Popularity does matter:
Situating social capital research in risk communication practice

by

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Abstract

The impacts of hazards greatly depend on the social landscape of a society. In order to fully anticipate them, all stakeholders need to be involved in risk management processes. Risk communication, which encourages a two-way flow of communication for addressing risks, is a vital practice for effective mitigation but has been proven difficult, especially in urban, diverse societies. Here, I confront this challenge. I use social capital theory to frame my research in order to better understand the impact of social networks on processes inherent to risk communication and management, such as public participation, community engagement, and stakeholder collaboration. Borrowing from related concepts such as Mark Granovetter's (1973) strength of weak ties theory and Nan Lin's (1999) social network approach, I conduct an interview study in Surrey, BC. An analysis of stakeholder activity and communication reveals alternative methods for reaching the South Asian community—a local ethnic group found to be disengaged from risk communication processes. Ultimately, the framework illuminates novel ways to exercise local resources for improving engagement, which supports the integration of social capital theory into the pre-disaster phase of risk management.

Keywords: Risk Communication; Social Capital Theory; Community Engagement; Stakeholders; Social Networks; Canadian Disaster Studies

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List of Acronyms

APP	Software Application
CBO	Community-based organization
EMBC	Emergency Management BC
FEMA	Federal Emergency Management Agency
H1N1	Hemagglutinin Type 1 and Neuraminidase Type 1
HRVA	Hazards, Risk and Vulnerability Analysis
IAP2	International Association for Public Participation
ICT	Information Communication Technology
LIP	Local Immigration Partnership
NAS	National Academy of Science
NRC	National Research Council
NSEM	North Shore Emergency Management
RCMP	Royal Canadian Mounted Police
SIM	Structured Interview Matrix
UNISDR	United Nations Office for Disaster Risk Reduction

Glossary

Ethnic minority	A group of people that has different national or cultural traditions from the main population.
Engagement	To occupy, attract, or involve one's interest and attention.
Capacity building	The process of identifying and developing the skills, assets and resources that communities need to adapt and survive.
Community	A group of people that have a particular characteristic in common; a feeling of fellowship with others, as a result of sharing common ideas, goals, or interests. This identification can be with a spatial and/or social environment.
Community leader	One that holds a high profile due to their service to the community. He or she should have heightened knowledge of the community's needs. Designation typically acquired by secondary sources.
Community resilience	The capacity of a system, community or society potentially exposed to hazards to adapt, by resisting or changing in order to reach and maintain an acceptable level of functioning and structure. This is determined by the degree to which the social system is capable of organizing itself to increase its capacity for learning from past disasters for better future protection and to improve risk reduction measures.
Disaster risk reduction	A systematic approach to identifying, assessing and reducing the risks and impacts of a disaster.
HRVA	The process of identifying and understanding the risks a community may face, allowing emergency managers to prevent or reduce the impacts and consequences of hazards.
Local level	Small geographic area, such as village, town, or city.
Minority group	A category of people differentiated from the social majority that coexists with but is typically subordinate to a more

	dominant group. Examples are: immigrants, First Nations, seniors, and those living with disabilities.
Noise	Any sort of disruption that interferes with the transmission or interpretation of a message from the sender to the receiver.
Public participation	Participation of the public in decision making. The principle behind this practice is that those who are affected by a decision have a right to be involved in the decision-making process.
Risk communication	An interactive process of exchange of information and opinion among individuals, groups, and institutions. It involves multiple messages about the nature of risk and other messages, not strictly about risk, that express concerns, opinions, or reactions to risk messages or to legal and institutional arrangements for risk management
Risk management	The identification, evaluation and prioritization of risks, followed by the application of resources to minimize their impact.
Risk perception	The subjective judgment that people make about the characteristics and severity of a risk. Culture, trust, past experience, types of exposure, and levels of publicity are all factors that affect one's risk perception.
Social capital	Resources embedded in a social structure that are accessed and/or mobilized in purposive actions.
Social fabric	The composite demographics of a defined area, and how these groups interact and work with one another.
Social network	A social structure made up of a set of "nodes" or social actors. Nodes can be individuals, organizations, societal institutions, businesses or government.
Stakeholder	A person, group, or organization who is affected by or who can affect a project's outcome.

South Asian	Someone from the southern region of the Asian continent. Although in this thesis, the term mainly encompasses those from India.
Vulnerability	A set of conditions and processes resulting from physical, social, economic and environmental factors that increase the susceptibility of a community to the impact of hazards.

Chapter 1.

Introduction

In Summer 2016 I led an initiative for North Shore Emergency Management (NSEM)[1], which involved outreach to small, local businesses on the North Shore in hopes of increasing their preparedness. Outreach was not selective—going door-to-door, I visited a wide variety of businesses. A prevalent theme that surfaced during this process was a sense of disinterest and distrust from immigrant business owners. Lack of English, as well as lack of understanding local risks, are among the possible reasons why they did not want to hear what I had to say or offer. Sometimes they took the free materials, but did not act upon them, as the follow-up phase showed. I walked away from this project incredibly proud—of the 9,800 businesses on the North Shore, I provided 584 with business preparedness materials. Depending on the business community, I followed up within six to eight weeks to see if they used or acted upon these resources. Of the 275 business owners that I re-contacted, 52 exemplified improvements in their preparedness[2], which means that *at least* 11 percent of the 584 businesses visited are now better prepared for emergencies. Calculating only the responses received during the follow-up phase, 37 percent are better prepared! Despite this progress, I was concerned for those small business owners that did not participate due to lack of knowledge, awareness, and English skills. Through a scan of risk management research, it became quickly apparent that this vulnerability is not limited within the business community. Ethnic minority and newcomer populations are constantly found disconnected from risk management processes—a pattern that runs contrary to current standards for this field, which promotes an involved public.

[1] NSEM is a public service for the District and City of North Vancouver, as well as the District of West Vancouver.

[2] Changes in their preparedness ranged from: talking to staff about their plan, circulating the information among staff, personally becoming more prepared, creating an emergency kit, filling out the preparedness plan provided to them, attending one of the NSEM workshops or implementing drills.

1.1. **Research Problem**

Prior to the 1990s, the natural sciences drove the management of risks and disasters. During that time expert opinion influenced decision making, because other affected parties, such as the public, were assumed to be deficient in their understanding of risk. Both William Leiss (1996) and Baruch Fischhoff (1995) note a major development in this field between the 1970s and the 1990s; one may describe it as a move away from top-down management and towards horizontal communication and distribution of responsibility. This change occurred because experts recognized that a purely natural sciences approach could not account for the social factors—including culture, experience, social networks, and risk perception—that influence a community's response and recovery. Put eloquently by Kasperson et al. (1988), "the investigation of risks is at once a scientific activity and an expression of culture" (p.177). In this sense, while hazards are natural, disasters and the risks associated with them are not. Current definitions of *disaster* capture its social nature by suggesting that it represents the combination of hazards, conditions of vulnerability, and insufficient capacity to reduce the negative consequences of risk (UNISDR, 2011; UNISDR, 2009). As Haque and Edkin (2012) phrase it: "without humans and their pertinent societal spheres, hazards are simply natural events and thus irrelevant" (p.vii).

Acknowledging that each society will face unique obstacles during a disaster, a promising shift in policymaking occurred, which encourages the involvement of all affected parties in decision-making processes. Consulting all segments of society better identifies their collective capacities and vulnerabilities—an action that aims to reduce risk and build resilience. Despite this valuation of a holistic, long-term approach, catastrophes all over the world demonstrate that practitioners have been slow to successfully integrate it into their practices (Aldrich, 2012; Henstra and McBean, 2005). All too frequently, "no decent effort is made on either account [risk managers and the public], and a risk information vacuum interposes itself between experts and the public, blocking the exchanges that ought to be occurring regularly" (Leiss, 2004, p.viii). A scan of recent case studies suggest that engaging minority voices is one obstacle for reaching this standard. My study responds to this challenge. It considers an alternative framework for analysis in hopes of uncovering gaps in communication and engagement strategies.

Ideally, from here, one can have greater knowledge on customizing local risk communication practice to engage harder-to-reach stakeholders.

1.2. **Risk Communication**

Although one can define *communication* simply as the exchange of information, it becomes quite clear in everyday life that this act—reaching the right audience, conveying the intended meaning, and understanding one another—can be challenging. The stakes are especially high in this field because it could impact lives and assets. Researchers and practitioners took notice of the practice's intricacies in the late 1980s, and an explosion of seminars, conferences and papers followed (Bean, 1987; Covello et al., 1987b, 1988; Davies et al., 1987; Fischhoff, 1987; Lind, 1988; Otway, 1987; Plough and Krimsky, 1987; Zimmerman, 1987 qtd. in NRC, 1989, p.16).

After conducting a literature review, it is evident that proper communication is essential for the overall management of risks. Risk communication's role is much broader than messaging; it includes all messages and interactions that bear on risk decisions, including information sources, personal beliefs and perceptions, and reactions to risk management actions or institutions. As the US National Research Council (NRC, 1989) phrases it: "not all these messages are strictly about risk, but all are material to risk management" (p.22). So, risk communication also encompasses the social interaction and debate that are essential to democratic political choice, and that often contribute to personal decisions about hazardous activities. An essential feature of this practice is that messages are moving in various directions—"not only from experts to nonexperts, but also from nonexperts to each other, from nonexperts to experts, and the messages of political participation, from citizens to public decision makers" (p.22). Hence, I will be using the NRC's (1989) definition of *risk communication*, which describes it as:

> …an interactive process of exchange of information and opinion among individuals, groups, and institutions. It involves multiple messages about the nature of risk and other messages, not strictly about risk, that express concerns, opinions, or reactions to risk messages or to legal and institutional arrangements for risk management. (p.21)

Although this definition shows that the current standard for effective risk communication involves all stakeholders, it seems that reaching this ideal is particularly difficult in urban, multicultural contexts because of the vast number of affected stakeholders.

Communication research often starts with examining previous failures or breakdowns. There are many theories that emphasize the impact of *noise*, or barriers, to transmitting or interpreting a message (Rothwell, 2004). When examining risk and emergency communication breakdowns, people tend to focus on environmental and physical noise, such as telecommunication network failures. Lately; however, some scholars have also began to explore the social factors that affect risk communication: "effective communication about risks depends on how well the risks themselves are understood (by both sender and receiver of the message), the level of 'trust' in those responsible for managing the risk, and how confident people are in the information provided" (Driedger, Cooper, Jardine, Furgal, Bartlett, 2015, p.2). Hence, my approach is to study the *social noise*, or social systems and relational situations that both hinder and improve this collaborative practice in diverse societies.

1.3. **Situating the Inquiry**

My thesis embraces the multidisciplinary nature of this field through its consideration of alternative frameworks for research and practice. As risk communication studies began to incorporate the social sciences, one can imagine the eclectic growth and well-rounded pool of knowledge and expertise (McComas, 2006, p.85). However, some argue that the field is "seriously fragmented" (Palenchar, 2009, p.38), which suggests that its multidisciplinary approach may be more tasking than beneficial. Communication scholar Katherine McComas (2006) explains this dilemma well: "risk communication research presently is characterized by many, sometimes overlapping, various analytic studies but few integrative theoretical frameworks" (p.85). The multitude of perspectives from various academic fields is overwhelming. However, I believe there is also room for opportunity. I hope to add to a body of literature that is more interdisciplinary, in the sense that it can successfully integrate other social science perspectives into risk communication research and practice.

1.3.1. **Social capital theory**

More specifically, I am employing an approach that integrates risk communication and social capital literature. My work stands alongside a smaller body of research that aims to merge the two fields (Iwasaki, Sawada and Aldrich, 2018; Burnside-Lawry and Carvalho, 2015; O'Sullivan, Corneil, Kuziemsky, and Toal-Sullivan, 2015; Paton, Selway and Mamula-Seadon, 2013; Aldrich, 2012; National Research Council, 2011; Murphy, 2007; Nakagawa and Shaw, 2004; Buckland and Rahman, 1999).

Like other forms of capital, social capital involves an investment for profits or return. As Putnam (2001) explains, "just as a screwdriver (physical capital) or a college education (human capital) can increase productivity (both individual and collective), so too social contacts affect the productivity of individuals and groups" (p.19). Although there is a plethora of definitions, (an obstacle that I discuss further in Chapter 3), the definition I align with describes social capital as the "resources embedded in social networks, which are accessed and/or mobilized in purposive actions" (Lin, 1999, p.35). "Who you know," becomes just as important as what you know or have—in fact Lin (2001) argues they go hand-in-hand. This perspective maintains that resources are found *within* social relations, rather than individuals (Lin, 2001, p.26). By this definition, the notion of social capital depends on three features: resources embedded in a social structure; accessibility to such social resources by individuals; and the use or mobilization of such social resources by individuals in purposive actions (Lin, 1999, p.35).

Applying this concept to risk management supports the idea that the social networking of a municipality is impactful on vital processes such as risk communication, public participation, collaboration, and ultimately, resilience. From this perspective, analyzing the social networks in one's society should illuminate ways to better exercise its social resources to better serve all residents. So far, the majority of research has occurred after a disaster. My study explores the value of mapping out social capital at the pre-disaster phase for reducing risk and building resilience at the municipal level.

1.4. **Scope**

1.4.1. **Ethnic minority groups as stakeholders**

This thesis explores the stakeholder relationships in Surrey, British Columbia to obtain a better grasp of social capital research and its place in risk planning. Past research indicates that some stakeholders—particularly, minority groups—are harder to engage than others. For this study, I examine the communication and relations between relevant City of Surrey departments, local community-based organizations[3] (henceforth CBOs) and a local minority group. Typically, the term *minority group* includes: seniors, those living with disabilities, those who are homeless or living in poverty, First Nations, immigrants and visible ethnic minorities. Many of these individuals experience social conditions that leave them less connected to the larger community, and consequently, the resources that support their resilience. After examining Surrey's minority demographics, I chose to take a closer look at Surrey's South Asian community. As I detail later, this demographic is large and diverse. As a researcher, this is attractive for two reasons. First, I must be realistic—when drawing from a larger participant pool, there is greater likelihood that I will reach my target number of participants. With that being said, there is also greater opportunity to include diverse and alternative perspectives on this topic, which will hopefully expand my understanding of how, and to what extent, the South Asian public participates in risk communication processes in Surrey.

The experience of ethnic groups is especially interesting because of their complexity and variance. As one participant of my study explains, ethnic groups can be overlooked in risk planning because most have some level of social connectedness and are able to meet their basic needs on a day-to-day basis. On the surface, they may not seem as vulnerable as seniors, people living with disabilities, and children. However, as post-disaster studies show, "often times, these 'invisible' communities are made visible after a disaster" (NRC, 2015, p.15; Tobin, 1999). Members of invisible communities are not necessarily homeless or depend on welfare, but they do seem to have fewer resources overall, making them less able to cope with disaster.

This disposition is important. When assessing vulnerability, it is important to recognize the conditions and paths that increase risk. Long-term strategies cannot fixate

[3] Includes both public and private organizations.

on the people; they must also acknowledge the contexts that make people vulnerable (Lemyre, Gibson, Zlepnig, Meyer-Macleod, Boutette, 2009). As I will show later, ethnic groups often have strong ties within their social networks, which hold some benefits. However, they also tend to have weaker bonds with those outside their community, which may translate to less access to external information and resources. On an average day, these potential restrictions are not visible. But as post-disaster research unveils, social connections seem to make an impact on resilience (Aldrich, 2012; Paton, Selway, Mamula-Sead, 2013). Through my research, I hope to make these ideas clearer in the context of Surrey.

Surrey's South Asian community

A glimpse at the latest census data (Statistics Canada, 2016) suggests that Surrey's social landscape is continually expanding and diversifying, making it a compelling context for this investigation. Surrey's population is second highest among municipalities in British Columbia and twelfth in Canada, and seems to be steadily increasing. It is among the top five census subdivisions in BC with the highest population growth. In 2006, Surrey's population was 394, 976. In 2011, it was 468, 251—indicating an 18.6% growth. The most recent census profile (2016) indicates another 10.6% growth, with a population of 517,887. Roughly a third of Surrey's population is South Asian, which is half of BC's South Asian population (see Appendix A1; Todd, 2012).

The census data (Statistics Canada, 2016) also highlights the diversity within Surrey's population. For example, it reports a large percentage of multilingual residents. 46.9% possess a non-official language as their mother tongue. The most common one is Punjabi[4], which demonstrates that many Surrey residents are South Asians. Some are longtime residents, while others are newly settled. In 2001, 30.8% of Surrey's immigrant population was born in India. In 2011, this number increased to 37.6% (City of Surrey, 2014, Immigration Fact Sheet). The neighborhoods of Newton (89.2%), Fleetwood (88.7%), and Whalley (86.6%) have the greatest proportion of recent immigrants born in Asian countries of all Surrey communities. In some areas in Newton, over 75 percent are South Asian households (See Appendix A2; Todd, 2012). Whalley and Newton are also among the top three communities with the lowest average income. Fleetwood is not far

[4] 106,100 people indicated that Punjabi is their mother tongue, which is 44.1% of the population that has a mother tongue other than English and French, and 20.6% of the total population of Surrey residents (Statistics Canada, 2016).

behind. South Surrey and Cloverdale, which are areas that home the highest number of Canadian citizens, have the highest average incomes (City of Surrey, 2014).

The intersection of these factors—increased urbanization, influx of newcomers and immigrants, dense settlements of ethnic groups, and diverse income levels—leads me to believe that local decision makers likely face some obstacles in harmonizing the public's needs. Some also argue that diversity in a society can lead to lower levels of distrust (Putnam, 2007), resulting to 'hunkering down' or social isolation. With a historical past of discrimination, through events such as the turning away of the Komagata Maru[5], distrust may be playing a huge role in Surrey's social network patterns today. Anticipating issues of trust, and how they impact settlement and integration with the wider society, cannot be overlooked. I hope this platform is an opportunity to weigh these challenges in the context of Surrey, and helps further the discussion on how to overcome them. What is clear right now is that Surrey's South Asian community is a large and diverse one. If they are unprepared, unaware or unconnected to resources during a disaster, there will be a visible impact on Surrey's overall response and recovery.

Surrey's current risk management program

Surrey's emergency management is led by the local fire department. One of the deputy chiefs is responsible for emergency planning and community engagement (alongside other duties). With Surrey's growth, it will be interesting to hear how one balances so many responsibilities, as well as any limitations or challenges the role brings.

A scan of the City of Surrey's online emergency management materials is quite promising, as it covers most aspects of their program, including personal preparedness, neighborhood preparedness and business preparedness. It also offers resources according to the different hazards in the area, such as power outages, floods and earthquakes. The website itself is quite verbose. However, the toolkits are much more approachable with the use of pictures and checklists. Most of these toolkits are adapted

[5] In 1914, the Komagata Maru steamship carried 376 passengers from Punjab to Vancouver in hopes of escaping British India. They were denied entry and on forced return to India, were fired upon by British police resulting in twenty deaths.

from other local sources, such as the provincial government's PreparedBC. Translations are offered through Google Translation, a free online service offered by Google. The downfall of this service is that it only translates the webpage, not any of the toolkit attachments, which I would argue are more helpful.

The City of Surrey does not have a mobile application (henceforth "app") or an online news channel that is solely dedicated to emergency messaging. However, the Surrey RCMP, which is an active stakeholder in the city's risk management program, possesses an app[6] and active Twitter account. According to the municipality's website, one of the features of the RCMP app is relaying significant emergency alerts. Since its launch in November 2017, there have been 5,138 downloads of this app (City of Surrey Participant 4).[7] Additionally, the RCMP Twitter account boasts over 20,000 followers. The RCMP seems to be a legitimate information outlet to many Surrey residents, so 'piggybacking' on their communication channels may be an efficient way to raise awareness of other aspects of public safety, such as individual and household emergency preparedness. It will be interesting to discuss the reach of these online communication tools with participants, as well as any potential areas of opportunity for growth or collaboration.

1.4.2. **Outside of the study's scope**

I focus my research on a particular ethnic group, in a particular municipality. Thus, practical recommendations will be specific to Surrey. Despite this feature, it is important to acknowledge that engaging minority groups, as active stakeholders in risk communication, is a challenge in many contexts. I hope the process I investigate—finding ways to incorporate social capital data in risk planning—can be a guiding force for projects that research other minority groups as stakeholders, and ways to increase their involvement. Understanding specifically how other minorities are involved in risk communication and planning processes are out of the scope of this research, but certainly deserves attention.

[6] This service is a part of City of Surrey's MySurrey Portal, which offers several apps that provide information on its library features, waste collection, restaurant health inspection, mapping, and building inspection.

[7] Time of writing is January 2018, suggesting over 5000 downloads in two months.

Risk communication, risk reduction, resilience, public participation—these are driving forces in North American risk management systems, but what role do they play in other parts of the world? This thesis does not address these concepts on an international level, but they likely take on different meanings; and therefore, should be explored. Social and governance structures play a role in determining which groups are at greater risk than others. Social capital theory may also help clarify this issue at the global level, but unfortunately it does not fit the boundaries of my study.

Lastly, in this study I do not take on the task of quantifying social capital. Rather, I use social capital theory as a lens for understanding the social relationships and networks in Surrey, and how they impact risk communication processes. Quantification, particularly through the incorporation of the South Asian public, would certainly serve future research on this topic. Because this community is so diverse, it would be worthy to pinpoint those that have greater or limited stocks of social capital. How does gender or age impact social capital in this community? Although outside of the boundaries of this study, these questions should be pursued in future research.

1.5. Research Questions

Research Question: **How does social capital knowledge serve risk management in urban, diverse societies such as Surrey?**

Sub-question 1) How can we describe the examined stakeholder groups and the relationships between them?

Sub-question 2) How have these relationships affected communication and engagement from a risk management standpoint?

Sub-question 3) What can be done with this information to improve resilience and reduce risk in Surrey?

The tension between policy, practice and research led my interest in a broad inquiry: how can we get closer to achieving collaborative risk communication? One body of literature suggests that answers can be found through a social capital lens. Because this obstacle frequently burdens multicultural, urban societies, I believe that better understanding the social networks and relationships of a municipality will progress

knowledge on how to engage and work with diverse publics. As reflected in the sub-questions, I am interested in both the research process and the data it produces. Taking an idiographic approach[8], it aims to serve the City of Surrey, while assisting those who wish to carry out similar groundwork in their own communities.

1.5.1. **Method**

Both risk communication and social capital research can be undertaken qualitatively and quantitatively, depending on the research questions at hand[9]. Evidently, I am more concerned with explanations and processes, rather than determining numerical data. Therefore, I believe that qualitative research will provide the depth I need for this study of stakeholder partnerships in Surrey. Qualitative research "uses a naturalistic approach that seeks to understand phenomena in context-specific settings" (Golafshani, 2003, p.600). Although I set out to answer certain inquiries, social capital's role in Surrey has not been defined. Therefore, conducting exploratory research through semi-structured interviews allows flexibility for other ideas to arise (Babbie and Benaquisto, p.328, 2014).

Ideally, the interview data will: describe the examined stakeholder groups, their relationships with one another, and their places in current risk planning; provoke discussion on communication and engagement strategies; and, identify ways to use this information in order to reduce risk and build resilience. Ultimately, the goal of the interviews is to address the social foundation of Surrey, in hopes of supplementing the academic conversation on social capital theory and risk management, as well as stimulating a practical conversation among Surrey's stakeholders.

1.6. **Significance**

This study will hopefully add to academia in two ways. The issue of involving

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[8] An idiographic approach emphasizes individual understanding, unpredictability, and subjectivity. Research based on these assumptions attempts to describe and assess the subjectivity and individuality of human communication, rather than aiming to discover universal laws (Tredwell, 2004, p.33).

[9] Methods such as interviews and observations are dominant in this naturalist (interpretive) paradigm and supplementary in the positive paradigm; the use of surveys serves in opposite order (Golafshani, 2003). He explains, "unlike quantitative researchers who seek causal determination, predication, and generalization of findings, qualitative researchers seek instead illumination, understanding, and extrapolation to similar situations" (p.600). In this sense, I am dealing with the latter paradigm.

minority groups in risk communication has troubled many societies; however the majority of research has been conducted outside of Canada. Hence, there are few applications of social capital theory to risk management in Canadian contexts, especially when examining the experience of ethnic minority groups (Buckland and Rahman, 1999). Because it is a nation with such a vibrant social fabric, a social capital perspective may prove to be helpful in untangling some of the obstacles in this field. Using this framework is a recent phenomenon, but what truly sets this work apart from others is its investigation of these ideas under non-crisis conditions. Typically, this research has occurred after a disaster (Paton, Selway and Mamula-Seadon, 2013; Aldrich, 2012; Murphy, 2007; Buckland and Rahman, 1999). Some of these studies conclude that social capital should be understood and refined before a disaster happens: “one way to get a sense of the resiliency within community emergency management is to assess the relationships that exist within and among communities and the extent to which local emergency management capitalist on existing relational resources and promote their further development” (Murphy, 2007, p.301). Unfortunately, little research exists that can confirm if this pre-disaster groundwork is worth the time and resources.

Again, I must stress the applied nature of this research. One of its purposes is to unveil any social noise that may be affecting risk communication processes in Surrey. More importantly, it draws the perspectives of different stakeholders on how social noise can be reduced or changed in order to increase engagement, participation and ultimately resilience in the community. I hope this interactive space will build upon conversations on how practices can better involve diverse communities in Surrey, as well as supplement any current efforts to engage and uplift isolated, or less resilient groups. Both in the academic literature and through my own research, it is clear that one of the main hurdles for investing in this type of work is a lack of time and resources. I hope to unpack this challenge during the development of my project, and make suggestions on how to make this work realistic and tangible in contexts that are experiencing funding constraints.

1.7. **Overview**

In Chapter 2 a review of literature takes place, citing risk communication pioneers William Leiss (1996) and Baruch Fischhoff (1995), as well as the following institutions

and agencies: National Academy of Science (NAS), National Research Council (NRC), Federal Emergency Management Agency (FEMA), Public Safety Canada, Emergency Management BC (EMBC), City of Surrey, Public Participation Canada, and United Nations Office for Disaster Risk Reduction (UNISDR). With these works, I brief the reader on the risk management field. I review the intersection of research, policy, and practice, focusing on the barriers to put current standards into action. I break down key concepts and essential processes behind effective risk communication (public participation; hazard, risk, vulnerability analyses) and management (disaster risk reduction, capacity and resilience building), setting the stage for my use of a social capital framework. The discussion highlights the impact of social noise (i.e. networks, relationships, trust) in putting these standards into action.

Chapter 3 expands on social capital theory and cites the ideas of leading scholars, which include Pierre Bourdieu (1986), James Coleman (1988), Robert Putnam (2001), Simon Szreter and Michael Woolcock (2004), Francis Fukuyama (2001), Nan Lin (1999, 2001), and Mark Granovetter (1973). After a thorough description of this theory and relevant concepts, I identify its place in multicultural societies, such as Surrey. In such urban, diverse spaces, the ability to connect with and trust one another is far more challenging. How to build or modify social capital is considered here. The latter half of the chapter applies social capital theory to the risk management context—particularly, as a means for deconstructing communication breakdowns or challenges. Following researchers such as Daniel Aldrich (2012; 2017; 2018), I use social capital theory as a lens to examine past catastrophes. This approach highlights the large role that social capital plays during all stages of disaster and risk management, including the pre-disaster phase. It also paves way for my own analysis, which utilizes social capital theory as a means to bring Surrey practitioners closer to achieving their risk management goals.

