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<https://doi.org/10.1016/j.ijdr.2024.104727>

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Turning Every Disaster into an Opportunity: An Exploratory Study on Refugees' Perceived Emergency Management Capacity and Disaster Resilience

Abstract

This article explores refugees' perceived emergency management capacity and disaster resilience. Adopting the theoretical framework of structural and cognitive social capital, we conducted in-depth interviews with refugees from Afghanistan, Congo, Iran, Myanmar, Somalia, and Thailand. The study identifies the specific needs of the refugee community regarding disaster management and their simultaneous vulnerability and resilience. Based on our research findings, we suggest that local disaster management agencies identify and collaborate with the community leaders in refugee communities to efficiently achieve their communication goals, strengthen refugees' disaster resilience, and better integrate refugee communities into the local community's disaster resilience development.

Keywords: social capital, social vulnerability, refugees, disaster resilience, emergency management capacity

Turning Every Disaster into an Opportunity: An Exploratory Study on Refugees’ Perceived Emergency Management Capacity and Disaster Resilience

Refugees are persons who are “unable or unwilling to return to their country of origin owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion” (United Nations High Commissioner for Refugees [UNHCR], 2010). In the United States, more than three million refugees have been resettled since 1975 (UNHCR, 2021). Refugees’ well-being is an integral part of the host countries’ safety, stability, and development. However, this goal is often hard to achieve because refugees are significantly impacted by disasters due to lack of resources and disaster-coping capacities (Lemyre et al., 2009; Xin et al., 2013).

Understanding refugee communities’ capacity and disaster resilience at the local level is an essential component of community-based emergency management. This study investigates refugees’ perceptions of disaster preparedness, disaster resilience, and emergency management capacities through the lens of social capital and community resilience. It examines the needs, obstacles, and potential solutions regarding refugees’ disaster preparedness in Texas. Texas has been one of the top placement states, resettling a growing population of refugees from countries such as Afghanistan, Cuba, Iran, Myanmar, Somalia, Thailand, and Vietnam (United States Department of State [USDOS], 2021). The large and diverse refugee population in Texas enables us to thoroughly investigate refugees’ disaster preparedness and resilience from multiple perspectives.

The purpose of this research is: (1) to understand refugees’ perceptions of disaster resilience and their culturally specific needs in response to disasters; (2) to improve future policymaking in emergency management through providing first-hand information about

refugees' needs and perceived disaster resilience; (3) to enrich emergency and disaster management literature on social vulnerability and community resilience.

The research findings will provide insights for emergency management professionals and policymakers to implement evidence-based programs and interventions at local and state levels. Specifically, through conducting in-depth interviews with refugee individuals, we seek to answer three overarching research questions:

1. What are refugees' experiences of vulnerability in disaster settings in the United States?
2. What social capital is available for refugees to use to prepare for, respond to, and recover from disasters?
3. What do refugees think they could do to enhance their disaster resilience?

Literature Review

Refugee Communities and Social Vulnerability

Social vulnerability identifies factors that make communities more resilient to hazards and disasters. Refugees are always considered vulnerable populations as they are in a deprived position in the society (Uekusa & Matthewman, 2017). Vulnerable populations are at risk of not accessing proper preparation, protection, or recovery services in emergency and crisis situations. Gaillard (2010) defined vulnerability as individuals' and communities' "susceptibility to suffering damage in a potentially dangerous event, either natural, economic or political" (p. 219). Institutional, demographic, cultural, socio-economic conditions, and social forces such as racism, gender and economic inequalities, linguisticism, and other forms of oppression generate and exacerbate vulnerability (Aung et al., 2022; Uekusa, 2020).

Disaster preparedness requires collaborative efforts of service providers and the communities themselves to reduce vulnerability and minimize potential damages (Keeney, 2004). Communities with less access to resources and less social capital are more likely to face daily challenges and structural violence that makes those communities harder prepare for disasters. For example, Donner and Rodríguez (2008) noted that social class, education, gender, age, and language proficiency all exacerbated individuals' vulnerability. In flood zones, communities with a higher percentage of low-income households have higher levels of social vulnerability than whose income and resource capacities are greater (Donner & Rodríguez, 2008).

Compared to the native-born population, refugees are more affected by disasters because of their lower socio-economic status, language barriers, and cultural differences (Donner & Rodríguez, 2008; Lemyre et al., 2009; Scurfield, 2008). Therefore, to empower refugees in disaster settings, emergency managers and service providers need to delineate refugees' existing emergency management capacity and vulnerability in disaster management. In this way, they are able to identify an effective way to allocate resources and enhance refugees' disaster resilience.

RQ1: What are refugees' experiences of vulnerability in disaster settings in the United States?

Social Capital

In addition to lower socio-economic status, language barriers, and cultural differences (Donner & Rodríguez, 2008; Lemyre et al., 2009; Scurfield, 2008), a lack of social capital further weakens refugees' disaster preparedness (Uekusa & Matthewman, 2017). Putnam (2000) defines social capital as relationships and networks and the associated reciprocity and trustworthiness. Social capital also refers to "the aggregate of the actual or potential resources

that are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition” (Bourdieu, 1986, as cited by Aldrich & Meyer, 2015, p. 256). Overall, social capital encompasses social networks, resources, and “the values ascribed to these resources by the individual,” such as reciprocity, trust, and shared norms (Wind et al., 2011, p. 4).

Various forms of social capital can generate material interventions and institutional modifications to reduce a community’s vulnerability in response to a crisis or disaster (Pelling & High, 2005). More importantly, social capital is a valuable lens through which to delineate how people manage resources and what promote collective actions through social networks (Tasic & Amir, 2016). A community’s resilience relies on the ability to act collectively (Azad et al., 2022). Given the prominent roles of social capital in explaining the complexity and dynamics of a community when it faces disruption (Roque et al., 2020), social capital has been a salient concept in community disaster resilience research. Among the various forms of social capital, structural and cognitive social capital are most likely to affect one’s disaster-coping capability. These two types of social capital are not exclusive but are highly interrelated to each other, providing us with an invaluable lens through which to understand how refugees can enhance their disaster resilience through various forms of communicative activities.

Structural Social Capital

Structural social capital concerns network ties among people and “who you reach and how you reach them” (Nahapiet & Ghoshal, 1998, p. 244). Structural social capital can be divided into three types: bonding, bridging, and linking (Aldrich & Meyer, 2015). Bonding social capital emphasizes the common identity and strong relationships among people with shared interests and beliefs. For refugees, bonding social capital is mainly from connections with

people from the same ethnic community (Elliott & Yusuf, 2014). Research shows mixed effects of bonding social capital on refugees' disaster resilience. On the one hand, bonding social capital can enhance disaster resilience by providing social support, security, stability, and solidarity (Iosifides et al., 2007); on the other hand, in-group networking and reinforcing group identities might increase the risk of social isolation and segregation from local residents, which imposes a threat to disaster resilience (Vergani et al., 2021).

Bridging social capital comprises relationships among people from different networks based on socioeconomics, religion, age, gender, ethnic group, or location of residence (Kwok et al., 2019). Refugees' bridging social capital is built through their interaction with the broader society, such as education, employment, religious activities, and community groups.

Bridging social capital enhances refugees' disaster resilience. For example, Ager and Strang (2008) found that friendly neighborhoods and local communities could contribute to refugees' feeling at home and secure. Similarly, a study on the 1995 heat wave in Chicago showed that members of churches and social groups had a significantly lower risk of death during the heat wave (Semenza et al., 1996).

Linking social capital consists of social networks that “interact across explicit, formal, or institutionalized power or authority gradients in society” (Szreter & Woolcock, 2004, p. 655). Linking social capital comes from the vertical relationships with formal institutions and people who hold decision-making and resource allocation power, such as law enforcement officers, health care providers, and governmental agencies (Kwok et al., 2019). Refugees' interaction with resettlement agencies has been their main source of linking social capital (Xie & Chen, in press). Those organizations play a central role in connecting refugees with policymakers as well as public service and social welfare service providers.

Scholars have argued that the disasters preparedness is contingent on having strong forms of all three types of bonding, bridging, and linking social capital (Hanson-Easey et al., 2018). For refugees, however, studies have found that they might have abundant bonding social capital with the absence of bridging and linking social capital (Hanson-Easey et al., 2018). The three components of bonding, bridging, and linking social capital provide a comprehensive framework to examine refugees' network size and composition at the levels of intra-community, inter-community, and community-public agency (Elliott & Yusuf, 2014).

RQ2a: What bonding, bridging, and linking social capital do refugees have in response to disasters?

