Community Capital and Small Firm Success after a Natural Disaster

George W. Haynes, Montana State University[1]
Yoon Lee, Utah State University[2]
Maria Marshall, Purdue University[3]
Linda Niehm, Iowa State University[4]
Kyle Musser, Montana State University[5]

Abstract

Using data from the 2013 Small Business Survival and Demise after a Natural Disaster (SBSD) project, the primary purpose of this study was to examine the relationship between community capital and small firm success after Hurricane Katrina. Specifically, this study examined to what extent individual and aggregate community capitals influence small firm success after a natural disaster. The two main research questions are: 1) Did individual's (owner's) community capital affect small firm success after Hurricane Katrina? 2) Did aggregate community capital influence small firm success after Hurricane Katrina? Firm success was measured by the level of perceived success by firm owners. This study found that individual community capital did not impact survival; however, aggregate community capitals, especially perceptions of strong community and pulling together, positively impacted perceived success.

Introduction

Previous studies have addressed family firms' response to natural disasters (Marshall & Schrank, 2014; Sydnor, Niehm, Lee, Marshall, & Schrank, 2017). Natural disasters are disruptive events in the community environment and such disasters can lead to business disruptions, which could influence the likelihood of demise. In times of disruption, community capital can play an important role in firm survival and success. Small firms could be at the heart of the economic sector in many communities. If communities in which business owners live and do businesses are to remain strong, those communities could offer economic opportunities such as entrepreneurship for business owners. In turn, small firms can provide employ opportunities for individuals residing in the community. Thus, understanding to what extent individual community capital and aggregate community capital play a role in determining small firm success after a natural disaster is crucial. Individual community capital in this study represents the feelings the firm owners have toward their community environment as well as the participation and involvement in community groups and social organizations. In the current study, aggregate community capital relates to the strength of the community in the event of disruption, being prepared for disasters post Katrina, and community growth after Katrina. Given the vulnerability of small firms following natural disasters, it is important to examine how individual and aggregate community capital increased or decreased the firm success among small businesses impacted by Hurricane Katrina.

Literature Review

Emery and Flora (2006) introduced a community capitals framework, which included several capitals (human, political, financial, natural, cultural, built, and social). This study focuses on relationships and ties in the community, hereafter called social capital. An understanding of social capitals is critical because community relationships are important for success of the family business. This study leans on two proposed definitions of social capital: (1) where social capital is the structure of informal relationships

---

[1] George W. Hayne (haynes@montana.edu), Professor and Extension Specialist, Agricultural Economics and Economics
[2] Yoon Lee (yoon.lee@usu.edu), Professor, Human Development and Family Studies
[3] Maria Marshall (mimarsha@purdue.edu), Professor, Agricultural Economics
[4] Lynda Niehm (niehmlin@iastate.edu), Professor, Apparel, Events, and Hospitality Management
[5] Kyle Musser (kyle.musser@student.montana.edu), Student, Agricultural Economics and Economics

conducive to developing cooperation among economic actors aimed at increasing social product and is the resources to which individuals have access through their social relationship (Alvarez and Romani, 2017; Hyami, 2009); and (2) where social capital refers to the set of relationships that have developed around shared values and the mechanism of relationships, such as networks, norms, and trust, to induce people toward cooperation (Hyami, 2009; Loury, 1997).

Horminga, Bastists-Canino, and Sanchez-Medina (2011) suggested the firms cannot be considered as isolated systems; they depend greatly on the relations they build up in their environment. Businesses need communities and communities need businesses. Social capital is critical because it helps establish networks, define social norms, and facilitate coordination and cooperation. Most importantly, business owners who can activate more resources through social networks are more successful than those who cannot (Egert, 2009).

While economists today have developed an overall consensus about the definition of many of the capitals suggested by Emery and Flora (2006), they are much farther from a consensus on the definition of social capital. The original thrust by Coleman (1988) and Putnam (1993) focused on social relationships forged through informal organizations. Other work by Bourdieu (1986), Coleman (1988), and Loury (1977) suggested that social capital was not embodied in any particular person, but was embedded in people's social relationships. This study utilizes the concept of bonding social capital proposed by Putnam (1993), which focuses on close ties that build communities, such as sports clubs and parent teacher associations, and bridging social capital proposed by Coleman (1988), which focuses on loose ties that bridge among organizations and communities, such as hierarchical structures and employer-employee relationships within a firm.

Methods

Data and Sample. This study utilized data from the 2013 Small Business Survival and Demise after a Natural Disaster Project (SBSD). The dataset includes information about small businesses operating in 2004 before Hurricane Katrina hit in 2005 in a ten-county area in southeastern Mississippi. The 2013 SBSD in wave 1 included a random sample of 499 small businesses with 200 or fewer employees. Of the 499 businesses interviewed for the study, 229 operating businesses in 2014 (wave 2) were included in the analyses.