Both Chapter 2 and 3 interweave case studies in its review of concepts and theories to help the reader grasp the applied nature of this research. Societies are becoming more urbanized and diverse. Accordingly, real-life events are unfolding regularly that display the disjoint between policy and practice. Examining these past catastrophes helps illuminate the role that this research plays in reducing risk and building resilience.

In Chapter 4 I outline my methodological choice and procedures, including participant selection, data collection and storage, and analysis. In Chapter 5, I present the findings from my research. The analysis phase undergoes several cycles of coding. Here, I share the themes that surface in each of these cycles. Section 5.2 reports the results from the open coding process; whereas, Section 5.3 presents the data through a social capital lens. Section 5.4 begins to synthesize the findings, stimulating discussion according to the research questions. Now that one is familiar with Surrey's social fabric, the latter portion of the chapter considers which information is valuable for customizing, and hopefully improving, Surrey's risk communication system.

My study operates under the assumption that investment in social capital research is helpful for risk planning processes. After presenting my data, I hope to make this vision clearer and a higher priority. In Chapter 6, I provide the reader with a summary of the results and how they answer my research questions, as well as how it fits into existing research. Here, I make the case for both its practical and academic value. Sticking to my hopes of defining a replicable process for undertaking such research, the final chapter is also a platform for discussing limitations and providing recommendations. Ideally, this insight will ease the work of future researchers in this area.

Chapter 2.

Background and Literature Review

2.1. Introduction

In this chapter I set the stage for the readers, giving them a comprehensive review of risk communication and management in Canada. First, I describe the heralded ideals as reflected in federal policies, municipal strategies, and expert guidelines. Then, I present examples and discussions that demonstrate the difficulty in achieving them. More and more social obstacles are emerging as societies grow and diversify; however, this chapter sticks to the challenges surrounding the engagement of ethnic communities in risk management activities.

2.1.1. Historical shift

PUBLIC PARTICIPATION AND SUSTAINABLE HAZARD MITIGATION

From		To
· Hazards	→	· Vulnerability
· Reactive	→	· Proactive
· Single Agency	→	· Partnerships
· Science Driven	→	· Multidisciplinary Approach
· Response Management	→	· Risk Management
· Planning for Communities	→	· Planning with Communities
· Communicating to Communities	→	· Communicating with Communities

Figure 1. Shifts in Risk Management Strategies (Pearce, 2003, p.213). Reproduced with permission of Springer Nature.

Historically, disasters were mainly treated as natural phenomena. Strategies were driven by science, and typically centered on short-term response and recovery (Leiss, 1996; Fischhoff, 1995). Sometimes called the “command and control model” (Neal and Phillips, 1995), the approach was a strict, almost paramilitary style of management. By the 1990s, it seemed to be incompatible with modern society (see Figure 1 for summary of changes).

For example, decision making and communications were centralized. Whereas, a

decentralized system is crucial for pinpointing all the contextual elements affecting community resilience. Often times, practitioners and experts were also too fixated on the response phase, which again dismisses context and environment. By assuming that disaster behavior is not tied into pre-disaster social relationships, they overlooked the many social, economic, political and physical impacts that surface when a disaster occurs. As Tobin (1999) phrases it: "restoration wins out over issues of equity and development, and root causes of the hazard are never addressed" (p.15). As societies diversified, it became clear that a monolithic, top-down decision-making structure could not illuminate all needs and vulnerabilities. Changing demographics—toward increased minority representation—intensifies this challenge in contemporary contexts like Surrey.

Before discussing new alternatives, it is important to recognize that moving away from command and control, response-based management did and still does present obstacles. Particularly, because hazards and disasters are so varied and complex, it is difficult to offer data that supports changes to current policies. With time though, increased research and advocacy paved way for a paradigm shift that validates infrastructures dedicated to reducing risk and building resilience through the involvement of all affected stakeholders.

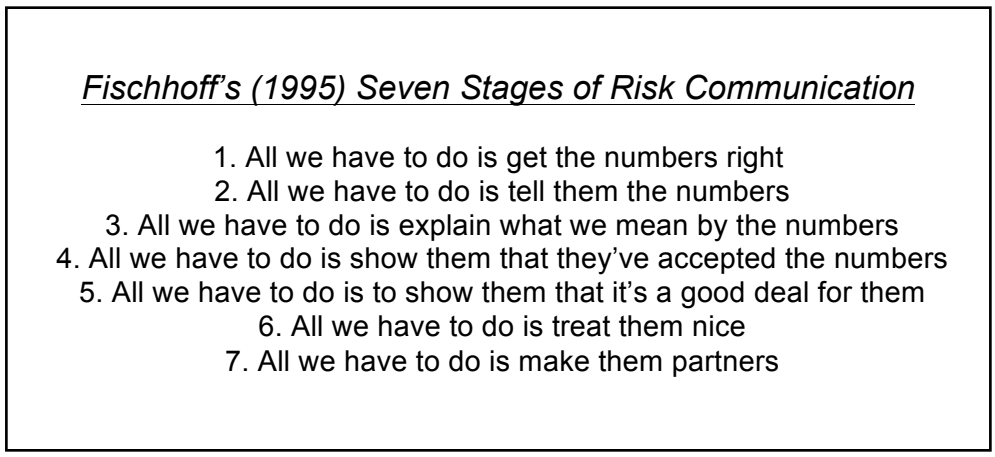

Figure 2. The Evolution of Risk Communication (adapted from Fischhoff, 1995).

As mentioned, between the 1970s and the 1990s an important change in risk communication occurred—that is, the validation, and then incorporation, of other stakeholder perspectives (see Figure 2). With growing attention on prevention and mitigation strategies, practitioners sought the public's participation. Risk discourse moved from managerial and scientific, to rhetorical and persuasive, to collaborative in

nature. This holistic structure acknowledges the complexity of disasters—adapting plans to people, rather than people to plans (Dynes, 1983, p.658). Involving them in these early stages of risk management was believed to help both parties understand and anticipate future disasters. Frandsen and Johansen (2009) summarize this evolution well:

> Scholars and practitioners seemed to have evolved from a narrow, tactical and operational approach towards a broader strategic approach. Within a narrow approach, crises are perceived as isolated events (with a clear focus on the crisis event stage)...emphasis is on crash management or damage control and as an operation and tactical action-oriented discipline inspired by the military logic of command and control. Taking the broader approach, crises are perceived as dynamic processes (with a focus on the precrisis, the crisis event and the postcrisis stages)…management is conceived as a strategic and pro-active discipline beginning with signal detection, issues management, stakeholder management or risk assessment and ending with evaluation, organizational learning or postcrisis actions. (p.106)

Accordingly, there were some changes made to Canadian public policy[10]; however, some regions have been slow to fully incorporate them into their practices. A scan of both academic literature and current events confirm that there are still breakdowns in response and recovery (Leiss, 2004; Boggild, Yuan, Low, McGeer, 2011; Buckland and Rahman, 1999; Murphy, 2007) and some argue that they are in part due to missing stakeholder perspectives during planning activities (Blazer and Murphy, 2008; Stewart and Rashid, 2011; Mikulsen and Diduck, 2013; O'Sullivan et al., 2015). In order to overcome the diverse factors that impact resilience, all stakeholders need to be engaged in identifying vulnerabilities and capacities. However, some are harder to reach than others. To build on this inquiry, this chapter seeks to unravel both key practices and obstacles to communicating and engaging with the public.

[10]Canada's Emergency Management Framework is revised every five years to "ensure that it remains accurate and relevant." The most recent edition "underscores…the need for all areas of society to work together to enhance resilience" (Public Safety Canada, 2017).

2.2. Current Standards

The following sections review critical concepts that comprise current standards for risk management. Collaboration, as an umbrella concept, leads to the discussion of two important approaches to risk management today: risk reduction and community resilience. From here, I introduce related processes that involve the public: public participation, HRVAs (hazard, risk and vulnerability analyses), and capacity building.

2.2.1. Collaboration

Today, instead of planning *for* and communicating *to* communities, experts recommend planning and communicating *with* communities. They believe that an inclusive approach provides the impetus for appropriate strategizing. It recognizes the many interests and needs that exist in one's community and, by striving to create partnerships, attempts to balance competing interests while working towards common goals (Pearce, 2012). The *Emergency Management Framework of Canada* (Public Safety Canada, 2017) leans on this idea, stressing that:

> …ongoing coordination and cooperation must continue to be fostered. By encouraging all segments of society, including individuals, communities, private and public sectors, non-governmental organizations, and academia to take responsibility and participate in emergency management, whole-of-society resilience can be achieved. (p.18)

It emphasizes individual capacity, but within a wider structure of coordination and collective decision making. Similarly, neighboring FEMA (2011) encourages a *whole community approach*, which it describes as a "means by which residents, emergency management practitioners, organizational and community leaders, and government officials can collectively understand and assess the needs of their respective communities and determine the best way to organize and strengthen their assets, capacities and interests" (p.3). Expressed clearly in North American public policies, identifying and preparing for risks should be a collaborative, interactive process that involves all levels of society.

Disaster risk reduction

The purpose of disaster risk reduction is to anticipate risks prior to a disaster, in order to reduce losses and damages. Accordingly, it involves long-term strategic planning rather than short-term relief (UNISDR, 2012). As Canadian public policy maintains:

> Greater attention or investment in prevention and mitigation can prevent disasters or significantly reduce the social, economic and environmental costs and damages when events occur. Forward looking recovery measures allow communities not only to recover from recent disaster events, but also to build back better in order to help overcome past vulnerabilities. (Public Safety Canada, 2011, p.5)

Disaster risk reduction is incredibly important for municipal planning. Yes, Canada's emergency management structures are coordinated so that proper support can be readily available when needed. If a municipality requires external resources, then it will receive help from the provincial or federal government (Public Safety Canada, 2017). Despite the involvement of upper levels of government, responsibility tends to concentrate at the local level (Murphy, 2007). Because they must work towards the ability to respond to disasters independently, many try to anticipate these situations with strong risk reduction strategies.

Strong risk reduction starts with determining the full spectrum of physical, social and economic adversities that the citizens may face. This identification process should involve the public (Pearce, 2012). UNISDR (2011) affirms that disaster risk reduction starts "with those who are themselves most exposed to anticipated hazards" (p.8). The first step is determining the risks with the community; the second is building capacities to mitigate these risks.

Community resilience

An underlying goal of disaster risk reduction is to develop strong, capable communities (Murphy, 2007). Thus, alongside the concept of disaster risk reduction is *community resilience*—a term that describes the internal capacity of a community to

identify and anticipate risk, limit its impact, and bounce back from adverse situations using its own resources. UNISDR (2012) defines it more thoroughly as:

> The capacity of a system, community or society potentially exposed to hazards to adapt, by resisting or changing in order to reach and maintain an acceptable level of functioning and structure. This is determined by the degree to which the social system is capable of organizing itself to increase its capacity for learning from past disasters for better future protection and to improve risk reduction measures. (p.16)

The development of community resilience is a highly interactive experience, because—as the definition indicates—it involves a social system's ability to learn and adjust, use all forms of knowledge, self-organize and develop links with other subsystems in the face of disasters. The term *community* can be defined in many ways, but prominent elements include a sense of belonging and identification with a spatial or social environment (O'Sullivan et al., 2015). In this sense, resilience cannot be built by a group of individuals; cohesion is critical.

Some studies point to the vulnerability of ethnic minority communities (Andrulis, Siddiqui and Gantner, 2007; Meredith, Shugarman, Chandra, Tanielian, Taylor, Stern, Beckjord, Parker and Tanielian, 2008), while others showcase their abilities to quickly bounce back. As Blazer and Murphy (2008) point out, immigrants showed great resourcefulness and resilience in post-Katrina New Orleans. Latino and Asian communities were found to be among the first to recover and thrive economically, and researchers believe that this is due to their experience in overcoming traumatic situations in their home countries. This study does not assume one or the other. It is often true that minority communities, such as ethnic minority groups, are found more vulnerable. But as already expressed, it is better to focus on contextual elements when determining levels of vulnerability and resilience[11] (Lemyre et al., 2009; Baker, 2009).

[11] Although the demographic approach to vulnerability analysis has been a favorable one in the past, scholars critique that it "reduces people to a homogenized, culturally undifferentiated mass of humanity variously associated with powerlessness, passivity, ignorance, hunger, illiteracy, neediness, oppression and inertia" (Banker qtd. in Baker, 2009, p.116).

2.2.2. **The public as a stakeholder**

Public participation

The public represents a major stakeholder in terms of risk management; therefore, their perspective is critical for decision making. Although this seems to be established in research and public policy, their participation in planning processes can be inconsistent. In Canada, municipal governments are tasked with satisfying the unique needs of their residents, while following provincial legislation (Province of British Columbia, 2017). This balancing act seems to be an obstacle in reaching risk management goals. At what stage and to what extent does the public participate? In Tappenden's (2014) examination of public participation in the development of a landslide management strategy for the District of North Vancouver, she notes while their involvement is "generally viewed to be an essential element," some "still question the public's ability to tackle complex decisions involving technical uncertainties and value trade-offs" (p.490). This quote captures realistic concerns that public participation is time consuming, costly, and delays the decision-making process (Tappenden, 2014).

Through the development of organizations such as the International Association of Public Participation, it is clear that the rising interest in public participation spans disciplines and boundaries. Its Canadian branch, the Association for Public Participation Canada (IAP2 Canada), advocates for the inclusion of all affected people and entities in public decision making. Echoing earlier discussions, it stands by the idea that public participation improves decision making because it incorporates the interests and concerns, and thus meets the needs, of all affected stakeholders. Its principles intersect with concepts or themes discussed in this thesis: collaboration, relationship building, trust and credibility, and openness and transparency. Although this overlap helps validate the need for public participation, as Tappenden (2014) expresses, its role in the risk management field is unclear.

IAP2 Canada's five stages

There are certainly different levels of public participation. IAP2 Canada identifies five of them. The first stage involves *informing* the public—providing balanced and objective information about the topic at hand. Although it increases transparency, it entails minimal participation, as there are no opportunities for feedback. As we have

seen prior to the 1990s, this approach is not suitable for risk communication and management. The second level entails *consulting* the public for feedback on the subject. The expectations of the first two stages are to keep the public informed, acknowledge their concerns, and provide a transparent decision-making process (including if and how public input influenced the decision). The third level aims to *involve* the public throughout the planning process. This level of participation better ensures that the public's concerns and aspirations are consistently understood and considered; hence, there is greater responsibility to directly incorporate them into the plans. This level of participation would start to build the relationships necessary for strong social networks. According to this guide, only until the fourth level is *collaboration* truly achieved. Here, there is a partnership with the public, and aspects of the decision—including the development of alternatives and the identification of the preferred solution—are considered together. At the collaboration level, the public's voice will influence the decisions to the maximum extent possible. The final stage—*empowerment*—places the final decision making in the hands of the public. Empowering the public promises that their decisions will be fully implemented (IAP2 Canada, 2015). The term *collaboration* is used a lot in this field; however, this spectrum shows that it requires a high level of participation. Later we will return to this concept and re-examine its place in Surrey.

HRVA (hazard, risk and vulnerability analysis)

For local risk management, one arena of public participation involves the identification of community needs and vulnerabilities. A popular term to describe this practice is *asset-mapping* (O'Sullivan et al., 2015). In BC, one calls it a *hazard, risk and vulnerability analysis* (HRVA), which is a requirement mandated by the provincial government[12] (EMBC, 2004). The BC government describes it as an activity that "helps community leaders make risk-based choices to address vulnerabilities, mitigate hazards and prepare for response and recovery from emergencies" (EMBC, 2004).

EMBC (Emergency Management BC) expects local authorities to generate an HRVA Advisory Committee to ensure that there is a balanced perspective on local risks, vulnerabilities and capacities. According to the HRVA toolkit, there should be representatives from local emergency social services, private industry associations, local

[12] Specifically, it is mandated in the Local Authority Emergency Management Regulation of the BC Emergency Program Act.

government, emergency professionals, subject matter experts and other interested community representatives with local knowledge and expertise (EMBC, 2004, p.9). Together, they identify potential hazards in their communities. Then, they rank these hazards according to their severity and likelihood, complete a risk profile and prioritize hazards, and identify risk reduction measures for any high-risk hazards. After evaluating these risks, they create a public consultation strategy and identify other affected stakeholders and anticipate stakeholder issues. Last, they review risk reduction measures and create an action plan. Here they should consider if there are local assets that could minimize the impact of these hazards. This following course of action—locating individual, organizational and community capacities to mitigate risks—is often called *capacity building* (Wells et al., 2013; UNISDR, 2009).

Capacity building

An anecdote shared by one of my interview participants reinforces the importance of HRVAs and capacity building: during the 2015 windstorm, Surrey's local food bank lost a tremendous amount of food because it had no power and therefore, no refrigeration. The participant feels that this could have been avoided if there were greater efforts to map out the community resources. For instance, the Surrey Board of Trade could have connected the City of Surrey to businesses that supply back-up generators. Unfortunately, they did not identify these assets, nor develop these partnerships, prior to the windstorm. As a result, a large amount of food was wasted. As one can see, this loss could have been turned into an asset. Capacity building provides a platform to map out a community's skills and resources, setting the stage for holistic planning and greater involvement by other stakeholders.

Some scholars argue that this diffusion of responsibility is essential for community resilience; Burnside-Lawry and Carvalho (2015) term it *inter-agency collaboration* (p.82). In describing this structure, they explain: "the role of leadership is to integrate vertical structures of an individual agency's control-command system into a horizontal system for cross-agency collaboration, a 'network system for command […] control that connects, collaborates and coordinates an adaptive response'" (p.82). This view suggests that effective disaster response involves maximized use of all stakeholder skills and assets. Following this perspective, Quarantelli (1988) finds it "impossible" to create a centralized authority system for risk management purposes. He asserts:

> In good disaster planning, rather than attempting to centralize authority, it is more appropriate to develop an emergent resource coordination model. Disasters have implications for many different segments of social life and the community, each with their own pre-existing patterns of authority and each with the necessity for simultaneous action and autonomous decision-making. (qtd. in Murphy, 2007, p. 299).

The implication is that, despite top-down tendencies, risk management must involve the public as active participants. Because citizens have diverse needs, they also hold a responsibility to partake in these resilience-building activities.

Local governments in Canada are striving for community resilience and many strategies involve capacity building and distributed responsibility. For example, the City of Surrey's *Public Safety Strategy: Taking Action Together* (2017) stresses the importance of: engaging community members to identify their skills and needs; building capacities and resilience; preventing or lowering risk factors; addressing local issues by avoiding a 'one-size-fits-all' approach; and providing integrated services (p.10-12). It also maintains that "building safe, healthy, resilient communities that are able to respond effectively to emergencies and crises" is imperative for reaching Surrey's goals (p.6). Hence, all community members and institutions have a role in building resilience. Everyone must be engaged in determining the issues important to them, and dedicated to acquiring the internal skills and resources to combat potential risks.

It is vital to note that these interactive processes build trust and relationships. If the public is aware of, consulted, and included, in local decision making, they are more likely to support the strategies and become empowered to take any subsequent action. Below, I share an example of a communication downfall due to missing stakeholder perspectives and ultimately, lacking relationships and trust. Rather than building resilience, the government's risk communication system arguably led to greater risks.

Case study: communicating the 2009 H1N1 strain in Canada

After familiarizing oneself with current policies and standards, the next step is to examine the efforts to put them into practice. A scan of recent catastrophes indicates that collaborative structures are missing in many pre-disaster contexts (Aldrich, 2012). The communication of the 2009 H1N1 strain in Canada is one example that displays this

lack. Although it was anticipated to be a major global pandemic, statistics show that its affect on Canada's population was comparable to any seasonal flu (Simonsen, Spreeuwenverg, Lustig, Taylor, Fleming, Kroneman, Van Kerkhove, Mounts, Paget, 2013)[13]. As Kelmm, Das and Hartmann (2016) phrase it, "in retrospective, the 2009 H1N1 influenza pandemic looks like much ado about nothing" (p.1). Fear of a pandemic was arguably the greater catastrophe.

Context: the fear of another pandemic

The disjoint between the fear of the 2009 H1N1 strain and its actual impact on Canadian society demonstrates the role that perception plays in risk management. Past pandemics likely influenced the handling of this outbreak—most notably, the 1918 H5N1 pandemic, which killed roughly 21 million worldwide. Some speculate that the death toll was as high as 100 million (Barry, 2005, p. 58; Knobler, Mack, Mahmoud, and Lemon, 2005). This unnerving data made many fear that with the world's growing population, the death toll from a contemporary strain could be even higher. For example, Barry (2005) argues that it could reach 175 to 350 million people (p.58). In an NRC 2005 workshop on preparing for future influenzas, the reader can see that there was genuine worry that a pandemic could happen again and that we are not prepared for it: "considerably more attention has been focused on protecting the public from terrorist attacks than from the far more likely and pervasive threat of pandemic influence" (Knobler, Mack, Mahmoud and Lemon, 2005).

This fearful assessment of future pandemic impacts may be indicative of what Kasperson et al. (1988) describe as the *social amplification of risk.* In the communications field, amplification denotes the process of intensifying or attenuating signals during the transmission of information from an information source, to intermediate transmitters, and finally to a receiver (p.180). Similarly, the *social amplification of risk* suggests that certain aspects of hazard events, and their portrayal in mediated sources, interact with social structures in ways that might weaken or amplify perceptions of risk, and through this, shape behavior. Within the context of the 2009 H1N1 strain in Canada, the news media was named a major culprit in amplifying its potential harm (Klemm, Das, and Hartmann, 2016; Rousseau, Moreau, Dumas, Bost, Lefebvre, and Atlani-Duault, 2013). Both of these analyses argue that the media

[13] However, the H1N1 strain did kill more people under the age of 65 than the average seasonal flu.

exaggerated H1N1's threat to Canadians. This panic seemed to trickle through the different levels of society, and its effects were most noticeable on marginalized groups, such as Canadian First Nations and Metis people. The case study below (Driedger, Cooper, Jardine, Furgal and Bartlett, 2015) outlines its impact more clearly.

Communicating the H1N1 vaccine to First Nations and Metis people

Here, I am going to review the problematic communication of the H1N1 vaccine in Manitoba, Canada as described by Driedger et al. (2015). It demonstrates the effect of top-down risk communication and planning. More importantly, it showcases how the absence of a First Nations and Metis perspective hindered their ability to serve and engage these communities effectively during an emergency situation.

As the authors summarize, the strategizing and communication surrounding the H1N1 vaccine was poorly received among these groups. Through interviews, the researchers examine First Nations and Metis people's responses to: the vaccine, the identification of at-risk groups, and how priority groups for the vaccine were established. They conclude that the messaging campaign was unclear, 'one-sized,' and ultimately ineffective for communicating the risks, who was at risk, and why. Considering the nation's colonial past, transparency, clarity, and cultural understanding are essential for building credibility.

The interview responses from the First Nations and Metis participants make it quite clear that distrust was a main reason for being disengaged from the H1N1 risk messaging. Canada's colonial background is an example of social noise that should have been considered during planning processes; these groups have long felt mistreated and ignored. Perhaps the fear of another 1918 pandemic distracted local authorities from considering deeper rooted contextual challenges. Nevertheless, relationships needed to be rebuilt. As one participant argues: "historically, First Nations and Metis [have] never been prioritized, so why now?" (p.6). Manitoba Health also did not distinguish why certain groups were prioritized. One participant asks, "who picks who is at the top of the list for the H1N1, like what were the studies?" This lack of transparency fueled their skepticism. Also, all First Nations and Metis communities were lumped together as one at-risk group: "anyone of Aboriginal identity" was prioritized for the vaccine. Since the messaging did not clarify which "Aboriginals" (First Nations, Metis, or both), or where they were located (urban or rural/remote), the respondents were

distrustful of the vaccine. They felt like they were being recruited to act as “guinea pigs” (p.6).

This case study exemplifies the issue with a population-based approach to communicating vulnerability, showcasing the need for informed stakeholder perspectives. When Manitoba Health labeled all Aboriginals as a priority group, without explanation or reasoning, it communicated that “Aboriginality” was a risk factor (p.4). Prioritizing individuals for the H1N1 vaccine according to socio-economic determinants of health may have been a better method for engaging the public. It draws one’s attention away from the people, and back to the contexts and conditions that increase risk (Lemyre et al., 2009). This activity is reminiscent of HRVA, as it requires the public’s help in identifying the social conditions that affect one’s resilience. In this case, the data indicates that the contribution of First Nations and Metis communities was quite low. Increased consultation would have likely led to a greater understanding on how to reach and engage them during emergencies. More importantly, it would have provided a platform for identifying any social conditions that disrupt their daily life and make them more vulnerable.

Several public health officials involved in the study state, “the focus on pandemic H1N1 was the ‘wrong’ pandemic: rather, the greater public health issue was and remains the social and economic circumstances that make some communities more vulnerable to negative health outcomes compared to the general population” (Driedger et al., 2015, p.5). Their emphasis on the socio-economic circumstances that make some communities more vulnerable than others indicates the need for forward thinking and collaborative problem solving. For example, many remote First Nations and Metis communities have unmet housing needs, including the lack of safe potable water. Although vaccinations are understood as preemptive measures; in this case, it seems more reactive. Attending to the lack of potable water would reduce their exposure to diseases and illnesses. Health officials communicate frequent hand washing as one of the most important protective behaviors an individual can adopt—an action made difficult without clean water. Addressing these broader social issues aligns with the ethics of disaster risk reduction, which strives for long-term prevention. The first step is identifying and communicating such matters, and it seems like this step may be a challenge in itself.

As I wrap up this discussion, I must bring the reader's attention back to the impact of trust, relationships and social networks. Before assessing the H1N1 messaging as an isolated hiccup, one should re-examine the communication flow between stakeholders and identify any barriers to this process. In terms of this case study, it is possible that these broader societal issues could have been addressed if there were stronger relationships between the government and First Nations and Metis groups. One respondent states that they did reach federal government employees with their concerns, such as the lack of potable water in some areas, but were believed to be "making it up to make their minister look bad" (p.5). Although this quote may be a case of 'he-said, she-said,' it certainly is not representative of the collaborative partnerships and two-way flows of discussion that Canada's *Framework* (2017) promotes—and trust seems to play a role.

