlations are computed using Spearman's Rho. Bootstrap confidence intervals are calculated to the 90% level. Median household income, % Below Poverty, % High School Education, and % Bachelor's Degree all come from the American Community Survey Five-Year Estimates. The dimension variables come from the 2017 North American Industry Classification System data on industries with additional calculations by author.

\*\*Correlation is significant at the 0.01 p level.

Table 14. Mississippi NPOPCE and Racial Characteristics Correlations (N=82)

	<b>Overall</b>	<b>Constructive</b>	<b>Finance</b>	<b>Health</b>	<b>Organizational</b>	<b>Nonprofit</b>	<b>Cultural</b>
% of County	.098	-.093	-.187	-.101	-.285**	.280*	.037
Population Non-White	[-.096, .282]	[-.279, .094]	[.003, .354]	[-.277, .081]	[-.469, .087]	[.083, .458]	[-.090, .250]

Notes: Correlations are computed using Spearman’s Rho. Bootstrapping confidence intervals are calculated to the 90% level. The dimension variables come from the 2017 North American Industry Classification System data on industries with additional calculations by author.

\*\*Correlation is significant at the 0.01 level.

\*Correlation is at the 0.05 p level.

### *General Conclusion*

. Despite these interesting findings, maybe the most important conclusion for this index is that at both the national and the state level, the overall index and the six dimensions all generally correlate in the theoretically expected direction. Nationally, the relationships between the overall index and the four poverty related measures are quite strong and statistically significant (Table 7). In the Mississippi correlations, the strength of the overall index and the four poverty related outcomes measures is weaker overall, but the relationships between the overall index and the poverty related outcomes are strong in the metro counties (Table 11).

## CHAPTER 5: DISCUSSION

This study sought to expand the understanding of organizational and physical capital community assets across the United States by synthesizing international human development literature (Sen 1988, 2006; Nussbaum 2011; Stiglitz et al. 2009) with localized measures of community capital (Flora and Flora 2013), asset building (Green and Haines 2012), and resilience (Holling 1973, Walker et al. 2004) to develop a comparable measurement tool for researchers, policymakers, foundations, and organizations. To influence change in communities, it is paramount that practitioners not only understand the existing resource environment of their own community, but also have some conception of how that community compares to others. This project provides a tool that can help policymakers, researchers, community organizations, and others make that comparison.

Likewise, this project allows us to begin asking and answering some questions about our common perceptions of poverty. As just the data from Mississippi show, the counties that people regularly perceive as “bad,” like the Delta counties, do not have the worst NPOPCE scores. Thus, is there possibly more opportunity in some of these places than commonly thought? Likewise, is it possible that over the last decade people have built stronger communities in some of these historically impoverished areas and these areas are poised to experience strong growth? These are the questions that this tool allows us to start asking.

### *Construction of a Community Physical Resource Index*

This tool uses publicly available NAICS establishment data to create an index of the organization and physical resource environment for each county in the United States. This index

uses these indicators as demonstrations of different forms of capital based on Flora and Flora's (2013) CCF that interact with one another to create more sustainable communities. By utilizing publicly available data that is updated in five-year cycles, this index can be recreated, amended, and updated. It is impossible to represent all of the vast differences that exist between the counties, states, and regions, but this index provides a unique look at what currently exists in both an organizational and physical sense. *Indices and Common Outcome Measures*

Developing the overall index and the individual dimension indices creates a useful tool for comparing counties, states, and regions. However, the tool would be deeply flawed if it did not associate with commonly accepted outcome measures of poverty. This is particularly important for assessing the validity of the overall measure. For example, if counties that had high standardized index scores also had high levels of poverty or vice versa, the index would do little to support common theoretical assumptions of capital forms. To test this, this study conducted Spearman's Rho correlations for four commonly accepted poverty-influenced outcomes. As predicted, the overall index for the national data correlated in the predicted directions; however, when just selecting for Mississippi counties there were several instances where the strength of the correlations varied widely in interesting ways.