Cognitive Social Capital

Cognitive social capital covers the psychological resources that foster trust, reciprocity, shared norms, and narratives. Cognitive social capital is concerned with one's perceptions of interpersonal trust, sharing, and reciprocity (Harpham et al., 2002; Villalonga-Olives & Kawachi, 2015). Wong et al. (2019) identified trust and sense of community as two major components and indicators of cognitive social capital. Trust is "the mutual expectation that arises within a community of regular, cooperative behavior, based on commonly shared norms" (Paldam & Svendsen, 2000, p. 342). Scholars argued that trustful social networks could empower a community, facilitate collective actions, and reduce disasters' consequences (Tasic & Amir, 2016). Sense of community refers to "a feeling members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together" (McMillan & Chavis, 1986, p. 9). Cognitive social capital is most salient in disaster settings, because individuals' subjective feeling of

belongingness, attachment, relatedness, and togetherness also leads to adherence to community norms and collective action (Kwok et al., 2019).

Cognitive social capital can be generated through social support and perceived instrumental and emotional social support. For example, among older adults, perceived access to instrumental support from neighbors is associated with a lower level of depression (Forsman et al., 2011). Story et al. (2020) identified the salience of emotional support for disaster preparedness within the Women Empowered (WE) communities in Ethiopia. Through sharing emotional burdens, spiritual guidance or solidarity, and improving self-esteem, WE communities not only served as a source of emotional support during crises, but they also enabled members to develop their own self-efficacy and confidence in preparing for disasters (Story et al., 2020).

In addition, informational support and better access to information have been identified as a critical component of cognitive social capital (Tasic & Amir, 2016). Before, during, and after disasters, every community member expects and deserves timely and accurate information regarding what is going on and how to access resources. Also, information is the key to taking action. Tasic and Amir (2016) found that information was a crucial assets to build strong community bonds and ties when a disaster strikes. A meta-analysis by Mengesha et al. (2021) suggests that pregnant women learned to better utilize maternal health services through receiving informational, instrumental, and emotional support from trusted members of their personal networks.

Overall, cognitive social capital can be examined from three aspects: informational support that enables people to “know” and understand things, instrumental support that enables people to “do” things, and emotional support that enables people to “feel” things (Harpham et al., 2002; Wind et al., 2011). The perceptions and beliefs of informational, instrumental, and

emotional support are helpful in fostering shared understandings and interpretations that "hold people together and lets them share what they know" (Chow & Chan, 2008, p. 460).

RQ2b: What informational, instrumental, and emotional support is available for refugees?

Both structural and cognitive social capital are essential components of emergency management, such that they bring community members together and establish common agendas and collective goals (Im & Rosenberg, 2016). In terms of the interplay of structural and cognitive social capital, scholars have had mixed findings. Some researchers pointed out that structural social capital was associated with increased cognitive social capital in disaster settings (Rung et al., 2017; Wong et al., 2019). In contrast, research also found that the correlation between structural and cognitive social capital was not always positive (Vergani et al., 2021; Xie & Chen, In press). More research is needed to explore how to utilize the existing relationship and resources to enhance refugees' disaster resilience.

From Vulnerability to Resilience

Community resilience is defined as a community's capacity to survive from disruption, restore from a shock, keep functioning, and improve levels of resilience for future disasters (Roque et al., 2020). Ross (2016) pointed out that adaptive capacity, organizational capacity, emergency manager experiences, and past disaster experience are important factors for community resilience.

Understanding resilience requires a proper understanding of social vulnerability in disasters (Uekusa & Matthewman, 2017). Scholars have pointed out the misleading effect of viewing vulnerability and resilience as negatively correlated and called for more research on the complex and multidimensional relationship between vulnerability and resilience (Uekusa &

Matthewman, 2017). Tierney (2014) argued that vulnerable people can be disaster resilient in some aspects. For example, Pulvirenti and Mason (2011) identified refugee women's resilience with their survival and adaptive capacity. As Fielding and Anderson (2008) stated, "Refugees must adapt to whatever environment they find themselves in, and the evidence shows they are stronger when they do this together" (p. 7).

Refugees' vulnerability and resilience can exist and be salient simultaneously (Uekusa & Matthewman, 2017). Specifically, refugees might need tailored programs and services and additional resources to cope with disasters because of the lack of resources. Also, the strong ethnic and cultural ties might make refugees stay with their own culture and refuse the connection with the broader community, while disaster resilience requires the adoption of norms and behaviors of the host society (Elliott & Yusuf, 2014). While refugees are more vulnerable to disaster than local residents are, occasionally, refugees have unique sources of resilience that allow them to adapt to the cultural environment and deal with disasters. For example, Carlson et al. (2012) studied unaccompanied refugee minors and found that their sources of resilience include a positive outlook, healthy coping mechanisms, religiosity, and connectedness to prosocial organizations. In this study, we examined what refugees thought they could do, should do, and wanted to do to enhance their disaster resilience.

RQ3: What do refugees think they could do to enhance their disaster resilience?

Methodology

To thoroughly understand refugees' perceptions of their disaster resilience and what they think is needed to prepare them for future disasters, we conducted 20 in-depth semi-structured interviews with refugees from Afghanistan, Congo, Iran, Myanmar, Rwanda, Somalia, and Thailand. The qualitative methods allowed us to investigate and interpret refugees' experiences

within specific social contexts. To ensure the anonymity of participants' identities, letters and numbers are used as pseudonyms to represent the participants. The research participants' information is presented in Table 1.

Table 1 Demographic Information of Interviewees

	Age	Gender	Country of Origin	Year(s) in the U.S.
RFG01	34	M	Myanmar	12 years
RFG02	28	F	Myanmar	9 years
RFG03	24	M	Congo	5 years
RFG04	20	M	Afghanistan	11 months
RFG05	27	F	Thailand	15 years
RFG06	22	F	Thailand	13 years
RFG07	35	F	Rwanda	10 years
RFG08	21	F	Thailand	5 years
RFG09	43	M	Afghanistan	14 months
RFG10	39	M	Afghanistan	9 months
RFG11	70	M	Iran	6 years
RFG12	53	M	Iran	6 years
RFG13	81	M	Iran	8 years
RFG14	60	F	Iran	8 years
RFG15	66	M	Iran	6 years
RFG16	25	F	Myanmar	14 years
RFG17	25	F	Myanmar	14 years
RFG18	49	M	Somali	13 years
RFG19	47	F	Myanmar	11 years
RFG20	22	M	Myanmar	11 years

Research participants were recruited through purposive and snowball sampling. IRB approval was obtained from the researchers' institution, and a signed consent form was collected before each interview. After getting the IRB approval, we started reaching out to local refugee service organizations in Texas, including the Refugee Services of Texas, Refugee Language Project, and the Catholic Charity of Amarillo. These organizations helped us connect with refugee communities' leaders and members. After identifying and contacting several community leaders and members, we used snowball sampling to recruit more participants.

All the interviews were conducted face-to-face at convenient times and places identified by participants. The interviews used an open-ended and semi-structured interview protocol,

lasting from 40-80 minutes for each. The interview questions mainly asked participants about (1) their experiences of disasters in the United States; (2) the informational, instrumental, and emotional support they had received regarding disaster management; (3) the barriers and challenges they had encountered in coping with disasters. The interviews were audio recorded, transcribed verbatim, and thematically analyzed. Four interviewees (RFG 13, 14, 15, and 19) refused the interview recording request because they thought the recordings might cause troubles to them, who were not U.S. citizens. We respected their concerns and took notes during the interviews.

In addition to interviews, we have been actively involved in public events in refugee communities. The leading researcher has served as a volunteer at a refugee resettlement agency and as a mentor for a refugee woman for over a year. She also helped facilitate a medicine kit distribution event for the local public health department at a refugee ethnic church. We also gave lectures at cultural orientation workshops at refugee resettlement agencies and local community organizations on the topics of disaster preparedness and public health awareness. We took notes of our observations and interactions with public health officials and church leaders and constantly discussed and compared our notes with the literature and interview transcripts. The prolonged engagement with refugee communities also enables us to develop a deep understanding of refugees' lives and experiences in the United States.

Data analysis followed the three steps of analyzing interview data recommended by Hesse-Biber and Leavy (2006): data preparation, data exploration, and data reduction. First, interview transcripts were prepared along with our short memos that documented interviewees' responses and our observations at public events. Next, during the data exploration phase, we used the constant comparison method (Corbin & Strauss, 2008) to analyze data. The constant

comparison method involves three steps: reading through the data, identifying recurring categories, and sorting data into coding categories. We read our transcripts and memos and highlighted the themes that interview participants repetitively mentioned. The universal themes were developed into coding categories. Finally, we divided the respondents' answers into the coding categories identified in the previous step during the data reduction phase. We further combined several coding categories and sorted them into the existing social capital and emergency management framework. Table 2 presents the themes and subthemes identified in the coding process. Each group of categories responded to one research question.