In terms of reaching disengaged minority communities, involving community leaders may be a method for increasing engagement and communication with these groups. In the long run, it may also serve to strengthen the trust and relationships between these two stakeholders. Driedger et al. (2015) address this point and note that in other Canadian Indigenous contexts, local community leaders have been utilized in the past to convey important news. In this case; however, federal and provincial authorities communicated the H1N1 risk messaging and one can see the downfall with this approach. They likely chose to communicate these messages themselves in order to avoid miscommunication and maintain consistency. But in cases where there is low trust and strained communication networks, top-down information flows can be counterproductive. As another study maintains, "implementing mitigation strategies, including vaccination campaigns, in a culturally sensitive and appropriate manner with community engagement under the direction of Aboriginal peoples and key stakeholders should be a priority" (Boggild, Yuan, Low, McGeer, 2011, p.347). Working with community leaders regularly may be a way to reduce the social noise affecting risk communication and management goals. I explore this strategy further in Chapter 5.

2.3. **Opportunities for Progress**

2.3.1. **Building resilience**

Community resilience is not a new concept to this field. However, how to

effectively build resilience is a recent topic of interest, especially among diverse, urban societies. Practitioners are campaigning for engagement methods that provide a positive experience for participants, while sustaining motivation to participate (O'Sullivan et al., 2015). But they also recognize that defining and implementing such an inclusive operation takes time and resources. Evidently, this new approach to risk management seems relatively easy from a theoretical standpoint, but the practical implementation of such collaborative plans is more elusive (Tobin, 1999). After illustrating the disjoint between research, policy and practice, the remainder of this chapter presents the dialogue on overcoming these challenges.

US National Research Council (NRC) on building resilience

The NRC report *Disaster Resilience: A National Imperative* (2012) asserts that the use of resilience measures is critical for building strong communities. Unfortunately, very few consistently incorporate them in their community development plans. Consequently, the NRC hosted a series of workshops to advocate for resilience building as a long-term goal and societal vision. According to their perspective:

> It is much more challenging to figure out how to turn tragedy into a triumph in a post-disaster community. In order to mainstream the concept of resilience, it is important for a community to build it into its existing efforts, find a champion to move the resilience agenda forward, and inspire civic engagement in resilience building. (p.11).

They partnered with practitioners from across the United States to help define actionable steps towards a more resilient nation, starting at the local level.

The focus of one workshop was to advance the development and implementation of resilience measures by and within diverse communities (NRC, 2015). Part of this process required the participating practitioners to define their region's resilience according to different environments. Important here is their evaluation of resilience in the *social/wellness environment*, which is "the capacity for people to connect with each other (e.g., social relationships, communication, formal and informal institutions)" (p.12). During the discussion, participants agree that neighborhoods experiencing high fluctuation (i.e. influx of new residents, transient populations) tend to be more vulnerable. In these areas it is harder for residents to develop social relationships, and thus

connections to information and resources. Those that are disengaged from the wider society, even if they display high social connectedness within their own social circles, also exhibit less resilience according to these participants.

Ultimately, the purpose of defining measures of resilience at these workshops was to better understand how to address obstacles to resilience. Even if a community has many highly resilient individuals, "resilience may still be low because a community can only be as resilient as its least resilient individuals" (p.15). As their discussion suggests, one way to boost the resilience of vulnerable areas is to foster social connectedness. Among their suggestions are: providing more shared community spaces and encouraging shared ideologies (p.12). They add that trust is especially critical for building these social relationships.

2.3.2. **Local efforts**

Surrey, British Columbia

Neighborhood preparedness programs embody this vision of creating social ties for risk management purposes (Pearce, 2012). Surrey's *Neighborhood Emergency Preparedness Program* is a free public service that helps interested Surrey neighborhoods create a preparedness plan. Working with a facilitator, they identify their internal skills and resources, and how they would use them to respond safely and effectively during a disaster. This system encourages an interactive, collaborative environment, which is ideal for developing trust, communication, and ultimately partnerships. In the past year, there has been incredible growth in the amount of participating neighborhoods. About a year and a half ago, only one was involved. Now, there are seventeen. Despite this promising statistic, one of my participants states that they are "not getting requests from the [South Asian] community" (City of Surrey Participant 5). So, although some neighborhoods are taking action to build resilience, next steps should focus on increasing interest or awareness within South Asian hubs. Looking ahead, this will minimize the disparities in resilience between different neighborhoods during a disaster situation.

Toronto, Ontario

In other Canadian societies, work is being done to boost interest among diverse

groups through interactive, bottom-up projects. O'Sullivan et al. (2015) launched the EnRiCH project in Toronto, Canada as a community resilience intervention program. It stands out from others because its framework is built on concepts that include social capital theory (p.617). The researchers stress the importance of networking and inclusive engagement prior to the advancement of risk communication and planning activities. Their approach was well received by the participants. As one participant shares, "I am happy to have had the opportunity to address this issue from an interesting angle and method which permits everyone to express themselves and to be listened to with respect" (p.621). In terms of provoking public participation and engagement, this foundation seems to give the program an edge. Launched to address the challenges for high-risk populations, the EnRiCH project showcases the value of reworking social capital for risk reduction purposes.

A large part of the EnRiCH project was the HRVA process, which was conducted through focus groups and interviews with a variety of stakeholders. The recruitment "deliberately emphasized inclusion of citizens, associations and volunteer groups whose voices are often not considered in community disaster preparedness activities" (p.621). O'Sullivan et al. (2015) emphasize that in order to facilitate a balanced exchange of information among diverse voices, one must create a comfortable environment. So, the first step of the HRVA phase was encouraging interaction between the participants: one-on-one interviews were followed by small group deliberation, and then a plenary discussion with the full group. A "graded approach" accommodates those who are shy, living with disabilities, or have other functional limitations that influence their ability to fully participate in group discussions (p.621). Participants reacted positively to this format. The ability to assume the roles of both interviewer and interviewee also seemed to generated more engagement.

It is important to mention that the facilitators did not rush these engagement activities. The discussion sessions lasted four to five hours. This time frame was "an important element in the SIM [structured interview matrix] process because the time invested in meeting new people and engaging in meaningful discussion facilitated the development of new community connections and opportunities to renew or deepen existing relationships" (p.619). As intended, the participants stated that they came away with new or deepened social connections.

The HRVA process increased knowledge and even action at both the individual and community level. Not only was there increased awareness about the resources available in their community, but also a general understanding of local issues related to disaster preparedness, response and recovery. As stated by one participant: “the discussion identified gaps, lack of awareness, need for education and greater collaboration. Getting to know others in related fields that had resources and manpower gave added information” (p.621). In addition to information sharing and building awareness, the exercise served as a platform for problem solving. Participants brainstormed how they could tackle vulnerabilities with the resources that they already have. The researchers share that the establishment of common ground and awareness worked to stimulate conversation and solution focused thinking—and subsequently, motivated participants to take action following the SIM sessions. This iterative cycle of engagement, information exchange and networking clearly requires time and resources, but as shown here, it can lead to action.

2.4. **Conclusion**

The purpose of this chapter was to outline policy, practice and research, and to showcase the disjoint between the three. Although there are clear standards, research shows that practitioners have struggled to uphold them. O’Sullivan et al.’s (2015) work serves to introduce the idea that social capital theory can be a guiding force for activating the public. In the next chapter, I argue that social capital theory’s attention to trust, relationships and social networks makes it a worthy framework for risk planning projects.

Chapter 3.

Theoretical Approach

3.1. Introduction

There are several theoretical paths one may choose for understanding any given issue. In this chapter, I propose that social capital theory is a constructive lens for investigating the social processes inherent to risk communication and management. I argue that this type of work is valuable at the pre-disaster phase for raising awareness of social network issues that may be affecting these practices, as well as any opportunities to fill these gaps.

By now, the reader is already aware that risk reduction and community resilience are objectives in this field—and according to the literature, stakeholder collaboration is important for both the development and execution of such strategies. But there is not one simple formula for generating it. Therefore, practitioners struggle in defining and implementing a collaborative process that is successful in one's municipality. Social capital theory; however, forces one's attention back to this stage of risk planning. How can we improve public participation? How can we engage the unplugged, or harder-to-reach, communities? Can we identify networks of communication and improve them? Are there issues of trust? From a social capital perspective, fostering authentic connections is a means for achieving effective risk communication practice and ultimately building resilience and reducing risk. The purpose of this chapter is to provide the reader with a thorough understanding of social capital theory, identify its role in Canadian society, explain its potential impact from a risk management standpoint, and introduce ways to incorporate it into local practice.

3.2. Social Capital Theory: An Overview

Social capital theory became popularized in the late 1970s and has since developed into a concept with many phenotypic applications. It has been criticized as a fashionable term used as a cure-all for the maladies affecting contemporary communities and societies. It has also been found challenging to researchers due to its

numerous definitions and consequently, its operationalization and measurement. As Adam and Roncevic (2003) put it, "the more popular the concept becomes, the further we get from a consensus" (p.160). Despite these obstacles, I argue that it is a worthy framework for this research—it just needs to be well defined in one's study. Therefore, I first provide the reader with a glimpse of these different approaches to social capital theory. Then, I describe the one I take: using Lin's (1999) *social network approach* as a base, I draw from Mark Granovetter's (1973) *strength of weak ties* theory to showcase this research's value to Surrey's risk management.

3.2.1. **Bourdieu, Coleman and Putnam**

Although aspects of this concept can be traced back to the origins of sociology itself, Pierre Bourdieu and James Coleman introduced social capital theory in the late 1970s to conceptualize the potential or actual resources that are embedded within social networks[14] (Hauberer, 2011; Lee and Sohn, 2016). The idea that social connectedness is an important facet of society is not new. However, within this field of thought, it is measurable[15] and a high accumulation of it contributes significantly to social, political and even economic performance, for better or worse (Nakagawa and Shaw, 2004).

Role of relationships

Important to both of their conceptualizations is that social capital is a property of relationships; it is a "relationship immanent capital" that provides useful support when needed (Hauberer, 2011, p.38). Thus, it is more appropriate to examine social capital according to its function—in other words, its mobilization of resources (Nakagawa and Shaw, 2004, p.7; Hauberer, 2011, p.40). For it to work positively, it is essential that relationships are stable. Stable relationships create honor and reputation among its members and are most effective for building and maintaining trust. Material and/or symbolic exchanges (i.e. gifts or greeting each other) sustain these relationships.

Although this sounds simple, there needs to be consistent investment in relationships to uphold them. Because social capital is immaterial and thus cannot be

[14] Both are credited as founding theorists; however, their work was done independently of one another.

[15] Although measurable, this is one feature that has made social capital research complicated—because there have been many different approaches to operationalization, measurements differ (Adam and Roncevic, 2003).

seen, it can often be left neglected. And like other forms of capital, it loses value over time. Social relations fragment, expectations lose importance, and norms expire (Coleman, 1988). Hence, efforts need to be made to maintain and boost social capital. Looking at its function on a wider scale, other studies point out that the resources accessed and mobilized through social ties do not fall equally across the racial, ethnic, or socioeconomic groups, which consequently leads to disparities in individual or group achievement of goals (Lin, 1999). So, when assessing social capital's role in a larger context, it is not uncommon to detect various patterns and functions.

Network closure

To combat the potential loss of social capital and its benefits, both Bourdieu and Coleman embrace network closure. Dense or closed networks maintain and enhance trust, norms, authority and sanctions, which are all solidifying forces that ensure the reproduction of collective capital. Later, we will discuss an alternative perspective, which maintains that having closure or density as a requirement for social capital ignores the significance of bridges or ties between social networks and their ability to connect individuals and groups with novel information and resources (Lin, 1999).

Beneficiaries

Where Bourdieu and Coleman differ is in their understanding of its beneficiaries (Hauberer, 2011). Bourdieu's concept of social capital focuses on the benefits that the elite individual[16] obtains through relationships, while Coleman's emphasizes the collective's[17]. With other forms of capital, those who invest in them reap the resulting benefits; they are private goods. For social capital, the investing actors are not the only ones who gain the benefits. Because others within the social structure also benefit, social capital is a public good. Political scientist Robert Putnam (2001) also emphasizes social capital's role in the collective experience. However, his approach focuses on how "certain communities cooperate with each other to overcome the dilemmas of collective action" (Lee and Sohn, p.730, 2016). Social trust, norms of reciprocity, and formal group activities are important to his conceptualization. He notes that the term has been

[16] Bourdieu's definition of social capital is especially interested in how individuals of the upper classes ensure that their spheres remain exclusive, highlighting the reality of social inequality.

[17] Meanwhile, Coleman's approach leads to a broader view of social capital, where it is not seen only as stock held by powerful elites, but notes its value for all kinds of communities, including the powerless and marginalized.

reinvented at least six times in the twentieth century, but it has always called attention to the ways in which our lives are made more productive by social ties:

> By analogy with notions of physical capital and human capital—tools and training that enhance individual productivity—the core idea of social capital theory is that social networks have value…whereas physical capital refers to properties and individuals and human capital refers to properties of individuals, social capital refers to connections among individuals—social networks and the norms of reciprocity and trustworthiness that arise from them. (Putnam, 2001, p.19)

Here, he argues that social networks affect the productivity of individuals and groups. As the quote suggests, the purpose of social capital research is to explore the connections between people, the strength of these connections, and all the resources available through these connections. Then, one can understand how these connections are influencing society.

3.2.2. **Forms of social capital**

The context-dependent nature of social capital means that it can take on many different roles and meanings. Szreter and Woolcock (2004) display the wide spectrum of social capital, which preps the reader for later discussions on Lin's (1999) *social network approach*, as well as Granovetter's (1973) *strength of weak ties* theory.

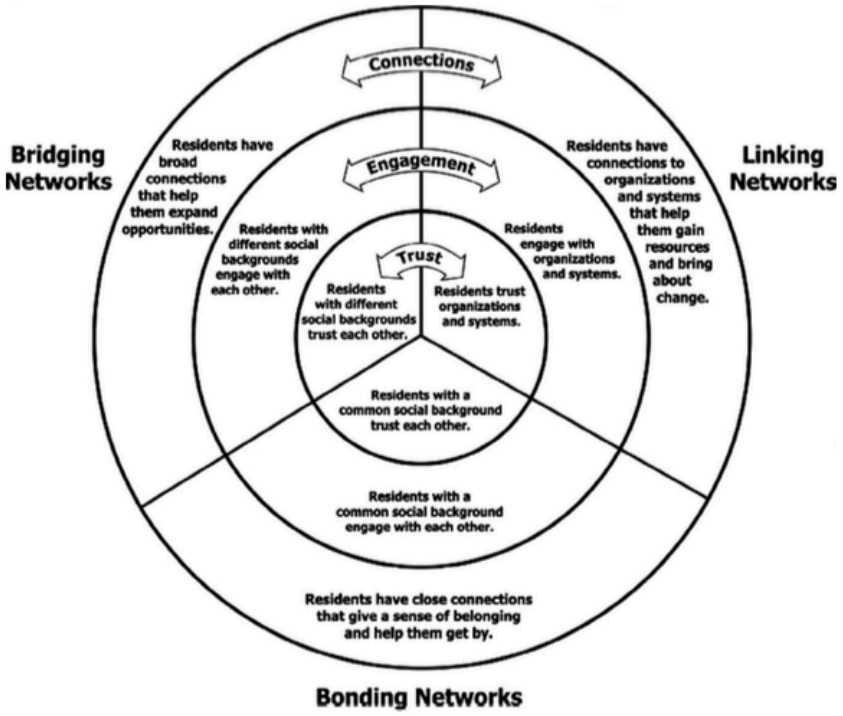

Figure 3. Community Social Capital Model (Chazdon and Lott, 2010, p.159). Reproduced with permission of Taylor and Francis.

Szreter and Woolcock (2004) help break down social capital according to three types of relationships (See Figure 3 above). First they distinguish between bonding and bridging social capital[18]. *Bonding social capital* describes the trusting and cooperative relations between members of a network who see themselves as sharing a social identity. *Bridging social capital*; on the other hand, entails relations of respect and mutuality between people who know that they are not alike in some socio-demographic (or social identity) sense. They may differ by age, ethnic group, or class, for example. Szreter and Woolcock (2004) are also known for establishing a third form of social capital—*linking social capital*—which represents norms of respect and networks of trusting relationships between people who are interacting across explicit, formal, or institutionalized power or authority gradients in society (p.655). With the introduction of linking social capital, one can now refine bridging social capital as horizontal connections with 'outsiders,' and linking social capital as vertical power relations.

Exploring linking social capital is especially important from a risk management

[18] Gittell and Vidal are the scholars often associated with making a distinction between these two forms of social capital (Gittell, 1998).

standpoint, as the handling of H1N1 in Manitoba demonstrated (Driedger et al., 2015). Szreter and Woolcock (2004) suggest that it is the nature and extent of respectful and trusting ties to representatives of formal institutions that has a major bearing on the public's welfare. Due to factors such as size and population density, low linking social capital is a common problem among urban societies—recent survey studies show that Canadian cities are no exception.

3.3. **Social Capital in Canada**

3.3.1. **High bonding social capital**

Several surveys assessing social capital in Canada suggest that social fragmentation exists and is especially impactful on the lives of immigrant and ethnic minority groups (George and Chaze, 2009; Kazemipur, 2012; Aizlewood and Pendakur, 2004). These examinations provide a sketch of the social fabric in Canada, giving the readers a glimpse of the potential challenges in a disaster situation. Typically, ethnic groups seem to have high bonding capital, but lower bridging and linking social capital. The researchers suggest that these patterns are reflective of high involvement within one's social circles, coupled with low participation in activities with the larger community.

George and Chaze's (2009) study argues that there is high bonding social capital among South Asian immigrant women in Toronto, and that it serves to ease the settlement of these women. In this sense, high bonding social capital can have positive effects. However, from a risk management standpoint it can present challenges. The interview data reveals that information is their greatest need during settlement, and that they mainly rely on informal networks as sources of information and orientation (George and Chaze, 2009). Do they turn to each other because they do not trust official sources? If they are depending on one another as information-bearers, are they aware of all the risks that they are exposed to in Canada? In an emergency situation, will these women be reached with accurate information? These are some questions that cross the minds of scholars and practitioners in this field.

3.3.2. **Low bridging and linking social capital**

Another survey study (Kazemipur, 2012) observes the weaker bridging and

linking social capital among ethnic communities through an analysis of their community engagement[19]. Kazemipur (2012) cites several domains where they fall behind the mainstream: voting, trust, volunteering, neighbourliness, group activity, political expression, and social networks (p.e107). Many of these involve interacting with the host population. Hence, the reported low levels of community engagement may be reflective of low bridging, and perhaps even linking, social capital.

To support this hypothesis, the author also compares the divergent Western and non-Western immigrant settlement experience. For instance, when comparing the levels of general trust reported by Western and non-Western immigrants, the rate of increase remains slower for non-Western immigrants over time, even though they both start from "almost identical" levels (p.e109). When he compares the levels of confidence in public institutions, all begin at a relatively high level. But, the longer the immigrants stay in the country, the more they lose this confidence—again, this decline is more pronounced in non-Western immigrants. A social capital perspective brings these patterns to light. It also forces the reader to evaluate the contextual reasons why non-Western immigrants are exemplifying a greater disconnect from Canadian society.

3.3.3. **Managing social capital**

Work needs to be done by decision makers to manage social capital in a way that strengthens all communities. Some scholars argue that positive connections can be built between groups or networks through regular social interactions. Not only would it increase bridging social capital, but also linking social capital. Proctor (2004) explains that social capital is positively correlated with an individual's belief in community and government: "individuals who regularly interact with one another in face-to-face settings learn to work together to solve collective problems. They gain social trust, which spills over into trust in government" (p.13). Even informal activities, such as chatting with one's neighbors, or partaking in community sports programs, develop positive social capital. Aligning with the NRC (2015) workshop, providing opportunities for even the simplest forms of interaction, such as increasing the amount of community gathering spaces, could develop social capital in a way that benefits a society's resilience.

[19] According to the data of Canada's 2003 General Social Survey.

Aizlewood and Pendakur's survey study (2004) of Canada's social capital adds that frequent, informal contact is especially meaningful when it takes place in ethnically diverse settings. When individuals living in heterogeneous neighborhoods have positive, direct interactions with member of other ethnic groups, they are also more likely to extend a sense of trust to strangers, which increases bridging social capital. The authors argue that positive social interactions among 'unlike' individuals contribute more to the development of generalized trust and civic orientations than similar experiences among individuals who share common characteristics, attitudes and behaviors (p.8). In short, moves do not need to be grand to be effective. However, this does not mean that it happens organically. As already identified, there needs to be conscious efforts and investment in social capital.

3.4. **Social Capital: Double-Edged Sword**

3.4.1. **Fukuyama's radius of trust**

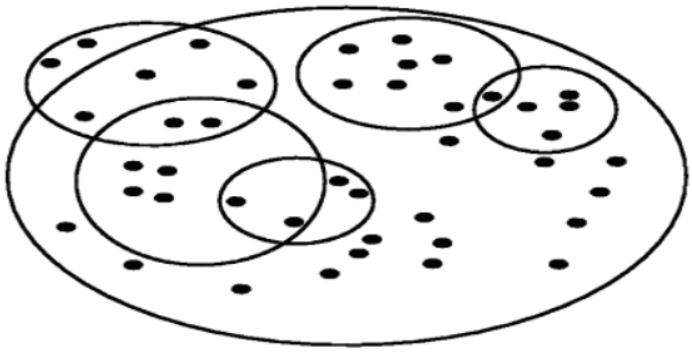

Figure 4. Fukuyama's Radius of Trust (Fukuyama, 2001, p.9). Reproduced with permission of Taylor and Francis.

At first glance, the promises of social capital are appealing. Opportunities for interaction and exchange seem easy to achieve—most of the time, they are engrained in daily life, right? On the contrary, social structures are often exclusionary by design (Gingrich and Lightman, 2015). While serving many, they exclude some. Hence, the interactions necessary for bridging and linking social capital may not be everyday, natural experiences.

Francis Fukuyama (2001) explains this phenomenon well through his concept of the *radius of trust* (see Figure 4). He explains that modern society can be represented as

a set of “concentric and overlapping radius of trust” ranging from families, coworkers, religious groups and so on. Within these circles, “cooperative norms are operative” (qtd. in Andriani, 2013, p.11). From here there are two paths. The radius of trust can be larger than the group itself, producing positive externalities, or, it is smaller than the group, which indicates that not all the members belonging to the group benefit from this “social resource” (p.11). In the second case, one sees the classic insider/outsider dichotomy that many urban communities experience. Several social capital theorists recognize that mutual trust—or having a radius of trust that encompasses all or most groups within a social structure—is incredibly important for developing and sustaining social capital (Fukuyama, 1999; Coleman, 1988; Granovetter, 1985). Hauberer (2011) explains that “trust relations make reciprocal actions at different time points possible for an individual, and are of value to the collective because they are the basis for establishing norms guiding the action of actors and, therefore, give rise to cooperation” (p.46). However, in communities that host many different walks of life, it is much harder to create these wide radiuses of trust.

Social capital can be understood as a double-edged sword. As Woolcock (1998) contends, “one would expect communities blessed with high stocks of social capital to be safer, cleaner, wealthier, more literate, better governed and generally ‘happier’ than those with low stocks” (p.155). However, Fukuyama’s (2001) *radius of trust* theory shows that there are factors that impact its positive role in society. It can be weak and exclusionary. It is also dependent on the contributions and efforts of many subjective beings. Social capital can take on a very different meaning in two neighboring communities. Thus, it is a complex concept and can be a hard one to manage.

3.5. **Social Capital and Communication**

Through a citation network analysis, Lee and Sohn (2016) assess the employment of social capital theory by communication scholars. Because the communications field is multidisciplinary, analyzing citation patterns is a way to examine cross-area flow of knowledge. As the authors argue, this method helps deepen our understanding of the usefulness, as well as the limitations, of various theoretical frameworks and methodologies used for communication research.

Their content analysis identifies that communication scientists became interested

in social capital in the mid-1990s, when social contexts became recognized as critical determinants of human mind and behaviors (p.730). Two approaches unfolded, depending on whether they envisioned social contexts according to geographic regions (bounded places) or networks (nonspatial contexts). Lee and Sohn (2016) describe the former as the social cohesion approach and the latter as the social network approach.

3.5.1. **Lin's social network approach**

My analysis of stakeholder relationships is best examined through a social network approach, which Lin (2001) argues is gaining consensus among scholars as the best framework for conceiving social capital theory (p.24). He maintains that social capital theory should be explored as: resources accessible through social ties that occupy strategic network locations and/or significant organizational positions. According to this perspective, "one invests in social relationships in order to gain or access the resources of other actors" (p.24); individuals network in order to gain profits. It is important, though, to understand that these resources are ultimately found in social relations, rather than individuals.

In this sense, social capital serves in several ways. First, it facilitates the flow of information. Social ties in certain locations can provide an individual with useful information about opportunities and choices otherwise not available. Second, it can exert influence on decision-making agents. Sometimes, due to their strategic locations, there are social ties that carry more valued resources, and exercise greater power, in organizational agents' decision making. Lastly, social tie resources may be conceived as an individual's social credentials. One's accessibility to other resources showcases one's personal value (p.31). He explains:

> The ego is cognitively aware of the presence of such resources in her or his relations and networks and makes a choice in evoking the particular resources. There may be ties that do not appear in ego's cognitive map and thus not in her's or his awareness of their existence. Only when the individual is aware of their presence, and of what resources they possess or can access (these ties have their networks as well), can the individual capitalize on such ties and resources (p.26).

So, if people are not investing in certain social relationships, is it because they do not see a benefit in doing so? Does this perception explain why there are different levels of participation in risk communication processes?

Lin's perspective on social capital goes against several thinkers in this field. First, unlike Putnam (2007), who argues that social capital is decreasing in contemporary settings, Lin (1999) maintains that is it on the ascent, due to increasingly pervasive online networking. This modern take on social capital theory aligns with some of the investigations undertaken in my study, such as the use of online tools for both social capital and risk communication purposes. Secondly, going against Bourdieu and Coleman's perspective on dense or closed networks, he points to the importance of bridges between networks in facilitating information and influence flows. In essence, to argue that closure or density is a requirement for social capital is to deny the significance of bridges, or weaker ties, in connecting individuals and groups with novel information and resources (Lin, 2001, p.27). Mark Granovetter's (1973) *strength of weak ties* theory clarifies this argument.

Strength of weak ties theory

Granovetter's (1973) *strength of weak ties* theory stresses the cohesive power of weak social ties[20]. Aligning with the discussion above, it suggests that open networks are beneficial for social capital because they expand access to resources, information, and opportunities to a greater number of individuals[21]. The term *ties* describes social relationships: there are strong, weak and absent ties. Much like bonding social capital, strong ties represent relationships between family members and close friends. Understandably, they usually bear similar information. This theory values those that have many weak social ties because novel information and resources flows through them. The more weak ties one has, the more connected they, and their social networks, are to new ideas, information and resources. Lin (2001) contends that interactions, thus, should be analyzed and understood "not only as relationship patterns among individual actors or nodes, but much more importantly, as resource patterns linked in interaction patterns (p.38).

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[20] Ronald Burt's (1992) structural holes theory is another concept that recognizes that social gaps provide opportunity for sharing complementary sources of information. However, due to word constraints, the use of weak ties theory is sufficient for the goals of this paper.

[21] This differs from the network closure approach (Bourdieu, Coleman) described earlier.

