DISSERTATION

SOCIAL CAPITAL AND COLLECTIVE EFFICACY FOR DISASTER RESILIENCE: CONNECTING INDIVIDUALS WITH COMMUNITIES AND VULNERABILITY WITH RESILIENCE IN HURRICANE-PRONE COMMUNITIES IN FLORIDA

Submitted by

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ABSTRACT

SOCIAL CAPITAL AND COLLECTIVE EFFICACY FOR DISASTER RESILIENCE: CONNECTING INDIVIDUALS WITH COMMUNITIES AND VULNERABILITY WITH RESILIENCE IN HURRICANE-PRONE COMMUNITIES IN FLORIDA

Disaster resilience broadly describes the ability of an individual or community to "bounce back" from disaster impacts, through improved mitigation, preparedness, response, and recovery. There has been academic and political interest in predicting resilience among different individuals, communities, and populations. Two components of disaster resilience that are commonly proposed, but under-theorized, are social capital and collective efficacy. These two components capture the interactive aspects of a community that imply a capacity to respond, adapt, learn, and effectively reorganize community life quickly following a disaster event. Social capital and collective efficacy are not only less established in resilience research, but they are also the key components that, from a sociological perspective, make a community "a community" and have the potential to meet the needs of vulnerable populations. These concepts represent individuals interacting and working together, and are signals that a community is more than a population and more than a simply tally of their population attributes like race, income, or housing structures.

This dissertation explored the relationship between individual and community resilience and social vulnerability in hurricane-prone communities in the United States using social capital and collective efficacy as conceptual grounding. *Social capital* represents the resources available through individual social ties with others that can be activated to affect individual life outcomes

and outcomes for the entire network. *Collective efficacy* refers to the capacity of a group of people to work together for shared goals and has been linked to a variety of collective outcomes such as crime rates or disaster recovery. I use a grounding in the sociological understanding of these two concepts to contribute to the growing focus on resilience as an organizing concept in disaster planning while focusing on marginalized populations to elucidate the connection between vulnerability and resilience. The overarching research questions of this dissertation are: How does social capital and collective efficacy affect individual and community disaster resilience and how do these aspects of resilience incorporate concerns for those most social vulnerable to disasters?

I pursue several specific research questions within this broad framework. 1) Individual-level social capital: How do individuals understand and leverage their informal (family and friends) and formal (organizations) social capital for disaster situations? What specific attributes of individuals and their networks affect their perceptions of social capital resources before a disaster occurs? 2) Individual-level perceptions of collective efficacy: How is collective efficacy for disasters understood and described by individual residents of a community? How does this understanding compare and contrast with routine (i.e., non-disaster) perspectives of collective efficacy? 3) Community-level social capital: How does disaster-specific social capital operate at a community level? What are the perceived attributes and effects of different forms of social capital on a community's overall disaster resilience? 4) Community-level perceptions of collective efficacy: How do organizational representatives understand and describe the disaster-specific collective efficacy in their communities? What attributes of their communities support and constrain disaster-specific collective efficacy?

To answer these questions, I completed case studies of two Florida counties, Leon and Dixie, using a mixed methods approach. In each case study county, I collected individual- and community-level data. At the individual level, I used mail surveys of 138 residents and in-person interviews with 25 residents to collect data on disaster-specific social networks and perceptions of collective efficacy. At the community level, I conducted 28 interviews with representatives of community organizations (religious institutions, nonprofits, emergency management agencies, and social service agencies). These interviews produced data on their organizational networks for disaster situations and perceptions of collective efficacy.