Statistical analyses. The preliminary analysis included the sample of 229 businesses. Descriptive statistics of means and percentages for all of the individual and aggregate community variables were obtained. For multivariate analysis, linear regression was employed to determine the role of individual and aggregate community capital in business success among small firms, and investigate other factors contributing to the firm success.

Dependent and Independent Variables. In this study, the dependent variable was the level of perceived success after the hurricane. In the survey, business owners responded to a question, "Overall, how successful is your business now?" The responses to this question ranged from 1 (not at all successful) to 5 (extremely successful). In the regression model, two main types of community capital, *individual community capital and aggregate community capital*, were included as key independent variables. Other explanatory variables included in the regression models are owner and business characteristics. The owner characteristics were gender, race, education, years of industry experience, and perceived overall damage to the residence. Business characteristics were business age, business size, home-based, ownership structure (sole proprietor or not), industry (service or not), and location (coastal or not).

Results

Descriptive Results. Table 1 presents descriptive results of individual and aggregate community capital of small firms. Individual community capital was measured by owners' perceived feeling about the community such as feeling at home, knowing their neighbors, and most of their friends live within one hour. The response to the first question ranged from 1 (not at all), to 5 (extremely). The mean of the

"feeling at home" question was 4.46, indicating that most owners have strong positive feelings about their community. Based on answers to the second and third questions ("knowing their neighbors" and "friends live within one hour"), most owners know their neighbors and have friends that live within one hour. Another category of individual community capital was measured by how firm owners participated in groups such as business organizations, social groups, religious organizations, and political organizations. It is noted that participation in business and political organizations was relatively lower, while participation in religious and social organizations was higher.

Descriptive results in Table 1 also show owners' perceived aggregate community capital in which they live and do business. The first category of the aggregate community capital includes questions: 1) Is your community stronger compared to before Katrina?, 2) Is community now better prepared for disaster?, 3) Has your community grown compared to before Katrina? Only nineteen percent of the owners responded that the community is stronger. Twenty-eight percent of them reported that their community is currently not prepared for disasters. Thirty-five percent of them reported that their community has grown compared to pre-Katrina levels. Under the aggregate community capital section, firm owners were asked five questions about their feelings toward the way the community has come together. The questions include whether or not the community pulled together after Katrina, if the leaders did what was best for the community, if a business had much to gain by remaining in the community, and if firm owners are willing to help out the community in the case of another disaster. Responses to these questions ranged from 1 (strongly disagree) to 5 (strongly agree). Owners indicated that the community was more likely to pull together during the Katrina recovery period, and they were more likely to use their resources to help the community. And finally, sixty percent of the businesses were deemed successful by their owners.

Multivariate Results. Table 2 presents the factors impacting the perceived success of small family firms after Hurricane Katrina. The linear regression results indicate that all else being equal, the effects of aggregate community capital were statistically significant in predicting firm success after a natural disaster. Specifically, it shows that among the aggregate community capitals, firm owners, who perceived that their community became stronger compared to before Katrina, had higher levels of business success than those who perceived the community as weaker. In addition, firm owners, who perceived that the community pulled together had higher levels of business success than other owners. This study also investigated other factors influencing small firm success after Hurricane Katrina. Female business owners and those with more industry experience had higher levels of perceived business success than other business owners.

Conclusion/Relevance

In this study, individual and aggregate community capitals were the focus in predicting small firm success after a natural disaster. This study concludes that there is significant impact of community capital on small firm success after Hurricane Katrina. The findings of this study suggest that aggregate community capitals, especially perceptions that the community is stronger and community members pull together, play an important role in determining small firm success after a natural disaster.

Among the community capitals, subjective perception about the community was more important in determining the success of the firm than owner involvement (participating in business, social and other organizations) and participation in the community. It is interesting that even after such a large disaster, about thirty percent of the business owners report that they are not prepared for another disaster. It is important for small business owners to know disaster preparedness and strategies to reduce vulnerabilities. It is also important for community leaders and government officials to recognize that the communities and businesses impacted by Hurricane Katrina are still struggling to overcome the disruptive event that originated outside the family and business system. The findings of the current study could provide insights for community leaders and policy makers to help identify vulnerable small firms and communities, and find ways to help the community and small firm prepare for natural disasters.

References

Alvarez, E., & Romani, J. (2017). Measuring social capital: further insights. *Gac Sanit, 31*(1), 57-61.

Coleman, J. (1988). Social capital in the creation of human capital. *American Journal of Sociology, 94*, 95-120. Retrieved from https://www.jstor.org/stable/2780243

Egbert, H. (2009). Business success through social networks? A comment on social networks and business success. *American Journal of Economics and Sociology, 68*(3), 665-677.

Emery, M., & Flora, C. (2006). Spiraling-up: mapping community transformation with community capitals framework. *Journal of the Community Development Society, 37*(1), 19-35.