3.6. **Social Capital and Risk Communication**

In post-disaster studies, researchers use social capital theory to better understand how societies mobilize social resources to meet the urgent needs of a disaster. Researchers have found that social capital can function to connect people to information and aid during a disaster, or, it may work to isolate individuals and groups (Naryan and Woolcock, 2000; Nakagawa and Shaw, 2004; Andriani, 2013, Buckland and Rahman, 1999).

Bhandari (2014) shares several studies that demonstrate the potential of social capital mobilization for risk management purposes (Neal and Phillips, 1995; Buckland and Rahman, 1999). In the case of the 1997 Red River Flood in Canada, Buckland and Rahman (1999) come to the conclusion that community development—embodied in social, economic and human capital—was an important determinant of effective community-based disaster management. Communities with higher levels social capital, and more community-oriented patterns of development, generally responded more effectively to the flood. De-centralized decision making, trust, and reciprocal normative behavior all came to the forefront as productive features of social capital. In this case study, Roseau River, which is predominantly Anishinabe First Nation, exemplified the lowest social capital and poorest response to the flood. An important difference between this community and the two European-origin communities examined seems to be in their linking social capital:

> In the case of the European-origin communities, the expanding community-government relationship seems like a partnership, albeit an unequal one. For Roseau River [the least], the relationship with government began and continues to be based on a paternalism that diminishes effective partnership. (p.182-183).

This quote proves that there are different forms, and varying levels, of social capital. Buckland and Rahman's (1999) comparison of three communities' social capital shows that it can impact disaster response and recovery, both positively and negatively.

There are more studies that showcase the devastating effects of social capital: fewer social connections ultimately led to fewer resources for response and recovery (Aldrich, 2012; Perry, Hawkins and Neal, 1983). For example, in Tamil Nadu, India, some villages institutionalized social capital in the form of *uur panchayats* (caste or tribal

councils)—an investment strategy that sounds promising. However, after the 2004 Indian Ocean tsunami, only the members of the *uur panchayats*, and those within their social circles, were effectively connected to outside aid. Many survivors were left with little help due to their lack of connections. These people (including *dalits* or "untouchables," Muslims, and women) reported discrimination by organized and connected social groups, which ultimately slowed their recovery (Aldrich, 2012, p.14).

As the reader can see, overcoming exclusionary social structures is not easy in practice. But social capital theory, as a lens, may be helpful for illuminating these challenges early on and methods to overcome them. As Buckland and Rahman (1999) affirm: "social capital is a useful concept that seeks to explain the characteristics required for effective and egalitarian community-based management capacity" (p.175). The integration of these two fields leads me to discuss past disasters and further weigh social capital's role in both helping and hindering community resilience. I will first discuss the works of Daniel Aldrich (2012; 2017; 2018), who is a prominent driver in this field of thought. In *Building Resilience* (Aldrich, 2012) he explains how variation in post-disaster recovery is linked to levels of social capital. He reviews four mega disasters—the 1923 Tokyo earthquake, 1995 Kobe earthquake, 2004 Indian Ocean tsunami, and the 2005 Hurricane Katrina in New Orleans—to demonstrate how communities with high social capital progressed their responses into quick recoveries. Here, I will review his analysis of both the Tokyo earthquake and Hurricane Katrina to introduce this connection between resilience and social capital.

3.6.1. **1923 Tokyo earthquake**

In *Building Resilience*, Aldrich (2012) first examines the 1923 Tokyo earthquake. The disaster's effects were immense: it left 350,000 houses damaged or completely destroyed and 60 percent of the population homeless; 60,000 residents were confirmed dead and 11,000 were listed missing. This case study fascinates social scientists because recovery rates varied widely across Tokyo's neighborhoods. Some argue that the amount of damage determined the pace of rehabilitation. Others argue that levels of civic participation dictated recovery rates. Aldrich's (2012) analysis considers this debate by investigating the ways in which both damage levels and different forms of capital (physical, human, economic, social) are connected to population recovery in Tokyo—an essential process for a society to recoup financially, physically and socially. According to

his findings, neighborhoods with higher levels of social capital "had measurably and statistically significant population growth than those with lower social capital" (p.70).

Through bivariate analysis, propensity score matching, and time series cross-sectional models, Aldrich (2012) examines six common categories of post-disaster research: aid to survivors, damage, population density, human capital, economic capital and social capital. After comparing different Tokyo neighborhoods according to these categories, he concludes that the variance in recovery rates seems to be due to different levels of social capital. Heavily damaged areas, such as Honjo, Atago, Kojimachi, Tsukiji, recovered faster than wealthier areas despite being working class neighborhoods. He attributes their recovery to solidarity, connections, and strong social networks—elements of social capital that were indicated through higher participation in civic and political affairs (i.e. voting, political demonstrations, rebuilding public spaces). He argues that this social connectedness brought back residents and even attracted new migrants. Although survivors could have relocated to new areas, bonds drew them back to their neighborhoods to rebuild. These ties also provided information and other types of informal insurance, such as tips on inexpensive places to eat and sleep, and early insights about job openings. Similar-sized but less damaged neighborhoods, such as Toriizaka and Horidame, had lower levels of civic and political engagement and, accordingly, lower population growth after the disaster. Ultimately, there were no social ties drawing them back. Aldrich's (2012) analysis finds little evidence that suggests traditional factors, such as damage levels, altered the pace of recovery. Instead, he presents a strong case for social capital's impact, and alludes that it can function as a resource for risk management if nurtured properly.

Investment in resilience challenges traditional approaches to cost-benefit analysis because there are many different kinds of assets, all of which are valued differently. Forms of capital such as physical, manufactured and economic capital historically have taken precedent because they have a tangible, measurable dollar value attached to them. Other forms, such as social and cultural, hold high value from a resilience-building point of view, but their worth is hard to quantify in financial terms. Nonetheless, as demonstrated by Aldrich's (2012) work, there is growing research that validates the connection between social capital and many facets of recovery, even economic upturns.

3.6.2. **Hurricane Katrina**

Since the 1923 Tokyo earthquake, there have been many catastrophes and thus opportunities to better understand the pillars of community resilience. Despite growing knowledge, the management of recent disasters proves that gaps still exist in practice. Hurricane Katrina, for example, was heavily criticized for how it was handled. Examined from all sorts of angles, the case studies are endless. Some get close to a social capital analysis, highlighting the impact of social networks, trust and internal information-bearers. One interview study (Eisenman, Cordasco, Asch, Golden and Glik, 2007) argues that in order to truly build resilience in New Orleans' impoverished, minority communities, policymakers must look beyond surface-level obstacles (such as shelter and transportation) and towards underlying social causes. Using a social capital framework, we can take their analysis a step further. For example, many participants express that they were dependent on family and friends for information. In addition to addressing these internal information outlets as the researchers suggest, the indication of strong bonding capital should also direct one's attention to the larger picture, such as weak or lacking external connections.

In his analysis of Hurricane Katrina, Aldrich (2012) directly assesses the role of bonding, bridging and linking social capital, and concludes that a community cannot mobilize with strong bonding social capital alone. It certainly holds a role in recovery. On an individual level, it is important for one's mental health (Iwasaka, Sawada, and Aldrich, 2018). As shown after the 1923 Tokyo earthquake, it can lead to smaller scale solidarity and collective action. However, when needs exceed internal resources, bridging and linking social capital are essential. In the case of Hurricane Katrina, neighborhoods with high levels of damage—and both bonding and linking social capital—proved to be more resilient than communities whose residents were connected primarily to each other and not to extra-local figures or institutions (Elliot, Haney and Sams-Abiodun qtd. in Aldrich, 2012, p.131). Improving bridging and linking social capital prior to a disaster benefits all parties. As a resident, one will have access to more information and resources; and thus, will be better equipped during an emergency. As a local decision maker or service provider, this open communication and trust will generate a greater understanding of the community's needs and assets, and ultimately lead to appropriate strategizing for reducing risk.

Practitioners and decision makers may have absent ties with individual residents, but weak ties with community-based organizations and community leaders should exist. The immediate outcome would be an improved information flow. Additionally, by partnering with community leaders, local authorities would also gain more credibility within these communities: “trust is assigned to a stranger, if a known (and trusted) person has a relationship with the stranger” (Hauberer, 2011, p.43). Some scholars are really pushing for such partnerships (Murphy, 2007; Burnside-Lawry and Carvalho, 2015; Aldrich, 2012). In the case of the 2011 Christchurch earthquake, community leaders used their weak ties to connect their respective communities to outside resources and information, which led to a faster recovery.

3.6.3. Community leaders and building resilience

Christchurch, New Zealand

Many researchers used the 2011 earthquake in Christchurch, New Zealand as an opportunity to better understand the features of a resilient community. According to Paton, Selway and Mamula-Sead’s (2013) report “Community Resilience in Christchurch: Adaptive Responses and Capacities During Earthquake Recovery,” one essential feature that surfaced was strong community leadership. They define community leaders as those who have: heightened knowledge of the community, effective liaising capabilities, and the commitment and availability to help others (p.14). During the response phase, those who emerged as strong leaders understood when their communities required outside help, and more importantly, could obtain it. In other words, they utilized their weak ties to access external information and resources. During the recovery phase, they used their knowledge of community capacities to advance a recovery process from within. According to the data, self-sufficiency was essential for fast recovery. Communities that had weak community leadership struggled to move forward after responders had come and gone. Both their physical and psychological recovery was slower (p.13). Overall, community leaders and their weak ties played a pivotal role in moving these communities from response into fast recovery.

United States

Post-disaster studies clearly indicate that community leadership is an asset in response and recovery. However, my work considers their role during pre-disaster

communication and planning processes. A study of American risk communication systems (Meredith et al., 2008) demonstrates that their incorporation during this phase increases community engagement and collaborative action. Like British Columbia, California also faces the challenge of harmonizing many cultures, views, and experiences. Its decision makers mitigated this challenge by activating partnerships with forty-five community leaders (p.20). Their role is to return back to their respective communities with information on decision making in order to gain feedback. Although it may be hard to reach some social groups directly, consulting them through community leaders is a way to uncover more perspectives.

Although I focus on community leaders, these 'social capital facilitators' vary in form and level of involvement. In Oklahoma, for example, representatives from minority groups—including immigrants, homeless people, seniors and those with disabilities—participated in a one-time needs assessment (p.23). These representatives voiced the challenges and needs of the groups they serve. Accordingly, Oklahoma was able to better incorporate their opinions in local emergency planning. In Florida, bilingual youth hold long-term roles in risk communication processes. Weak ties—to both the host population and their respective communities—improve information flow between groups. They understand the needs of their community, which they communicate to local decision makers. They can also successfully bring information back into the community, as they are trusted sources. In Montgomery County, local churches take on this position. Beyond providing information on emergency preparedness to participating churches, parish nurses conduct outreach and train others on how to educate their own congregations on these topics (p.22). As I have established, credibility within one's social group, coupled with weak ties to other social groups, lends to their success. Their trustworthiness, knowledge, and liaising capabilities make them valuable figures in risk management contexts.

3.6.4. **Programming for building resilience**

Japan

Programs that foster social capital also exist. Daniel Aldrich and Emi Kyota (2017) research the effects of Japan's *Ibasho*. *Ibasho* is an organization that partners with local organizations and communities to design and create socially integrated and

sustainable communities that value their elders (Ibasho, 2018). It promotes consistent programming that engages children, adults and seniors simultaneously, providing a physical space for local residents of all ages to intermingle. Like the EnRiCH project in Toronto, one of the goals of *Ibasho* is to bring together those who may otherwise have limited social contact. Echoing earlier discussions, this engagement does not always have to be on the topics of risk management. Activities include volunteering, storytelling, cooking, and teaching other life skills. The data shows that those who participate regularly in *Ibasho* have an increased sense of belonging and sense of efficacy—predictors for civic engagement. By embedding elderly residents within larger social networks, *Ibasho* also strives to empower them to participate in leadership activities (p.1).

A goal of my study is to judge if these proactive efforts to build social capital are moves towards building resilience. Aldrich and Kyota (2017) argue that *Ibasho*'s open, collaborative process "simultaneously [built] social capital and developed community resilience to future crises" (p.2). They argue that, like other forms of capital, social capital can be created and sustained through deliberate mediation—something best pursued at the pre-disaster phase.

3.7. **Conclusion**

Social capital was discussed in terms of its role in risk management within several different contexts, and the connection between the two fields is a valid one. Examining the social relations of a community can unveil a variety of matters: trusting and lacking relationships; popular and restricted networks of communication; and assets and challenges for community development. As with other forms of capital, social capital can be gained, lost, and unevenly concentrated within different groups. So, the presence of social capital does not necessarily indicate equity within society, or resilience across society.

With such information, one way a society moves forward is by supporting processes that reconcile social divides. Identifying the different forms of social capital in one's society is a valuable starting point. From here, one can begin to strategize how to engage those harder-to-reach communities. If a community exhibits low linking social capital, it may be worthy to work towards closing that network gap.

From a risk management perspective, it is important to repair pre-existing imbalances or friction. Otherwise, a community is doomed to repeat “the cycle of disaster-damage-repair-disaster” (Tobin, 1999, p.15). Tobin (1999) furthers, current response and mitigation practices often sustain communities as they are, and merely perpetuate this cycle rather than addressing the root causes of the problems (p.23; see Figure). Social capital theory may be an effective lens to push past this tendency and direct practitioners’ attention and resources towards comprehensive, long-term strategies that encompass all aspects of the hazard problem, especially the social elements.

At this time, I present endless possibilities on how to manipulate social capital. Some say small interactions develop social capital; whereas, others suggest formal institutions and programs can foster social ties. Many scholars maintain the importance of community leaders or ‘social capital facilitators,’ but the insight on their role is overwhelming. Although it seems that social capital’s place in risk management has been determined, I think it is also quite clear that its function varies in each community, which is an inquiry that should be explored before a disaster strikes.

Chapter 4.

Methods

4.1. Introduction

This chapter both describes and justifies the method I use to address my research questions. After a quick re-introduction to the rationale behind this case study, I first outline semi-structured interviews as a research method, and why I find it appropriate for my research. I then thoroughly describe the procedures for the data collection and analysis phases. Before reviewing the study's findings, I wrap up this chapter with my conceptualization of validity and reliability, and the steps I took in the research design to legitimize my research.

4.1.1. Rationale

To reiterate, the term *risk communication* describes an essential process behind risk management—that is, the two-way flow of communication between stakeholders. Using Surrey as a case study, the goal is to clarify the impact that social capital has on risk communication processes. Through this exploration, the thesis weighs the value of social capital research in this field, and its application to local-level planning.

There have been successful moves towards incorporating social capital concepts in risk planning (O'Sullivan et al., 2014). For instance, the previously discussed EnRiCH project was effective at enhancing connectedness and common ground in five geographic communities in Toronto. Outcomes include improved individual awareness (of existing services and supports in one's community), and increased collaborative action. This project demonstrates a productive step towards merging these two fields; however, the researchers admit it was timely and costly. Nine structured interview matrices (SIMs) were conducted, each of which took four to five hours. At the end of each SIM session, open-ended questionnaires were administered to document the participants' experiences. In order to pitch a program like the EnRiCH project, one needs supporting data. I believe preliminary research would be helpful for justifying similar projects in one's own locale.

4.2. **Research Design**

The topic I am exploring is not a new one. Experts acknowledge that risk communication and management are practices often hindered by various forms of social noise—communication barriers, social networks, and trust are some that I consider in this paper. Because these social obstacles are incredibly contextual, I am seeking detail that is relevant to Canadian studies. Therefore, I believe a micro-level examination is essential for the goals of this paper.

One may classify my study as case study research because Surrey's context is inherent to the investigation: "the phenomenon is not isolated from its context, but is of interest precisely because the aim is to understand how behavior and/or processes are influenced by, and influence context" (Hartley, 2004, p.323). In this sense, case studies are particularly useful when it is important to understand how organizational and environmental contexts impacts social processes. Clegg and Bailey (2008) further that they are examinations of "how individuals construct organizational structures, processes, and practices and how these, in turn, shape social relations and create institutions that ultimately influence people" (p.xliii). Essentially, this quote describes a main goal of this study. I evaluate Surrey stakeholders and their networks, and how they affect essential risk planning processes—such as participation, engagement and communication. Because context and people are so intertwined in this assessment, Surrey and its stakeholders cannot be unhitched from the investigation.

4.2.1. **Method**

Past Studies

Similar research typically utilizes methods such as surveys, interviews and focus groups. When quantifying social capital, researchers usually conduct surveys or analyze the data drawn from previous surveys. Common measures include volunteering, population recovery, construction and occupation of temporary housing. Aldrich (2012) takes this approach when assessing the role of social capital in community recovery after the 1923 Tokyo and 1995 Kobe earthquake. When researchers seek more detailed information, they conduct interviews and focus groups. Supplementing previous survey data, Murphy (2007) uses interviews to uncover the social networks that were utilized

during the 2000 water-borne *E.coli* outbreak in Walkerton, Ontario. Ultimately, the interview data revealed micro-level activities that are indicative of social capital's influence on recovery, but harder to capture through survey data. Despite the knowledge that comes from this post-disaster work, scholars like Murphy (2007) and Bhandari (2014) are calling for pre-disaster evaluations of social capital.

Semi-structured interviews

Aligning with researchers such as Murphy (2007), I conducted semi-structured interviews. I believe a flexible, open exchange of ideas was most appropriate for my study's exploratory approach. I interviewed key informants from three different stakeholder groups: South Asian community leaders, employees from relevant City of Surrey departments, and representatives of local community-based organizations (henceforth CBOs). It was important to have a consistent set of questions in order to compare perspectives on this topic. However, a semi-structured format allowed for an organic discussion and the ability to follow up with any relevant questions. As Stake (1995) argues, case study researchers "find that they do their best work by being thoroughly prepared to concentrate on a few things, yet ready for unanticipated happenings that reveal the nature of the case" (qtd. in Hartley, 2004, p.324).

Semi-structured interview methods do have limitations. Interviews may create conditions where the participants say what they think is socially desirable or what the interviewer wants to hear, as opposed to what actually happened or how they really feel (Irvine, Drew & Sainsbury, 2013). Many of the participants represent the City of Surrey or well-known CBOs, so there was a risk that they would censor their answers in order to maintain the image of the organization they represent. Despite these possible limitations, they did not seem to impede on the data collected because the interview questions focused on one's professional work, rather than sensitive topics. Ultimately, they successfully gathered the three perspectives I was seeking in a timely manner.

4.2.2. **Procedure**

Sampling

To recruit potential participants, I used purposive and snowball sampling techniques. One uses purposive sampling[22] when seeking depth and detail: its logic "lies in the selection of information rich cases, from which the researcher can learn a great deal about matters of central importance to the purpose of the research" (Emmel, 2014, p.37; Patton, 1999). The focus is on understanding and illuminating important cases, rather than generalizing from a sample to a population. In addition to purposive sampling, I used snowball sampling to identify other knowledgeable candidates. This technique relies on current participants to locate and recruit others (Babbie and Benaquisto, 2014, p.164). Twelve potential participants were identified via purposive sampling, and twenty through snowball sampling. Of those discovered through purposive sampling, seven participated; five were drawn through snowball sampling.

Typically, researchers favor random sampling because it is the least biased. However, for this context-specific research, purposive sampling drew the appropriate knowledge for answering my research questions, while the snowball sampling technique connected me to those that were harder to reach. It was especially useful for reaching South Asian community leaders. By putting some of the selection in the hands of other participants, snowball sampling also lessened the possibility of researcher bias.

Participants

Selection

As briefly stated, I conducted twelve semi-structured interviews with Surrey stakeholders representing three perspectives: the South Asian community, the City of Surrey, and local CBOs. In total, five participants represent City of Surrey, four are community leaders, and three work at local CBOs. All participants are adults—nineteen years and older. Five are female and seven are male.

[22] Sampling is a problematic concept in qualitative research. While in quantitative methods, sampling aims to achieve statistical significance and create findings that are generalizable, in qualitative research, it aims to gain the deepest insights without goals of probabilistic sampling to produce statistical generalizability (Babbie and Benaquisto, 2014). Hence, purposive sampling is used to gain the most detailed insight on this context-specific study.

Gathering insight from all three groups was important for triangulation purposes. Patton (1999) asserts that there are four kinds of triangulation that contribute to the verification and validation of qualitative analysis—one of which is *triangulation of sources*. He explains that this form of triangulation examines consistency within the same method through different data sources, or perspectives (p.1193; Shenton, 2004). The intention is not to demonstrate that these sources will all lead to the same ideas. Seldom will data sources lead to a single, totally consistent picture. Although consistency in overall patterns of data can add to the credibility of one's findings (Patton, 1999), the real significance arguably lies in uncovering differences—and when and why they occur.

To create an outline of the city's risk management system, it was necessary to interview relevant City of Surrey employees. I compiled an inventory of prospective participants mainly through public domain sources such as City of Surrey websites, or through other participants. I first contacted the local fire department because it is responsible for Surrey's emergency management. However, there are many other departments and players that are involved, such as: City of Surrey's public safety, communications, and engineering departments; the Surrey RCMP; and Surrey City Council. Typically, I contacted a general email for these departments and was then forwarded to the appropriate people—usually, those that deal with stakeholder relationships, public outreach, and community engagement (see Appendix B for recruitment email).

It was also imperative to gain the perspective of the South Asian community. In this context, I am defining *community leader* as one with a high profile acquired through their work (paid or voluntary) towards the community. Designation is typically acquired through secondary sources. One of their most essential features is that they display a strong understanding of the community's needs and assets. For this study, potential participants were entirely established through snowball sampling, which demonstrates some active, working relationships between these three stakeholder groups. Nonetheless, it is important to note that these interviews were the hardest to obtain. Unlike the participants from the City of Surrey and CBOs, who could schedule the interviews during work hours, the community leaders had to schedule time before or after work to partake in the study.

When determining potential participants, I had to reflect if community leaders and those from City of Surrey would sufficiently answer my research questions. Community leaders carry wisdom of the South Asian community, and City of Surrey representatives offer incredible insight on the local risk communication and management structures. But some City of Surrey participants may not have a lot to say about the South Asian community. In a similar vein, the community leaders may not know much about the city's risk planning processes. After recognizing this gap, I felt it was necessary to find people who have knowledge of local ethnic groups *and* Surrey's governance. Hence, I decided to incorporate the perspective of local CBOs.

CBOs are known to work closely with both local government and marginalized sectors of the public. In this sense, they are liaison figures. Examples of Surrey CBOs that are relevant to my research are: MOSAIC, Surrey Local Immigration Partnership (LIP), Progressive Intercultural Community Services (PICS) and DIVERSEcity. They help newcomer and ethnic communities settle, integrate, and communicate with others. Sometimes, this means co-sponsoring programs and events with the City of Surrey. I focused my recruitment on those that have heightened knowledge of both settled and newcomer South Asian residents. Unless a participant referred me to a specific individual, again, this process involved writing a general recruitment email to these organizations.

For participation, the exclusion criteria were simple. Those who do not represent or work with the South Asian community in Surrey, and those who do not work in or have knowledge of the local risk management structures, were not invited to partake in the study. Sometimes, potential participants stated that they did not carry sufficient knowledge on either topic. Consequently, interviews with them were no longer pursued. In total, there were thirty-two potential participants identified, and attempted contact with twenty-two of them. Twelve participated, four declined, and six never responded (see Appendix B; Table B2).

Interview protocol

For the interviews, I prepared two transcripts: one that was for experts of the South Asian experience in Surrey, and one that was for those knowledgeable of risk

management in Surrey[23] (see Appendix D). Transcripts were chosen depending on one's expertise. Typically, I used the former when interviewing community leaders, and the latter for City of Surrey workers. Although, sometimes it was more appropriate to use the other one.[24] For local CBO representatives, usually it was fitting to use the transcript that discusses the South Asian experience in greater depth.

I strive to better understand these stakeholder groups, but not as stand-alone entities. Important to this research is the relationships between these groups. So, in addition to discussing their expertise, I ask questions about their partnerships and how their work fits in with others' work. I also solicit their opinion on the South Asian community, and how—as a social group—it participates as a stakeholder. How engaged are they in community building and development activities, including risk planning? Despite some differences due to their line of work, most participants could discuss the stakeholders they partner with. Many also offered insight on how to better engage and communicate with local ethnic groups, such as the South Asian community. This feedback helped describe Surrey's social fabric, and to what extent social networks interact and work with one another, setting the stage for more focused discussions from a risk management perspective.

Data collection logistics

Here, I give the reader a thorough and transparent view of the data collection phase, which occurred from March 2017 to July 2017. It involved recruiting participants, conducting interviews, and transcribing interviews. As expressed, recruitment occurred over email and I attempted contact twice. Attached is the recruitment email (Appendix B); it was quickly adjusted to include more information on the study, as participants usually asked for more detail regarding my research interests. Once a participant agreed to be interviewed, I organized an appointment. Participants chose the time and place of the interviews according their convenience. If conducted in person, interviews usually occurred at their workplace in Surrey. Sometimes, participants preferred to discuss the

[23] Because the pool of potential participants is limited to Surrey, I had to be lenient in my conceptualizations of those managing risks, and those who are experts of the South Asian community, in order to gain enough participants. For example, in the case of local CBOs, some participants preferred to speak on the broader ethnic minority experience.

[24] For example, those from the government-funded Surrey Local Immigration Partnership (LIP) were asked questions concerning the local ethnic communities.

questions over the phone[25]. Nonetheless, consent forms had to be signed prior to the interview (see Appendix C). The consent form outlines the use of a tape recording device. Phone interviews were taped using the TapeACall application, and in-person interviews were recorded using the Voice Recorder application. The interviews were structured to last one hour. All ranged from 40 minutes to 60 minutes.

After each interview, the audio files were uploaded to my encrypted computer and imported to NVivo (a qualitative data analysis computer software), and then deleted off of my recording device. I transcribed the interviews within a day or two of the interview. Here, I tried to be as detached from the data as possible. After completing each transcript, I did not re-read any of them until the analysis phase, hoping that this approach would keep future interviews as objective as possible; I did not want to detect any patterns or themes at this time. I labeled both the transcripts and audiotapes in accordance to the consent form, which indicates the use of pseudonyms. Only until after the analysis were the audiotapes deleted from NVivo.

4.3. **Data Analysis**

4.3.1. **Overview of analysis cycles**

After data collection, there were three cycles of coding: the first involved open coding, the second entailed focused coding, and the third incorporated axial coding. In qualitative inquiry, one defines a *code* as "a word or short phrase that symbolically assigns a summative, salient essence-capturing, and/or evocative attribute for a portion of language-based or visual data qualitative inquiry" (Saldana, 2009, p.3). Researchers emphasize that coding is a cyclical act (Saldana, 2009; Strauss and Corbin, 1990). Each cycle further manages, filters, highlights and focuses the salient features of the qualitative data record for generating categories, themes, and even concepts and meaning. Ergo, these three cycles were vital for progressing the analysis towards deeper understanding. According to Babbie and Benaquisto (2014), systematic coding is also important for achieving validity and reliability in the analysis of data (p.310).