Disaster social capital at the individual level describes the personal social networks of family, friends, neighbors, acquaintances, and organizations who individuals perceive as able provide assistance for disaster-related activities. My results highlight the following five main findings related to disaster social capital. First, respondents' disaster-specific social networks are limited in size. Many respondents perceived a small number of social capital ties as able to provide resources for disaster situations, and this result differed based on the resource considered (financial or nonfinancial) and by county. Second, family ties and geographically localized ties are prominent in these networks. Third, taken together with indicators of social vulnerability, disaster social capital involves a complex process of network size, composition, and resource needs and availability that influence the perception of potential social ties to activate in disasters. This process has implications for individual resilience, based on the resources an individual has and what they can receive from their networks. Fourth, this primary data on disaster social networks is positively correlated, but only weakly, to common measures of routine social capital.

Fifth, nearly half of the respondents in this study lack formal social capital ties to community organizations. Few of these individuals perceived these formal social capital ties as useful in a disaster situation and instead would rely on family and friends first.

At the community-level, the practice of social capital among community organizations varies. In Leon County, their disaster social capital is formalized in a network of government and nongovernmental organizations with varying degrees of involvement. I created a six tier typology to describe the levels of connection between different organizations in Leon County: Disaster Core, Conduits of Emergency Services, Social Service Semi-periphery, Faithful and Financial Periphery, External Assistance, and The Disconnected. Involvement in this disasterspecific organizational social capital network was perceived to have three main benefits related to disaster resilience: improve disaster response, improve organizational capacity to survive a disaster, and improve organizational capacity to assist their clients or members during a disaster. In contrast, Dixie County lacked a formal disaster-specific organizational network, and only two local government organizations collaborated regularly on disaster concerns. Other organizations in the area were expected to emerge in the aftermath of a disaster and assist with response and recovery as they could. The lack of formalized disaster social capital in Dixie County was attributed to the limited capacity of nongovernmental organizations, the lack of large disasters that require more than what local emergency management could handle, and confusion as to what nongovernmental organizations could offer or gain from being involved in such a network.

Perceptions of disaster collective efficacy from individual residents and organizational representatives incorporated understanding of individual traits, such as friendliness and

neighborliness, and formal disaster response organizations which were perceived as important to coordinating collective action. Respondents from both counties described their collective efficacy as high, although organizational representatives saw the current economic context, lack of recent large-scale disaster experience, and lack of understanding of social vulnerability as negatively affecting potential disaster collective efficacy. These results show how disaster-specific collective efficacy was viewed as an extension of routine collective efficacy. Further, organizational capacity to coordinate disaster-specific collective action was expected and necessary to foster this collective efficacy to its fullest potential.

This research helps illuminate the conceptualization and operationalization of community disaster resilience. Further, it highlights theoretical contributions to understanding social capital and collective efficacy as aspects of disaster resilience, indicating that the disaster context creates similarities and differences in how these concepts operate. Finally, this dissertation contributes methodologically by revealing the need for disaster-specific measures of social capital and collective efficacy, network-based measures of social capital, and understanding of organizational processes for community-level social capital and collective efficacy.

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CHAPTER ONE

INTRODUCTION

This dissertation grew out of an interest in the topic of "disaster resilience," which broadly describes the ability of an individual or community to "bounce back" from a disaster or other hazardous event (Adger et al. 2005; Manyena 2006). Disasters disrupt the fabric of community life and are stressors to social systems (Fritz 1961). Resilience is the ability to effectively deal with these stressors. Having grown more versed in the social vulnerability paradigm of disaster research, I reviewed the new conceptual and methodological research on this hot topic of disaster resilience with an underlying concern about socially vulnerable populations. Research has consistently shown that stratification in societies result in disproportionate impacts for different populations because economic, social, and political inequalities (based on race, economic status, gender, citizenship, disability status, and age, among others) are exacerbated in disaster situations (Phillips and Fordham 2010). Thus, I wondered how a resilience framework might address these concerns—specifically, how would a community disaster resilience framework address the needs of the most marginalized and disenfranchised populations? This question goes beyond an academic exercise to ask: Can a community, as a whole, practice in a manner that supports its population to rebound from the depths of disaster destruction, including those persons who are less able to actualize individual resilience?

