THE IMPORTANCE OF SOCIAL CAPITAL IN EMERGENCY MANAGEMENT: A LITERATURE SURVEY

Sosyal Sermayenin Acil Durum Yönetimindeki Önemi: Bir Yazın İncelemesi

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ÖZ

Çalışmanın Temelleri: Bu çalışmanın temeli hem acil durum yönetimi hem de sosyal sermaye yazınına dayanmaktadır.

Çalışmanın Amacı: Bu çalışmanın amacı, doğal afet bağlamındaki sosyal sermaye ile ilgili yazını gözden geçirmektir. Ayrıca, sosyal sermaye çeşitleri ile acil durum yönetiminin aşamaları incelenmiş, durum örnekleri verilmiştir. Bu çalışmada ayrıca muhtemel bir araştırma modeli önerisinin yanı sıra, politika ve yönetim ile ilgili sonuçlar ve gelecekteki potansiyel araştırma konularına yer verilmiştir.

Veri Kaynakları: Çalışmanın veri kaynakları, sosyal sermayenin doğal afet durumlarındaki rolünü araştıran çalışmalardır.

Tartışma ve Sonuç: Daha önce yapılmış görgül çalışmaların bulgularına dayanarak, farklı doğal afet durumlarında acil durum yönetiminin her bir aşamasında sosyal sermayenin çok büyük önemi olduğu açıkça söylenebilir.

Anahtar kelimeler: Sosyal sermaye, bağlayan sosyal sermaye, birleştiren sosyal sermaye, acil durum yönetimi, hazırlık, müdahale, kurtarma, azaltma.

ABSTRACT

Bases of the Study: This study is based on the literatures both emergency management and social capital.

Purposes of the Study: The objective of this paper is to review the social capital literature in the context of disasters. In addition, the use of different forms of social capital in various phases of emergency management is also examined and case examples from previous research are provided. The review also includes the proposition of a possible research model, implications as well as directions for future research.

Data Resources: The data resources of the study are the research studies conducted on the role of social capital in disaster context.

Discussion and Conclusion: Based on the empirical evidence from the previous research, it is appropriate to articulate that social capital is of great importance in each phase of emergency management due to various types of disasters.

Keywords: Social capital, bonding social capital, bridging social capital, emergency management, preparedness, response, recovery, mitigation.

1. INTRODUCTION

The performance of the efforts during each phase of extreme events environments is likely to be different among different communities. Some communities are showing a more resilient behavior in such incidents, while others are having difficulties in terms of physical and psychological recovery from the disaster (Lee et al. 2006). Capabilities and resources embedded in a social network is one explanation to this fact, which originates from the theory of social capital (Lin 2005). Kreps (1984) defines disasters as *"events, observable in time and*

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space, in which societies or their larger subunits (e.g., communities, region) incur physical damages and losses and/or disruption of their routine functioning", and points out that consequence of disasters are closely related to the social structure. The reason is that social order is interrupted in the case of a disaster, which might be followed by the social disorders and conflicts (Zhao 2009). Disasters usually take place in specific geographic regions, and populations in closer proximities are affected by it (Kirschenbaum 2004). Therefore, it is important to consider that social networks, social relationship, and social structure of a community are the basic social unit that needs to be leveraged before and after disasters (Drabek et al. 1981). Another important fact is that disasters destroy all types of capital, such as physical, human, and social capital. Of these capital types, social capital is the one which is least affected by the disasters. That is why emergency efforts should be primarily based on the social capital (Dynes 2005). In this way, emergency management should treat people of the communities as active agents for collaboration and assistance, instead of passive victims (Dynes 2002).

The objective of this paper is to review the social capital literature in the context of disasters. In addition to present the current empirical research findings in the context of social capital in disaster environments, this study also reviews the literature in terms of the forms of social capital (bonding and bridging) and the phases of emergency management (mitigation, preparedness, response, recovery), and the research conducted to reflect the relationships between these constructs.

2. SOCIAL CAPITAL AND EMERGENCY MANAGEMENT

The concept of social capital is very popular in a wide range of social sciences disciplines from economics, organizational sociology to political science (Adler & Kwon 2002; Beugelsdijk & Smulders 2003; Köseoğlu 2007). That's why there are different viewpoints on social capital. Social capital can be seen as a fourth form of capital together with human capital, financial capital, and physical capital (Lyons 2002). In order to better understanding of social capital, the similarities and differences between social capital and the other forms of capital should be clarified (Adler & Kwon 2002). At this point, social capital is a long-lived asset which may be invested for future benefits; it is appropriable and convertible; it can be a complement or substitute to other resources; social capital needs maintenance; some forms of social capital are collective goods; it is found in the relations between individuals, and it does not have quantitative measures (Adler & Kwon 2002; Köseoğlu 2007).