[25] Concerns about using a phone for interviews include losing non-verbal cues, more difficulty building rapport, and shorter interviews. However many qualitative researchers have challenged these concerns as unfounded empirical evidence (Trier-Bieniek, 2012; Cachia and Milward, 2011; Sturges and Hanrahan, 2004). As expressed by Holt (2010), the empirical data strongly suggests there is no need to consider the use of telephones for interviewing as a "second-best option" (p.120).

Each cycle of analysis should be more focused than the last. Here, the first was open coding, which involves labeling concepts and categories, and then refining them. Afterwards, I examined categories in greater depth and identified properties; this stage is focused coding. Axial coding follows—categories are integrated and relationships among a few particular categories become the focus. During this last stage, I used social capital theory to identify relationships between the categories. Below I thoroughly walk the reader through these cycles.

Cycle 1: open coding

The first step of open coding is becoming familiar with the interview data. So, I first read through the transcripts once without making notes. This measure is important for gaining a comprehensive understanding of the data. Then, I began to decode the data, which involved re-reading the transcripts and attaching "first impression phrases" to them (Saldana, 2009, p.4). Questions I asked myself were: "what is going on," "what are people saying," "what are people doing," and "how does context influence these actions and statements?"

After marking the transcripts with annotations, I began encoding these passages and labeling them with appropriate codes. Codes can be about acts, activities, meanings, participation, relationships and settings (Lofland, Snow, Anderson and Lofland, 2006). Many codes centered on these categories. I was very liberal during this cycle of coding; anything and everything that I found possibly relevant was annotated and coded. Within NVivo, I created a list of categories and subcategories (termed "node" in NVivo), in which the codes were placed. However, by the end of this coding cycle, the amount of codes, categories, and subcategories was overwhelming. In order to make sense of these findings, I had to reassess those that were relevant to my research questions.

Cycle 2: focused coding

Focused coding refines categories. It can be understood as an extension of open coding. According to Charmaz (2006), it searches for frequent or significant initial codes to develop "the most salient categories" in the data corpus and "requires decisions about which initial codes make the most analytic sense" (p.45, 57; Saldana, 2009). To determine which information was important for my study, I re-organized the codes in a

table according to my research sub-questions (see Appendix E). These remaining codes were renamed and re-categorized in order to make them less descriptive and more analytic. The tables found in Appendix E list all of the new categories, the properties of the categories (descriptive codes), and examples of corresponding codes. These are mainly in vivo codes, which are also known as quotes (Saldana, 2009).

Analytic memos were helpful for this process of re-categorization. One can compare analytic memos to research journal entries or blogs—"a place to 'dump your brain' about the participants, phenomenon, or process under investigation by thinking and thus writing and thus thinking even more about them" (Saldana, p.32, 2009). The purpose, as Mason (2002) explains, is research reflexivity on the data corpus: "thinking critically about what you are doing and why, confronting and often challenging your own assumptions, and recognizing the extent to which your thoughts, actions and decisions shape how you research and what you see" (p.5). For my study, these analytic memos can be found in the annotation section in NVivo, as well as in the "Notes" section in my iPhone[26]. Here is where I often brainstormed how codes and categories seem to cluster and interrelate. Returning back to these notes helped define more appropriate categories for progressing my analysis.

Cycle 3: axial coding

The last phase involves *axial coding*[27]. Kendall (1999) differentiates axial coding from open coding by stating, "whereas open coding fractures the data into categories, axial coding puts the data back together by making connections between the categories and subcategories" (p.748). Hence, the axial coding phase is about relating codes: "coding is not just labeling, it is linking" (Saldana, 2009, p.8). Categories are integrated, and relationships among these remaining categories become the focus. As I mentioned, it is not uncommon to use theory to help connect the data[28]. During axial coding, theory

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[26]Sometimes, 'ah-ha' moments of insight occur at unexpected and inopportune times. One should not rely on 'mental notes to self' and keep a notepad nearby at all times. (Saldana, 2009, p.34).

[27] I acknowledge that among grounded theory researchers, axial coding is controversial. Strauss and Corbin (1990), for example, believe that it helps grounded theory researchers construct complex and meaningful theory more reliably. Others, such as Glaser (1978, 1992), Charmaz (2006) and Dey (1999) argue that it the concept of emergence is an underlying guiding principle of grounded theory research, and that axial coding restricts it. Ultimately, the use of axial coding depends on the research goals.

[28] The use of theory "to inform and make sense of the data" is important for case study research. It needs to provide not only a sense of the particular circumstances of the case, but also what is of more general relevance and interest (Hartley, 2004, p.324).

functions as a *paradigm model*. A paradigm model is an "organizing scheme that connects subcategories of data to a central idea, or phenomenon" (Kendall, 1999, p.747). Here, social capital theory is the paradigm model; therefore, the patterns and categories uncovered in the first two cycles were synthesized and related according to social capital theory (see Appendix E).

4.4. Conceptualizing Reliability and Validity

Reliability and *validity* are key words in the research realm; they describe the tests for research quality. However, they are understood and defined quite differently among qualitative and quantitative researchers (Lincoln and Guba, 1985; Yanow and Schwartz-Shea, 2007; Schwartz, 2006). For example, Lincoln and Guba (1985) explain that while the terms *reliability* and *validity* are essential criteria for quality in quantitative paradigms, in qualitative paradigms the term *trustworthiness*—which can be broken down to *credibility*, *neutrality* or *confirmability*, *consistency* or *dependability*, and *applicability* or *transferability*—is the essential criterion for quality. With numerous terms to describe this process, it is important to conceptualize its role in this study. Using Shenton's (2004) article on trustworthiness in qualitative research[29], I will describe the steps I took to verify the quality of my own research.

4.4.1. Credibility

One of the key criteria that quantitative researchers seek is internal validity, which ensures that their studies measure or test what is actually intended. The qualitative investigator's equivalent concept is called *credibility*—it deals with the question: how congruent are the findings with reality? Shenton (2004) shares several ways that a researcher can increase credibility. Those relevant for this discussion are: the adoption of well-established research methods, the examination of previous research findings, triangulation, and tactics to help ensure honesty in the informants.

First, this study conducted interviews, which is a well-established method in this field of thought. As researchers recognize that disasters and risks are social phenomena, interviews and other qualitative methods are increasingly used to uncover

[29] Shenton's (2004) breakdown echoes Lincoln and Guba's (1985) constructs, which pulls away from the positivist paradigm and towards a 'naturalistic' one.

new knowledge. In this sense, my study supplements previous work. On the other hand, a literature review reveals that under non-crisis conditions, this exploratory work is quite novel, especially within Canadian literature. Triangulation of data sources was another tactic to increase credibility; the perspectives of three very different stakeholder perspectives helped verify the data's authenticity. Lastly, there were several strategies to ensure honesty in the informants. As the reader can see in the consent form (Appendix C), I did not put pressure on potential participants to partake in the study. Their ability to withdraw at any time was made clear. Although we discussed their line of work, I also assured the use of pseudonyms.

4.4.2. **Confirmability**

One associates objectivity in science with the use of instruments that are not dependent on human skill and perception (Patton, 1999). It is difficult in qualitative studies to confirm genuine objectivity because the intrusion of researcher bias is inevitable. The concept of *confirmability* is the qualitative investigator's comparable concern to objectivity. Here, there is an awareness of bias and attempts to reduce it. Steps must be taken to make sure that the work's findings align with the experiences and ideas of the informants, rather than the researcher (Shenton, 2004). Triangulation is one strategy to ensure that the data reflects the participants' perspectives accurately. Despite these measures, it is important to acknowledge that bias is common in qualitative research. Although there can be moves made to minimize it, researchers must still acknowledge his or her own predispositions. Bias in this study is further discussed in Section 6.2.

Researcher position statement

It is important to state and reflect on my own perspective to enhance the transparency of my interpretation of the study's findings (Yanow and Schwartz-Shea, 2007). Due to my work with North Shore Emergency Management, I approached this research with an awareness of other local ethnic communities' disengagement with emergency management projects. I also entered the study believing that collaboration with all diverse sectors is important for successful risk communication. So, through this research I hoped to test some of these assumptions and predispositions, and to clarify their relevance in the context of Surrey.

4.4.3. **Transferability**

Testing for external validity is also important. In quantitative research, this work involves demonstrating that the results can be applied to a wider population. Because qualitative research focuses on small numbers of particular environments and individuals, “it is impossible to demonstrate that the findings and conclusions are applicable to other situations and populations” (Shenton, 2004, p.69). So, in seeking external validity, qualitative researchers aim to provide information that is *transferrable*. One must ask his or herself, is the study relatable to the readers? To achieve external validity in qualitative research, it is the researcher’s responsibility to provide sufficient contextual information about the fieldwork sites for the reader to make such a transfer. Shenton (2004) explains, after readers peruse the description of the context in which the work was undertaken, they should be able to determine how far they could transfer the results to other situations.

For the transferability of this study, I use Statistics Canada data (2016) and maps detailing the local South Asian populations (Appendix A) to provide a detailed report of Surrey’s context in Chapter 1. In this chapter, I further one’s understanding of the stakeholders involved with thorough descriptions of the participant groups. I also believe that knowledge of Canadian risk management systems is valuable for transferability; thus, I use the second chapter to outline both federal and local-level policies and strategies.

4.4.4. **Dependability**

Similar to transferability, *dependability* requires a detailed report of the processes within the study, thereby enabling a future researcher to repeat the work, if not necessarily to gain the same results. In this sense, the research design may be viewed as a “prototype model” (Shenton, 2004, p.71). Above, I clearly define important features of the research design, such as participant selection and recruitment, and the different coding cycles. Included in the appendices are documents helpful for replicating the study as well, such as the email recruitment letter (Appendix B), the consent form (Appendix C), the interview scripts (Appendix D) and the coding tables (Appendix E). One of the main objectives of this study is to demonstrate how one can use social capital research

for risk communication and overall management purposes. Therefore, the level of its dependability is particularly significant for my research goals.

4.4.5. **Ethics statement**

This study received ethical approval from Simon Fraser University (2017s0105). A full overview of the ethics documents can be found in Appendices A-C.

4.5. **Conclusion**

In this chapter I described my study's research design. I aimed to be transparent with my choices, and any limitations that these choices created. First, I introduced the method and justified its usefulness for my research goals. Then, I followed with a description of the data collection phase. This report sets the stage for Chapter 5, which presents the findings, as well as a succeeding discussion on how they confront my research questions.

Chapter 5.

Results

5.1. Introduction

This chapter shares the findings of the interview study. The first portion introduces the data drawn from the first two cycles of coding. At this point, I describe the participants' responses objectively. The purpose here is to fuse their knowledge into a comprehensive map of Surrey's risk management and stakeholders. The latter half discusses the data more analytically. I begin to make sense of the patterns and themes through a social capital lens, in hopes of answering my research questions.

5.1.1. Summary of findings: Cycle 1 and 2

Surrey is incredibly large and diverse. The South Asian population is one of many ethnic groups settled in this municipality. Although *within* minority groups one can detect a strong sense of belonging, the data indicates that these connections are lacking *between* different groups. This isolation is particularly influential on newcomers' resilience. For instance, it limits their access to external information. In terms of emergency preparedness, many are unaware of local risks, individual and household responsibilities, and the resources available to them. Eight of twelve participants acknowledge this lack of cohesion between groups and its impact on engagement efforts. Subsequently, they share that it has led to extensive communication, and hence funding needs.

To tackle the problem of limited resources, there already seems to be healthy and active partnerships in place. Local CBO and City of Surrey participants share that they often work together to overcome funding constraints. However, public participation in any sort of planning or community development projects was a noted challenge; participation from the South Asian community was cited as particularly low. So, although some relationships are already in place, there is opportunity to build others.

The interviews provided a platform for the interviewees to discuss current work to improve these conditions. Most strategies focus on strengthening social networks: mutual learning, building trust and increasing opportunities for interaction are all themes that emerge from the data. The interviews also allowed us to discuss future goals, which include incorporating community leaders in plans and projects, and increasing grassroots interest. Particular to the South Asian community, participants consider the issue of engagement and how they can peak interest in risk management and community resilience.

5.2. **Detailed Report of Findings: Cycle 1 and 2**

Aligning with the coding tables from Cycle 2 (see Appendix E), the sections below reflect each of the research sub-questions. For example, one seeks to better understand the social networks and relationships in Surrey. Ergo, a section below outlines the data on Surrey's social fabric (see Section 5.2.1.). Because this portion is mainly descriptive, I dedicate the latter half of the chapter to discussing the significant patterns in the data and weighing their value to Surrey's risk management.

5.2.1. **Surrey's social fabric**

High diversity

"We focus on all things identified as diverse in Surrey, and as you can probably imagine, it is a very large umbrella." –City of Surrey Participant 4

Eight of the twelve participants emphasize that Surrey is an incredibly diverse city and is growing at a fast pace, but they embrace the challenges it brings. There are many different social groups with unique needs, and efforts are being made to meet them. Despite such endeavors, it has been hard to keep up with the city's expansion. In addition to the South Asian demographic, there are many other ethnic groups that are increasing in size. Surrey now homes the largest Arabic speaking community in Metro Vancouver. 40 percent of the Syrian refugees that have arrived in BC now live in Surrey, and that number[30] is growing (CBO Participant 1). Three participants also reference the large Filipino and Chinese communities, which—like the South Asian community—are

[30] Approximately 1000 newcomers so far.

settled in hubs or ethnic enclaves. For example, most of the Chinese community lives in South Surrey; and in Guildford, there are pockets of Filipino residents. In addition to these dominant ethnic groups, there are many smaller ones. According to City of Surrey Participant 2, there are 138 spoken languages in Surrey! Surrey is heterogeneous in many ways (i.e. religion, economic levels, age, ethnicity) and it is important to acknowledge that differences exist even within these social groups. For instance, Surrey's South Asian community is a large one, but the individual experience varies according to how long one has lived in Canada, their education levels, English skills, and economic positions. Because these features play a role in resilience, such variance must be a challenge to local planners.

Ethnic enclaves: low interaction between social groups

"I don't really see [fluidity between groups]. They are isolated, which is a real shame. I'm pleasantly surprised when I do see them interacting." –CBO Participant 3

When settling in a new country, people are attracted to familiarity—that is a natural inclination. They want to be closer to religious and cultural institutions, grocery stores that sell familiar food, and people who share cultural values and speak the same language. Once one creates these routines and relationships, it seems nonsensical to leave such a comfortable environment. Nine participants believe that these hubs can certainly be helpful for the settlement process; however, five also argue that it hinders integration into the wider community. Four of these five participants are South Asian community leaders.

In general, low socialization outside of one's social group can lead to ignorance of other lifestyles, religions, cultures and perspectives, and may cause cases of discrimination, racism and reverse racism. A survey was conducted in Surrey to learn about residents' perceptions on: sense of belonging, sense of inclusion, and the overall diversity of Surrey. One question inquired if participants believe that discrimination is a local issue. According to the survey, 50 percent of the respondents feel that discrimination is a problem in Surrey (CBO Participant 2).

In discussing these social divides, three participants who have a background in diversity and multicultural services stress the need for shared ideologies: "what we are lacking is a common celebration…having something in common [would] be helpful"

(Community Leader Participant 1). When people start communicating, stereotypes are reduced and commonalities are discovered. According to community-based research conducted by Surrey's Local Immigration Partnership (LIP) Committee, the Surrey public wants these connections too: "through research and consultation we have learned that local newcomers, and Canadian-born folks, want a more connected community where immigrants have more opportunities to make meaningful connections with other local residents" (CBO Participant 2). It seems that these social barriers start with fear of the unknown. But the data suggests that once they are broken down through mutual learning, the nervousness to venture outside of one's social group will lessen.

South Asian community: Strong in-group connections

"Newton, Whalley, Panorama—its just South Asians interacting with South Asians. It is not super multicultural." –Community Leader Participant 2

When discussing the South Asian community, all participants emphasize that there is high solidarity. This strong collective identity is built on shared experiences and ideologies, and is especially meaningful for newcomers and their settlement. Such strong in-group connections motivate their participation in internal activities. Five participants note the community's ability to come together to fundraise and volunteer. Another shares that many can find jobs without even learning English because their networking is so strong (CBO Participant 2). However, the tone shifts when considering communication and engagement outside of the community. Their closeness may serve to also isolate them.

What concerns five of the participants is the South Asian community's lack of venturing outside these hubs—for instance, to engage in public events and to seek external information and resources. When comparing levels of participation, they believe that there is lower involvement in Surrey-wide events. Although they did not pinpoint a reason, CBO Participant 1 emphasizes "there is a huge difference in participation [depending on] if it comes from their ethnic community sources or from City [of Surrey] organizers." Information outlets also seem limited to within the community. Community Leader Participant 1 discusses his role in relaying information: "Many South Asian people opposed [light rail transit] but didn't go to the consultation meetings…they talked to me about it, and said they didn't like it." The quote clearly indicates that many prefer to discuss things internally, rather than partake in citywide public consultations. When I

asked community leaders to rank information sources, they identified friends and family first, local ethnic radio and news channels second, and mainstream sources third (Community Leader Participant 3). In terms of risk management, this system may be contributing to many individuals' lack of awareness, because they are not hearing about local risks and the resources available to them.

Newcomer vulnerability

"When you're in a different environment, you just don't know: 'I didn't know what I didn't know.'" –City of Surrey Participant 1

The South Asian community is incredibly diverse, so isolation may not be a problem for those who are longtime residents. Participants identify South Asian newcomers, on the other hand, as incredibly vulnerable. Much of their vulnerability relates to their detachment from the larger community. When discussing ethnic enclaves, three participants argue that they seem to be diminishing in Surrey, because the younger generations are migrating to other areas of the city. Many of those that are still attracted to these neighborhoods, though, are newcomers. Again, ethnic enclaves are certainly helpful for initial settlement. But in the long run it can slow newcomers' integration into the wider society—or, as Community Leader Participant 1 puts it, "learning the Canadian way."

Knowledge of local information sources, customs, resources, and laws is incredibly important for general integration, but also for resilience. From a risk management perspective, ignorance can leave newcomers quite vulnerable. For example, two of the community leader participants share that there is a misconception among newcomers that disasters will not happen here. They explain that Canada is idealized for being safe and secure. Thus, knowledge on local risks, such as earthquakes, is low: "we come from a background with few earthquakes, so it is stuck in our head that it won't happen" (Community Leader Participant 1). If newcomers are not exposed to ideas that challenge their understanding of risks in Canada, their perceptions will not change. It seems likely that homogenous social networks play a role in upholding these misconceptions of local hazards.

Strong collaboration between government and CBOs

"Everyone works together, everyone collaborates. Some might say it's because we have grown so rapidly that there is a challenge with our services keeping up, but it has meant we really need to work together across sectors. We are extremely collaborative." –City of Surrey Participant 1

The responses from those representing the City of Surrey and local CBOs indicate that there are strong working relationships between these two stakeholder groups; they co-sponsor, cross-promote, and attend each other's events and programs. Six of the participants share that they have to rely on these partnerships because of funding and resource limitations. No matter which department, service, or organization that we were discussing, it seems that stakeholder relationships are well developed and representational of most perspectives in Surrey. Some participants cite working with up to one hundred stakeholders in order to execute their strategies. The efficiency of working together seems to already be incorporated in their planning approaches.

Although relationships with the general public could be improved, there are several active advisory committees that aim to make Surrey a welcoming and inclusive society. The presence of groups such as the LIP Committee, the LIP Advisory Roundtable, and the Diversity Advisory Committee offer platforms for diverse perspectives, promoting a collaborative environment for planning processes.

Three participants are especially proud of the Surrey LIP Committee. A Google search shows that the committee hosts many voices, including those from local government, non-profits, and schools[31]. Its development, involving community-based research and consultations, took two years. Roughly 1000 residents and stakeholders were conferred in order to get the big picture—where the needs, gaps, and successes are. This data informed the creation of the *Immigrant Integration Strategy*, which was adopted by the LIP Committee, presented to the city council, and then endorsed by the City of Surrey. Surrey's LIP Committee is now one year into this strategy, and its traction among organizations is steadily increasing. Described as "a platform that provides opportunities for local stakeholders to work together to make the community more

[31] Members include representatives from non-profits such DiverseCity, Alexandra Neighborhood House, Immigrant Services Society of BC, S.U.C.C.E.S.S., Muslim Food Bank and Options. There are City of Surrey workers representing a variety of departments. There are also those from local academic institutions, such as SFU Surrey, Surrey School District #36, and Douglas College (City of Surrey, 2015).

inclusive" (CBO Participant 2), the LIP Committee is a clear example of collaborative work already in place to serve local ethnic groups better.

5.2.2. **Resulting challenges**

Extensive communication needs

"As far as the cultural diversity and how you get that information that's out there, it scares me. We know that we have a very diverse city. It's my understanding that we have 138 spoken languages in this city. So can you get the messaging out there? What percentage of the population will understand?" -City of Surrey Participant 2

Although Surrey's diversity is highly celebrated, it does present some obstacles for communicating information. I asked all participants how they would reach diverse members of the public, and although some hold opinions on what is more effective (one argues that sending flyers to households is more successful than generic radio and TV broadcasts; whereas, another believes flyers are a waste of resources); ultimately, half of the participants conclude that there needs to be a multi-channel approach. As City of Surrey Participant 3 says, "it is hard to say what works…I don't think there is one right way. We have to do everything."

Reaching the South Asian community is a challenge that is on the local government's radar: in discussing communication strategies, City of Surrey Participant 3 states: "[there is] no question that the South Asian community is a harder audience to reach. What we find is that they tend to be somewhat complacent or disengaged to a certain extent." When seeking suggestions on how to reach this public, participants held varying views. City of Surrey Participant 3 argues that translations should not necessarily be the priority: "people assume that the barrier to reaching the South Asian community is language, but [communication and marketing] research shows that's not the case" because often times, they will know someone that has strong English skills (i.e. children or grandchildren). Rather than targeting messaging through translations, the participant recommends using imagery to reach ethnic groups. Three of the community leaders suggest using ethnic media channels, yet they admit that this would mainly reach the older generations and newcomers. Community Leader Participant 2 proposes the use of emotional marketing to reach them and induce action: "give them

stories they can relate to." Although these interviews offer several suggestions, it seems that a 'golden rule' either has not been uncovered, or does not exist.

The greatest consensus was in favor of any sort of face-to-face outreach, especially when trying to reach ethnic or other untapped communities. This method acknowledges, and tries to overcome, the lacking connections between some social groups—a first step to becoming a trusted information outlet. Community Leader Participant 1 acknowledges that the City of Surrey is "doing their job" in terms of creating media content; however, the connection between this public and the local government "needs some extra work." For risk communication purposes, this participant believes that door-to-door visits would spark their attention and interest. City of Surrey Participant 4 aligns with this comment:

> The most successful is by far face-to-face. People want to see people. When we set up an information booth, people tend to walk by it. When we put a police officer there, the engagement takes place and far greater information is shared. When we stand up in front of an audience, we rarely have people walk out. People are interested, engaged, they want to discuss. They want to throw ideas back and forth. As I've said before, this is also important for trust building. You can't do this by social media, or flyers. There needs to be face-to-face discussion.

In the past, face-to-face outreach was proven to be incredibly successful for reaching the Surrey South Asian community. When moving to the three-bin waste system, employees went door-to-door to discuss the introduction of organic waste. It was admittedly challenging and required a lot of money and effort, but according to City of Surrey Participant 3, it was very rewarding and effective.

Low engagement of South Asians in planning processes

"On a city-wide scale, in that multicultural end of things, that's where I see the improvement. And that's where I see the emergency planner recognizing that we need to connect to those groups." –City of Surrey Participant 2

Echoing the discussion of their general low interaction and communication with out-groups, the data also indicates that South Asian individuals are often disengaged from local planning processes. As already mentioned, the community leader participants

expressed that they exhibit low participation in public consultations and meetings. When recruiting for the Immigrant Advisory Roundtable[32], Surrey's LIP Committee reportedly struggled to find someone from the South Asian community (CBO Participant 2). They also seem less involved in risk planning activities. City of Surrey Participant 5 shares that the *Neighborhood Preparedness Program* has grown tremendously this past year. In 2016 there were seventy workshop bookings and one active program. As of March 2017 there were already fifty workshop bookings and seventeen active programs[33]. Despite this growth, they have not received requests from the South Asian public.

Limited resources

"It always comes down to money and funding." –CBO Participant 3

Connected to these communication and engagement problems is a lack of funding and resources. When asked if they are implementing specific engagement strategies geared towards the South Asian community, six participants express concern over the inability to match their resources with the city's growing diversity. The fire department's *Neighborhood Preparedness Program* can barely accommodate the requests they are receiving. Although they recognize that the South Asian community is not participating and could potentially be less resilient during a disaster, they do not have the resources to conduct outreach:

> "What I haven't done yet is any active promotion because I don't want to outrun myself. With my 26 volunteers, I can also see that I'm limited—I'm going to have trouble keeping up…If I've been approached then I know I have an engaged party. It's kind of the low hanging fruit for me…I don't want to forget about the vulnerable people that don't have an environment that's conducive to the [neighborhood preparedness program]—that's really where I want to get to—but right now I'm focused on developing this program, and certainly the groups that approach me with interest are helping me do that." (City of Surrey Participant 5)

At this point, there is only one emergency planner, who is also a fire chief. City of Surrey Participant 2 argues that emergency planning cannot be someone's "side job." There are

[32] The Immigrant Advisory Roundtable is a committee attached to LIP, but comprised of local newcomer residents.

[33] At the time of interview (March, 2017).

many stakeholders that play a role, but somebody needs to be dedicated to coordinating these players and developing plans.

Tight funding seems to be crippling many other departments and local organizations. The RCMP, for example, created a diversity unit in order to align with Surrey's needs; however, it is also hindered by lack of resources. Engagement has gone up 700 percent this year. In order to keep up with this growth, the unit also needs to grow. As City of Surrey Participant 4 puts it: "we are victims of our own success." In terms of settlement services, there is a two-year line up for ESL classes. Although English language skills are incredibly important for integration, some may not have access to these classes for years! The City of Surrey's communication division also feels overwhelmed. All departments have engagement initiatives, but having a team to coordinate and drive these efforts would be advantageous: "we have so many priorities, we are getting lost in them" (City of Surrey Participant 3). Although proudly labeling themselves as a "lean and mean" staff, they admit that they need a comprehensive engagement strategy. From these responses, it seems that Surrey's risk management would benefit from some form of coordination, but at this time funding is preventing it from materializing.

5.2.3. **Current work towards tackling these challenges**

Mutual Learning

"For integration, it's a two-way street. We have to communicate with each other, learn about each other…that is the way to despell myths and stereotypes. We need to get to know each other on a personal basis." –CBO Participant 3

The data suggests that there are some social divides that require reconciliation. Planners are aware of this need, and strategies are already in place to break down these barriers. Most of them encompass education. Six participants embrace a mutual learning mindset, which means that learning must occur among all parties in order to build social bridges. For example, the Surrey Library offers educational programs for newcomers on life in Canada, as well as workshops for their own staff on diversity. Similarly, the RCMP's diversity unit conducts regular outreach to open up the dialogue on people's risk perceptions and fears, as well as their expectations for public safety. Internally, they

educate staff on the different ethnic and religious groups in Surrey, so that officers can know how to better handle situations of conflict.