What I found while reviewing this topic was that certain components of what contributes to a community's resilience were measured with relative ease and, for the most part, well

established in the academic literature. These agreed upon components included economic attributes (e.g., median income of the population, economic development in a community) and demographic indicators (e.g., two-parent households, more able-bodied persons, higher levels of education) that are commonly depicted as in opposition to disaster vulnerability. Thus, from a preliminary review, it seemed resilience was little more than an antonym for vulnerability, and as such offered little to conceptually or practically advance the protection and positive adaptation of social vulnerable populations in disasters.

Beyond these basic economic and demographic components, however, there was an implication in the literature that disaster resilience is *dynamic* and includes processes of learning and adaptation, and thus should measure more than just point-in-time economic and demographic attributes of a community. Scholars, though, disagree on exactly what dynamic aspects of the community should be included to fully elaborate the concept of resilience.

Two additional components of community disaster resilience that are commonly proposed, but under-theorized, are social capital and collective efficacy. These two components for resilience capture the interactive aspects of a community that imply a capacity to respond, adapt, learn from a disaster, and effectively reorganize community life quickly following an event (Cutter et al. 2008; Norris et al. 2008). Social capital and collective efficacy are not only less established in resilience research, but they are also the key components that, in sociological speak, make a community "a community" and have the potential to meet the needs of vulnerable populations. These concepts represent individuals interacting and working together, and are signals that a community is more than a population and more than a tally of their population attributes like race, income, housing structure, etc. (i.e., social vulnerability). These two components representing dynamic social life may also hold the potential to counteract social

vulnerability issues in disaster, just as networks and collective processes have been shown as important to daily life of marginalized or disadvantaged individuals (e.g., Stack 1975). In this dissertation, I set out to study social capital and collective efficacy as they related to community disaster resilience, especially for vulnerable populations.

Social capital represents the resources available through individual social ties with others that can be activated to affect individual life outcomes and outcomes for the entire network (Bourdieu 1985a; Lin 1999). Collective efficacy refers to the capacity of a group of people to work together for shared goals and has been linked to a variety of collective outcomes such as delinquency rates or disaster recovery (Benight 2004; Sampson and Raudenbush 1997). The history of disaster research is full of examples of collectives working together to recover from catastrophic impacts (Fischer 2008; Quarantelli and Dynes 1977) and individual and community networks providing access to various resources in disaster situations (Elliott, Haney, and Sams-Abiodun 2010; Hurlbert, Haines, and Beggs 2000; Kaniasty and Norris 1993).

Since social capital and collective efficacy are focused on interactions between individuals and within collectives, they both have various units of analysis from individual to group to community. In sociological research and disaster research, the question remains at which scale these processes should be conceptualized (Varda et al. 2009). While I began with a relatively humble goal of aiming to fill a gap in current resilience theory and inform the measurement of these two topics for resilience research, I am also tackling this larger question that plagues disaster resilience research: How do we understand the unit of analysis for disaster resilience—individual or community—and how does social capital and collective efficacy link individuals, especially vulnerable individuals, and communities together to produce resilience?

The importance of this dissertation lies in the fact that disaster resilience continues to grow in popularity throughout academic and policy circles. Population growth, increasing inequality, continued migration, and development in hazard-prone areas, such as the United States Atlantic and Gulf Coasts, means more people and property are at risk of disaster (Crossett et al. 2004). Furthermore, natural environmental risk is also increasing with climate change, causing sea levels to rise and the potential for more intense storms, droughts, and floods (Field et al. 2007). With rising disaster losses, disaster resilience now appears in various forms of disaster management guidance, ranging from local to federal to international, including for example, the United States Federal Emergency Management Agency's (FEMA) "National Disaster Recovery Framework" (2010) and "The Whole Community Approach to Emergency Management" (2011) to the United Nations' "Making Cities Resilient Campaign" (UNISDR 2012) and "Hyogo Framework for Action" (UNISDR 2005). Yet, even with the growing attention, sociology and disaster research lack a clear, operational definition of disaster resilience and a consistent method of empirical analysis—which is a gap I address in this dissertation.