For the purposes of this study, we are utilizing several definitions for social capital. In one of the definitions, social capital is defined as *"… features of social organization, such as trust, norms [or reciprocity], and networks [of civic engagement], that can improve the efficiency of society by facilitating coordinated action"* (Putnam et al. 1993). According to another definition, it is defined as *"social networks, the reciprocities that arise from them, and the value of these for achieving certain goals"* (Schuller et al. 2000). Cohen and Prusak (2001) define social capital as *"the trust, mutual understanding, and shared values and behaviors that bind the members of human networks and communities and make cooperative action possible"*. Ritchie and Gill (2007) argue that social capital *"facilitates a flow of information providing a basis for action and assisting in individual and community goal attainment"*. As can be seen from these definitions, social capital is likely to be a significant basis for collective action in communities, which can be leveraged in the case of disasters.

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On the other hand, there are two forms of social capital: bonding and bridging social capital. Bonding aspect is developed from the theoretical term of closure

(Coleman 1988), and relates to the social capital among the community's individuals who already know each other (Putnam 2000). Bonding social capital is based on persistent and personal inward oriented networks and is created between people who shares similar characteristics (demographic, social, ethnic, etc.), such as immediate family members, neighbors, close friends, and business associates (Bridge, 2002; Wuthnow 2002; Woolcock 2000). On the other hand, bridging aspect of social capital is developed from Burt's (1992; 2000) structural hole theory, and relates to the links among people who does not know each other (Putnam 2000). Bridging social capital is mainly based on relatively weaker and impersonal external networks between diverse people and institutions (Bridge 2002; Wuthnow 2002). The diverse ties are usually between people from different ethnic, geographical, and occupational backgrounds, but similar economic and political influence (Woolcock 2000).

The other key concept of our paper is emergency management and it can be defined as *"applying science, technology, planning, and management to deal with extreme events that can injure or kill large numbers of people, do extensive damage to property, and disrupt community life"* (Drabek 1991). There are four different stages of emergency management which deals with the strategies towards better managing adverse affects of extreme environments. These four elements of emergency management are hazard *mitigation*, disaster *preparedness*, emergency *response*, and disaster *recovery*. The first two emergency management activities happen before the disaster hits, while latter two elements of emergency management occur during or after the disaster. Mitigation refers to the efforts for addressing the causes of disasters, reducing the likelihood, or limiting its consequences. The focus in this stage is to stop disasters before they happen. Preparedness relates to the efforts for protecting the lives and property, and facilitating rapid recovery from the disaster. Preparedness efforts include preparing plans, procedures, and resources which should be developed before the disaster take place. Emergency response has the goals of protecting the population, limiting the damage from the primary impact, and minimizing the damage from secondary impacts. Emergency activities usually start when the disaster happens. Activities in this stage include securing the area impacted by the disaster, evacuating the areas threatened by the disaster, conducting search and rescue the people injured, providing medical care for emergency, sheltering evacuees and other disaster victims. Finally, the recovery stage starts from the end of the disaster and lasts until the disaster community is back to normal functioning. Recovery stage might be longer for some cases and includes activities such as clearing the debris for accessing to the area affected by the disaster, renewing and restoring economic activities and government services back to the pre-disaster period, providing housing, clothing, and food for disaster victims (Lindell et al. 2007).

3. PREVIOUS RESARCH FINDINGS

This section provides brief discussions on the research conducted on the role of social capital in disaster context. Appendix A summarizes the characteristics of all of the research studies that are as follows;

The study of Haines et al. (1996): In a research program, researchers examined the social capital phenomenon in the context of Hurricane Andrew (1992) in the US. The research program was based on the data collected through telephone interviews from 594 respondents located in two adjacent southwestern Louisiana rural communities which are most affected by the hurricane. The three research studies are as follow: Haines and colleagues (1996) examined the impact of support provider characteristics (age, gender, education, family income, etc.), personal network characteristics (density, size, gender diversity, etc.), and

community context characteristics (fraternal group membership, service group membership, etc.) on support provision. They examined the issue in disaster preparedness and recovery phases. Findings reveal that the three factors at issue indeed affect the support provided. However, the support provision differs depending on different phases of the hurricane. For instance, support provision is significantly affected by age, income, network density, and local economic conditions in the course of the preparedness phase, while income did not significantly affect short term recovery support.

The study of Hurlbert et al. (2000): In the second research study of the program, Hurlbert et al. (2000) investigated whether core social network characteristics (density, size, gender diversity, etc.) and positional characteristics (age, gender, race, etc.) have an effect on the activation of core networks for informal support during preparedness and recovery phase of Hurricane Andrew. According to the findings of this study, individuals' core network structure enabled the activation of ties for getting informal support. In addition, individuals who are in high-density networks, whose networks have greater gender diversity, and whose networks contain more men, kin, and younger people, are more likely to activate their core networks for informal support as compared to the people who lack these characteristics.

The study of Hurlbert et al. (2001): In the third study, Hurlbert et al. (2001) examine the impact of positional characteristics (e.g., age, sex, race, etc.) and integration into the community (e.g., tenure in the area and voluntary memberships) on the network structures (e.g., kin, sex, education, and age) and network range (e.g., size, density, and diversity) which are likely to provide access to informal support and activate the core network ties for informal support. Results suggest that social capital embedded in the network structures is of great importance to get support in extreme environments. Specifically, positional and community integration characteristics affect gaining access to the social capital found in composition and range of core networks.