Table 2 Themes and Subthemes Identified			
Main Themes	Subthemes	Coding Categories	Example Quotes/Stories
Vulnerability	Environmental change	Climate difference and the lack of knowledge of severe weather in the United States	RFG18 took three years to gradually adapt himself to the cold weather and take actions to prepare "appropriate clothing and equipment" ahead of time.
	Language and cultural barriers	Lack of English proficiency to communicate and receive needed information	RFG03 described not knowing English as "a greater disaster than a hurricane."
		Various cultural backgrounds and different understanding of the concept of disasters	"What you consider disasters might be different from what I consider as disasters."
	Discrimination	Negative stereotype of refugees and mistreatment	"I was targeted and blamed about something I did not do. And they don't apologize."
	Lack of education and employment opportunities	Challenges to get education and employment opportunities	RFG03 noted refugees should get "some reasonable better jobs."
	Lack of preparedness	Not aware of disasters and have not taken actions to prepare for future disasters	"Never thought about disaster could happen"
Structural Social Capital	Bonding social capital	Connection with local ethnic communities and co-ethnics	"We are community-based people. They will be the first

			people I go to ask for help if something happens.”
	Bridging social capital	Connection with individuals and organizations outside their ethnic groups	[Refugee resettlement organization] “will come to you if they know you because they are the ones in charge of receiving refugees and they want to make sure you are safe.”
	Linking social capital	Connection with governments and other service providers	Receive governmental assistance during the COVID-19 pandemic.
Cognitive Social Capital	Informational support (“knowing”)	Receive needed disaster-related information	Cultural orientation workshops and lectures on the topic of safety are regularly offered by resettlement agencies.
	Instrumental support (“doing”)	Receive tangible and specific material support	The local public health department gave a lecture regarding the COVID vaccine and distributed COVID vaccine and medicine kits at a refugee ethnic church.
	Emotional support (“feeling”)	Receive support to reduce uncertainty and enhance trust and sense of community	RFG11 felt safe and confident in dealing with any future disasters because he knew that “there will always be good and kind people help me” makes him feel safe and confident in dealing with any future disasters.
Resilience	Inherent strengths, assets, and capacity	Cultural heritage, disaster experiences, and strong ethnic ties	“I think I can handle anything since I survived in my country.”
	Collaboration across communities	Willingness to be integrated into the broader community	Nurture community leaders who can connect the host society and articulate the disasters’ significance and planning to the community

Findings

Refugees’ Experiences of Vulnerability and Disasters

RQ1 asked about refugees’ experiences of vulnerability in disaster settings in the United States. Refugees entered a drastically different natural and cultural environment when they got resettled in the host country. Among the numerous challenges and difficulties they mentioned, environmental change, language and cultural barriers, discrimination, and lack of education and

employment opportunities were most likely to exacerbate their vulnerability in disaster settings. Also, while being asked about perception of disaster preparedness, the majority of the research participants showed that they were not preparedness at all.

Environmental Change

Most refugees were neither mentally nor physically prepared for severe local weather conditions. Refugees from Southeast Asian and African countries found the need to rapidly adapt themselves to the local climate to be the first challenge they encountered. RFG07 was from East Africa. She had never experienced snow before she came to the United States and caught a cold when she first experienced snow. She noted, “I thought it was something like sugar, and I did not know it was cold. So I stood outside and talked to my friends. I was sick for three weeks [after the snow].” RFG18 was from Somalia, and he had never experienced cold winter before he resettled in the Texas panhandle. It took him up to three years to gradually adapt to the local winter weather, when he learned to prepare appropriate clothing and equipment such as sweaters and hats.

Not knowing how to cope with local weather could make refugees even more vulnerable when severe weather conditions happened. In 2012, a severe hailstorm damaged the roof and windows of RFG19’s house and car. She never knew that “hail could be as big as eggs,” so she did not take any preventive actions before the hailstorm. During the hailstorm, she did nothing other than closing all the doors and windows and hiding herself in the room. RFG19 was so scared that she could hardly describe how she survived the one-hour hailstorm. To her, the shock brought about by the huge size of hail exceeded the property loss caused by the hailstorm.

Language and Cultural Barriers

Almost all the interviewees viewed language barriers as a major challenge. RFG03 described not knowing English as “a greater disaster than a hurricane.” Lacking proficiency in English significantly impacted their interest in and ability to receive disaster-related information from emergency management organizations and local governments. To circumvent the language barriers, refugees turned to their relatives and friends for help and information. RFG12, for example, trusted his relatives and friends the most and would “follow what other people do. They hide I hide.” He said that he decided to get the COVID-19 vaccine only because his friends and relatives got it. Since he thought he could receive the information he needed from his relatives and peers, he did not think he need disaster-coping information in English from other sources.

Some refugees were not prepared for disasters due to their cultural and religious backgrounds. RFG08 noted that her religion taught her to focus on the current moment and day-to-day life. This was partially why she did not think about long-term plans or the future, let alone disasters. Some refugees from family-oriented cultures bear the responsibility to take care of families, with limited opportunity for their own development and engagement with others. RFG06, an instructional assistant at a public elementary school, said: “I have to take care of my family because I am the only one can speak English in my home.” Similarly, RFG08 believed that she could never leave her family, get married, or have children because her parents depended on her. Being overwhelmed by the day-to-day tasks prohibited refugees from seeking information from or building connections with other local groups, which could prohibit them from obtaining timely support when a disaster occurred.

Discrimination

Refugees did not find discrimination to be a common or severe challenge to them, but the occasional moments when they were discriminated against by local residents could discourage refugees from seeking support when disasters occurred. RFG04 worked at an apartment complex maintenance and was discriminated against by his co-workers. He noted, “I was targeted and blamed about something I did not do. And they don't apologize.” He decided to quit his job when he asked the apartment manager, “You treat me badly. Is it because I am not an American?” The manager said yes. RFG05 concluded that some people were not nice to refugees or immigrants. Some people rejected her by simply saying “we don't have anybody who speaks your language.” Due to their unpleasant experiences, refugees chose to seek help from people who they knew very well and had already offered tremendous help, such as those from their ethnic church (RFG05).

Lack of Education and Employment Opportunities

Employment is a critical standard for refugee resettlement agencies to measure their successfulness and effectiveness of service and refugees' self-sufficiency. At a resettlement agency's event, the organization's director proudly announced that this organization was ranked number three in the United States regarding employment rate and the average waiting time for their clients to get employment, which is two months.

However, these “hard-working jobs” also create challenges for refugees (RFG03). Most of the refugees need to work a long time and at different time shifts, so they do not have time for family dinners, education, and socializing. RFG03 and his mom are both refugees. He said that when he worked at a meat packing plant for four months, “I can [could] spend the whole week without seeing my mom, and we live in the same house. Because I worked from 9:00 [am] to 6:00 [pm] and my mom goes to work at 2:00 pm and she comes back at over midnight, past

midnight.” Also, because of the challenge of balancing work and school and taking care of family, both RFG03 and RFG04 dropped out of the community college, although they believed education was important for their future success.

Because of the time schedule conflict, it is hard to provide training and workshops for refugees. RFG03 has helped many community organizations to organize events and invite refugee participants. He noted that he always needs to “beg them to come.” He also noted refugees should get “some reasonable better jobs.” Similarly, RFG08 stated that disaster preparedness is not on their priority list because they have so many “more important things” to do.

Lack of Preparedness

Somewhat surprisingly, most refugees had “never thought that disasters could happen” (RFG07) on them. RFG 13 and 14 noted that they had experienced severe weather or other disasters, had heard stories of disasters from their friends, neighbors, and the news media, and had learned about the dangers of disasters such as tornados and earthquakes, but they believed there was nothing they could do when another disaster happened. As RFG18 noted, “No one of the immigrants has an idea of what can happen. They just believe the government will help.”

RFG08 experienced a hurricane evacuation in Port Lavaca, Texas a few years ago, and more recently, a snowstorm caused a water pipe burst in her house. Both experiences were shocking and fresh in her memory, and she acquired some scattered knowledge about how to cope with extreme weather conditions and natural disasters. After the snowstorm, she learned from an apartment owner that she should let the water pipe drip when the weather temperature went below a certain degree. Nevertheless, when asked what she would do and to whom she would seek help if another natural disaster happened in the near future, she had no idea. She

agreed that being prepared for disasters was important, but she had never thought about taking any action. Similarly, RFG15 had experienced earthquakes, snow, and heavy rain. Despite emphasizing how shocked he was when he first encountered those unexpected disasters, he did not learn any lessons or come up with any plans to cope with similar situations in the future. “No matter what happens, I will stay at home,” he said. He knew that “the house is made by wood, [but] I don't know anywhere else to go.” He had never talked about disasters with his family, and he said that he was not interested in receiving any kind of information regarding disaster preparation.