Dissertation Objectives

My interest in community disaster resilience is driven by the desire to understand the ability of resilience, as a construct and operational activity, to fully incorporate *all* community members into disaster protection and recovery. Thus, this dissertation addresses two distinct but related projects: 1) the relationship of individual and community levels of analysis for disaster resilience and 2) the conceptual and practical relationship between social vulnerability to disaster and disaster resilience. These two projects are achieved through my detailed qualitative and quantitative analysis of disaster-specific social capital and collective efficacy. In this dissertation, I pursue several specific research questions, each addressed in a separate chapter:

Individual-level social capital: How do individuals understand and leverage their informal (family and friends) and formal (organizations) social capital for disaster situations? What specific attributes of individuals and their networks affect their perceptions of social capital resources before a disaster occurs? I address these questions in Chapter Four.

Individual-level perceptions of collective efficacy: How is collective efficacy for disasters understood and described by individual residents of a community? How does this understanding compare and contrast with routine perspectives of collective efficacy? These questions are discussed in Chapter Five.

Community-level social capital: How does disaster-specific social-capital operate at a community level? What are the perceived attributes and effects of different forms of social capital on a community's overall disaster resilience? I address these questions in Chapter Six.

Community-level perceptions of collective efficacy: How do organizational representatives understand and describe the disaster-specific collective efficacy in their communities? What attributes of their communities support and constrain disaster-specific collective efficacy? These questions make up Chapter Seven.

With each question, social vulnerability is prevalent in the analyses, as these topics are discussed in relation to their impact on the resilience of all populations in a community. Furthermore, the results from each chapter speak to the overall conceptualization and measurement of community disaster resilience, and how each concept compares and contrasts in conceptualization and measurement for routine (non-disaster) and non-routine (disaster) situations. These questions ultimately address how to more accurately predict resilience and to point out areas for improvement among different communities. The results from my

investigation of disaster social capital and collective efficacy point to the uniqueness of disasterspecific conceptualization and measurement for resilience.

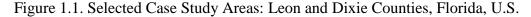
Research Methods Overview

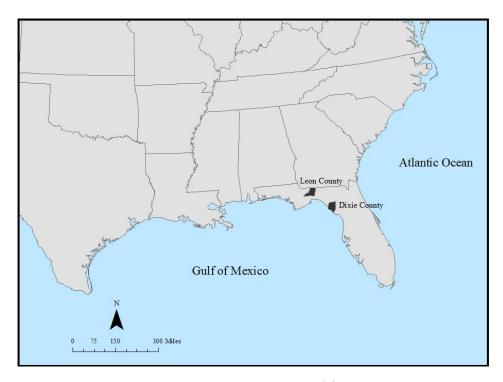
To address these questions, I used a mixed method case study approach. Through indepth descriptive and corresponding explanatory work in the Florida counties of Leon and Dixie (described below), I coordinated individual- and community-level data. At the individual level, I conducted a mail survey of residents in each county and then follow-up in-person interviews with willing survey participants to gather more detailed information about disaster-specific social capital and collective efficacy. At the community level, I performed in-person interviews with representatives of governmental and nongovernmental organizations who are theorized to be important to resilience and important to socially vulnerable populations. My dissertation contributes to an understanding of community disaster resilience that is place-based, local, and contextualized.

Florida and the Selected Cases

With the interest in rising disaster impacts propelling research on resilience, I chose two counties in a state highly prone to natural disasters as case studies for this dissertation. Florida, as a peninsula into the Atlantic Ocean and Gulf of Mexico, faces the annual threat of hurricanes as well as other natural disasters such as drought, wildfire, flood, and tornado. Because of this regular experience, Florida's state government structures and population have experience with responding to and learning from disasters, and as such, Florida is often viewed as a national leader in emergency management. Taken together, this makes Florida an excellent case study for researching disaster resilience. While I focused on natural disasters because of their regularity in parts of the country, my findings are applicable to other types of disasters.