To summarize, the overall nonprofit and private organizational and physical capital index provides a strong tool for researchers, policymakers, and stakeholders looking for a comparable measure of organizational and physical capital. At the national level, the strong correlations with common poverty related outcomes measures points to the strength of this index as an analytical tool. The lone dimension that did not correlate with one of the indicators, finance and median income, is worth investigating; there is basically no correlation between the dimension and the poverty outcome at all. One would assume that there would be some agglomeration effects of



banks in areas with high population, but that does not seem to be the case just looking at national data. Mapping this dimension alone might provide some answers. The Mississippi correlations also demonstrate that there are a number of unanswered questions. Why do the metro counties in Mississippi have such strong relationships between nonprofit and private organizational and physical capital? Why do all Mississippi counties have such strong relationships between these capitals and educational outcomes? In some ways, this project provides as many questions as it does answers.

#### *Overall Index, Short and Long-Term Well-Being, and Replicability*

Considering how this project correlates with measures of poverty outcomes consistently, it is clear that in many ways this index provides a measure for not just what currently exists in communities, but also as a potential tool to track the development of these capital forms over time. This index did little to measure the long-term impact that these types of capital can have; it analyzed data based on single point-in-time estimates rather than multi-year trends. Therefore, it might be interesting to look at the growth of counties, states, and regions from census period to census period. Now that this tool has been created, it can be updated going forward.

Discovering what is special about the outlier counties and states is beyond the current scope of this project, though the discussion of organizational and physical capital and poverty outcomes does provide some potential suggestions for the abnormalities found in Mississippi. It would be interesting to extend the county-level analysis performed on Mississippi to other states. A “report card” of sorts could even be created for each state demonstrating how well that state performs in each dimension or the counties with similar general characteristics (population, industry, migration, etc.) could be grouped and studied together.

#### *Challenges and Limitations*

Developing a new tool involved dealing with a host of unanticipated choices. Decisions had to be made on what data set to use, what indicators to include, and how each data point should be weighted (if at all). Then, once the tool was created, its validity within a limited timeframe. I want to use this section to acknowledge how these decisions were made and how they may have impacted the final result.

First, using the NAICS establishment data as a primary data source allowed me to focus on and fully utilize one data source. NAICS is the most consistent, publicly available, and regularly updated census of businesses and organizations available in North America. However, it does have one central shortcoming. NAICS codes are sorted into four, five, and six-digit codes corresponding to different industries, but the industries vary drastically in size. To create this index, industries were selected based on thematic fit and number of establishments, focusing on Mississippi and then looking nationally. After this first group of approximately thirty indicators were selected, those with limited variation between counties were excluded from the final index. For example, though there were 2,659 political organizations across the United States in the 2017 NAICS census, most counties either had one or none political organizations. Sufficient variation in this index was considered to be basically any indicator that had multiple instances of establishment values greater than one. The goal of this project was to create a nationally comparable index; whereas a researcher looking to use this same framework in a smaller region (NAICS data are available at the census tract level for metro areas) could choose a different set of indicators to answer his or her questions.

#### *Future Research*

One of the central intentions of this project was to provide future researchers and

policymakers with a new tool that they could use to understand the communities they serve. The Social Capital Index (Rupasingha, Goetz, Freshwater, 2006) is used regularly in the type of multivariate analyses that this index could be (Lee and Daniel 2013; Goetz et al. 2012). Ideally, this index has the ability to be used in similar ways.

Initially, it is easy to think of several ways this project can be used or expanded. Currently, this project only does a preliminary analysis of race; however, by creating a set of variables for more complete racial characteristics, it would be possible to see more completely how race related to the overall index and the individual dimension indices. This could be done in different states, across regions, and with a number of racial characteristics and would provide researchers with a more thorough understanding of how the relationships between nonprofit and private community development resources and race. Similarly, this project only displayed the data for the counties in Mississippi, but creating regional, congressional, or more developed national tools opens a new spectrum of opportunities to researchers. By identifying counties with similar index scores, but different outcomes, researchers can continue to explore the specific characteristics that help communities develop.

This is just a first iteration. Arguments can and should be made for the inclusion of new indicators and the exclusion of current ones; nonetheless, a tool now exists to compare the physical resource environments of communities that did not before. This project completed the goal of this thesis, and in doing so, opens up a host of new opportunities to those stakeholders seeking to better understand how to develop and maintain vibrant communities. In many ways, the creation of this tool serves as a culmination of the work that I have been a part of in communities across Mississippi over the last several years. These experiences shaped not just the

questions that inspired this project, but also its construction. A tool is only useful if the people it is intended for can use it, and I hope that I have created one here.