Opportunities for interaction

"At Surrey LIP, that is what they do—they encourage newcomers to engage…I think we are one of the few LIPS that have an immigrant advisory committee, which [is comprised of] newcomers and immigrants. And they are able to advise as well. They have a voice. It shouldn't just be us representing them." –CBO Participant 2

Groups and services such as the Surrey LIP Committee, the Diversity Advisory Committee and the Surrey Library, act as facilitators—they aim to connect the public with services, information, resources, and even each other. For example, the vision behind the LIP Immigrant Advisory Roundtable was to provide leadership opportunities to newcomers in order to empower them: "when you engage people in an advisory capacity, that's great, but in order for people to start mingling and trusting each other, they have to start doing things together" (CBO Participant 2). This roundtable of eighteen members represents sixteen countries. Hence, it facilitates interaction between newcomers of different social and ethnic circles, helping them create new connections.

Another program that encourages interaction with others is the Human Library Program[34]. Its purpose is to shatter stereotypes and myths about different groups of people. Every year there is a different focus. In 2016, it was religion. The Surrey Library recruited people representing all sorts of religions, so that local residents could register to speak with one of these 'human books' one-on-one for twenty minutes. This program premises itself on the idea that interacting and learning about people that are different, through face-to-face dialogue, will reduce ignorance and thus discrimination. The library provides a safe space to have this conversation. As one participant says, "it's hard to hate someone" after creating an intimate connection (CBO Participant 3).

Building trust

"You must build these relationships and trust continually." –City of Surrey Participant 3

[34] The Human Library Program was launched and popularized in Denmark by a group of youth to fight racism and discrimination, and adopted by the Surrey Library a few years ago.

Building trust has already been woven into many programs and strategies in Surrey. Six participants argue that trust is imperative for executing their plans and programs. Before communicating, engaging, or collaborating, relationships need to be built. Trust building is especially relevant in municipalities that have a high influx of immigrants. CBO Participant 1 asserts that it is the stepping-stone for newcomers' integration. Only then will they feel comfortable to ask questions and learn about the wider community. From a public safety standpoint, one must also build trust before educating people, especially newcomers, on risks and safety measures: "there's a large gap that needs to be built. We need to build a bridge" (City of Surrey Participant 4). For the RCMP's diversity unit, sometimes an average workday consists of sharing a meal with newcomers in their civilian clothing. Here, they are trying to show that beneath the uniform, they are just like everyone else. They cannot expect the public to respond to information if they do not trust its source.

5.2.4. **Future focuses**

Community leaders

"Community leadership is high in this community." –City of Surrey Participant 1

All twelve participants recognize that community leaders play a key role in reaching, engaging and collaborating with diverse groups in Surrey—especially the South Asian community. They are known, and they are trusted. Their credibility makes them prime candidates for leading engagement efforts: "we need to involve those leaders to draw participation…to convince their members to come and participate" (CBO Participant 1). Community leaders agree that they have influencing power: people "tend to listen to [us] more" (Community Leader Participant 3). To execute their own internal events they use this same strategy; they involve prominent members of the community (Community Leader Participant 4). The use of community leaders also avoids complications that can arise from a decision-making system that is overly flat or horizontal. Community Leader Participant 4 argues that sometimes consulting too many people can slow the process and even disengage some members—an effect that was also found during the 1997 Red River Flood (Buckland and Rahman, 1999).

The data reveals that there are some moves towards better incorporating community leaders in planning activities. For instance, the RCMP is developing

relationships with local religious leaders. Officers visit temples on Fridays "just to say hi." According to City of Surrey Participant 4, these drop-ins are some of their best sources for knowing "what is going on" in the community.

Other participants recognize the role of community leaders but have not executed any engagement due to limited funding. For example, there have been introductions between Surrey's fire department and leaders of the South Asian community. City of Surrey Participant 5 shares that these leaders have been open to discussing opportunities for bringing emergency messaging into the temples and cultural centers: "every time I bring it up, it is enthusiastically received, so it's a matter of developing those resources and taking advantage of those opportunities." Unfortunately, limited resources restrict them from moving forward. CBO Participant 2 acknowledges that their organization has already compiled lists of local ethnic organizations, churches and mosques to work with. However, they have not been able to conduct outreach yet—again, they are hindered by funding. Evidently, participants believe that community leaders hold a powerful liaising role. However, there is a current struggle to fully develop these partnerships.

Raise awareness within South Asian community

"They lack the knowledge that it can happen here, because it's Canada and [they think] its safe. Awareness needs to be brought to the community that it's happening around the world, and it can happen here, and we need to be prepared. That's the best route—bringing up examples and helping them understand it can happen here." –Community Leader Participant 2

Raising awareness is the first step to preparedness. If there are gaps in someone's understanding of local risks, we need to assess why it is that way before moving forward. Here, three interrelated themes surfaced in the data: knowledge, risk perception and complacency. Four participants (three of which are community leaders) believe that the South Asian community in Surrey generally lacks knowledge of local risks and resources, and consequently, what needs to be done personally and at a household level to prepare. Risk perception plays a role. As cited earlier (see 5.2.2.) many newcomer residents come from countries that do not experience the same hazards, such as earthquakes. Thus, earthquake preparedness is not a priority. Three participants also suggest that complacency adds to this issue. Community Leader

Participant 3 shares that while some have sat down to make a plan for the household, most are “careless about it.” Although complacency is arguably a citywide issue that affects most of the public, there is a noticeable difference in interest in Surrey’s neighborhood preparedness program:

> I’m not getting requests from the community. The challenge is to understand why. My assumption is that there is a lack of awareness—of either the resources we have or the need to be prepared. It may be that the biggest challenge is education. I still don’t know why they are not requesting for presentations in their community, because when I offer it, they are very receptive. So it may be a lack of perception of the need to be prepared. That’s a challenge. If they aren’t interested, I will have a limited capacity to grow it within the community. The first step will likely involve increasing the awareness of the benefit of being prepared. (City of Surrey Participant 5).

The quote suggests that there is a gap in interest and the reasons why remain a grey area for some participants. As indicated above, it appears multifaceted: knowledge, risk perception, and complacency all likely play a role. Participants seem to be aware that understanding this obstacle better will help formulate proper strategies for risk communication and management.

Nevertheless, there was some productive dialogue on how to raise awareness in the South Asian community. Community Leader Participant 1 suggests making information and resources more convenient and accessible to the community. He believes that if these services were geographically closer to the community—in Newton for example—it would better catch their attention. This approach worked well for the Surrey libraries in the past. CBO Participant 2 recounts that twenty-five years ago it was hard to draw South Asians to inclusive activities, but now that there is a Newton branch there is higher attendance. Because disasters are not everyday occurrences, these participants seem to argue that convenience and accessibility are important for public education.

Increase grassroots level interest

"It would be nice if the ground was pushing this up. From my experience, these ideas up here that are being pushed down are far less absorbed than ideas being pushed up from the bottom." –City of Surrey Participant 2

After increasing knowledge and awareness within the South Asian community, the next step is to encourage action. The data indicates that developing grassroots-level interest is one possible response to limited funding and resources. Programs such as the *Library Champions Program* and the *Neighborhood Preparedness Program* are grounded on this approach.

The *Library Champions Program* successfully involves newcomers in community-building activities, while also expanding their social networks. The library recruits newcomers to connect with those within their own social group, spreading the word on community resources. Echoing earlier discussions on Granovetter's (1973) *strength of weak ties* theory, City of Surrey Participant 3 believes that outreach workers from within these communities are incredibly valuable. In this context, their ability to flow between social groups increases the library's ability to reach diverse groups with important information and resources. In turn, the volunteers learn about their local environment, and expand their own social networks by making friends with other volunteers.

Like the *Library Champions Program*, the *Neighborhood Preparedness Program* relies on grassroots support, especially to combat funding constraints. In describing the program, City of Surrey Participant 5 shares:

> Instead of having to hire and recruit volunteers, I can incorporate the interest of the community to grow the program. It's been great, so far it is a really good model: it increases the engagement of the people who are requesting support and turns them into champions in their community…it's like a good epidemic.

As mentioned earlier, it has been successful in raising awareness and increasing participation in local emergency planning within certain neighborhoods. Ideally though, this interest needs to spread among other communities, to ensure all Surrey residents are living within a structure that promotes resilience.

5.3. **Assessing Surrey's Social Capital**

The findings above provide a comprehensive picture of Surrey's social fabric according to my research interests. But in order to answer my research questions, I must re-examine the data through a social capital lens. Social capital theory, as a paradigm model, progresses the analysis further by identifying relationships between the codes and categories. Subsequently, subcategories were shifted under new categories according to social capital reasoning (see Appendix E). Before sharing my analysis, I will walk you through the reorganization of data.

5.3.1. **Axial coding**

First, the data under the subcategories *High Diversity*, *Building Trust*, *Strategies Focused on Building Bridges Between Social Networks*, and *Opportunities for Interaction*, all acknowledge that social networks impact the functioning of society. Stakeholders are aware that different social groups exist and can influence social processes such as communication, interaction, and engagement. Accordingly, their engagement strategies often incorporate trust and relationship building. Hence, these subcategories were regrouped under a new category: *Social Capital's Impact on Strategizing*.

The subcategories *Strong South Asian Communal Identity*, *Less Engagement Outside Social Groups*, and *Newcomer Vulnerability* direct one's attention to different forms of social capital. According to a social capital framework, the closeness within the South Asian community, coupled with low interaction with others outside of this group and minimal engagement with planning processes, suggests that there is high bonding capital, and lower bridging and linking social capital. Expectedly, this new category is titled: *High Bonding, Low Bridging and Linking Social Capital*.

Several subcategories suggest that weak ties are a way to mitigate this dynamic. *Stretched Resources*, *Extensive Communication Needs*, *Engaging Community Leaders*, *Increasing Grassroots Interest*, and *Strong Collaboration Between Public and Non-Profit Institutions* support the idea that weak ties can increase the reach of information, resources, and knowledge effectively and efficiently. For example, the use of weak ties

between the City of Surrey and CBOs progressed past programs and events. These subcategories have been re-grouped under the category, *Use of Weak Ties*.

5.3.2. **Summary of findings: Cycle 3**

To summarize, the third level of analysis shows that when looking at these specific Surrey stakeholder relationships, there is high bonding social capital and lower bridging and linking social capital. Focusing on the South Asian community, these social capital patterns seem to impact participation in mainstream activities, and has arguably spilled over into engagement efforts geared towards building resilience. The South Asian community seems to have less connections to outside information and resources; hence, most are currently unaware of the importance of emergency planning and their roles as both residents and stakeholders.

5.4. **Detailed Analysis of Findings: Cycle 3**

These findings do not suggest that social capital ultimately hinders risk management. Rather, this analysis proposes that social capital can function to both help and hinder risk communication practice. The takeaway is that knowledge of its function can be used to increase its utility in local risk communication and management.

For instance, logically, low bridging and linking social capital alongside high bonding social capital is a detrimental combination because it often leads to isolated social networks and thus, isolation from assets, resources and information. However, high bonding social capital can be manipulated to mitigate this issue. The South Asian community's solidarity has mobilized initiatives in the past, so one just needs to know the right avenues for provoking interest. In the Surrey context, most participants identify community leaders as holding immense influencing power. As long as one has weak ties with prominent members of the community and can gain their interest, engagement and reach should increase. Because social capital can function both ways, my study supports the idea that conducting this local level research would likely improve risk communication. By unveiling information, people, or resources that may otherwise be overlooked, this lens is helpful for filling gaps in local strategies. Below, I consider the knowledge it provides for Surrey's planning.

5.4.1. **“Is the South Asian community prepared for a disaster?”**

Unlike most studies with similar motives, I sought the opinion of the examined ethnic community in hopes that it would reveal novel information on risk communication obstacles. It was worth it. The participating community leaders were incredibly vocal on this topic: all suggest that the South Asian public is generally detached from risk communication processes. Although it was not my primary focus, I was curious—can social isolation translate to low preparedness?

I ended the interviews by directly asking participants if they believe that the South Asian community is prepared for a disaster. Because their responses were opinion-based, the City of Surrey and CBO representatives could not answer the question with much conviction. Aspects of this discussion seemed to cross into unknown territory. However, three participants did suggest that they might be particularly vulnerable due to large family households; they would need larger emergency kits and would have to coordinate more people. Since many of these households are geographically near one another in hubs such as Newton and Strawberry Hill—and are not participating in a neighborhood preparedness program— their susceptibility to risk, as a neighborhood, also increases.

The participating community leaders spoke quite passionately on this topic. All four believe that the majority of the community is unprepared for local emergencies and disasters. As Community Leader Participant 4 puts it blatantly: “the community is not prepared at all.” Community Leader Participant 1 firmly believes that there is a difference between the South Asian public’s preparedness and the mainstream. In fact, he guesses that 80 to 90 percent of South Asian families do not have an emergency kit. To avoid ecological fallacy (Babbie and Benaquisto, 2014), I must be clear that the study explores stakeholder relationships and how they may impact risk management, not one’s preparedness. However, it is hard to ignore these statements from community leaders. Although I think it is realistic to say that most Surrey residents could be better prepared for a disaster (as CBO Participant 3 argues), the difference in one’s response and recovery may lie in their connections to outside resources. This potential vulnerability of the South Asian community’s, exposed through a social capital framework, is something to consider.

5.4.2. **Highlighting newcomer vulnerability**

Increasing knowledge

The South Asian community is diverse. Some are Canadian-born and integrated into the wider society, while others are recent immigrants and burdened with many stressors. With such a spectrum, participation in mitigation activities will obviously vary. A social capital lens puts the spotlight on newcomers' isolation, and the need to educate them on local risks, information and resources. Many may be unfamiliar with Canada's approach to risk management, and hence, their roles and responsibilities as residents—such as being self-sufficient for 72 hours after a disaster. Some may also be unaware of local disasters in BC and Canada. Many emigrate from countries that experience different disasters and emergencies. The importance of learning this aspect of Canadian life needs to be stressed. As the CBO participants share, the settlement process is overwhelming. Newcomers are busy with finding a job, learning English, and even developing trust in other people, institutions, and services. If newcomers are ignorant of local risks, their preparedness and involvement in these processes will not be a priority.

Adjusting risk perceptions

Another possible reason for newcomers' disengagement is skewed risk perceptions. This is an arguably bigger issue because, while knowledge and awareness of local risks can be learned, risk perception is harder to change. It is highly subjective and further impacted by culture, gender, income, trust, and hazard experience (Pine and Guillot, 2014). According to the data, many South Asian newcomers believe that disasters will not happen in Canada. Some may be escaping chaos, so Canada is heralded as a safe escape. As Community Leader Participant 2 phrases it:

> But a general person—someone working at Tim Horton's [or someone who] has less education—they may not be so aware, especially if they are a newcomer. Their knowledge is limited about local risks. I'm not just talking earthquakes, any sort of harm. They lack the knowledge that it can happen here, because it's Canada and it's safe. Awareness needs to be brought to the community that it's happening around the world, and it can happen here, and we need to be prepared.

It is important to differentiate between understanding and discrediting risk perceptions. As Kirkwood (1994) explains, the expert and the public look at risk very differently: "the expert examines risk based on a rational-documented process, and the public by looking at potential injury, death, or loss" (qtd. in Pines and Guillot, 2014, p.191). Fischhoff, Slovic and Lichtenstein (1982) add that people's perceptions about risk may sometimes be erroneous but they are "seldom stupid or irrational" (p.188). An individual citizen may have a different way of processing risk and the possibility of harm, so the task of Surrey's risk management team is to acknowledge these differences and find ways to align newcomers' risk perceptions with local hazards. Building knowledge and trust plays a role in harmonizing the two. If newcomers learn about local risks through a trusted source, their risk perceptions should naturally shift.

5.4.3. **Re-evaluating "risk communication" as we know it**

To reiterate, the 'ideal' risk communication model encourages a highly involved public—it is an interactive, person-centered process. Important to the practice is acknowledging the complexities of human life, including differing perceptions of risk and alternative communication channels (Pine and Guillot, 2014, p.189-90). The study's findings; however, seem to indicate that collaboration and a two-way flow of communication as classically defined in the literature cannot always be achievable in a large, diverse context like Surrey. Low bridging and linking social capital impedes on reaching certain publics directly. Whether it was for public consultations, recruitment for roundtable discussions, or participation in the *Neighborhood Preparedness program*, engaging the Surrey South Asian community has been proven difficult.

In brainstorming ways to achieve risk communication standards, the data forces me to re-evaluate the concept in relation to different contexts. Earlier it seemed that level four (collaboration) of IAP2 Canada's stages of public participation aligned with risk communication goals. Now, it may be more appropriate to suggest a combination of level two (consultation for feedback) and three (involving the public's concerns). It is a more realistic standard for some contexts; and therefore, may be more effective at peaking interest. However, because the level of their participation is lowered, it is imperative that their voices and perceptions are still represented. Community leaders are a way to ensure that this aspect of risk communication is maintained.

Two-step flow of communication

As the literature review shows, many aspire for a more horizontal risk communication system; however, it is possible that a tiered model involving community leaders may be more compatible with communities like the Surrey South Asian community. From a communications perspective, one can rationalize this proposal through Lazarsfeld, Berelson and Gaudet's (1948) concept of the *two-step flow of communication*[35], which traces information flow and its impact on opinion formation. According to this model, ideas flow from mass media outlets to opinion leaders, and from them, to the less active sections of the population (p.32). From this perspective, interpersonal relations are powerful vehicles and can be quite valuable if incorporated in risk communication practice. In this context, information regarding local risks would pass from City of Surrey outlets to community leaders, and from community leaders to these harder-to-reach residents.

One can already identify traces of this two-step system within the South Asian community. Community Leader Participant 2 explicitly states when they try to push an initiative among South Asians in Surrey, they: gather a group of prominent members, create a plan together, and then have these members bring the information back to their segments of the community. She explains that this system makes the public feel represented, but it does not lead to hurt feelings or disengagement if the decision making does not wholly align with one's ideas. The participant's advice confirms that this strategy is already in place *within* the community, and is successful for disseminating information and stimulating engagement.

5.4.4. **Re-defining "community leader"**

An important discovery during Katz and Lazarsfeld's development of the two-step flow of communication model is that opinion leaders are not necessarily those "who are thought of traditionally as the wielders of influence; opinion leaders seemed to be distributed in all occupational groups, and on every social and economic level" (Katz and Lazarsfeld, 1955, p.32). Their insight is helpful for re-defining the community leaders of

[35] In Katz and Lazarsfeld's (1955) investigation of the major determinants of an individual's vote decision during the 1940 US election, personal influence emerged as a major impact. In fact, there were particular people who exerted this influence on the vote intentions of their fellows. Following this discovery, they then explored "who or what influences the influential." Opinion leaders reported much more than non-opinion leaders that the mass media was influential on their decision-making.

this study and more importantly, for future studies. Initially, I relied too heavily on the identification of religious leaders as the sole opinion leaders within the South Asian community. Although participants recognize the importance of religious officials and their position of authority, many also shared that these connections were not very developed—only the RCMP seems to have regular contact with religious leaders. Thus, not only is it important to determine prominent members of the community, one must also distinguish those that are available for the project and best suited for its goals.

Moving forward, the best way to expand this pool of opinion leaders is to define community leadership based on their connections and level of communication with others:

> Opinion leadership is not a trait which some people have and others do not, but rather that opinion leadership is an integral part of the give-and-take of everyday personal relationships. It is suggested, in other words, that all interpersonal relations are potential networks of communication and that an opinion leader can best be thought of as a group member playing a key communications role. (Katz and Lazarsfeld, 1999, p.33).

The snowball sampling process helped unveil this idea. The participants rarely suggested a religious official when identifying community leaders. Instead, teachers, doctors, nurses, insurance brokers, and politicians were named. Many were also involved in non-profit or volunteer initiatives, which supports the notion that opinion leaders' level of social contact is multi-faceted. This snowball recruitment was a valuable learning experience. It forced me to detach from my previous conception of South Asian community leaders, and to be more open to others'.

5.4.5. **Re-assessing the Neighborhood Preparedness Program**

One challenge that several participants identify is instilling individual and neighborhood preparedness within the South Asian community. In contrast to the mainstream, they are less engaged with the existing *Neighborhood Preparedness Program*, despite its tremendous growth among other neighborhoods and communities. Although interest may increase as one's awareness of local risks improves, local

government cannot wait for this to happen. Efforts should be made to adjust to each community's needs and assets.

Using social capital theory to frame the interviews revealed possible alternatives. For example, there may be opportunity to integrate resources on risk reduction and resilience building into the *Library Champion*s *Program*, as it is already successful in engaging newcomers and educating them on Canadian life. Like community leaders, these 'champions' use their weak ties to bring information back to their social circles. Currently, they provide materials and resources on settlement services. Perhaps they could also offer risk and emergency preparedness materials. The *Neighborhood Preparedness Program* is struggling to uphold itself due to funding; the training is extensive and there are only twenty-six volunteers. The *Library Champions Program* has roughly three hundred volunteers. This is not a suggestion to replace their neighborhood preparedness program. However, incorporating this information into the *Library Champions Program* may be a stepping-stone to reaching South Asian residents with this information.

5.4.6. **Online opportunities**

The City of Surrey has a vast online presence, which presents potential as well as challenges. On the one hand, many channels can work to engage a larger audience. However, I would like to argue that merging some of these efforts would be a better allocation of time and resources. Through my own scan of City of Surrey's website I discovered MySurrey Portal, which offers several applications that connect users with local services and information. In addition to this service, there is a newly launched electronic newsletter (City of Surrey Participant 3). Its role is to create a customized online news experience for Surrey residents; one simply subscribes to the information that they want to hear about.[36] As I identified earlier, there are also several successful Twitter accounts, including one that represents the City of Surrey and the Surrey RCMP. Because public safety is a high priority to many Surrey residents, including the South Asian community (Community Leader Participant 2), perhaps the RCMP's information channels and engagement programs can help raise awareness of local risks and resources. Several participants note that they collaborate with others in order to stretch

[36] General subjects include: arts, business, city, heritage, public safety, and recreation (City of Surrey, 2016).

their resources. Along these lines, assessments should be made to uncover the most effective online channels. These are the ones that should be utilized—perhaps adapted to fit risk management goals—and further promoted.

Of course, one area of concern is reaching those who are not regularly online. There can be several courses of action to fill this gap. One way to overcome this challenge is reaching these residents *through* those who are regularly online, such as youth. Taking the two-step flow or weak ties approach, if the City of Surrey can reach a member of a household through these online channels, there is a high chance that those who are not online will still be exposed to its information and resources. This strategy was found successful in Oklahoma, where they used bilingual youth as conduits into different social groups (Meredith et al., 2008). City of Surrey Participant 2 also recognizes the power of this method: “If three quarters [of Surrey’s population] know what they’re supposed to do, then the other quarter will get it translated to them somehow.” Another option is providing workshops on how to sign on and use these digital resources. In a city like Surrey, accessibility to computers is not a significant issue. However, not knowing how to use this technology is a common reason for remaining offline. Therefore, some guidance would likely empower citizens to use these digital channels, expanding Surrey’s online network of users. Public spaces, such as libraries, senior facilities, recreation centers or cultural centers are already highly frequented and would be ideal places to offer such workshops

5.4.7. **Facilitating common ground**

After conducting these interviews, I pondered how to create common ground and expand one’s radius of trust (Fukuyama, 2001). As CBO Participant 3 argues, what [City of Surrey] is lacking is “a common celebration.” How can we facilitate greater interaction and trust between social networks? In Surrey, it is clear that there are strong relationships within distinct social groups, but in order to expand the reach of information, stronger out-group connections are necessary. Hence, it was important to step back and consider ways to build Surrey’s collective identity.

Public spaces and placemaking

Of course, one area of opportunity is facilitating events that encourage intermingling with others. The efforts discussed in the interviews mainly encompass

official events or campaigns that celebrate a common identity.[37] I would like to return back to Aizlewood and Pendakur's (2004) insight, which is that frequent, informal contact is also incredibly valuable for developing positive connections between unlike people. William H. Whyte, an American urbanist and expert on human behavior in urban settings, helps put this idea in motion with his concepts of *placemaking* and *triangulation*.

Placemaking aims to turn every public space into a "place" that is lively and inviting: "when a space becomes more than the sum of its parts, it becomes a place" (Abdel-Aziz, Abdel-Salam, El-Sayad, 2015, p.488). The goal is to invite greater interactions among people and to foster communities that are more socially, physically, and economically viable. *Triangulation* is a strategy for placemaking; it is "the process by which some external stimulus provides a linkage between people and prompts strangers to talk to other strangers as if they knew each other" (Whyte, 2005, p.94). In a public space, the choice and arrangement of different elements in relation to each other can put the triangulation process in motion (or not). For example, if a garbage can, bench, and water fountain are arranged together alongside other amenities, such as a food truck or musician, they will naturally bring strangers together. Sculptures, musicians and entertainers, gardens and fountains, food stalls, pop-up shops or restaurants—these are all stimuli that can increase triangulation and bring people together. As the City of Surrey is undergoing constant development, this concept may assist in the design of future public spaces—or it may help planners reflect on the effectiveness of current facilities.

Widening the concept of placemaking in the digital era

One also cannot ignore the online possibilities for strengthening Surrey's common identity. Berra (2003) argues that ICT (information communication technologies[38]) also offer spaces for interaction between citizens and local administrations, increasing interconnectivity between levels of society. She explains:

> Territorially-based ICT services or local information systems in their different forms enable the setting up of a system with a strong focus on local objectives, on local norms, and on the supply of relevant local information and

[37] For example, Surrey has recently launched the "We Are Surrey" campaign, which focuses on celebrating Surrey diversity. Another example is the discussed Human Library program launched by Surrey Libraries.

[38] Here, this term refers to technologies that provide access to information through telecommunications—i.e. the Internet, wireless networks, cell phones and other communication mediums.

> services. At the same time, they enable interconnectivity with the regional, national and international levels of governance. From a practical standpoint, the strengthening and functioning of the services offered and the interactions between different social actors promotes a consensus that springs from a shared experience of everyday life, where citizens and institutions interact. The co-ordination of services, the transparency and accessibility of information and the reduction of time required for the processing of procedures does not only improve the quality of the supply of public goods, through a reduction in social costs, but also strengthens the authority and credibility of the institutions. (p. 216-217).

In this sense, creating a comprehensive online experience not only improves the potential of local government, but it may also promote a process of socialization that could revitalize civil and political participation (Berra, 2003, p.215). Users inherently become active and engaged citizens through the act of signing up and subscribing to these online channels.

Some believe ICTs only encourage segregation of individuals and the decline of locality. In a response to this argument, researchers are presenting ways of implementing ICT tools in public spaces in order to regain their status (Abdel-Aziz, Abdel-Salam, and El-Sayad, 2015). These authors take real life and virtual spaces, as arenas for fostering social connections, and propose a merging of the two—giving new media a role in real-life placemaking.