Within Florida there is variation among communities, in terms of experience of and risk to disasters. Further, community-level differences exist in the contribution of local emergency management as well as population size and demographics. With disaster resilience practice and research beginning at the local level (Wilbanks 2009), finding two local communities to compare within one state structure was important so I could hold the state context constant. The selected counties, Leon and Dixie, lie about 100 miles apart in the panhandle of Florida (see Figure 1.1). Although they are relatively close together in terms of geographic proximity, they are quite distinct in terms of sociodemographic traits, culture, economic activity, and lifestyle. Leon County is an urban-suburban county with economic and social activities centering around the state capital of Tallahassee, where 65 percent of the county residents live (Census 2010). In contrast, Dixie County contains two small rural towns and nine unincorporated communities, none of which claim more than 2,000 residents, which makes it one of the most rural counties in Florida (USDA 2003).





I selected these two areas to showcase differences in the economic and social attributes that current resilience theory and research deems important. Leon County, for example, scored highly resilient on the recent Baseline Resilience Indicators for Counties index, while Dixie County received one of the lowest resilience scores in the state (Cutter, Burton, and Emrich 2010). Current resilience indices, like that one, tend to correlate with population size; urban counties achieve higher resilience scores than rural counties because they have more governmental and nongovernmental organizations, more economic diversity, and more overall financial assets. Thus, I took this correlation to task by including a more urban (Leon) and a more rural county (Dixie) as cases. To introduce each county, I now provide some context on community life, the focus of this dissertation, including religious institutions, nongovernmental organizations, emergency management, and social life.

Leon County, Florida

One county and ten miles separate the southernmost part of Leon County and the Gulf of Mexico, and it shares its northern border with the state of Georgia. Leon County is home to approximately 275,000 individuals, of whom 63 percent are white, 30 percent are African American, three percent are Asian, and the median age is 30. When compared to the population size of other metropolitan counties in Florida, such as Miami-Dade County (2,496,435) or Broward County (home of Tampa) (1,748,066), Leon County is a relatively small urban area. Yet, the county contains the infrastructure common to urban areas: public transit (including local and long distance bus services and an airport), many social service and nonprofit organizations, three institutions of higher education, and numerous industries and businesses. Furthermore, Leon County contains Tallahassee, the state capital, which means it is home to state government

offices, the Governor's residence, the state legislature, state public service organizations, and the state's emergency management headquarters.

Community life in Leon County is full of activities, social and religious organizations, and university events, among others. Leon County is also home to hundreds of churches as well as numerous nonprofits, social organizations, and vibrant neighborhood associations. Downtown Tallahassee contains eight- to ten-story buildings, legal offices, as well as the state capital buildings. Florida State University, Florida A&M University, and Tallahassee Community College occupy large swaths of land within the city limits, and there are also five hospitals. The outskirts of the city include suburbanized communities and large suburban shopping areas. Farther out from Tallahassee, there are sparsely populated areas of Leon County and portions of the state park system.

In terms of disaster experience, residents of Leon County recall Hurricane Kate in 1985 as the last major storm to impact the area, which caused power outages for several days and much flooding. Other than that storm, residents describe how storms often "turn" before hitting the County, and thus imply a perceived natural safety due to the county's location on the Panhandle (Personal Interviews 2012).

Dixie County, Florida

Dixie County has approximately 30 miles of the Gulf of Mexico coastline called "The Nature Coast" for tourists, which includes two unincorporated fishing communities that are populated mostly by weekend fishing tourists from other areas of Florida and Georgia. The county contains plots of forest in various stages of regrowth and timber harvesting, remnants of the County's once thriving sawmill industry. Dixie County has only one grocery store, and residents must drive to a neighboring county, nearly 50 miles, to reach a hospital. The common

method of giving directions is to inform someone which direction to turn at the only traffic light in the county, simply referred to as "the red light."