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## APPENDIX



## APPENDIX. DATA UTILIZATION WORKSHOP AND DISCUSSION

On Friday, March 23, 2018, the University of Mississippi (UM) Center for Population Studies (CPS) hosted a Data Utilization Workshop in Clarksdale, Mississippi. Many of the Center's partners were invited to this event held at the Coahoma County Higher Education Center, where three graduate students, myself included, presented on a variety of topics, with coordination assistance from Center staff. The purpose of the event was to engage with community development practitioners to share and improve data tools to inform their work.<sup>1</sup>

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<sup>1</sup> This event was conducted by the Center for Population Studies with support from the New Pathways to Health and Opportunity Initiative, Right! From the Start Initiative, Community Foundation of Northwest Mississippi, W.K. Kellogg Foundation, and the UM College of Liberal Arts through the Society and Health Minor. The views expressed at the event and in this document do not necessarily represent these partners.

After three presentations, the community partners provided feedback to the presenters via a focus group style discussion. Following the discussion, the community partners were given a paper survey to fill out and extra paper to provide commentary. The goal of this workshop was to provide an overview of various research projects that aim to inform community development and discuss possible implications of that research. With this, the hope was to provide new information and/or tools to practitioners actively engaged in community development.

There were 11 people who attended in person, and three who joined via video conference using the Zoom platform. Of these 14 participants, nine were white females and five were black females. The participants ranged in age from 20 years old to roughly 75 years old. The average age of attendees was roughly 35. The educational attainment makeup of the group is as follows: four have earned their bachelor's degree, seven have earned their master's degree, and one has earned her doctoral degree. Four of the women are currently employed with a school, college, or university. Ten women are currently employed with a non-profit organization, and one is currently employed with a for-profit business. Two attendees are currently enrolled in undergraduate studies at the University of Mississippi, taking the Society and Population Health course with Dr. John Green. Of the participants, half (seven) currently volunteer with at least one community-based organization.

The presentations provided information about health, hunger, resilience, community capitals, and spatial disadvantage. Each presentation lasted roughly 15 minutes, and there was time for questions both during and following the presentations. The first presentation, by Rachel Haggard, was on the Mississippi Health and Hunger Atlas and the Resilience Project. Second, I presented on my thesis for which I developed a national county-level built and organizational capital index. Lastly, Katrina Alford presented on her thesis, where she examined cumulative

spatial disadvantage and human and social capital at the county-level. Following each of the presentations, questions were asked. These questions ranged from clarification about data sourcing and analysis to explanations of findings and recommendations for further research.

The community-based nature of our all three of these projects was the inspiration for doing this community meeting, without community feedback, this research that is supposed to assist people and organizations is largely just self-serving for the researchers. To gather this feedback, Katrina and I led a focus group session asking four central discussion questions, passed out a survey to all of the attendees, and provided a method for more thorough paper comments. The survey instrument inquired about the understanding and usefulness of the topics presented on, the favorite and least favorite parts of the workshop, recommendations for how this type of workshop or training might be useful, as well as demographic characteristic information (age, sex/gender, race, level of education, and employment/volunteer involvement; see above). All of this information gathering was approved by IRB. Each of these processes is outlined below with a discussion of the feedback we received.

These questions were intended to inform the researchers about what was useful from the presentations and how these community leaders might benefit from the information and data presented. Katrina and I co-facilitated this discussion, where I primarily lead the conversation, and Katrina took notes on a flip chart; Rachel also took notes regarding participant responses on her lap top, which provided a more detailed account of the discussion to refer back to.

The first question was, “How would you interpret the meanings of these projects?” For the most part, the discussion led to what these projects mean for the attendees and their own work, as well as the work that they strive to do in their communities. One attendee noted that it is important to recognize how everything is linked – there are correlations between human and

social capital, income, resilience, and health that we do not always think about when considering our own community development work. Additionally, one attendee, who focuses on workforce development, noted how all three projects could be beneficial to her work. There was a large agreement that these projects meant possible support for grants in the future – these projects help support the work that they are doing and there is clear data to support their initiatives. One participant, who primarily works on the funding side, noted that these data can be helpful when outcomes are not obvious – community development is not an overnight process, and these data show how change and progress can and should look over time.