The study of Kirschenbaum (2004): A study by Kirschenbaum (2004) conducted in Israel focused on how various characteristics (family network, neighborhood network, and community network) of a disaster community affect the level of various components of preparedness (provision, skills, planning, and protection) in the case of a disaster. The data of the study at issue is based on the telephone survey (random-digital-dial and computer-assisted survey) from 841 adult households in 150 urban areas in Israel (2001). This study is not specific to a certain disaster; however, the responders are asked the types of disasters that they experienced. Responds include, but are not limited to, the first Gulf War (1991), missile attacks, earthquakes, industrial and technological accidents, and road accidents. The findings of this study suggest that, in general, the strong ties within a community positively influence disaster behaviors of its members as compared to the communities with more diffused social networks. Another finding is that characteristics of the disaster communities have differential predictive ability on preparedness behaviors. Finally, a very marginal affect is found on differences in preparedness behaviors, when ethnic and educational characteristics of the network members are introduced to the research model.

The study of Nakagawa and Shaw (2004): A comparative case study is conducted by Nakagawa and Shaw (2004) in order to investigate whether social capital affects recovery programs of communities. The comparison is made between the Kobe, Japan, and Gujarat, India. Based on the data collected from the primary (i.e., questionnaire survey and interviews from 128 community members in Gujarat, India) and secondary (official sources, prior studies, books, reports,

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journal articles, etc.) sources, the findings of this study suggest that social capital played an important role in recovery process of the natural disasters, regardless of the socio-economic and cultural backgrounds of the communities located in different countries. Depending on different levels of social capital, it is possible for different communities within the same culture to have different levels of recovery speed and satisfaction with reconstruction plans.

The study of Mimaki and Shaw (2007): In another comparative case study, Mimaki and Shaw (2007) examined the impact of social capital in enhancing the disaster preparedness efforts in two communities (Kainokawagou and Shimokawaguchiura) Tosashimizu city (Kochi, Japan). Field survey and qualitative interviews were conducted with residents, teachers, school children, and local government officials. Qualitative review of the data reveals that social capital in fact enhances disaster preparedness. The findings show that in the community of Shimokawaguchiura, there was a considerable improvement in disaster preparedness efforts between two flood disasters happened in 2001 and 2004. Particularly, this improvement was due to (1) the existence of an enthusiastic community leader, (2) the social capital that facilitates the formation of the community capacity for disaster preparedness, and (3) the existence of organizations and systems which lead to expanding the current social capital and formation of the new social capital.

The study of Murphy (2007): Murphy (2007) examines the impact of social capital towards a community's resilience to risk and hazards due to extreme conditions. The study examines two cases: Power blackout in Eastern Canada and US in 2003 and water-borne disaster in Walkerton, Ontario (2000). In the context of the power blackout case, the survey data is collected from 1203 general population telephone survey in Ontario, Canada in February 2004. The survey responders were asked for the emergency preparedness, positive and negative feelings regarding the emergency management efforts in the community, altruistic behaviors during the disaster, and the social network structure during the response efforts. 89% of the respondents reported that their neighbors would be likely to provide help during a disaster. The results also suggest that social capital in rural areas (i.e., communities) is more robust than larger locations in the course of a possible crisis. In the context of water-borne disaster, the data is collected in three ways: face-to-face structured survey with 104 households, 23 key informant reviews with community leaders, government officials, etc., focus groups comprised of 12 community members. Responders reported that a significant portion of the community (72%) in Walkerton involved in some type of community activity, while one-third of the responders said that they relied on such organizations to get help during the disaster occurred in the area. In addition, 60% of the responders indicated that they provided assistance to other community members, usually the people they have close ties. Statistical analysis of the study under discussion revealed that there is a positive relationship between (1) levels of recovery and participation in community organizations, (2) recovery and reliance on community organizations, and (3) recovery and reliance on family and friends. Overall, findings of this study emphasize the importance of social capital in achieving the resiliency in communities during and after disasters.

The study of Zhao (2009): A recent study by Zhao (2009) investigated the role that social capital plays in reducing risk during and after the Wenchuan earthquake (2008) in China. The study is based on the data collected in the context of post-disaster rapid needs assessment survey conducted to 3652 households located in 144 clusters (villages, residential committees, or camps) in Sichuan earthquake area. Findings suggest that social network indicators do affect victim's

access to policy information, access to social support, and mental health. More explicitly, 16.3% of victims reported that they get critical and policy information from their social networks (e.g., relatives, friends, etc.), following getting information from TV (72.5%). In addition, one-third of the victims get the social support from their social networks, while support is distributed heterogeneously. That is (1) people with more members in their social networks, (2) people with new members in their network, receive more support than other victims. Finally, the findings of this study indicate that victims having more members in their network and more relatives in their network have greater levels of mental health, while loss of social network members in disaster negatively affects mental health status.