The various challenges and difficulties from both the refugees’ own cultures and external constraints limited their capacity to engage in and navigate the resources that were available in the broader host society. RFG02, a pastor at a refugee ethnic church, was the only participant who were aware of the necessity of raising disaster coping awareness and capabilities within refugee communities. He planned to hold workshops to educate church members about disaster preparedness and public health. He quickly realized that his plans were not welcomed because people would not want to spend as few as 15 minutes attending a disaster preparedness workshop.

RFG03 echoed this opinion and called it “ignorance.” Based on his observations, RFG03 believed that most refugees cared the most about working, making money, paying bills, feeding their families. “They haven’t been open enough to any other communities,” he said.

Social Capital

Despite a low level of preparedness for disasters and a lack of interest in empowering themselves for future disasters, refugees identified a wide variety of sources from which they believed they could obtain support when needed. These resources could help them cope with

disasters. They were the social capital refugees had obtained. Within the social capital framework, the resources refugees mentioned can be sorted into two groups, structural and cognitive social capital. RQ2 is concerned with the available social capital for refugees to cope with disasters. This section elaborates on what resources and assistance were available for them and where those resources were from.

Structural Social Capital

Bonding social capital is the strong relationships and social networks among individuals with shared experiences and backgrounds. Refugees perceived their bonding social capital as the most important and the most convenient resource they had access to. When asked what they would do if a tornado destroyed their house, most refugees answered that the first thing they would do was to ask their sons, daughters, cousins, brothers, sisters, and other relatives for help.

Some ethnic groups had formed well-established ethnic communities, and members of the ethnic communities became the major bonding social capital for refugees. However, bonding social capital varied greatly across ethnic groups. The Chin, an ethnic group from Myanmar, for example, had established its own local community in the city. The Chin church was the main organization to connect Chin refugees. The community members were from all walks of life, including nurses, insurance agents, barbers, tailors, etc. The close connections and diverse professions within the Chin community provided basic information and resources that community members might need in coping with disasters. As RFG20 noted, “We are community-based people. They [Community members] will be the first people I go to ask for help if something happens.” Newly arrived Chin refugees did not have to seek help from professional refugee serving agencies anymore because they could get all kinds of support from the local Chin community (RFG02). This trend was observed by RFG19 as well. RFG19 found

that refugees preferred to go to their ethnic church and community to ask for help when they encountered some situations they were not able to handle. Similarly, the Burmese refugees had established a support system within its community, the support and resource were mainly from the ethnic group. In addition, members of the established communities often lived near each other, making it easier for community members to support each other. RFG12, an Iranian refugee, lived in an apartment complex where "at least 10 other Iranian families lived in the same building." Whenever he needed help, he would first ask for help from his cousins and relatives in the same community.

Not all the ethnic groups had formed well-established communities, which greatly weakened refugees' abilities to cope with all kinds of difficulties and challenges, including disasters. Without well-established communities, refugees relied heavily on a small number of individuals for help and support. RFG03 spoke fluent English, so he believed that everybody in the local African community knew him. Every time his friends needed help, they would reach out to him. He helped with issues such as asking for doctors' notes, getting drivers' license, and talking to school teachers and apartment managers. Given his proficient language skills and the prominent role RFG03 played in his own community, he was no doubt a primary bonding social capital for his community members.

Similarly, the Afghans had not built their own ethnic communities yet (RFG09). RFG09 and 10, who had master's degrees and spoke English fluently, had devoted countless time and efforts to help "newcomers." He was proud of what he did, because with his efforts, new refugees did not have to experience the same hardship as he experienced when he newly arrived in the U.S. (RFG10). In addition to helping his own 11 family members, RFG09 received at least 30 phone calls from Afghans who asked help from him in a typical day. He noted, "There are

about 300-400 Afghan people in this city now, but only 15-20 of us can speak English.” He also noted, “I got ten phone calls from my office to here today before this [the interview].”

Community leaders like RFG03, RFG09, and RFG10 had been playing a crucial role in transferring their knowledge and experiences needed to survive in the host society (RFG017) to members of their co-ethnic groups in everyday settings. When a disaster happened, they could serve as a bridge to connect refugees with a wider variety of local resources.

Bonding social capital alone is not sufficient to enhance refugees’ disaster resilience. Local resettlement agencies and community organizations are the main resources for refugees’ **bridging social capital**. Resettlement agencies are always the first bridging social capital that refugees can acquire when they arrive. RFG04 viewed the two local resettlement agencies as “my two arms to help me.” His case manager helped him with government documents such as getting Social Security Number, employment, apartment set up, and getting essential materials for daily life. A volunteer from another local organization helped him whenever he had an emergency, even at midnight. RFG03 also believed that due to the established trust, resettlement agencies would be the first place for him to ask for help and assistance, such as shelter and food, if a disaster happened.

Although bridging social capital played a pivotal role during the early stages of resettlement, it did not appear to last long. Once refugees settled down and they believed they were “independent,” they no longer kept an active contact with those refugee serving organizations (RFG19). In addition, volunteers from the local community provided essential bridging social capital for refugees. For example, RFG16 and 17 greatly appreciated Ms. E, a nurse from a local high school. Ms. E had been reputable and famous for helping refugee

communities, making her the main support and the trustworthy resource for refugees. Other non-profit organizations refugees trust included Heal the City and Snack Pak 4 Kids.

During disasters, resettlement agencies and experts served as the main **linking social capital** and information sources for refugees. Refugees did not have the ability to quickly find the specific governmental agencies where they could receive monetary or material support, so they turned to local resettlement agencies instead. In this way, local resettlement agencies served as a bridge to transfer governmental resources to refugees. During the COVID-19 pandemic, RFG06 relied on a local refugee serving organization to receive the COVID relief money from the government, in this way, he was able to pay rent. RFG02 stated that she would first contact the local resettlement agency and let them know that there is a large ethnic group here that might need help. Because resettlement agencies are “under the government” (RFG02), she trusted the information and the resources from these agencies. “Although they might not be able to help us survive, because themselves need to survive disasters too. So, just basic information, like what do we do, and inform us and then for what they have informed us and provided us we can kind of manage and arrange ourselves with the shelters and what we could do” (RFG02).

Cognitive Social Capital

Refugees obtained cognitive social capital from a wider variety of sources. During disasters, **informational support** and reliable information is critical for any individuals and communities. Many refugees mentioned that if a disaster happened, the first and the most important information they wanted to obtain was informational support on what to do right away. Refugees obtained informational support mainly from resettlement agencies and the news media.

Cultural orientation workshops and lectures on safety issues have been regularly offered by resettlement agencies, and many refugees learned some basic emergency management skill

sets, such as calling 911 when any emergency happened, from those workshops. The topics of those workshops and lectures varied greatly across time, some of which were related to disaster preparedness. Refugees learned a small amount of unsystematic knowledge about coping with severe weather and disasters. RFG10 found those workshops and lectures to be highly effective. But they were not likely to benefit the refugees who did not speak English (RFG10).

In addition, refugees received disaster-related information from the news media and social media. The Persian and Arabic versions of BBC News and YouTube news channels were the main information resource for RFG12. He watched “something happened in other places and got ideas about what people should do” during disasters. Similarly, RFG14 learned that she needed to go to the bathroom or find shelter when a tornado occurred from the TV news. RFG16 and 17 received information related to disasters, such as preparing an emergency kit with a flashlight and emergency food from TV news and the social media group chat from their ethnic church. Overall, they believed they had obtained the basic knowledge of coping with disasters but are not well prepared.

Refugees relied on resettlement agencies, local governments, and their own ethnic communities to receive **instrumental support**. Resettlement agencies were obligated to provide refugees with basic and reliable support, especially when refugees just arrived in the country. However, RFG10 “did not ask for any help” from the resettlement agency after the first two months. RFG10 felt not being respected when he asked questions at the resettlement agency. He noted, “The organization should respect their questions from newcomers” and “treat them in a nice way.” The unpleasant experiences could have discouraged refugees from trusting resettlement agencies.