Secondly, we asked, “What additional issues do you think need attention?” One attendee, whose primary focus is health, noted additional variables to consider for the Mississippi Health and Hunger Atlas, which included: infant mortality, behavioral health, and the overall County Health Ranking. She also believed that the County Health Ranking data might be an interesting addition to my research. I found this especially interesting because in many ways, the County Health Rankings were an inspiration for this project. Rather than develop a measure of the overall personal health environment of a county, my measure sought to understand the overall physical and emotional capital health of a county. Looking at the relationships between these two measures is certainly an area of research that would be worth pursuing. Another participant encouraged Katrina to consider the Cumulative Spatial Disadvantage Index in comparison to the rest of the states. With all of this, she encouraged us to think about the policy implications of health in a community.

The third question was, “How could you use these findings to inform your program planning?” Personally, I believe that this was the most useful part of the discussion, as our hope was to inform policy and community development work. One attendee said that the pictures,

maps, and tools are useful, and are great for showing data in practice. This is something that I have tried to develop more fully for my final thesis presentation. Another participant praised the Atlas for being a printed out and aggregated tool – the Atlas is an easily accessible tool for people of all levels, students, professionals, and community leaders. She noted how something similar for both my and Katrina’s projects would be helpful, especially when considering how these data can be useful in practice. It is certainly possible to do something similar, or even online, for my index. One participant noted how these projects can be the bridge between the research and the field – presenting these data and findings to developers, board members, and the community can bring the data down to the community level, making it more easily accessible and more impactful

The final question, which had been discussed throughout the others, was “What recommendations do you have?” The one response we received to this question tied closely to bringing the data down to a community level. She suggested to build partnerships on the ground to help people translate these data and findings into action, where we can establish a “second layer” between the researchers and the field.

Next, on the separate sheets of paper, one green and one pink, attendees were asked to consider what was useful/helpful/interesting (green) and what was unclear or what should be considered for future studies (pink). Many of the green sheets responded to the presentations positively, where respondents noted how the work/research was interesting, and could be used in everyday work. We received fewer pink sheets than green sheets; however, one respondent did write that we should “be cautious about what this data tells us about where there are strengths, and what the limitations of this data are.” I do worry about overstating the importance of our projects, and so I am really happy that this attendee made a note of this.

Finally, we passed out a paper survey to the attendees. The survey asked participants to reflect upon three skills/topics and their knowledge and understanding based on their attendance and participation in the workshop. On a scale ranging from poor to excellent, four attendees noted that their understanding of identifying publically available data relevant to their communities as a result of this workshop was good and nine noted this as excellent. When asked about their understanding of interpreting data to better understand their communities, five participants responded with good, while eight said excellent. Concerning utilizing data to inform program planning, seven attendees said their understanding was good, and six said their understanding was excellent.

Attendees were then asked how useful the information they received will be in various parts of their work. In regards to their daily professional work, one participant noted that the information would be somewhat useful, six noted it as moderately useful, and seven reported that it would be highly useful. When asked about the usefulness of the information for their given organizations, six participants responded that it would be moderately useful, and eight responded that it would be highly useful. Concerning the usefulness for their community and voluntary activities, two participants replied that it would be somewhat useful, four noted that it would be moderately useful, and eight said highly useful. Lastly, when asked about the usefulness of the information in their continuing education, two of the attendees noted that it would be somewhat useful, five reported moderately useful, and seven noted highly useful.

The survey also asked participants to rate their level of agreement with two statements. In response to “Participation in this workshop provided me with information I did not previously have,” six attendees said they somewhat agreed, and eight said they strongly agreed. In response to “Participation in this workshop provided me with new skills for using data to address

problems in my community,” three noted they neither agreed nor disagreed, six said they somewhat agreed, and five said they strongly agreed.