The study of Lee et al. (2006): In another case study, Lee et al. (2006) examined the contribution of social capital, with its bonding and bridging aspects, in the performance of emergency management and the design of information systems related to emergency management.

The study of Airriess, Li, Leong, Chen, and Keith (2008): Finally, Airriess et al. (2008), based on the data collected from focus groups, interviews, and survey, pointed out the importance of community based social capital in the recovery efforts of post-Katrina period.

4. RELATIONSHIPS BETWEEN SOCIAL CAPITAL AND EMERGENCY MANAGEMENT PHASES

Previous research shows that different forms of social capital are used during different phases of the disasters. This section summarizes the research studies in terms of the form of social capital and the phase of emergency management in which the social capital is leveraged (See Figure 1).

Figure 1. Forms Social Capital and Emergency Management Phases

Emergency Management Phases / Forms of Social Capital	Mitigation	Preparedness	Response	Recovery
Bonding Social Capital	Zhao (2009)	Haines et al. (1996), Hurlbert et al. (2000), Hurlbert et al. (2001), Kirschenbaum (2004), Lee et al. (2006), Mimaki and Shaw (2007), Murphy (2007)	Lee et al. (2006), Murphy (2007), Zhao (2009)	Airriess et al. (2008), Haines et al. (1996), Hurlbert et al. (2000), Hurlbert et al. (2001), Nakagawa and Shaw (2004), Zhao (2009)
Bridging Social Capital	N/A	Lee et al. (2006), Mimaki and Shaw (2007)	Lee et al. (2006)	Airriess et al. (2008); Nakagawa and Shaw (2004)

As mentioned earlier, Mimaki and Shaw (2007) examined the social capital phenomenon in the context of disaster ***preparedness*** efforts of two communities affected by flood disasters in Kochi, Japan. They compared communities in terms of their social capital and whether differences have any impact on disaster preparedness efforts. As compared to Community A, Community B showed a greater level of preparedness performance due to its bonding and bridging social capital. For instance, Community B's leader had a greater leadership in these efforts. He retained better relationships with local government and enabled the local community to be conscious about the disaster preparedness. These efforts include creating a firefighter group by arranging practice sessions, arranging monthly get-together to share critical information, bringing together of regional institutions related to preparedness awareness. In terms of bridging perspective, the

community leader made external links with other communities to establish relationships and leverage them in the case of an emergency.

Kirschenbaum (2004) considers the role of bonding social capital in disaster ***preparedness*** efforts in Israel. The study examines family, neighborhood, and community networks, which can be named as bonding social capital, and focuses on how these strong ties enable the preparedness activities. It is argued that emergency performance is impacted to a large extent due to the disaster behavior of the citizens, as the region is frequently experiencing disaster-related incidents.

Another study by Lee et al. (2006) examined bonding and bridging social capital in the context of ***preparedness*** and ***response*** activities in the context of tropical storm of Ivan. From a bonding perspective, emergency planning meetings are arranged in the community. Among the attendees are the people who were first responders to the disaster under consideration, including fireman, police, and even a local tow truck company representatives. Such activities make people, who are stakeholders of the disaster, come together in a face-to-face setting, know each other, and being prepared and planned for the future disasters. The community also leveraged its social capital potential by having bridging relationships. In particular, one of the emergency planning administrators helped this happen. He enabled the state lawmakers to help the community in their attempts to persuade Airport authorities to re-open the flood gates. Another bridging social capital case includes getting County commissioner assistance to address the unmet need for potable water. Finally, through the contacts with American Red Cross, the community is provided with home oxygen and the walker, and long-term shelter for the use in the case of a disaster.

Zhao (2009) focused on the issue by considering the role of bonding social capital during ***response*** and ***mitigation*** phases of the Wenchuan earthquake (2008) in China. In terms of the disaster response, empirical findings suggest that the social capital embedded in communities was of great importance in search and rescue activities after the earthquake. The study also suggests that governments should be able to help communities to build social networks in disaster areas in order to have better mitigation and reconstruction performance.

Murphy (2007) examined how social networks functioned during two disasters (power blackout and water-borne disasters) in Canada. The surveys reveal that community members engaged in the activities which can be regarded as ***response*** and ***preparedness*** to such disasters. Citizens engaged in events for better preparing for the potential risks for improving community resilience. The study also suggests that performance of the emergency response increased significantly, since people in these communities helped other people and showed altruistic behaviors after the disasters strike.

Airriess et al. (2008) investigated whether church-based social capital, with both bonding and bridging aspects, has an impact on post-Katrina ***recovery*** efforts in a Vietnamese American community in New Orleans, Louisiana. An important example of the bonding social capital oriented recovery effort was that the pastor of the community church returned to the region with 300 community members one month after the disaster in order to help in the rebuilding process. This local action of rebuilding efforts included repairing houses, administrating tetanus shots and other health-care issues, purchasing food and preparing the meals with the help of groups formed for these purposes. The pastor also contacted local utility company for restoring the power to the community and arranged people, by getting their signatures, to prove that there is sufficient number of residents that returned to the region. Although the community's bonding social capital was very effective, it was

not sufficient to meet all recovery related requirements as well as some of the particular goals. Such requirements and goals include the community's economic development and community's need to create a political organization in order to address community's pressing needs. That is why, the church of the community under discussion attempted to create relationships for bridging social capital. Specifically, the church reached beyond the local and extra-local boundaries, including co-ethnic individual and organizations at a national level. For instance, a co-ethnic and mutual assistance group called NAVASA help the community for addressing several social and economic needs. The help from this organization included the assistance for the external grants towards community development, and developing rebuilding strategies for local businesses.