One suggestion is making advertising boards and public displays digital and interactive. Although they cite the example of effective displays in Europe, I would like to share a local example. In August 2017, a free interactive public art installation was stationed on the False Creek seawall, which allowed the general public to take control of the lights on Science World. The goal of this installation was “for people to be present in the moment, and feel connected to the city and people around the installation” (Chan, July 2017). These interactive displays draw the interest of all sorts of people, and ideally foster interaction between them. In addition to increasing socialization among strangers, they could also be used for more educational purposes, such as broadcasting knowledge and information.

Abdel-Aziz, Abdel-Salam and El-Sayad (2015) also discuss the use of phone applications in public spaces; specifically, location-based apps and augmented reality browsers. The overlapping of digital narratives over physical space increases knowledge and learning about that space (as shown through their example of London's "Street Museum" app[39]), and ultimately one's sense of place. Because they are usually entertaining, they not only draw people together, they typically keep them there too. An example that comes to mind is the recent Pokémon Go phenomenon, which attracts many different people to public places to catch Pokémon. Endless news articles argue its value for community building. Through its own local examples of casual encounters between strangers, *The Vancouver Sun* asserts that it worked to "erase divisions" between races and generations (Ryan, July 2016). In sum, the reader can see that this proposal offers a different spin on placemaking. It shares new, yet tangible ways to put this idea into action, furthering the discussion on how to incite social connections in diverse, urban settings.

5.5. **Conclusion**

The purpose of this chapter was to introduce the findings and discuss their value to Surrey's risk management. Using social capital research for risk management purposes unveiled several social gaps that seem to impede on Surrey's risk communication practice, as well as some promising solutions: it shed light on key players and programs—such as community leaders and the *Library Champions Program*—that may be able to increase engagement with the South Asian community.

To appease the reader, the final chapter summarizes the practical and academic significance of these findings. It concludes with a short discussion of the study's limitations, as well as areas of further research.

[39] This app provides a view of historical images of the city coordinated with the current physical location.

Chapter 6.

Conclusion

6.1. Introduction

In this final chapter, I provide a summary of my study. I situate the findings by explaining both its practical and academic relevance. Lastly, the limitations are discussed, which direct the readers' attention to future research opportunities.

6.1.1. Summary

As societies grow and diversify, it is increasingly challenging to engage all members of the public in risk communication and management activities. Acknowledging that these are social, interactive operations, the intent of this study was to explore if social capital research could serve them at the pre-disaster phase. I decided to apply this investigation to Surrey, British Columbia—a city that is rapidly expanding and hosts many different minority communities. To drive a more focused study, I examined the engagement of the South Asian community in local planning processes.

To address my research goals, I pursued semi-structured interviews with relevant City of Surrey departments, local CBOs and South Asian community leaders in order to describe the communication and relationships between them. In both geographic and non-spatial terms, the findings indicate that the South Asian community possesses a strong communal identity. The examined City of Surrey departments and local CBOs also showcase strong partnerships with one another. However, the communication between these three groups seems less developed—particularly between the South Asian community and the City of Surrey. Generally speaking, a social capital lens labels these patterns as high bonding social capital among the South Asian community, and lower bridging and linking social capital with external social networks.

The study also makes progress in uncovering how social networks may affect engagement and collaboration in this field, and even points to some of the implications. Specifically, the participants suggest that the South Asian community's limited

interaction with risk communication processes hinders their knowledge of local risks and the resources available. The data implies that these disparities affect their risk perception and ultimately, their resilience. To create a sense of urgency, moves need to be made to gain access to and educate this community on local hazards.

Lastly, the data inspires suggestions on how to improve Surrey's risk communication—adding to the discussion on social capital research's usefulness in this field. My proposals do not suggest making changes to Surrey's social capital. But they do show that a social capital lens can reveal people or programs already in place to fill the social gaps that are hindering risk communication practice. In this sense, it develops a comprehensive map of what is needed and what is available. One just needs to take the time to obtain the information and put the pieces together.

6.1.2. **Practical significance**

In the previous chapter I showcase how social capital research serves Surrey's risk management, which addresses my main research question. For moving forward, I think it is important to revisit my third sub-question: how can one use this knowledge to build resilience in one's community? The integration of social capital theory into risk management research is a recent phenomenon. Even more contemporary is learning how to use social capital theory as a framework for action. Therefore, with this case study, I add to the ongoing dialectic on translating this concept from a framework for description into a framework for action (Putnam, Light, Briggs, Rohe, Vidal, Hutchinson, Gress, Woolcock, 2004). In other words, the aim was to not only identify social capital patterns, but to know how to act upon them.

This micro-level analysis of social networks in Surrey served to unveil resources and people that are unconventional but arguably hold a valuable role in filling gaps in engagement strategies. For instance, novel community leaders emerged as a way to reach the South Asian community with information on local risks. I was admittedly guilty of holding narrow criteria for community leaders, but this framework allowed for new identities to surface. Although the RCMP's role is a bit more predictable, the analysis confirms that their influencing power and reach is already developed in Surrey and should be better utilized. The potential of the *Library Champions Program*; however, may have slipped under the radar if social capital theory did not shape the interviews. With

over 300 volunteers, this program could be an incredibly effective way to reach newcomers. Committees that host many different cultural and religious identities, such as the LIP Advisory Roundtable and the Surrey Interfaith Council, are also potential conduits into many different communities. The LIP Advisory Roundtable represents sixteen countries through eighteen members, which means that one may be able to efficiently reach sixteen ethnic groups just by engaging this roundtable. In essence, although these suggestions do not align with traditional disaster management efforts, this framework shows that there alternative ways to integrate them into local services. By using existing people and programs for risk management purposes, community resilience projects should become more tangible in societies that are constrained by funding.

In sum, what this social capital research lends practically in Surrey is an alternative, yet comprehensive map to coordinate key services and players for building resilience. Several participants note the need for a coordinator role in this field. From a social capital standpoint, a coordinator could focus on liaising with service providers and stakeholders, ultimately building a complete and accessible survey of Surrey's assets. And in the long run, it would likely reduce the resources necessary to reach current risk management goals. As Dynes (2006) stresses in his analysis of social capital's role in disaster management: "*utilize existing* habit patterns as the basis for emergency action…*utilize existing* social units, rather than create new ad hoc ones…*utilize the existing* authority structure…*utilize existing* channels of communication and increase them…" [emphasis added] (p.21-22). One must remember that although some of these existing resources may be unconventional to risk management, they could also be a solution for filling some of these gaps.

6.1.3. **Academic significance**

There are numerous studies that showcase the role of social capital in disaster response and recovery (Bhandari, 2014; Aldrich, 2017, 2012; Murphy, 2007; Hawkins and Maurer, 2010; Dynes, 2006; Nakagawa and Shaw, 2004; Shaw and Goda, 2004). Typically, researchers define measures of social capital—such as contact with neighbors, volunteerism, civic engagement, and reciprocity—and then analyze the data from past surveys according to such measures. They usually cross-examine these findings with other impacts on personal recovery, such as household damage and

economic standing. Daniel Aldrich (2017; 2012), for example, investigates social capital's role in disaster recovery in this way according to many different contexts, including: New Orleans, USA; Indiana, USA; Tamil Nadu, India; Kobe, Japan; and Tokyo, Japan. Although the use of social capital theory is not new, the majority of studies take on this framework from a post-disaster perspective. Here, I add to those exploring social capital under non-crisis conditions and consider its value to risk communication activities.

Pre-disaster research

It is difficult to draw conclusions on how current social capital patterns in a society will affect their response and recovery before a disaster happens. This challenge may explain why there are fewer studies analyzing social capital at the pre-disaster phase. It is hard to fund 'what-if' research. Nevertheless, the academic community recognizes the need for it (Bhandari, 2014; Murphy, 2007; Dynes, 2006; Shaw and Goda, 2004). As Murphy (2007) argues after her analyses of the 2003 power outage in Eastern Canada and the 2001 water-borne E.coli breakout in Walkerton, Ontario:

> Yet, proactive emergency management suggests that we should be assessing and ameliorating resiliency prior to a crisis (Murphy et al. 2005). Future research needs to be undertaken that seeks to evaluate the contribution of social capital to resiliency under non-crisis conditions. It is in the planning/mitigation stages that the relationships between community groups and local emergency managers must also be evaluated and ameliorated. This is the time to assess community resources and seek out opportunities for mutual learning—both among community groups and between these groups and local municipal authorities. (p.312).

Bhandari's (2014) analysis of social capital mobilization following the 1934 Kathmandu Valley earthquake also supports the need to incorporate this perspective earlier on in risk management. By arguing its role in disaster response and recovery, he hopes to prove its worth in disaster planning and policy making: "from the cases examined we can draw wide ranging implications for community social capital based planning that can assist in making local disaster policies" (p.326). Through my interview study, I hope to have made this vision clearer.

6.2. **Limitations & Suggestions for Future Research**

This thesis is necessarily limited in scope, as context plays a large role in the findings. Although the research is informative on the social capital in Surrey and will likely serve the city's risk communication and management processes, there are opportunities to build upon this research.

6.2.1. **Triangulation**

There are several methodological limitations that deserve mentioning. Qualitative research is tasked with overcoming both researcher and participant bias. There were several moves taken to reduce researcher bias. For example, I incorporated three different stakeholder groups to help triangulate the data. Although I did not use random sampling, the snowball sampling technique added perspectives that were recruited by others. I thoughtfully designed the data collection and analysis phase to reduce bias as well. Although semi-structured, all interviews followed scripts and thus were systemic and generally consistent. I also transcribed all interviews before conducting any form of analysis to avoid swaying future interviews. In addition, efforts were made to reduce participant bias. Meeting at the interviewees' convenience and at their workplace, or over the phone at their leisure, intended to create a comfortable environment. Although we discussed their public work, I committed to keeping their identity confidential—again to limit response bias.

Despite these measures, there are opportunities to build on this research. Specifically, other forms of triangulation would strengthen the findings. I conducted twelve interviews that provided excellent, detailed information. However, as a graduate student, there are obvious time constraints. Adding more interviews would further triangulate the data. Adding a second case for comparative purposes would also help verify the data.

It would be worthy to explore if the study's findings are reflective of inherent cultural attributes of the South Asian community. This could be done by juxtaposing the experience of Surrey's South Asian community with the one in Brampton, Ontario,[40] or,

[40] As of 2011, Brampton, Ontario homes the largest population of South Asians at 38.7%. Surrey is second with 29.5% (Statistics Canada, 2011).

with another Surrey minority group, such as the Korean community. Are other ethnic minority groups better engaged with Surrey's risk or general planning activities? Are they more involved in mainstream events? Having this knowledge and being able to anticipate cultural behaviors in a disaster situation would be a better allocation of time and funding. For example, fatalism surfaced in studies on Hurricane Katrina as a cultural belief that impacted individuals' preparedness and response (Eisenman et al., 2007). In another study on evacuation behavior, researchers conclude that it is unlikely that local authorities can evacuate entire cities even with improved preparedness activities. So, local government "must ensure that [it] can supply food, water, and medicine to people who are trapped" (Brodie, Weltzien, Altman, Blendon, Benson, 2006, p. 1408). Perhaps social capital research will show that some communities will be less engaged in risk reduction activities no matter what. If it does, local planners need to be prepared for that, and strategize for a stronger response and recovery in some neighborhoods. Ultimately, adding more perspectives, or another case, would serve to confirm the best moves forward and perhaps offer novel information.

6.2.2. **Mixed methods**

The missing voice in this study was the South Asian public. Now that gaps are identified, it would also be worthy to follow up with an additional method incorporating this public. I think the most fruitful research would be a participatory-style study, as both participants and researchers come away with a better understanding of the discussed topic. For example, O'Sullivan et al. (2015) share that in addition to the researchers gaining more insight on the public's risk perceptions, assets and vulnerabilities, the participants left with a greater awareness of local hazards, the resources available to them, and knowledge of how to reach these resources. Participants also developed relationships with one another, which created a sense of community and thus a desire to improve their resilience as a whole. Similarly, Nirupama and Maula (2013) conducted a participatory-style study of roughly forty South Asian women in a focus group interview setting; the intention was to facilitate people's participation in order to comprehend their perception of risk, vulnerability, and resilience, as well as their knowledge of hazard risk. They were able to collectively discuss the importance of awareness, available resources and help, and outlets for voicing one's opinion. Ultimately, the researchers believe that participants felt engaged and came away with a greater understanding of the importance

of participation in building resilience. Although it is a costly and timely method, it reflects the standard for risk communication: interaction and a two-way flow of communication. And as we see in other cases, such as in Manitoba during the 2009 H1N1 crisis (Driedger et al., 2013), it is clear that prior collaborative activities also work to minimize social divides and distrust.

There are other methods that incorporate public opinion, such as surveys. Because this study uses social capital theory as a lens, rather than an instrument, quantification would help confirm some of the ideas raised by the participants in this study, as well as bring forth specific network issues, neighborhoods, or people of the South Asian community that are in need of attention.

6.2.3. Alternative frameworks

For future research, it is also worthy to utilize alternative frameworks. For example, exploring social capital patterns through a political economy framework may illuminate ways in which they upholding or representative of structural inequalities. One must acknowledge that social capital is bound up with other forms of capital, such as economic and cultural capital. It is not a cure-all or replacement for these other forms. Hence, some argue that lower stocks of social capital are reflective of inequality (Veuthey, 2015). As the reader can see in Wisner, Blaikie, Cannon and Davis' (2003) *Pressure and Release (PAR) Model* (Figure 5 below), one's vulnerability is rooted in social processes and underlying causes, which may ultimately be quite remote from the disaster itself. The basis of the *PAR* idea is that a disaster is the intersection of two opposing forces: those processes generating vulnerability on one side, and the natural hazard event the other. The image resembles a nutcracker, with increasing pressure arising from either side. The 'release' idea is incorporated to conceptualize the reduction of disaster: to relieve the pressure, vulnerability has to be reduced.

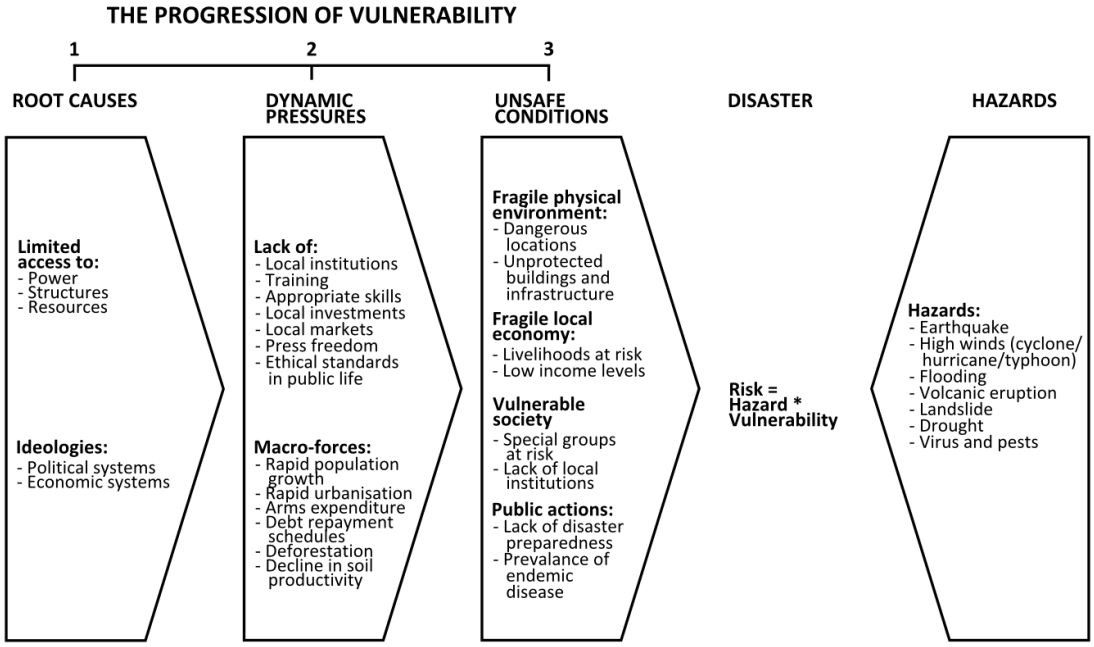

Figure 5. Pressure and Release Model (Wisner et al., 2003). Reproduced with permission of Routledge.

According to Wisner et al. (2003), the idea of *access* (to resources of all kinds, including material, social and political) is central to this task; understanding how the distribution of power, wealth, resources, information and social standing are structured in normal life needs to be understood prior to a disaster to reduce vulnerability.

For future research that aims to disentangle these forms of capital and their impact on accessibility within Surrey's South Asian community, it is crucial to acknowledge differences based on gender. Because many South Asian groups adhere to traditional gender roles, men and women's social capital may be very different, especially their bridging and linking social capital. Should practitioners try to reach these women with information and resources through women's groups? Or do they try and reach households through the male members? Will this be sufficient? Women typically suffer more in a variety of disaster situations—especially during the recovery phase—because of limited access to resources, such as loans (Wisner, 1993, p.132). Identifying these positions in non-crisis conditions will be helpful for practitioners to serve all residents adequately during a disaster.

6.2.3. **Future work in Surrey**

Determining successful digital and online strategies

Finally, I hope to provide the City of Surrey with data and ideas that inspire positive changes in current programs and strategies. One domain that warrants further exploration is the digital sphere—as a tool for increasing awareness of Surrey's risk management, as well as developing social connections between residents. I discussed the online platforms already in place, as well as possible ways to use them more effectively. Perhaps it is through utilizing channels that already have a broad reach, such as the RCMP's. Or, it may be incorporating ICTs in public spaces for placemaking purposes, as I contemplate in Section 5.4.7. The potential of online and digital communication tools became clearer during the data analysis phase but deserves more attention. They encourage two-way discussion and interaction, and can increase exposure through weak ties (for example, through sharing posts on Facebook, re-tweeting on Twitter, or bringing strangers together to use a digital display), which provides a strong argument that the digital public sphere is a contemporary platform that can likely further both social capital and risk communication goals. Hence, it would be worthy to dedicate future work to defining its place, and subsequently, its purpose in Surrey.

6.3. Concluding Remarks

During the data collection process, one participant asked me to lead an informal public discussion on disaster preparedness for newcomers in Surrey. Although only a handful of people showed up, it connected me to members of the public, as well as a City of Surrey employee, who are passionate about this topic. It secured two more interviews for my study, and even inspired the group to kick-start a grassroots neighborhood preparedness program, which they call *Map Your Community Surrey*. Although the program is in slow development, this meeting showcases the power of social networks and weak ties, and their value to local risk management.

The intention here was to highlight social capital research's value to municipal risk communication. Although there are several arenas for future research and action, the findings encourage researchers to remain open to alternative lenses when exploring social challenges in the risk management field. Remnants of its prior top-down approach

seem to prevail in certain contexts. Overcoming this predisposition may offer a more productive path forward, because as societies diversify, there needs to be flexibility to combat the challenges it brings.

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Appendix A.

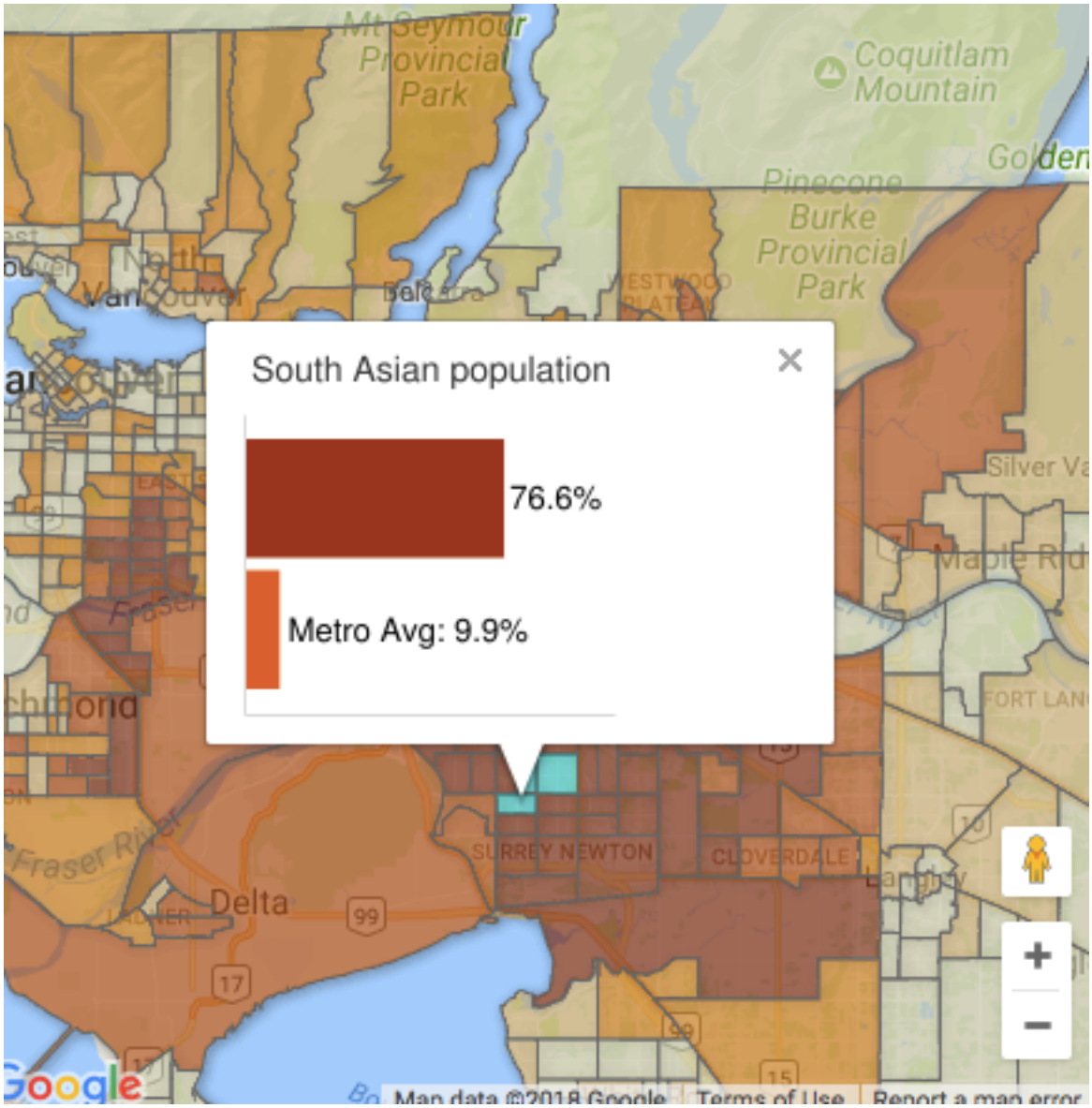
Maps of Surrey

(Retrieved from: Todd, 2012).

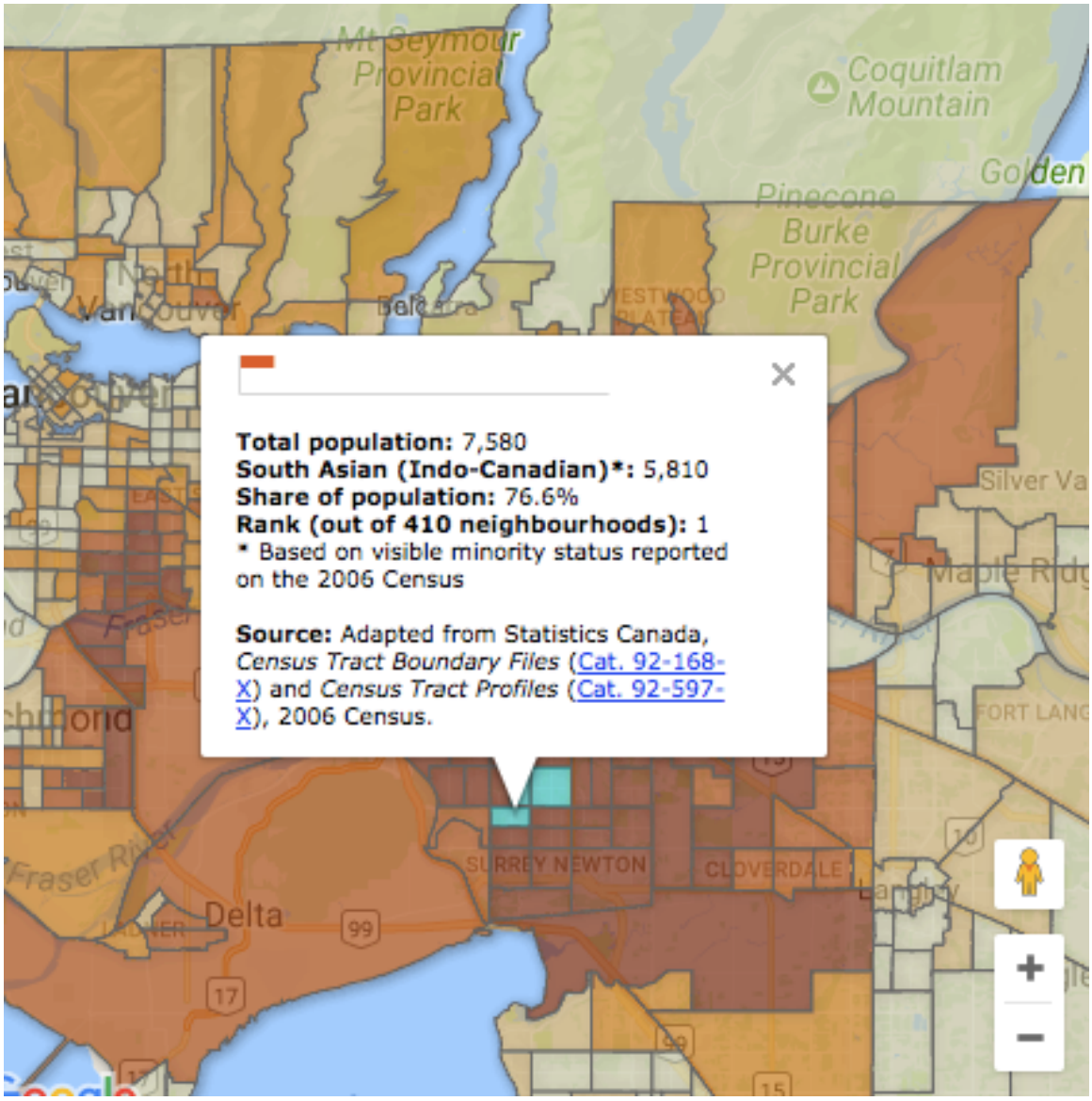
A.1. South Asian populations in the Lower Mainland

Metro Vancouver's South Asian community. The darker the colour, the more people there from the featured ethnic group. The top five neighbourhoods are shown in light blue. These maps were created using data adapted from Statistics Canada Census Tract Boundary Files (Cat. 92-168-X) and Census Tract Profiles (Cat. 92-597-X), 2006 Census. STATISTICS CANADA / ...