In addition, local governments occasionally played a role in offering instrumental support. The local public health department gave a lecture regarding the COVID vaccine and distributed COVID vaccine and medicine kits at RFG16 and RFG17's church. This kind of event not only provided material support but also educated refugees about taking preventive actions during a public health pandemic. Refugees did not have the abilities to identify the correct medicines from the pharmacies, so they found the medicine kit, along with an information sheet with instructions, to be most useful.

Of most importance, ethnic groups provided instrumental support for refugees' daily needs, such as interpretation and translation services. "Our church provides interpretation and translation services for our members. But sometimes, some places like the court or hospitals require translators with certificates. And we don't have those people. So they cannot do the service" (RFG01).

Although refugees were not well prepared for disasters, they were not overly concerned about disasters because they had received consistent **emotional support** from their ethnic groups. RFG11, for example, said that knowing that "there will always be good and kind people to help me" made him feel safe and confident in dealing with any future disasters. This kind of minor and intangible support reduced his fear of disasters. For RFG15, the emotional support not only came from his sons and relatives but also came from the local church. Although most of the church members didn't speak Arabic or Persian, the languages he spoke, he consistently went to the church to seek a sense of belongingness. Similarly, simply "seeing" people at the Chin church made RFG19 feel safe.

Other kinds of emotional support were rooted in refugees' shared experiences and cultural backgrounds. RFG04 stated that sharing "the memory and the experience of separating

from family” was the main thing during his communication with other Afghans. Although RFG06 had not asked for any help from the local Karen community, she believed she could receive help whenever she needed because “the community is there.”

Enhancing Refugee Community’s Disaster Resilience

RQ3 asks about how refugees perceive their disaster resilience and what they think is needed to enhance their disaster resilience. Since “disasters” appeared to be too abstract to refugees, we converted our interview question into more specific ones: “what would you do if a flood/tornado destroyed your house the coming summer? How confident are you in surviving a flood/tornado?” When asked about their responses to this specific disaster, refugees identified various coping strategies, which showed their disaster resilience. In addition to utilizing the various forms of structural and cognitive social capital mentioned in the previous section, refugees found that their personal experiences as refugees had reduced their vulnerability and thus enhanced their disaster resilience. Of more importance, refugees found it necessary to seek more social capital to improve their disaster resilience. They gave valuable suggestions on how to gain social capital inside and outside their communities.

Refugees’ personal experiences enhanced their disaster resilience. Even though they did not view disaster preparedness as a crucial component of their everyday life, refugees were able to recall a lot of knowledge and skill sets acquired from their previous disaster experiences. RFG06 and RFG07, for example, believed that their previous unpleasant experiences with disasters in their home countries had “made them strong” (RFG07). RFG06 learned how to use a traditional Asian stove to cook food and make her house warm, when a water and electricity outage occurred due to a snowstorm. Similarly, after experiencing several severe weather conditions, RFG08 found an “Asian fireplace” she got from the Asian store to be the best home

appliance to help her survive similar cold weather in the future. She proudly introduced to us how to use the Asian fireplace to warm the house, light the room, and cook food. RFG16 and RFG17 were very scared the first time they encountered a tornado warning a few years ago. But they quickly learned from that experience that they should go to a shelter if something alike happened in the future. They rated their confidence in handling a future tornado at 8 points on a 10-point scale.

Some refugees were not able to recall the specific knowledge or skill sets acquired from previous disastrous experiences but surviving the disastrous experiences had made them confident in surviving future disasters. RFG07 talked about her experiences during the civil war in her home country. She did not think she was likely to have similar experiences in the future, but she said, “I think I can handle anything since I survived in my country.” In short, refugees acquired knowledge, skill sets, and confidence from the past, and they converted their vulnerability in a previous disaster into resilience in future disasters.

Refugees believed that their current social capital might not be sufficient to help the whole community survive disasters. They found it necessary to enhance their community’s disaster resilience. The strong ethnic connections within refugee communities made it easy for refugees to help each other. RFG03 had been thinking of organizing events to get youths together to talk to each other about issues of shared concern.

Refugees also acknowledged the importance of building a bridge between their ethnic communities and the host community. RFG18 and RFG20 both suggested more collaborations between local governments and community leaders. RFG18 noted, “Community leader is the key.” Community leaders can be trusted messengers to deliver fliers and information sheets door to door. Of more importance, due to shared cultural backgrounds, community leaders had the

abilities to explain the information to refugees in refugees' languages (RFG18). Relying on community leaders, individuals who are trusted by refugees, to disseminate information can increase the efficiency and effectiveness of disaster-information sharing.

Collaborations between community leaders and local governments can enhance two-way communication between refugees and the host community, enhancing refugees' community resilience. On the one hand, community leaders can play a key role in spreading disaster-coping information to a broader audience. RFG18 suggested that local emergency management offices hold regular meetings and educational sessions with leaders from all ethnic group communities. During the sessions, videos can be shared so that community leaders learn "what disaster looks like and how to prevent it." Obtaining critical disaster-coping information, community leaders can share what they learn about from local emergency management agencies with other refugees in their daily activities and conversations. On the other hand, community leaders can inform local governments and emergency management agencies of the unique needs of refugees. For example, many refugees viewed the snow and the cold winter weather in the Texas Panhandle as a "disaster" to them because they had never experienced such weather conditions in their home countries. Few local residents would consider the local winter weather a "disaster." Accordingly, local emergency management professionals would never know that they needed to provide refugees with specific guidelines on how to survive snowstorms and cold weather. Refugee community leaders can play a role in communicating refugees' unique needs to local agencies.

In addition, RFG20 believed that local governments should be aware of the variety of ethnic groups in the community and provide information and services accordingly. He noted that there are more than 130 ethnic groups in Myanmar, and that in the city here, there are at least two different ethnic groups who speak different languages and have totally different cultures.

Also, he believes that collaboration between the government, the host society, and the ethnic communities is critical. To encourage collaborations, refugees recognize the need to address language and cultural barriers and the critical role of community leaders. Most of the time, “information will be lost in translation.” Therefore, a community leader can be educated regarding the disaster's significance and planning, and the person will be able to “articulate the significance to the community.” He also agrees that videos can be a useful tool to “expose them [refugees].”

Discussion

This study attempts to understand refugees’ vulnerabilities and disaster resilience from their own perspective. Our research findings reveal how contextual and structural social factors influence refugees’ vulnerability and resilience. More importantly, the research findings demonstrate refugees’ inherent resilience that can be integrated into the broader society’s emergency management efforts.

The Needs to Address Structural and Institutional Constraints

Refugees have always been viewed as a vulnerable group in the host society. They are vulnerable because they lack sufficient language proficiency, disaster-coping knowledge, and experiences in the host society. Our research findings resonate with the existing literature on the factors that contribute to refugees’ vulnerability, including language barriers, cultural differences, and lack of education and employment opportunities (Uekusa, 2020). These structural and institutional constraints limited refugees’ ability and opportunity to navigate the social system of the United States and should be addressed from a systematic perspective. More importantly, recognizing the factors that contribute to refugees’ vulnerability and the refugee communities’ inherent capacity and assets is useful for policymakers and emergency managers to

address the structural and institutional inequalities (i.e., language barriers, stereotypes, racial segregation, economic disparity, limited education and employment opportunities, and lack of political representation) and integrate refugees into the whole community's emergency management efforts (Uekusa, 2020). For example, while the language barrier has been a consistent challenge for refugees, more tailored services can be designed and provided in languages that refugees speak. Basically, refugees need information regarding who they can communicate with when a disaster happens and what community resources are available for them. Information about disaster preparedness should be specifically related to a certain type of disaster and provide practical instruction about what to do, where to find a shelter, how to get material support, etc. A step-by-step checklist with pictures in their own language will be effective.

The cultural orientation workshops and lectures offered by refugee service organizations had equipped refugees with some skill sets to survive in the host country, but they did not provide adequate information regarding disaster preparedness. A large number of refugees, especially who did not speak fluent English, were not interested in attending those events. As a result, refugee serving organizations were not likely to reach out to those who were most vulnerable to disasters. In fact, few service providers had thought about including a disaster-related topic in their workshops (Xie & Chen, in press).