Dixie County is the center of a rural swath of the Florida Panhandle and is bordered by four other rural counties. While the population of Dixie County has risen over the past three decades to just over 16,000 people, the area faces the common rural concerns of persistent poverty and dependence on supplemental government income (Flora and Flora 2012). Sixteen percent of residents live in poverty and nearly half receive Social Security income, and there has been a continual decline of local employment opportunities, especially for younger persons (Census 2010).

Community life in Dixie County centers around religious organizations, with 28 churches in the area, some with congregations of less than 50 people (Personal Interview 2012). Along State Highway 27, which runs through the center of the county, there are no less than six billboards encouraging drivers to find eternal salvation in Christ before it is too late, and many more large and small Christian crosses dot the roadside. The only locally-based charity organization is funded by local church and individual donations, and provides free and reduced-price clothing, utility assistance, and food. Lack of financial capacity in the community means they run out of money to provide these services before the middle of each month (Personal Interview 2012). This lack of organizational capacity is in stark contrast to Leon County's organizational milieu.

Geographically, Dixie County is bordered on the north and south by two rivers: the Steinhatchee and the Suwannee. This river basin geography plus the Gulf of Mexico coast leaves nearly 85 percent of the county identified as in a floodplain (Personal Interview 2012). Residents recall floods with little concern—the type of acceptance that often comes with common

experience. They describe more excitedly the "Storm of the Century" also called the "No Name Storm," which was the most destructive tropical storm to hit the county in recent memory. This storm came ashore in the middle of the night on March 13, 1993, damaging homes and killing 44 people in Florida, but none in Dixie County. This storm and Hurricane Kate that hit Leon County were a mere two years apart, with both approaching their 30 year anniversaries. While both case study counties have faced disaster destruction before, the yearly risk is not extreme and thus their experiences are similar to those of many other areas of the country that face relatively infrequent large-scale disaster events (e.g., flooding once a decade along the Mississippi River).

Because of these differences in community context between the two counties, but similarities in disaster risk and experience, they provide divergent cases to understand community disaster resilience. As FEMA (2011) encourages all local communities, regardless of resources or population size, to work with their "whole community" of individuals, businesses, nonprofits, civic groups, recreational groups, and emergency management to take responsibility for their own resilience, my research provides further understanding of the capacities and constraints within any community that can affect resilience. With these case studies of areas prone to, but lacking recent disaster experience, I am able to showcase a dynamic and complex understanding of social capital and collective efficacy for potential resilience, applicable for practitioners and researchers as we move forward with growing climate change impacts, population growth, and increasing disaster losses.

In this chapter, I introduced the reason for my interest in disaster resilience and my research objective to further understand social capital and collective efficacy as they contribute to community disaster resilience. Next, in Chapter Two, I outline the contours of disaster resilience research literature, focusing on definitions, operationalization, and its relation to social

vulnerability. I review theory and research on social capital and collective efficacy for routine and disaster settings, especially as it relates to their use in disaster resilience research. In Chapter Three, I provide more detail on my mixed methods case study design, the selection of the cases, and my quantitative and qualitative data collection and analysis.

Chapter Four through Seven summarize the results of my research. In Chapter Four, I elaborate on social capital at the individual level, comparing and contrasting residents' perceptions of their potential disaster-specific networks. Chapter Five includes my analysis of individual residents' perspectives on collective efficacy in their relevant counties. In Chapter Six, I move to what I refer to as the community level of analysis, and the results from the interviews with organizational representatives in each county. Chapter Six discusses of social capital among organizations, including a comparison and contrast of the operation of social capital among Leon County and Dixie County organizations. Chapter Seven continues the focus on the community level with my discussion of organizational interviewees' perceptions of disaster-specific collective efficacy in their respective counties. Finally, in Chapter Eight I integrate the individual and community level of my analyses to discuss the methodological and theoretical implications of this dissertation for community disaster resilience.

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