Hormiga, E., Batista-Canino, R., & Sanchez-Medina, A. (2011). The impact of relational capital on the success of new business start-ups. *Journal of Small Business Management, 49*(4), 617-638.

Hyami, Y. (2009). Social capital, human capital and the community mechanism: toward a conceptual framework for economists. *Journal of Development Studies, 45*(1), 96-123.

Loury, G.C. (1977). A dynamic theory of racial income differences. In: Wallace, P.A., Mund, A.L. (Eds.), Women, Minorities and Employment Discrimination. Heath. Lexington, MA, pp. 153–186.

Marshall, M. & Schrank, H. (2014). Small business disaster recovery-A research framework. *Natural Hazards*, 72, 597–616. DOI: 10.1007/s11069-013-1025-z

Putnam, R. (1993). The prosperous community: social capital and public life*. The American Prospect. 4*(13), 1-11.

Sydnor, S, L. Niehm, Y.G. Lee, M.I. Marshall, and H. Schrank (2017). An analysis of post-disaster and disruptive impacts on the operating status of small businesses after Hurricane Katrina. *Natural Hazards*, 85, 1637-1663.

Table 1. *Descriptive Statistics*

Variable	Mean	Standard Deviation
Bonding		
Do you feel at home where you live? (Range 1-5)	4.46	0.78
Do you know most neighbors by name? (Range 1-5)	3.60	1.09
Proportion of friends that live within 1 hour (Range 1-5)	3.48	0.93
Bridging		
Do you participate in business organization? (1 = Yes, 0 = No)	0.36	0.48
Do you participate in social, fraternal groups? (1 = Yes, 0 = No)	0.50	0.50
Do you participate in religious organization? (1 = Yes, 0 = No)	0.74	0.44
Do you participate in political organization? (1 = Yes, 0 = No)	0.21	0.41
Have you served or given $ to the comm. in past 10 years? (1 = Yes, 0 = No)	0.76	0.43
Aggregate Community Capital		
Is your community **stronger** compared to before Katrina? (1 = Yes, 0 = No)	0.19	0.39
Is your community now better **prepared** for disaster? (1 = Yes, 0 = No)	0.28	0.45
Compare your community **growth** to pre-Katrina levels (1 = Yes, 0 = No)	0.35	0.48
Pull Together		
Did your comm. pull together during the K recovery period? (Range 1-5)	4.38	0.87
Post-K, did comm. Leaders do what was best for the com. (Range 1-5)	3.55	1.04
A business had much to gain by remaining in my com. (Range 1-5)	3.56	1.08
Are you willing to expend resources to help the comm. (Range 1-5)	4.41	0.78
In my com., residents go out of their way to support local bus. (Range 1-5)	3.51	1.00
Success		
Overall how successful is your business now (1 = Yes, 0 = No)	0.60	0.49

Table 2. *Influence of Individual and Aggregate Community Capital on Perceived Business Success*

Characteristic	Parameter Estimate	p-value	Parameter Estimate	p-value	Parameter Estimate	p-value	Parameter Estimate	p-value	Parameter Estimate	p-value
Intercept	2.8323	0.0001	2.7020	0.0001	2.6810	0.0001	1.6443	0.0015	0.6687	0.2829
Bonding										
Do you feel at home where you live	-0.0996	0.2089	-0.0956	0.2273	-0.1091	0.1595	-0.1230	0.1058	-0.1206	0.1254
Do you know most neighbors by name	-0.0071	0.8996	-0.0122	0.8273	-0.0168	0.7588	-0.0022	0.9675	-0.0040	0.9428
Proportion of friends that live within 1 hour	0.0777	0.2269	0.0756	0.2393	0.0578	0.3592	0.0670	0.2780	0.0801	0.2206
Bridging										
Owner's community participation			0.0538	0.1856	0.0601	0.1342	0.0404	0.3082	0.0272	0.5025
Aggregate community – stronger					0.5185	**0.0018**	0.4584	**0.0050**	0.4399	**0.0086**
Aggregate community – Prepared					0.0087	0.9480	-0.0728	0.5837	-0.0442	0.7411
Aggregate community – Growing					0.1226	0.3573	0.0761	0.5617	0.1072	0.4216
Aggregate community – Pulling together							0.0574	**0.0012**	0.0591	**0.0010**
Sex (1 = Female, 0 = o/w)									0.2965	**0.0278**
Race (1 = White, 0 = o/w)									0.0379	0.8557
Education									0.1177	0.1167
Perceived disaster damage									0.0648	0.2795
Industry experience									0.0124	**0.0214**
Business age									-0.0055	0.1579
Business size									0.0047	0.4625
Home-based business									-0.0592	0.6536
Legal organization (1 = Sole, 0 = 0/w)									0.1094	0.3853
Industry (1 = Service, 0 = o/w)									0.0414	0.7556
Location (1 = coastal, 0 = o/w)									0.0681	0.6066
Adjusted R-squared		0.0000		0.0029		0.0559		0.0991		0.1102