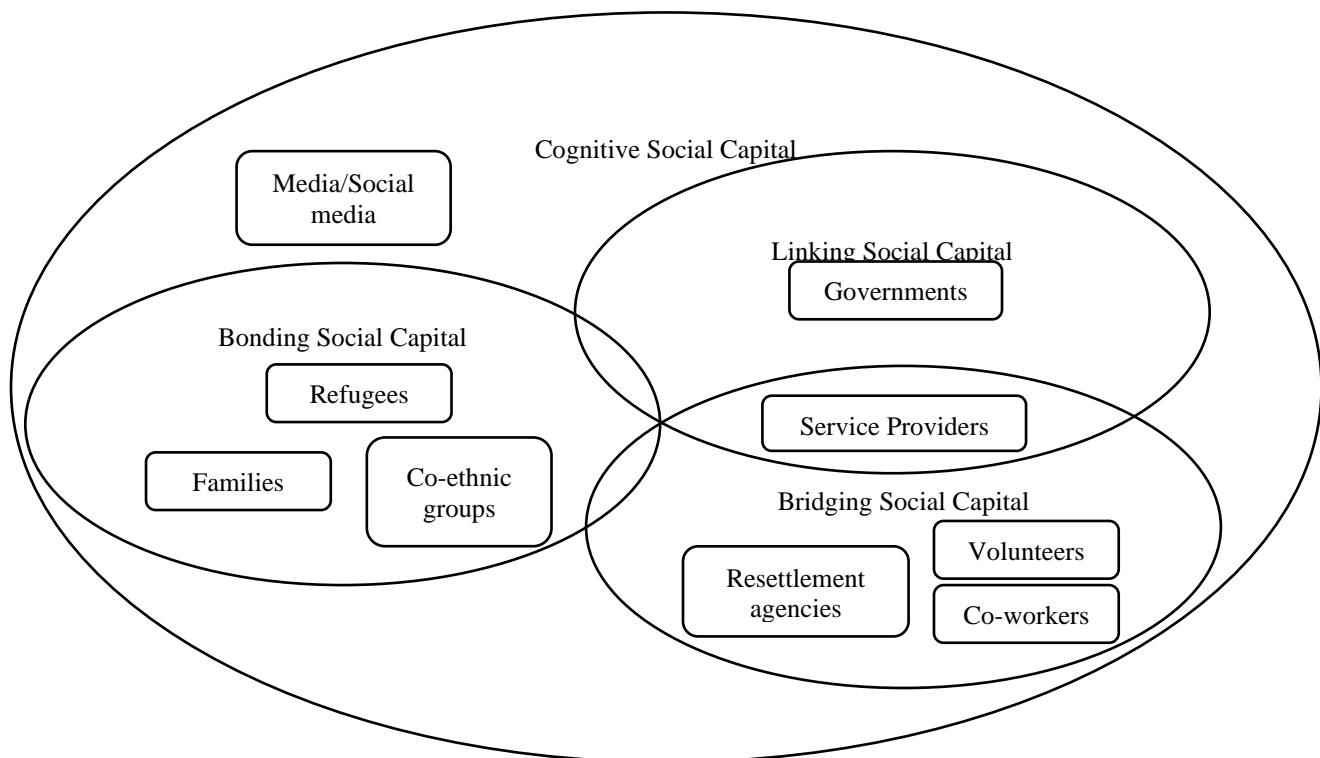
Our research findings highlight that disaster preparedness can only be effective when the information is provided consistently, continuously, and in various languages and formats. All the above measures are essential for refugee communities to enhance their ability to navigate and activate resources through their social networks and buffer the impacts of disasters (Kwok et al., 2019). Both community leaders and government decision makers need to gain timely and

updated information regarding the available tangible and intangible resources for refugees to ensure that appropriate resource can be allocated to those communities. Also, understanding their cultural beliefs and practices is essential to provide informational, instrumental, and emotional support and ameliorate social vulnerability.

How Social Capital Reduces Refugees' Vulnerabilities

Our research findings demonstrate the irreplaceable role of each kind of social capital in strengthening refugees' disaster resilience. Figure 1 shows the various sources from which a refugee can obtain social capital. Social capital acquired in and outside their communities empowers refugees to cope with disasters.

Figure 1. Available Social Capital Source for Refugees



While Figure 1 maps out refugees' major sources of social capital, it implies that refugees' current ways of obtaining social capital have two major limitations. First, refugees

acquire different kinds of social capital from a variety of sources, but the social capital they acquire is scattered and does not enhance each other. In addition, the amount and the quality of social capital one refugee receives is largely determined by his/her own ethnicity, country of origin, language proficiency, and personality. For example, an outgoing refugee who speaks fluent English and has a well-established co-ethnic group in the host society no doubt obtains a larger amount of reliable disaster-coping information than a refugee who is shy, does not speak English, and does not have a large local co-ethnic group. Nevertheless, it might be exorbitantly costly and even impossible for local emergency management organizations to interfere with individual refugees' social capital gaining process.

Second and of more importance, Figure 1 outlines a general pattern of refugees' sources of social capital, but the real situations change over time. Our research shows that most refugees relied heavily on bridging social capital to survive when they newly arrived in the country, but as time went on, they turned to bonding social capital. To many refugees, their connections with local organizations gradually become dormant connections (De Silva et al., 2007). Accordingly, it gets harder for service providers from local organizations to reach out to those refugees and provide support needed to disaster preparedness. This implies that trying to establish long-term relationships between individual refugees and local organizations, a common model adopted by most local refugee serving organizations (Xie & Chen, in press), is not the most effective way to strengthen refugees' disaster resilience or to convene refugees to join the collective actions needed when disasters occur.

Given the limitations of the current ways in which refugees obtain the social capital needed for disaster preparedness, in the following section, we will propose a new model to suggest a more effective disaster management method.

The Interplay of Social Capital and Community Resilience

From the perspective of social capital, improved information access and engagement opportunities are essential to empower refugees in the emergency management process (Kwok et al., 2019). Collaboration between the ethnic and host communities can enhance the bridging and linking social capital.

On the one hand, we need to recognize the inherent capacity of refugee communities and provide opportunities to empower refugees. The adaptive capacity of a community deeply relies on the existing and emergent community leaders (Kwok et al., 2019). Several research participants emphasized the importance of education from different perspectives. They recognized that education would change individuals and the whole refugee community's development in the future. Within the ethnic community, individuals with professional backgrounds, such as health workers, lawyers, and highly educated people, are also trustworthy resources. More people from the refugee background and the ethnic group in the emergency management and public health personnel are needed. Educating and nurturing public health workers, emergency managers, and community leaders might be an effective way to build and improve the refugee community's resilience. Developing capacity-building programs to identify and nurture community leaders who can represent the shared interest of their communities can promote positive community changes and disaster resilience.

On the other hand, refugees need support not only from their own ethnic communities and refugee service organizations but also from the whole community. In disaster settings, social support enables people to anticipate and cope with a wide range of circumstances (Kwok et al., 2019). Refugee resettlement agencies play a critical role in providing critical information regarding disaster preparedness and response. Because of the established trust between refugees

and these agencies, and the organizations' "governmental" background, refugees will trust the information and resource provided by these organizations.

Due to the unique cultural, ethnical, and religious backgrounds, each refugee community has unique advantages and disadvantages in coping with disasters. Regardless of the existence of well-established ethnic communities, refugees relied much more heavily on their bonding social capital to seek support, while they considered bridging and linking social capital to be secondary resources. In our interviews, most refugees were able to actively recall some moments when they sought help from their relatives, friends, and other members from their ethnical church, but few were able to think of local refugee serving organizations without giving any hints.

Weighing bonding social capital over bridging and linking social capital has several implications. First, refugees are vulnerable but do not resettle with zero social capital. They obtain a considerable amount of social capital as soon as they join their ethnic communities. Therefore, the most effective method emergency management agencies can use to enhance newly arrived refugees' disaster resilience is to introduce them to their co-ethnic communities. Local ethnic communities largely reduce the workload of local agencies.

Second, the bonding social capital within ethnic communities is not sufficient to help refugees survive all kinds of disasters or to cope with the situations community members have rarely encountered. They are not likely to obtain all kinds of material, information, instrumental, or emotional support on their own. Therefore, more bridging and linking social capital is needed. Due to language barriers and other restraints, not all the refugees are willing to or have the ability to establish stable, durable relationships with groups and organizations within the host community. Fortunately, our interview shows that a considerable number of refugees have been or are willing to play the role of community leaders and serve as a bridge to connect other

refugees and local organizations. Most of these community leaders speak fluent English, have been resettled for more than five years, and have the desire to help others. Therefore, local emergency management organizations can seek collaborations with community leaders to transfer bridging and linking social capital to refugees and to learn about refugees' unique needs.

Our research findings indicate that collaborating with community leaders is likely to maximize the effects of bridging and linking social capital on refugees' disaster resilience. We propose a new social capital model to maximize the efficiency and effectiveness of resilience building for refugees (Figure 2).