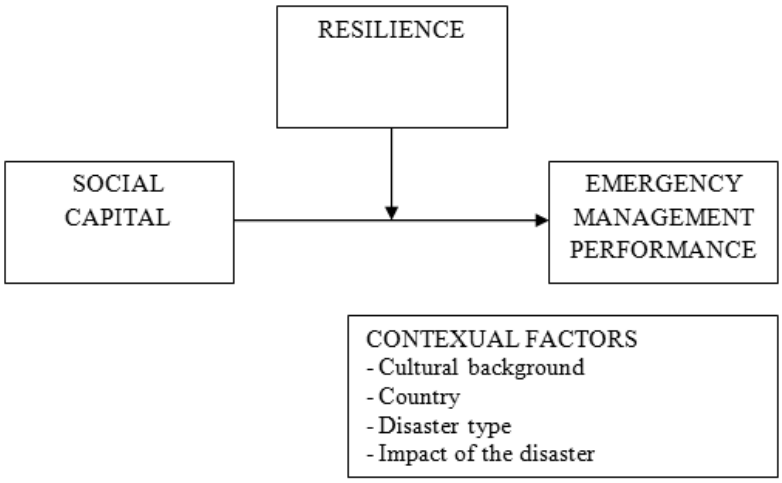
Nakagawa and Shaw (2004) examined bonding and bridging social capital in ***recovery*** process of earthquake disasters in Kobe, Japan and Gujarat, India. In the context of Kobe case, research shows that bonding social capital (trust, social norms, tradition of community activities, various community based groups, etc.) enabled the community to proactively participate in reconstruction efforts, thus enabling a speedy recovery from the disaster. Bridging social capital (interactions with town planning consultants, academicians, activity groups and neighbor associations of other communities, etc.) was also an important factor in recovery as well as reconstruction and rehabilitation from the earthquake disaster. In this study, Kobe case is taken as a model and applied to two communities in Gujarat, India. Depending on different levels of social capital, these two communities have different levels of recovery speed and satisfaction with reconstruction plans. Specifically, Soni community showed a greater level of bonding social capital in the form of shared trust, social norms, and participation to the collective action. In terms of bridging aspect, again, Soni community performed better than Khatri community by having more links to the outside networks and inter-community relationships.

5. DISCUSSION AND CONCLUSION

5.1 Possible Research Model

Based on the empirical evidence from the previous research, it is appropriate to articulate that social capital is of great importance in each phase of emergency management due to various types of disasters. It is also of great importance to further advance the theory relevant to the social capital and leveraging it in extreme environments. For this purpose, a possible theoretical model is proposed for future research and validation. The following figure summarizes the proposed model which is derived from the synthesis from the relevant literature;

Figure 2. Possible Research Model



In this research model, we define social capital is defined as "… features of social organization, such as trust, norms [or reciprocity], and networks [of civic engagement], that can improve the efficiency of society by facilitating coordinated action" (Putnam et al. 1993). Two forms of social capital (bonding and bridging), which are discussed earlier in this paper, can be used depending on the context.

Emergency management, as defined earlier, is "applying science, technology, planning, and management to deal with extreme events that can injure or kill large numbers of people, do extensive damage to property, and disrupt community life" (Drabek 1991). Emergency management is composed of several phases (mitigation, preparedness, response, and recovery) and each phase has several goals and outcomes. The level of success and/or effectiveness in each phase can be conceptualized as the performance of emergency management efforts. Examples include but are not limited to emergency response performance (Lee et al. 2006), level of emergency preparedness (Kirschenbaum 2004), disaster preparedness performance (Mimaki and Shaw 2007), speed of disaster recovery and satisfaction with town planning for disaster recovery (Nakagawa and Shaw 2004). Future research should focus on the theoretical models with emergency management performance taken into account in the model.

Finally, in this model, resilience refers to "a process linking a set of adaptive capacities (i.e., resources that are robust, redundant, or rapidly accessible) to a positive trajectory of functioning and adaptation after a disturbance". Resilience is examined in this model is at the community level which is defined as "A process linking a set of networked adaptive capacities to a positive trajectory of functioning and adaptation in constituent populations after a disturbance" (Norris et al. 2008). Resilience is an important capability which enables communities to deal with long term stress due to natural disasters. An example of resilience at the community level is examined by Murphy (2007), and defined as the capacity to draw upon internal strengths and resources to deal with hazards and disasters. Resilient communities are more favorable because it facilitates emergency management efforts. That is why researchers may need to focus on resilience as a moderator variable in their research models.