Overall, I found this data utilization event to be extremely helpful. After completing this project, and understanding all of the theoretical and methodological choices that have to be made, it can sometimes be easy to forget that this work is based on helping create better communities. Over the last several years, working to help communities in Mississippi, especially those in the Mississippi Delta, I have learned that the community itself has to be at the forefront of everything that the university does; this event only reminded me of that yet again. Also striking to me was the community partners’ quick grasp of the idea of community capitals that all of our projects are somewhat based on. Though they may not have known the academic terminology, they fundamentally understood the role that reinforcing capital forms play in developing sustainable communities. This was just another reminder of the importance of connecting the work that we all do with the need and actions of our community membe

VITA

**Ryan Snow**

Oxford MS 38655  
rtsnow@go.olemiss.edu

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## EDUCATION

**Master of Arts**, Sociology, May 2018

University of Mississippi (Ole Miss), Oxford, MS

Thesis: *Measuring the Capabilities Infrastructure: A County-Level Index of Nonprofit and Private Sector Organizational and Physical Community Capital*

Thesis Advisor: Dr. John Green

**Bachelor of Arts**, Economics and Public Policy Leadership; May 2016, Magna Cum Laude

Sally McDonnell Barksdale Honors College at the University of Mississippi, Oxford, MS

Senior Thesis: *The Entrepreneurship Center at the Mississippi Development Authority: An Assessment of the State’s Small Business Engine*

Thesis Advisor: Dr. Melissa Bass

## **HONORS AND AFFILIATIONS**

Larry DeBord Award for Outstanding Graduating Sociology Master's Student

McLean Institute Innovation Fellow, 2016 - present

McLean Institute Innovation Scholar 2014-2016

Phi Beta Kappa, inducted 2015

Who's Who Among Colleges and Universities, inducted 2014

Phi Kappa Phi, inducted 2014

Order of Omega, Inducted 2014

## **RELATED EXPERIENCE**

### **Undergraduate Innovation Scholar and Graduate Innovation Fellow**

McLean Institute for Community Service and Public Engagement

University of Mississippi, Oxford, MS

August 2016 – May 2018

- Assisted in the management of \$1.6 million dollar grant through the Robert M. Hearin Support Foundation tasked with stimulating entrepreneurship and economic development in Mississippi.
- Forged relationships with 10+ nonprofits and partners and conducted research to develop scalable solutions to social and economic problems in struggling regions
- Led survey design and analytics for ten McLean Institute projects that streamlined programs that serve over 100 graduate, undergraduate, and high school students as well as dozens of nonprofit and governmental organizations.
- Led biweekly meetings with four undergraduate students that discussed a
- common assigned reading and current student projects

### **Co-Founder,**

McLean Entrepreneurial Leadership Program (MELP)

University of Mississippi

May 2016 – present

- Led the creation of an entrepreneurial youth program that has served 60+ students over three years and led to the development of 10 actionable business plans
- Led five-member student teams in the planning and execution of daily activities
- Partnered with two dozen local businesses and organizations to offer mentorship and resources to students.

### **Sitting Member,**

Entrepreneurship Pathways Group

Mississippi Development Authority

Jackson, Mississippi, April 2017 – May 2018

- Served as representative of the University of Mississippi
- Led group analysis of Webinar resource via Qualtrics
- Group aims to better develop a K-12 pathway for entrepreneurial education



**Co-Organizer, Host**

Rural Entrepreneurship Forum

University of Mississippi

Tupelo, MS, June 2016

Coordinated over 25 different speakers from various organizations

Partnered speakers with undergraduate and graduate students for mentorship

Introduced and Managed the speakers throughout the day-long conference

Participated in pre-event meetings with the venue and catering staff

**Research Assistant**, UM Squared Consortium,

University of Michigan and University of Mississippi

Clarksdale, Mississippi, May 2015

- Worked with about 20 other students to measure the interest in expanding existing programming.
- Surveyed over 60 parents of children in Tri-County Workforce Alliance programs
- Presented findings to both TCWA board and local politicians

**CONFERENCES AND PRESENTATIONS**

Rural Entrepreneurship Forum, Spring 2018:

Lunch Keynote Talk on the Catalyzing Entrepreneurship and Economic Development Initiative

Alabama-Mississippi Sociological Association Annual Conference, February 2016:

Presentation on “The McLean Institute’s Youth Program: A Strategic Evaluation of a Statewide Youth Program”

Delta Regional Forum, Summer 2015:

Panelist on State Entrepreneurship Strategy