Figure 2. Suggested Model of Social Capital Flow

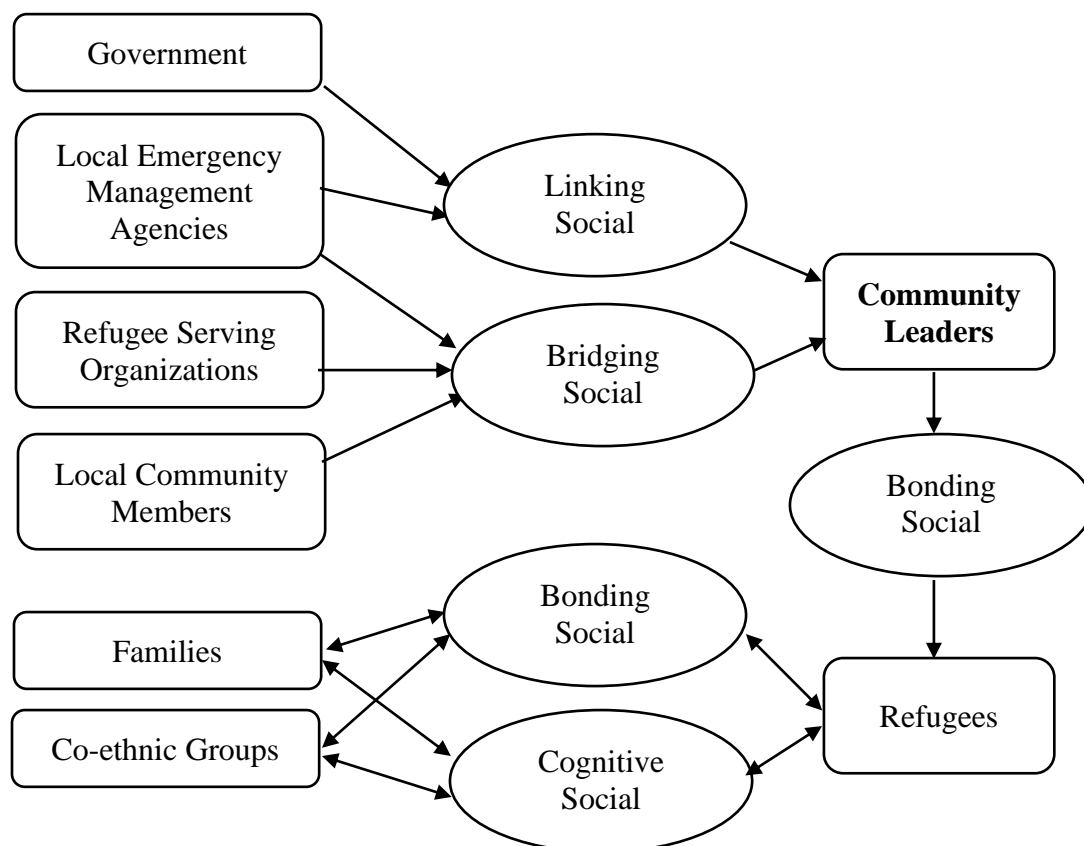


Figure 2 shows that community leaders can collaborate with local governments, refugee serving organizations, and emergency management agencies to acquire bridging and linking

social capital, and then, they bring those bridging and linking social capital to their ethnic communities and transform them into individual refugee's bonding social capital. Individual refugees keep producing bonding and cognitive social capital within their ethnic communities.

We suggest local refugee serving and emergency management organizations adopt this model, such that they identify community leaders and rely on community leaders to learn about refugees' needs and disseminate disaster-coping information. In this way, they are likely to most efficiently achieve their communication goals, strengthen refugees' disaster resilience, and better motivate refugee communities to join collective actions when disasters occur.

Implications and Conclusion

Our research findings reveal a complex and dynamic picture of refugees' disaster resilience and serve as a starting point for scholars and disaster management professionals to gauge the multifaceted social capital available for refugees in the nation. Theoretically, this research expands the concept of social capital by illustrating how bridging and linking social capital can be transformed into bonding social capital. Bonding social capital can be maximized and therefore enhance community resilience when it is generated among all community members and the whole community builds a strong tie. Also, this project has profound practical implications. Local emergency management specialists and educators could utilize our research findings to develop tailored educational programs and interventions. By obtaining an all-around understanding of refugees' risk and disaster perceptions, culturally specific needs, and perceived barriers to disaster preparedness, local administrators and educators precisely know what refugees need the most to develop effective interventions. The tailored interventions built upon our research findings will efficiently improve refugees' disaster resilience, resulting in a significant increase in their well-being.

References

- Ager, A., & Strang, A. (2008). Understanding integration: A conceptual framework. *Journal of Refugee Studies*, 21(2), 166–191. <https://doi.org/10.1093/jrs/fen016>
- Aldrich, D. P., & Meyer, M. A. (2015). Social capital and community resilience. *American Behavioral Scientist*, 59(2), 254–269. <https://doi.org/10.1177/0002764214550299>
- Aung, T. S., Fischer, T. B., & Wang, Y. (2022). Conceptualization of health and social vulnerability of marginalized populations during Covid-19 using quantitative scoring approach. *Journal of Immigrant & Refugee Studies*, 20(1), 1–16. <https://doi.org/10.1080/15562948.2021.1882023>
- Azad, M. A. K., Haque, C. E., & Choudhury, M.-U.-I. (2022). Social learning-based disaster resilience: Collective action in flash flood-prone Sunamganj communities in Bangladesh. *Environmental Hazards*, 21(4), 309–333. <https://doi.org/10.1080/17477891.2021.1976096>
- Carlson, B. E., Cacciatore, J., & Klimek, B. (2012). A risk and resilience perspective on unaccompanied refugee minors. *Social Work*, 57(3), 259–269. <https://doi.org/10.1093/sw/sws003>
- Chow, W. S., & Chan, L. S. (2008). Social network, social trust and shared goals in organizational knowledge sharing. *Information & Management*, 45(7), 458–465. <https://doi.org/10.1016/j.im.2008.06.007>
- Corbin, J., & Strauss, A. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (3rd ed.). SAGE.

- De Silva, M. J., Huttly, S. R., Harpham, T., & Kenward, M. G. (2007). Social capital and mental health: A comparative analysis of four low income countries. *Social Science & Medicine* (1982), 64(1), 5–20. <https://doi.org/10.1016/j.socscimed.2006.08.044>
- Donner, W., & Rodríguez, H. (2008). Population composition, migration and inequality: The influence of demographic changes on disaster risk and vulnerability. *Social Forces*, 87(2), 1089–1114.
- Elliott, S., & Yusuf, I. (2014). ‘Yes, we can; but together’: Social capital and refugee resettlement. *Kōtuitui: New Zealand Journal of Social Sciences Online*, 9(2), 101–110. <https://doi.org/10.1080/1177083X.2014.951662>
- Fielding, A., & Anderson, J. (2008). *Working with refugee communities to build collective resilience*. Association for Services to Torture and Trauma Survivors.
- Forsman, A. K., Nordmyr, J., & Wahlbeck, K. (2011). Psychosocial interventions for the promotion of mental health and the prevention of depression among older adults. *Health Promotion International*, 26(suppl_1), i85–i107. <https://doi.org/10.1093/heapro/dar074>
- Gaillard, J. C. (2010). Vulnerability, capacity and resilience: Perspectives for climate and development policy. *Journal of International Development*, 22(2), 218–232. <https://doi.org/10.1002/jid.1675>
- Hanson-Easey, S., Every, D., Hansen, A., & Bi, P. (2018). Risk communication for new and emerging communities: The contingent role of social capital. *International Journal of Disaster Risk Reduction*, 28, 620–628. <https://doi.org/10.1016/j.ijdrr.2018.01.012>
- Harpham, T., De Silva, M. J., & Tuan, T. (2006). Maternal social capital and child health in Vietnam. *Journal of Epidemiology and Community Health*, 60(10), 865–871. <https://doi.org/10.1136/jech.2005.044883>