Based on the research model, following propositions can be made;

Proposition 1: Social capital (bonding and bridging) positively influences the emergency management performance (mitigation, preparedness, response, recovery).

Proposition 2: Social capital has a positive impact in each phase of emergency management regardless of the contextual factors (cultural background, level of social capital, country, and disaster type and the impact of the disaster).

Proposition 3: Depending on different contexts, different levels of social capital may lead to different outcomes as it relates to the emergency management performance.

Proposition 4: If the community shows higher levels of resilience before and/or after the disasters, performance of the emergency management efforts will be greater.

The proposed model is applicable only in the context of natural disasters which impact large geographic areas. In such disasters, emergency efforts might be inadequate to provide formal support to all of the affected communities. In such cases, resources used in the emergency management efforts will be channelized to more vulnerable communities with lower levels of social capital. The research model, thus, may not be applicable in the context of other emergencies, such as fire in a building, or a local chemical incident. In such cases, performance of the emergency management will not be driven by social resources (social capital), because it is greatly likely that local emergency agencies will be able to deal with the emergency with their own resources.

5.2 Implications and Future Research Directions

There are several implications to this review study. It is obvious from previous research that social capital (bonding and bridging) provides benefits before and after the disasters. As also mentioned earlier in this review, communities with greater levels of social capital perform better than others in terms of managing the disasters' adverse effects. Therefore, it is an important implication that emergency management efforts and various resources required in this process should be channelized to the communities with lower levels of social capital. The reason is that communities having higher levels of bonding and bridging connections can handle the disasters to some extent until the formal support from local emergency agencies as well as the federal agencies if required. However, low social capital communities are more vulnerable to disasters and may not be able to show resilient behavior at both individual and community level. Another implication of this review is the fact that communities need to be involved in various types of activities which will enable the residents to be connected. Community organizations that are voluntary based should be encouraged by the local governments as well as the involved community members. This also requires that communities need to have individuals with leadership roles to make this happen. In terms of the emergency management perspective, it is of great importance to educate people concerning the requirements and actions before and after the disasters. In this way, residents of a community will be active assistants, instead of passive victims, of the emergency responders or other people helping in the extreme events (Dynes 2002). Another implication is for the policy formulation. Administration at the local, state, as well as at the federal level should be aware of the social capital reality, and should accept it as one of the resources to leverage in disaster response and recovery as well as mitigation and preparedness. Long-term strategies and action plans should be developed towards leveraging social capital in this context.

Finally, it is important to note that there are several research opportunities in this field of research. According to the literature review, there is no theory development study towards the use of social capital in disaster contexts. Future research might be needed to develop theoretical constructs related to social capital,

resiliency, as well as performance of each phase of emergency management (response performance, recovery performance, etc.). A possible research model is proposed in the current study. Another future research opportunity is that prior research did not focus much on the importance of individual social capital in extreme environments and how this helps in creating resilient behavior in the regions in which the risk of having disasters are greater. Past research usually focused on how the phenomenon is applied in achieving community level disaster activities and resiliency. Another future research opportunity is regarding the phases of emergency management. As also shown in Figure 1, previous research mostly focused on preparedness as well as recovery phases of disasters; this it is important to focus on the issue in terms of disaster mitigation and response.

REFERENCES

Adler, P. S. & Kwon, S-W. (2002). Social capital: prospects for a new concept. *Academy of Management Review*, 27(1), 17-40.

Airriess, C. A., Li, W., Leong, K. J., Chen, A. C., Keith, V. M. (2008). Church-based social capital, networks and geographical scale: Katrina evacuation, relocation, and recovery in a New Orleans Vietnamese American community. *Geoforum*, 39, 1333–1346.

Beugelsdijk, s. & Smulders, S. (2003). Bridging and bonding social capital: which type is good for economic growth? 1-33, 2003<http://www.eea-esem.com/papers/eea-esem/2003/119/EEA2003.PDF> (14.09.2010).

Bridge, G. (2002. The Neighborhood and social networks. *ESRC Centre for Neighborhood Research*, Bristol.

Burt, R. (1992). *Structural holes: The social structures of competition*. Cambridge: Harvard University Press.

Burt, R. (2000). The network structure of social capital. In R. I.Sutton, B. M. Staw & C. T. Greenwich (Eds.) *Research in Organizational Behavior,* JAI Press, 22, 345-423.

Cohen, D. & Prusak, L. (2001). In good company. In D. Cohen & L. Prusak (Eds.) *Good company: how social capital makes organizations work*. Boston: Harvard Business School Press, 1–26.

Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94: 95-120.

Drabek, T. E. & Hoetmer, G. J. (1991). *Emergency management: principles and practice for local government*. Washington, D.C.: International City Management Association.

Drabek, T. et al. 1981. Managing multiorganizational emergency responses: emergent search and rescue networks in natural disasters and remote area settings. Boulder: Institute of Behavior Science, University of Colombia.

Dynes, R. R. (2002). The importance of social capital in disaster response, *Preliminary Paper #327,* Disaster Research Centre, University of Delaware.