A.2. South Asian population in Newton neighborhood of Surrey



A.3. South Asian population in Newton neighborhood of Surrey



Appendix B.

Interview sampling and recruitment process

B.1. Sampling Strategy

My original sample target number of interviews was 10-15, given:

1) My research interests and questions (provides depth while comparing and contrasting different stakeholder perspectives),
2) My short time frame and available funding, and
3) The expectations of a master's thesis in our School of Communication.

B.1.1 Participant criteria

For community leaders: those that serve the South Asian community and have a high community profile. Their status is often determined by secondary sources, such as media. Examples of community leaders are religious officials, doctors, executive directors at community-based ethnic organizations, certain ethnic media personnel and politicians. They should show a high level of knowledge of this community's vulnerabilities and capacities, as well as the cultural differences that may affect interaction or collaboration with other stakeholders. An understanding of the concept of "social network" and how it applies to Surrey's South Asian community is important. These criteria do not necessarily mean that the community leaders must be South Asians themselves. Participants must be adults, 19 years of age and older.

For City of Surrey employees: those that work for Surrey's emergency management department, which includes the fire department, public safety department, and emergency social services. Having a high understanding of stakeholder relationships, or community engagement practices, is important. Participants must be adults, 19 years of age and older.

For community-based organizations: those that work at local community-based organizations and have knowledge of the ethnic minority experience in Surrey. Specifically, I am seeking those that have knowledge of the South Asian community,

and/or engagement practices for municipal planning—awareness of risk management processes is an asset. Participants must be adults, 19 years of age and older.

Exclusion criteria: those who do not work with the South Asian community, or for the emergency management department, in Surrey.

B.2. Recruitment Process

Table B2. Recruitment results

Participants Identified	Contacted	Responded	Interviewed
32	18	16	12
	Phone contact was once; email contact twice. Recruitment naturally stopped when I hit twelve interviews (the remaining potential participants did not respond but I reached my target of 10-15 participants.	Of the 4 that did not proceed to interviews, two declined (too busy) and suggested to re-contact them later, and two declined but offered to connect me to someone else.	

B.2.1. Recruitment invitation email

Community Leaders/CBOs

Dear [NAME],
My name is Ayesha and I'm a master's student at SFU, studying engagement and collaboration with diverse communities from a risk management standpoint. I have chosen to explore this topic in Surrey, with attention to its large South Asian population. I think you carry some helpful knowledge for my research interests, so I invite you to participate in my study titled: *A Connected Community: Fostering Social Links as a Form of Disaster Risk Reduction in Multicultural Societies.*

If you are willing to be interviewed for this study, your participation will involve answering a few interview questions and would take no more than an hour. So far, participants have preferred phone interviews, but I can also come to your workplace. Your participation is voluntary, and can be withdrawn at any time without any consequences.

A bit about the study: strong risk management involves all members of society. We must prepare and plan for disasters (natural or man-made) and the risks associated with them. These plans must be developed according to everyone's needs and vulnerabilities, as well as their strengths and capacities. Language barriers, for example, may increase vulnerability during a disaster. But having prior experience in disaster situations is an asset. Identifying these strengths and weaknesses with the community; however, can be challenging.

The goal of this project is to uncover this interactive process. How are existing social relationships determining the risk planning process? Are there communication barriers? Are there better, culturally appropriate ways of engaging certain communities? Should different outlets, such as ethnic media, religious institutions, or schools, be better utilized? Are there issues of trust and how does it impact community engagement and outreach? Social relationships and networks seem to make an impact on risk management. I hope that with your expertise, you can help unpack some of these ideas.

You may not have much knowledge on emergency and risk planning. However your knowledge of [personalized message of participant's expertise/knowledge of the South

Asian or minority communities] is just as important for reducing risk and improving resilience in a community.

Please see the attached consent form for additional study details and your rights as a participant. If you would like to participate in the study or if you have any questions please contact me at [...]@sfu.ca or 604-[…], or my supervisor Peter Anderson at [...]@sfu.ca. We can then pursue next steps.

Sincerely,

Ayesha Renyard, M.A. Candidate
School of Communication, Simon Fraser University

City of Surrey

Dear [NAME],

My name is Ayesha and I'm a master's student at SFU, studying engagement with minority communities from a risk management standpoint. I have chosen to explore this topic in the Surrey context, focusing on its large South Asian population. I think you carry some helpful knowledge for my research interests, so I invite you to participate in my study titled, *A Connected Community: Fostering Social Links as a Form of Disaster Risk Reduction in Multicultural Societies.*

If you are willing to be interviewed for this study, your participation will involve answering a few interview questions and would take no more than an hour. So far, participants have preferred phone interviews, but I can also come to your workplace. Your participation is voluntary, and can be withdrawn at any time without any consequences.

A bit about the study: strong risk management involves all members of society. We must prepare and plan for disasters (natural or man-made) and the risks associated with them. These plans must be developed according to everyone's needs and vulnerabilities, as well as their strengths and capacities. Language barriers, for example,

may increase vulnerability during a disaster. But having prior experience in disaster situations is an asset. Identifying these strengths and weaknesses with the community; however, can be challenging.

The goal of this project is to uncover this interactive process. How are existing social relationships determining the risk planning process? Are there communication barriers? Are there better, culturally appropriate ways of engaging certain communities? Should different outlets, such as ethnic media, religious institutions, or schools, be better utilized? Are there issues of trust and how does it impact community engagement and outreach? Social relationships and networks seem to make an impact on risk management. I hope that with your expertise, you can help unpack some of these ideas.

I hope your knowledge of [personalized message on the participant's knowledge/expertise] can help fill some gaps on how different levels of Surrey are able to communicate and engage one another. Ultimately, I hope this knowledge can be put to use—to reduce risk and increase resilience in this community.

Please see the attached consent form for additional study details and your rights as a participant. If you would like to participate in the study or if you have any questions please contact me at [...]@sfu.ca or 604-[…], or my supervisor Peter Anderson at [...]@sfu.ca. We can then pursue next steps.

Sincerely,

Ayesha Renyard, M.A. Candidate
School of Communication, Simon Fraser University

Appendix C.

Obtaining Consent

C.1. Consent Form

Consent Form – Interview

A Connected Community: Fostering Social Links as a Form of Disaster Risk Reduction in Multicultural Societies

Study: #2017s0105

Principal Investigator:

Ayesha Renyard, M.A. Candidate

Grad Fellowship Award

Emergency Preparedness Conference Scholarship in Emergency Communications

School of Communication, Simon Fraser University

604-[…], [...]@sfu.ca

Faculty Supervisor:

Peter Anderson

University Professor, School of Communication, Simon Fraser University

778-[…], [...]@sfu.ca

1. Who is conducting the study?

Ayesha Renyard, who is working on her Master's thesis under the supervision of Professor Peter Anderson.

This study will contribute to Ayesha's thesis, which will be publicly available through the SFU library upon completion.

2. What is the study about?

This research explores how the different social groups in Surrey work together to reduce the impacts of disasters. Specifically, this project is interested in the communication and collaboration between local emergency planners and the South Asian community, as current literature has identified the process of engaging minority communities to be especially difficult.

Mapping out the relationships essential to this practice will hopefully lead to a better understanding of how to engage minority communities on their needs, as well as their responsibilities as citizens. Ultimately, I hope to shed light on the role of social networks in achieving this collaborative work.

3. Your participation is voluntary

Your participation in this study is voluntary. You have the right to refuse your participation in this study, and there will be no repercussions to you. If you do decide to participate, you may still choose to withdraw at any time, and do not have to give any reasons for your withdrawal. There will not be any negative consequences. Before you decide whether or not to participate, you should understand what the study involves. This consent form tells you about the purposes of this study, your role in the study, and the possible benefits and risks. Please be aware that permission from your employer was not sought out.

4. When you say "Yes, I want to be in the study":

- If you agree to participate, the researcher will set up a convenient interview time and location with you;
- The interview will take no longer than one hour;
- You will be asked if you are willing to have the interview audio recorded.
  - If you agree to be recorded, it is important that you know that I will label these

audio files under your initials, or pseudonyms if you desire. They will be stored on a flash drive in a locked filing cabinet (in a different drawer than the consent forms). After I digitally transcribe the audio files, they will be erased. The transcripts will be stored on my hard drive, which is password protected. There will be no identifiers on the transcripts. Only my supervisor and I will have access to this data. After the work is published, data will be stored for two years. Then, it will be destroyed, as there are no future uses for these transcripts.
- If you do not consent to being recorded, the interview can still be conducted and the researcher will take notes by hand. Physical notes will be labeled and stored in the same way as audio files (identified above). When transcribed, the physical notes will also be destroyed and the digital copies will be stored on a password protected hard drive, which will only be accessed by my supervisor and I.

5. What are the possible harms of participating?

This study is considered minimal risk, as the researcher will be asking questions that relate to your line of work. However, there is a possibility of the loss of confidentiality. Although identifiers that would connect you to your interview will be stripped, what you say in the interview may be linked back to you. We will make every effort to ensure that this risk is minimal. For example, pseudonyms will be used and your name will not appear in any published materials, unless you consent in writing to waive your anonymity.

6. What are the benefits of participating in this study?

The overarching purpose of this study is to assess the possible value of mapping out social networks and determining how to develop and engage them at the pre-disaster phase—as a form of preparedness and risk reduction in urban, multicultural contexts. By consenting to share your opinions and experiences, you can help build a better understanding of how to maximize effective collaboration between social groups—something that is essential for local emergency planning. These ideas can help academia, but will likely have more immediate, practical effects in Surrey.

7. What happens if you withdraw from the study?

You may withdraw your consent at any time, without giving reasons, and there will be no negative consequences.

8. Will taking part in this study be kept confidential?

Yes, your confidentiality will be respected. Only the faculty supervisor and the researcher will have access to the research records (including those that identify you). No information that disclose your identity will be published without your written consent.

9. Who can you contact if you have questions?

If you have any questions or desire more information about this study, at any time, you can contact Ayesha Renyard at 604-[…] or [...]@sfu.ca, or Ayesha's supervisor, Professor Peter Anderson at 778-[...] or [...]@sfu.ca

If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact Dr. Jeffrey Toward, Director, Office of Research Ethics at [...]@sfu.ca or 778-[…].

Participant Consent:

Participating in this study is your decision. You have the right to refuse to participate, or withdraw your consent to participate at any time. You do not need to give a reason. There will be no negative consequence for refusing or withdrawing from the study. Your signature below indicates that:

- You agree to participate in this study
- You have received a copy of this consent form
- You do not waive any of your legal rights by participating
- You have had enough time and information to consider your participation
- You understand that your participation is voluntary
- You understand you can refuse to participate or withdraw at any time
- You understand there is no guarantee that this study will provide benefits to you
- You have read this form and freely consent to participate in this study
- You are 19 years of age or older

I consent* to participate in:

1. Being interviewed YES____ NO____

2. Being audio-recorded YES____ NO____

**Note that you can consent to both, one, or none of these forms of participation*

3. Do you consent to re-contact YES____ NO____

If yes, please provide a way to contact you: _____

_____ _____ _____

Name of Participant (printed) Signature Date

_____

Address

Appendix D.

Interview Protocol

D.1. Interview Guide

D.1.1. Interview Script

For South Asian community leaders/CBO participants

Preamble: I'm looking at unpacking the community engagement process from a risk management standpoint in Surrey. Although you may not have a lot to say about Surrey's risk and emergency management, I understand that you have a lot of knowledge on Surrey's immigrant and ethnic communities. So I'd like to ask you questions regarding your work with these groups, with particular interest with communication and engagement strategies. If you can answer any of these questions with particular attention to the South Asian community, that would be great! Otherwise, in more broad terms (diverse/minority communities in general) is also acceptable.

1. Can you explain your role at [organization] and how you serve the ethnic communities/the South Asian community?

2. I am studying how different stakeholders work together. Which stakeholders do you work with most closely?

3. Are you aware of any services or organizations that help integrate minority communities with the wider community?

    a. Do religious institutions help bridge the gap between the South Asian community and the wider Surrey community? How? Who else could bridge the gap?
    b. Has anyone consulted you for help?

4. How could the City engage the South Asian community better? Are there any

methods/media/people that could be better used?

5. Within the South Asian community, how important is interaction with:

a. Family?
b. Friends?
c. Neighbors?
d. Those in same religious circle?
e. People outside the South Asian community?

6. For important news, who or what would be their first source of information (i.e. family, friends, ethnic media, mainstream media)?

7. What are issues of interest to the South Asian community? Do you feel that their needs are being addressed?

8. Have you heard of the term "social capital" (it is based on the idea that the network of relationships among people who live and work in a particular society is important for a society to function effectively)? Do you think that this concept holds true for Surrey? Why?

9. Interviewees from the City mentioned that there are many opportunities for public feedback during the development of city strategies. Can you speak on whether or not the minority communities get involved in these public consultations?

10. Are you familiar with the term "ethnic enclave" (geographic area with high ethnic concentration)?

a. What does this term mean to you?
b. Is Surrey's South Asian community an ethnic enclave? If so, how does it affect their settlement and integration?

11. What binds newcomer communities the most (i.e. religion/religious events, language, family, job opportunities, ties to home country, cultural identity)?

12. For ethnic groups in Surrey, what are the barriers for interacting with others?

13. Is discrimination a problem in Surrey? How does this affect social networks, relationship building, or trust?

12. Do you think the South Asian community is aware/knowledgeable about disaster preparedness? Has this been addressed internally, say at religious institutions, cultural events, or even at home?

a. Is there interest?
b. Are there internal strategies?
a. Are they aware of the Neighborhood Preparedness Program?
b. Do you think this community is particularly vulnerable?
c. How would you engage them on topics of disaster preparedness?

Now that you have a greater understanding of the study, do you have any people in mind that would be suitable to participate? May I send you a recruitment email that you can forward along to these potential participants?

For City of Surrey participants

Preamble: I'm interested in exploring the risk planning process at the local level. I understand that collaborating with all stakeholders can be difficult, especially in urban, multicultural societies. Through interviews, the goal is to unpack the community engagement process. As you know, I am particularly interested in the communication and engagement between local authorities/decision-makers and the South Asian community. If you can answer some of these questions while specifically addressing this group, that is great! Otherwise, in more broad terms (diverse/minority communities in general) is also acceptable.

1. Can you explain your role at the City of Surrey and how it relates to risk management or public safety?

2. I am studying how different stakeholders work together. Which stakeholders do you work with most closely?

a. How often do you work with the public and what does this work entail?

4. What size of a role does the public currently hold in the disaster planning process? How does this compare to the ideal?

5. Are there any divisions within your institution that works on engaging the community?

6. What has been the most effective method or medium for reaching the public with

your material/information?

a. Does your strategy change when trying to reach ethnic communities?
b. What are the biggest challenges in reaching these groups?

7. Do you think that the current public engagement strategies are also sufficient to reach minority communities, such as the South Asian community?

a. Do you have recommendations for improvement?

8. Are you aware of any services or organizations that help integrate minority communities with the wider community?

9. Is discrimination a problem in Surrey? How does this affect social networks, relationship building, or trust?

10. Are you familiar with the term “ethnic enclave” (geographic area with high ethnic concentration)?

a. What does this term mean to you?
b. Is Surrey’s South Asian community an ethnic enclave? If so, how does it affect their settlement and integration?

11. Can you provide any examples of collaborative work by your institution with the South Asian community that you know of? Specific to risk planning?

12. Have efforts been made to understand the cultural differences of prominent ethnic communities in Surrey?

a. Have these been woven into specific engagement strategies on topics of disaster preparedness?

13. Have you heard of the term “social capital” (it is based on the idea that the network of relationships among people who live and work in a particular society is important for a society to function effectively)? Do you think that this concept holds true for Surrey’s emergency management? Why?

14. Do you think the South Asian community is aware/knowledgeable about disaster preparedness?

a. Is there interest?
b. Are there internal strategies?
c. Are they aware of the Neighborhood Preparedness Program?
d. Do you think this community is particularly vulnerable?

15. What have been your biggest successes for public engagement?

16. Can you tell me any future goals or projects regarding engagement and collaboration with the public? Are there any specific to minority communities?

a. If you had endless funding…?

17. Are you familiar with Surrey's new public safety strategy?

a. What are its goals?
b. Where do minority groups fit in?
c. Which goals will be the hardest to accomplish/
d. Is there a timeline for completing these goals?

Now that you have a greater understanding of the study, do you have any people in mind that would be suitable to participate? May I send you a recruitment email that you can forward along to these potential participants?

Appendix E.

Analysis of Data

E.1. Coding Cycles

Figure E.1.2. Cycle 2 – focused coding

Sub RQ 1: How can we describe the current relationships and social networks in Surrey?

A) Generally

SUB CATEGORY	DESCRIPTIVE CODES	IN VIVO CODES
High Diversity	-Many different ethnic groups/languages -Distinct differences between neighborhoods -Disparity in income levels -Influx in newcomers -Need for representation in decision-making	-We focus on all things that are identified as diverse... We deal with culture, religion, seniors, those with disabilities, etc. This is so we can better understand how to approach these groups, and for them to understand what we do -Our services haven't kept up with growth -I don't want to forget about the vulnerable people that don't have an environment that's conducive to the neighborhoods program -As far as the cultural diversity of how you get that information that's out there, it scares me. We know that we have a very

		diverse city. It's my understanding that we have 138 spoken languages in this city. So can you get the messaging out there? What percentage of the population will understand?
Low Interaction Between Social Groups	-Less communication and socializing with others outside of community -Lack of shared ideologies -Racism and stereotyping	-When I hold workshops for newcomers, they must meet us halfway in order to integrate into the community -We must learn about one another -What we are lacking is a common celebration…having something in common can be helpful -As a result, we learned residents' perceptions on sense of belonging, sense of inclusion, what they think and feel about diversity of Surrey. One of the questions: whether they feel that discrimination is an issue in Surrey. We were surprised to learn that over 50% of those who participated in the survey, which represents Surrey's population, suggested that they do feel that discrimination is a problem

Strong Collaboration Between Public and Non-Profit Institutions	-Presence of advisory committees and community organizations -Collaboration, pooling resources, co-sponsoring -Round table discussions, and representation of diverse interests	We work together to serve the community -We accomplish things by pooling resources -We work with 70-100 stakeholders, whether it be settlement agencies, schools, temples, the Red Cross, SFU, the list goes on. That is externally. And then internally—the City of Surrey; -[City of Surrey workers] are not in silos…Everyone works together, everyone collaborates. Some might say it's because we have grown so rapidly that there is a challenge with our services keeping up, but it has meant we really need to work together across sectors. We are extremely collaborative .

B) Specific to South Asian Community

SUB CATEGORY	DESCRIPTIVE CODES	IN NIVO CODES
Strong South Asian Communal Identity	Tendency to settle into geographic hubs -Limited engagement with those outside one's community -Reliance on those within community for information and resources -High attendance to their cultural events coupled with low attendance to citywide events.	It's natural for people to settle among people like themselves -it is comfortable for them, especially when they settle initially -Newton, Whalley, Panorama—its just South Asians interacting with South Asians. It is not super multicultural -We already know that social capital theory works in the sense that people can find jobs without having to speak English, through their social networks; -If the target is to make a bigger community, then we must integrate SA's into the wider society. At this time, we are still hindered by the ethnic enclave -I don't think they participate in citywide events as much. I don't know why. But there is a huge difference in participation if it comes from their ethnic community sources or from City organizers
Newcomer Vulnerability	Have other priorities related to settlement -Awareness of resources are low	The three newcomer challenges are: finding a job, learning English, and being isolated -When you're in a different

	-Connections to others outside one's social circle is lacking -Communication networks are smaller -Language barriers	environment, you just don't know: 'I didn't know what I didn't know' **-With new immigrants, it's challenging. Not only do they need to learn about Canadian society, but there is also trust that needs to be built** -They come from a background with few earthquakes, so its stuck in their head that it won't happen

Sub RQ 2: How have these social networks presented challenges for engagement and collaboration?

SUB CATEGORY	DESCRIPTIVE CODES	IN VIVO CODES
Low engagement of SA's in planning processes	Low attendance in public consultation meetings -Low interest in local emergency preparedness program Less knowledge of local risks -Lack of personal/household preparedness	Many South Asian people opposed [light rail transit] but didn't go to the consultation meetings…they talked to me about it, and said they didn't like it -It is stuck in their head that [a disaster] won't happen. We must educate them. It could happen any way -This community is not prepared at all -[Preparedness] is on the backburner -I'm not getting requests from this

		community [for neighborhood preparedness program facilitation] -When trying to recruit for our roundtable, we had a hard time recruiting someone from the South Asian community -The ideas up here that are being pushed down are far less absorbed than ideas being pushed up from the bottom. It would be nice if there was a push up -No question that the South Asian community is a harder audience to reach. What we find is that they tend to be somewhat complacent or disengaged to a certain extent
Extensive Communication Needs	Multi-pronged approach that includes different mediums (ethnic media, mainstream media, radio, bulletins, newsletters) -Face-to-face interaction most effective for making an impact	Hard to say what works…I don't think there is one right way. We have to do everything -Must go door-to-door to reach [SA community] -We try to reach untapped members of the community at community events -We have been told that to engage South Asian folks, there

		are 5-6 different outlets (radios, newspapers). There's differentiation on preferences whether they are newcomers, Canadian-born, seniors, etc. -Sending things to household is most effective but also most expensive -Multi-channel approach most effective
Stretched Resources	-Inability to execute plans due to resources and funding -Funding does not match needs of Surrey because Surrey growing too fast	What I haven't done yet is any active promotion, because I don't want to outrun myself. With my 26 volunteers, I can already see that I'm limited—I'm going to have trouble keeping up -I would love our unit to be bigger. We are out tasking ourselves. We are victims of our own success. In the last year and a half, our engagement has gone up 700%. We can't maintain that increase any longer. I would love to see my unit grow. And then I can engage more -We listen to their needs, but with the budget that we have -I'd like to be a bit more progressive but we are limited due to finding; our services haven't kept up with our growth -ESL classes have a two year line

		up -We need a comprehensive engagement strategy -We have so many priorities, we are getting lost in them -"Lean and mean" staff

Sub RQ 3a: What is being done to tackle these challenges?

SUB CATEGORY	DESCRIPTIVE CODES	IN VIVO CODES
Strategies focused on building bridges between social networks	-Engaging prominent members of diverse communities -Increasing opportunities for collaboration between diverse stakeholders -providing opportunities for members of the public to mingle -focus on inclusionary communication methods/community events -Focusing resources on positions or projects that tackle these goals	-We work on educating the community, as well as our staff, on how to better understand one another and work together -[The City] works hard to engage communities that wouldn't typically come out to events, to come out to events -LIP was created to engage newcomers -[LIP] created an immigrant advisory round table to incorporate newcomer voices that connection [between the City and SA community] needs extra work; even our own staff is going through intercultural

		communication workshops -The strategy has 5 strategic directions, one of which is called "engage community." Through research and consultation we have learned that local newcomers, and Canadian-born folks, want a more connected community, where immigrants have more opportunities to make meaningful connections with other local residents. So that's one of our strategic directions
Build Trust	-Face-to-face interactions -Encouraging learning about one another/minimizing ignorance of one another -Minimizing stereotypes	Once they learn English and start communicating, they develop the courage to ask questions and they begin to learn about their city. When they feel challenged in this regard, they keep themselves within their own community -Trust and relationships must be built continually; in order for people to start mingling and trusting each other, they have to start doing things together -Face-to-face discussion is so important for trust building…you can't do this by social media or flyers -We do a lot of things that focus on bringing the community together…people are coming up

		with creative ways to integrate groups that haven't normally been integrated -I always say, at the end of a presentation, if they trust me 1% more, than I will do it 99 more times.

Sub RQ 3b: What can be done further to reduce risk and build resilience?

SUB CATEGORY	DESCRIPTIVE CODES	IN VIVO CODES
Engage Community Leaders (i.e. religious leaders and other prominent members of the SA community)	-Create a role for them in plans -Consult them for feedback -Include in roundtable discussions -Consistently maintain relationships -Partake in their cultural activities	-I've been introduced to leaders of the Sikh community that are very open to discussing opportunities to bringing emergency messaging into the temples and into the culture. Every time I bring it up, it is enthusiastically received, so it's a matter of developing those resources and taking advantage of those opportunities -City needs to connect to community leaders to gain the SA public's feedback -On Fridays we stop in to temples randomly, just to say hi. Those have been some of our best sources of the pulse, what is going on in the community -I think we should do a better job at reaching out to those

		hubs/social networks. Whether its ethnic organizations, churches, mosques. We have a list of them, but we don't have the capacity to reach out -Its harder to reach out and get specific voices from the community, but those representing them are heard
Create Directed Strategies for Raising Awareness of Local Risks/Personal and Household Preparedness Within the SA Community	-Identify effective information outlets -Identify material that would perk their interest -Make resources and information easily accessible -Create ways to measure any increase in their awareness	But I'm not getting requests from the community. The challenge is understand why, my assumption is that there is a lack of awareness—of either the resources we have or the need to be prepared. It may be the biggest challenge is education. I still don't know why they are not requesting for presentations in their community, because when I offer it, they are very receptive. So it may be a lack of perception of the need to be prepared. That's a challenge. If they aren't interested, I will have a limited capacity to grow it within the community. The first step will likely involve increasing the awareness of the benefit of being prepared -Unless you come from a country that experiences many disasters, you wouldn't worry about earthquakes

		-[The SA community] likes to see things and hear stories that are relatable—that give emotional attachment -How do you engage with them with things that are important to them, and then introduce what's important to you. So they can understand the importance and get engaged
Increase Grassroots Level Interest	Encouraging members of public to take leadership roles (horizontal leadership/training) -Support those to use their social connections to reach diverse communities	-Neighborhood Preparedness program: Instead of having to hire and recruit volunteers, I can incorporate the interest of the community to grow the program. It's been great, so far it is a really good model: it increases the engagement of the people who are requesting support and turns them into champions in their community. It's a compounding effect. I have a bunch of stories where people were dissatisfied with what was available, and now they have not only provided what they imagined for their own community, but they're actually training the communities around them with my cooperation. It's like a good epidemic -Library Champions: [this is

		transcribed] we address lack of awareness among newcomers by recruiting newcomers to go out and connect with those within their social group, and spread the word on community resources. In turn, they also learn, make friends, and expand their social network. -Immigrant Advisory Roundtable

Figure E.1.3. Cycle 3 – axial coding

FOCUSED CODES	AXIAL CODES
-Tight-knit SA community -Less Engagement Outside Social Groups -Newcomer Vulnerability	-High Bonding, Low Bridging/Linking Social Capital
-High Diversity - Low engagement of SA's in planning processes -Building Trust -Strategies Focused on Building Bridges/Social Networks	-Social Capital's Impact on Strategizing

-Stretched Resources -Extensive Communication Needs -Engaging Community Leaders -Increasing Grassroots Interest -Strong Collaboration B/W Public and Non-Profit Institutions	-Use of Weak Ties