- Harpham, T., Grant, E., & Thomas, E. (2002). Measuring social capital within health surveys: Key issues. *Health Policy and Planning*, 17(1), 106–111.
<https://doi.org/10.1093/heapol/17.1.106>
- Hesse-Biber, S. N., & Leavy, P. (2006). *The practice of qualitative research*. Sage.
- Im, H., & Rosenberg, R. (2016). Building social capital through a peer-led community health workshop: A pilot with the Bhutanese refugee community. *Journal of Community Health*, 41(3), 509–517. <https://doi.org/10.1007/s10900-015-0124-z>
- Iosifides, T., Lavrentiadou, M., Petracou, E., & Kontis, A. (2007). Forms of social capital and the incorporation of Albanian immigrants in Greece. *Journal of Ethnic and Migration Studies*, 33(8), 1343–1361. <https://doi.org/10.1080/13691830701614247>
- Keeney, G. B. (2004). Disaster preparedness: What do we do now? *Journal of Midwifery & Women's Health*, 49(4, Supplement), 2–6. <https://doi.org/10.1016/j.jmwh.2004.05.003>
- Koh, H., & Cadigan, R. (2008). Disaster preparedness and social capital. In I. Kawachi, S. B. Subramanian, & D. Kim (Eds.), *Social capital and health* (pp. 273–285). Springer.
- Kwok, A. H., Becker, J., Paton, D., Hudson-Doyle, E., & Johnston, D. (2019). Stakeholders' perspectives of social capital in informing the development of neighborhood-based disaster resilience measurements. *Journal of Applied Social Science*, 13(1), 26–57.
<https://doi.org/10.1177/1936724419827987>
- Lemyre, L., Gibson, S., Zlepzig, J., Meyer-Macleod, R., & Boutette, P. (2009). Emergency preparedness for higher risk populations: Psychosocial considerations. *Radiation Protection Dosimetry*, 134(3–4), 207–214. <https://doi.org/10.1093/rpd/ncp084>

- Liev, M. H. (2008). *Adaptation of Cambodians in New Zealand: Achievement, cultural identity and community development* [Thesis, ResearchSpace@Auckland].
<https://researchspace.auckland.ac.nz/handle/2292/3362>
- McMillan, D. W., & Chavis, D. M. (1986). Sense of community: A definition and theory. *Journal of Community Psychology*, 14(1), 6–23. [https://doi.org/10.1002/1520-6629\(198601\)14:1<6::AID-JCOP2290140103>3.0.CO;2-I](https://doi.org/10.1002/1520-6629(198601)14:1<6::AID-JCOP2290140103>3.0.CO;2-I)
- Mengesha, E. W., Alene, G. D., Amare, D., Assefa, Y., & Tessema, G. A. (2021). Social capital and maternal and child health services uptake in low- and middle-income countries: Mixed methods systematic review. *BMC Health Services Research*, 21(1), 1142. <https://doi.org/10.1186/s12913-021-07129-1>
- Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *The Academy of Management Review*, 23(2), 242–266. <https://doi.org/10.2307/259373>
- Paldam, M., & Svendsen, G. T. (2000). An essay on social capital: Looking for the fire behind the smoke. *European Journal of Political Economy*, 16(2), 339–366. [https://doi.org/10.1016/S0176-2680\(99\)00064-6](https://doi.org/10.1016/S0176-2680(99)00064-6)
- Paton, D., & Johnston, D. M. (2006). *Disaster resilience: An integrated approach*. Charles C Thomas Publisher.
- Paxton, P. (1999). Is social capital declining in the United States? A multiple indicator assessment. *American Journal of Sociology*, 105(1), 88–127. <https://doi.org/10.1086/210268>

- Pelling, M., & High, C. (2005). Understanding adaptation: What can social capital offer assessments of adaptive capacity? *Global Environmental Change*, 15(4), 308–319.
<https://doi.org/10.1016/j.gloenvcha.2005.02.001>
- Potocky-Tripodi, M. (2004). The role of social capital in immigrant and refugee economic adaptation. *Journal of Social Services Research*, 31(1), 59–91.
https://doi.org/10.1300/J079v31n01_04
- Pulvirenti, M., & Mason, G. (2011). Resilience and survival: Refugee women and violence. *Current Issues in Criminal Justice*, 23(1), 37–52.
<https://doi.org/10.1080/10345329.2011.12035908>
- Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. Simon and Schuster.
- Roque, A. D., Pijawka, D., & Wutich, A. (2020). The role of social capital in resiliency: Disaster recovery in Puerto Rico. *Risk, Hazards & Crisis in Public Policy*, 11(2), 204–235.
<https://doi.org/10.1002/rhc3.12187>
- Ross, A. D. (2016). Perceptions of resilience among coastal emergency managers. *Risk, Hazards & Crisis in Public Policy*, 7(1), 4–24. <https://doi.org/10.1002/rhc3.12092>
- Rung, A. L., Gaston, S., Robinson, W. T., Trapido, E. J., & Peters, E. S. (2017). Untangling the disaster-depression knot: The role of social ties after Deepwater Horizon. *Social Science & Medicine*, 177, 19–26. <https://doi.org/10.1016/j.socscimed.2017.01.041>
- Scurfield, R. (2008). Post-Katrina storm disorder and recovery in Mississippi more than 2 years later: *Traumatology*, 14(2), 88–106. <https://doi.org/10.1177/1534765608319086>
- Semenza, J. C., Rubin, C. H., Falter, K. H., Selanikio, J. D., Flanders, W. D., Howe, H. L., & Wilhelm, J. L. (1996). Heat-related deaths during the July 1995 heat wave in Chicago.

- New England Journal of Medicine*, 335(2), 84–90.
<https://doi.org/10.1056/NEJM199607113350203>
- Story, W. T., Tura, H., Rubin, J., Engidawork, B., Ahmed, A., Jundi, F., Iddosa, T., & Abrha, T. H. (2020). Social capital and disaster preparedness in Oromia, Ethiopia: An evaluation of the “Women Empowered” approach. *Social Science & Medicine*, 257, 1–9.
<https://doi.org/10.1016/j.socscimed.2018.08.027>
- Szreter, S., & Woolcock, M. (2004). Health by association? Social capital, social theory, and the political economy of public health. *International Journal of Epidemiology*, 33(4), 650–667. <https://doi.org/10.1093/ije/dyh013>
- Tasic, J., & Amir, S. (2016). Informational capital and disaster resilience: The case of Jalin Merapi. *Disaster Prevention and Management*, 25(3), 395–411.
<http://dx.doi.org/10.1108/DPM-07-2015-0163>
- Tierney, K. (2014). The social roots of risk: Producing disasters, promoting resilience. In *The Social Roots of Risk*. Stanford University Press. <https://doi.org/10.1515/9780804791403>
- Uekusa, S. (2020). The paradox of social capital: A case of immigrants, refugees and linguistic minorities in the Canterbury and Tohoku disasters. *International Journal of Disaster Risk Reduction*, 48, 101625. <https://doi.org/10.1016/j.ijdrr.2020.101625>
- Uekusa, S., & Matthewman, S. (2017). Vulnerable and resilient? Immigrants and refugees in the 2010–2011 Canterbury and Tohoku disasters. *International Journal of Disaster Risk Reduction*, 22, 355–361. <https://doi.org/10.1016/j.ijdrr.2017.02.006>
- UNHCR. (2010). *Convention and protocol relating to the status of refugees*. The United Nation High Commissioner for Refugees (UNHCR).

- <https://www.unhcr.org/protection/basic/3b66c2aa10/convention-protocol-relating-status-refugees.html>
- UNHCR. (2021). *Refugees in America*. <https://www.unrefugees.org/refugee-facts/usa/>
- USDOS. (2021). *Report to Congress on proposed refugee admissions for fiscal year 2022*.
<https://www.state.gov/report-to-congress-on-proposed-refugee-admissions-for-fiscal-year-2022/>
- Vergani, M., Yilmaz, I., Barton, G., Barry, J., Bashirov, G., & Barton, S. M. (2021). Bonding social capital, Afghan refugees, and early access to employment. *International Migration Review*, 55(4), 1152–1168. <https://doi.org/10.1177/01979183211000282>
- Villalonga-Olives, E., & Kawachi, I. (2015). The measurement of social capital. *Gaceta Sanitaria*, 29, 62–64. <https://doi.org/10.1016/j.gaceta.2014.09.006>
- Wind, T. R., Fordham, M., & Komproe, I. H. (2011). Social capital and post-disaster mental health. *Global Health Action*, 4(1), 1–9. <https://doi.org/10.3402/gha.v4i0.6351>
- Wong, H., Huang, Y., Fu, Y., & Zhang, Y. (2019). Impacts of structural social capital and cognitive social capital on the psychological status of survivors of the Yaan earthquake. *Applied Research in Quality of Life*, 14(5), 1411–1433.
- Xie, M., & Chen, L. (In press). Make hay while the sun shines: How community organizations cultivate refugees’ social capital and disaster resilience. *Journal of Health and Human Services Administration*.
- Xin, H., Aronson, R. E., Lovelace, K. A., Strack, R. W., & Villalba, J. A. (2013). Resilience of Vietnamese refugees: Resources to cope with natural disasters in their resettled country. *Disaster Medicine and Public Health Preparedness*, 7(4), 387–394.
<https://doi.org/10.1017/dmp.2013.44>