Dynes, R. R. (2005). Community social capital as the primary basis for resilience. *Preliminary paper #344*, Disaster Research Center, University of Delaware.

Haines, V. A. et al. (1996). Exploring the determinants of support provision: provider characteristics, personal networks, community contexts, and support following life events. *Journal of Health and Social Behavior*, 37:252-64.

Hurlbert, J. S. et al. (2000). Core networks and the activation of ties: what kinds of routine social networks allocate resources in nonroutine situations? *American Sociological Review*, 65: 598-618.

Hurlbert, J. S. et al. (2001). Social networks and social capital in extreme environments. In N. Lin, K. Cook, R. S. Burt (Eds.) *Social capital theory and research*. New York: Aldine De Gruyter, 209-231.

Kirschenbaum, A. (2004). Generic sources of disaster communities: a social network approach", *International Journal of Sociology and Social Policy*, 24 (10/11), 94-129.

Köseoğlu, G. (2007), Social capital development among tenant firms and between tenant firms and the host university in business incubators: a case of a Turkish business incubator, *Unpublished Master's Thesis*, Middle East Technical University, Ankara.

Kreps, G. (1984). Sociological inquiry and disaster research. *Annual Review of Sociology*, 10, 309-330.

Lee, R. L. et al. (2006). The role of social capital in emergency response. *Proceedings of the Twelfth Americas Conference on Information Systems*, Acapulco, Mexico, August 4-6 2006.

Lin, N. (2005). A network theory of social capital. In D. Castiglione, V. Deth & G. Wolleb (Eds.) *Handbook on social capital*. New York: Oxford University Press.

Lindell, M. K. et al. (2007). *Introduction to emergency management*. Hoboken, New Jersey: John Wiley & Sons.

Lyons, T. S. (2002). Building social capital for rural enterprise development: three case studies in the United States. *Journal of Developmental Entrepreneurship*, 7(2), 193-216.

Mimaki, J. & Shaw, R. (2007). Enhancement of disaster preparedness with social capital and community capacity: a perspective from a comparative case study of rural communities in Kochi, Japan. *Hydrological Research Letters*, 1, 5-10.

Murphy, B. L. (2007). Locating social capital in resilient community-level emergency management. *Natural Hazards*, 41, 297–315.

Nakagawa, Y. & Shaw, R. (2004). Social capital: a missing link to disaster recovery, *International Journal of Mass Emergencies and Disasters*, 22 (1), 5-34.

Norris, F. H. et al. (2008). Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness. *American Journal of Community Psychology*, 41, 127–150.

Putnam R. (2000). *Bowling alone: the collapse and revival of American community*. New York Simon and Schuster.

Putnam R. et al. (1993). *Making democracy work: civic traditions in modern Italy*. Princeton: Princeton University Press.

Ritchie, L.A. & Gill, D.A. (2007). Social capital theory and an integrating theoretical framework in technological disaster research. *Sociological Spectrum*, 27, 103–129.

Schuller, T. et al. (2000). Social capital: a review and critique. In S. Baron, J. Field, & T. Schuller (Eds.) *Social Capital: Critical Perspectives,* Oxford: Oxford University Press, 1–38.

Woolcock, M. (2000). Social capital in theory and practice: where do we stand? In J. Isham, T. Kelly & S. Ramaswamy (eds.) *Social capital and economic development well-being in developing countries*, Massachusettes: Edward Elgar Publishing, Inc., 18-39, <http://www.google.com/books?hl=tr&lr=&id=idighlpKtnEC&oi=fnd&pg=PA18&dq=Woolcock,+M.+(2000).+Social+capital+in+theory+and+practice:+where+do+we+stand&ots=CoQk6NVnS-&sig=QtA3deURsVCj3hY89gqudicsNrk#v=onepage&q&f=false> (14.09.2010).

Wuthnow, R. (2002). Religious involvement and status-bridging social capital. *Journal for the Scientific Study of Religion*, 41 (4), 669–684.

Zhao, Y. (2009). Social networks and reduction of risk in disasters: An example of Wenchuan earthquake, *Conference on Managing the Social Impacts of Change from a Risk Perspective*, Beijing Normal University, Beijing, 15-17 April 2009.

APPENDIX A: Summary of Research Findings

Study ID	Author(s) and Disaster Context	Independent Variable	Dependent Variable	Data	Analysis
1	Haines et al. (1996) Hurricane Andrew (1992) – USA	- Provider characteristics (age, gender, education, family income, etc.) - Personal network characteristics (density, size, gender diversity, etc.) - Community context characteristics (fraternal group membership, service group membership, etc.)	Social support (provision of material or instrumental aid during the disaster)	- Telephone interviews with 594 residents in two southwestern Louisiana (USA) communities which are most affected by the disaster. - Name generator technique is used for the network structure, network range data.	Regression (OLS, logistic)
2	Hurlbert et al. (2000) Hurricane Andrew (1992) – USA	- Social network characteristics (density, size, gender diversity, etc.) - Positional characteristics (age, gender, race, etc.)	Activation of core networks for informal support (proportion of core network ties, total number of informal support providers who were members of the core network)	- Telephone interviews with 594 residents in two southwestern Louisiana (USA) communities which are most affected by the disaster. - Name generator technique is used for the network structure, network range data.	Regression (OLS)
3	Hurlbert et al. (2001) Hurricane Andrew (1992) – USA	- Positional characteristics: age, race, gender, education, family income, marital status - Community integration: tenure in the area, participation in voluntary organizations	Network structure: kin, sex, education, age Network range: size, density, diversity	- Telephone interviews with 594 residents in two southwestern Louisiana (USA) communities which are most affected by the disaster. - Name generator technique is used for the network structure, network range data.	Regression (OLS)
4	Kirschenbaum (2004) Various disasters including first Gulf War (1991), missile attacks, earthquakes, terrorism, etc.	Characteristics of the disaster community (family network, neighborhood network, and community network)	Level of preparedness (provisions, skills, planning, protections)	- 841 adult households are surveyed (random-digital-dial and computer-assisted survey) in 150 urban areas in Israel (2001).	Regression Correlation
5	Nakagawa and Shaw (2004) - Kobe earthquake (1995) – Japan - Gujarat earthquake (2001) – India	Social Capital (network structure, trust, social norms, community leadership, collective action)	- Speed of recovery (duration of recovery process) - Satisfaction (survey to measure the satisfaction with town planning for reconstruction)	- Secondary data from official sources, prior studies, reports, etc. - Primary data (i.e., questionnaire survey and interviews) from 128 community members in Gujarat, India	Comparative case study Descriptive statistics
6	Mimaki and Shaw (2007) Flood disaster (2001) and Typhoon 23 (2004) – Japan	Social capital (leadership of the community leader, get-together activities in the community and emergency response community, efforts to build external links, etc.)	Disaster preparedness (enhancement of the level of consciousness for disaster preparedness, and activities done towards disaster preparedness, etc.)	Field survey and qualitative interviews with residents, teachers, school children, and local government officials in two communities Tosashimizu city	Case study Qualitative review
7	Murphy (2007) - Power blackout (2003) – Easter Canada and US - Water-borne disaster (2000) Walkerton, Ontario	Social capital (presence of and/or participation in community groups and organizations, interaction among community groups, participation of community groups in local emergency management planning, links to external organizations and municipal institutions)	Community resilience (the capacity to draw upon internal strengths and resources to deal with hazards and disasters)	- Power blackout case: 1203 general population telephone survey in Ontario, Canada in February 2004 - Water-borne disaster case: face-to-face structured survey with 104 households; 23 key informant reviews with community leaders, government officials, etc.; focus groups comprised of 12 community members	Case study
8	Zhao (2009) Wenchuan earthquake (2008) – China	- Use of social networks - Network size - Network composition - Network deterioration - Network reconstruction	- Information (the source to acquire disaster-specific information) - Social support (amount of support received from government, relatives, friends, volunteers, etc.) - Mental health (short and long-term psychological distress	- Post-disaster rapid needs assessment survey to 3652 households located in 144 clusters (villages, residential committees, or camps) in Sichuan earthquake area. - Position generator technique is used for the network size, network structure, and network change (deterioration and reconstruction) data.	Regression (OLS, logistic)
9	Lee et al. (2006) Tropical storm Ivan (2004) – USA	Social capital (bonding: communication between local emergency management community; bridging: links to external communities)	Performance of emergency management Design of Information Systems	Informal interviews with emergency managers of two communities in Central Pennsylvania (USA)	Case study Content analysis
10	Airriess et al. (2008) Hurricane Katrina (2005) – New Orleans East (USA)	Church-based social capital (efforts to strengthen the link among community members, and to link the community to the eternal co-ethnic institutions)	Post-Katrina recovery (rebuilding the community in terms of health-care and food related issues, restoring the power in the community, supporting the economic and social needs, and advising the local businesses, etc.)	- Survey data collected from 104 Vietnamese American community members - Focus group comprised of six (3 males and 3 females) community members - In-depth interviews with five key community informants, leaders, etc.	Qualitative (focus groups, interviews) and quantitative methods (survey)

Araş. Gör. Serkan Ada

Lisans eğitimini 2003 yılında Celal Bayar Üniversitesi İktisadi ve İdari Bilimler Fakültesi İşletme Bölümü'nde tamamlamıştır. 2003 yılında Yüksek Öğretim Kurulu bursunu kazanarak Kahramanmaraş Sütçü İmam Üniversitesi İktisadi ve İdari Bilimler Fakültesi İşletme Bölümü'nde Araştırma Görevlisi olarak görev yapmaya başlamıştır. 2007 yılında ABD'de State University of New York at Oswego'da işletme yüksek lisansını tamamlamıştır. Halen ABD'de University at Buffalo'da doktora eğitimine devam etmektedir. Bilişimin işletme değeri, bilişim güvenliği teorileri ve uluslararası iş etiği konularında makaleleri, uluslararası konferans bildirileri ve kitap bölümü bulunmaktadır.

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