


8-2019

Applying Social Network Analysis to Identify how Chief Resilience Officers Promote Community Resilience through Boundary Spanning, Interorganizational Collaboration, and Leadership

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Applying Social Network Analysis to Identify
how Chief Resilience Officers Promote Community Resilience
through Boundary Spanning, Interorganizational Collaboration, and Leadership

A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Arts in Communication

by

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University of Arkansas
Bachelor of Arts in Communication, 2017

August 2019
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This thesis is approved for recommendation to the Graduate Council.

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Abstract

The purpose of this paper is to explore, in some depth, the functions of interorganizational collaboration (IOC) by analyzing the Chief Resilience Officer (CRO) role in 5 US cities. The CRO can act as a key network collaborator or boundary spanner – managing relationships, communication and strategic responses within and across organizations. This study researches the IOC and leadership functions of CROs operating in the social network of 100RC cities to better understand their boundary spanning roles. This study explores how CROs create and maintain IOC, characterizes their leadership functions and role, and examines the boundary spanning role as reticulist, entrepreneur and innovator, and a leader. This study aims to describe the role of a CRO in the social construction of IOC in a social network context, providing a composite IOC network of a CRO and detailing the nature of their communication (frequency, mode, content) in a composite IOC network.

Keywords: community resilience, interorganizational collaboration, boundary spanning, leadership, chief resilience officer, social network analysis.

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Author Note

This research was supported in part by grants from the Department of Communication at The University of Arkansas.

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Acknowledgments

A special thanks to my thesis advisor, Dr. Myria Allen, for her clear guidance and staunch support. Before beginning the writing process, she told me that these next few months would resemble the tango. My composition coupled with her direction of this thesis would need active participation and cooperation from us both - resulting in a beautiful expression of research when complete. Well Dr. Allen...I don't think we did the tango, but we definitely got on the dancefloor and danced our hearts out! I will forever remember this challenging, yet rewarding time of my life. Thank you for the dance.

My heartfelt thanks to the woman who made me fall in love with the study of communication, Dr. Kasey Walker. Funny enough, emailing proves to be quite difficult when you share the exact same name, so nicknames were soon assigned. Dr. Walker decided that she would be known as "Kasey: The Elder" – not to be confused with Pliny. I will always cherish her for giving me the strength and confidence needed to finish my studies. With that I say... Thank you, "Network Goddess" for everything you've taught both in and out of the classroom.

A huge thank you to Dr. Spialek, the professor who gave me the opportunity to actually enjoy being a student and sparked a newfound joy of learning within me. He taught me that it's actually possible to look forward to a seminar class held from 6 PM to 9PM every single week. I will forever be thankful that he suggested I look into 100RC as a potential topic for a seminar paper - the very paper that began the preliminary stages of this thesis. Dr. Spialek, thank you for the endless feedback and support. I hope one day to be a professor who ignites a passion for research in their students and encourages them in their academics, just as you have for me.

I know that none of this would be possible without the favor of the Lord. I worked my hardest and prayed my hardest throughout these past two years - He never left my side. I thank God for every door, both opened and closed, that led me to where I am today.

Many people say that it takes a village to raise a child, but no one ever tells you what it takes to get through a graduate program. My village is the only reason I survived these past two years. Like a bottle of 2016 Caymus Cabernet Sauvignon, my family's value to me only grows with age.

To my brother, William Cody. He has brought me laughs when I most need it – and showed me grace when I don't deserve it. His passion and dedication inspire me daily, showing me the value of putting honest, hard work into things you care about. Cody, I am very proud of the person you have become. The late Mac Miller once said, "The number one reason why people give up so fast is because they tend to look at how far they still have to go, instead of how far they've gotten." Don't forget to appreciate the hard times, so you can fully enjoy the good times. You'll be successful in whatever you choose to do in life, as long as you do what makes you happy.

To my sister, Kinsley Anna. She has brought me infectious joy and never fails to put a smile on my face. Her laughter is contagious and her creativity is limitless. Kinsley, I pray you keep your curious spirit and kind heart. I admire the way that you love others, but mostly, how you love the Lord. Never stop chasing your dreams – you can do anything and be anything you want to be. If you want to be a lawyer one day, you'll need to be able to "speak up for those who cannot speak for themselves" just as it says in Proverbs 31:8. All you have to do is dream big and pray bigger.

John Edward. Words fail to express how truly blessed I am to have you as my partner, walking side by side with me during this season of my life. During times of exhaustion and stress, you were always there with patience, love, and FaceTimes to cheer me up from 782 miles away. You are my cheerleader. You are my champion. You are my person. You challenge me to be the best version of myself - I would not be the woman that I am today without you.

Dedications

I dedicate this final project and all the time, effort, and commitment graduate school required of me to my mom and dad. I am indebted to my parents for all the support they have given me throughout my life.

To my mom. Her advice, her patience, her faith. She is someone who understands every part of me. I have to take time to thank her for being my personal editor for the past 15+ years. Before every deadline, she has dropped everything and taken the time to edit every single paper that I have written, starting in middle school and going all the way through graduate school. Though she stopped editing the content years ago, I can always count on her for checking my grammar. Mom, thank you for teaching me that it is okay to laugh at myself and to never apologize for who I am. My confidence comes straight from you, for better or worse. Thank you for being my partner in crime, my ride or die, my best friend. 143.

To my dad. In the song *Cowboy Take Me Away*, one line says, “fly this girl as high as you can into the wild blue” and he did just that. He encouraged me to not only follow my dreams, but also make sure I do everything I can to make them a reality – persistence is omnipotent. However, he was always there to catch me if (when) I fall. Ahem, is it still too soon to mention New York? Dad, I am thankful for your wisdom, support, and loyalty – you have always been there for me. I am forever thankful that God handpicked you for our family. Thank you for trusting His plan to make you a dad – my dad. I love you big like the whole world.

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Chapter 1: Introduction

From the effects of climate change to threats of terrorist attacks, the range of wicked problems that communities face has become a global focus. The term “wicked problems” came into the vernacular in the mid-70s as a way to better understand societal issues (Rittel & Webber, 1973). Wicked problems are complex, interconnected problems that demand complex and interconnected leader participation to achieve solutions. They include problems such as poverty, inequality, political instability, death, disease, or famine. Every wicked problem is complex and unique, yet interconnected with other problems (Rittel & Webber, 1973). They can't be solved by one specific organizational group, such as the government, communities, corporations, nonprofits, or private citizens, and require a significant increase in the level of connectedness among a diverse group of people and places (Heath & Isbell, 2017).

With the escalating complexity and interdependence of these wicked problems, scholars (e.g., Hopkins, 2017) believe that collaboration is the key to solving such problems. Collaboration allows for “efficiency of processes and expands the network of perspectives to increase the potential for creative solutions” (Heath & Isbell, 2017, p. 6). Other scholars (e.g., Luthar & Cicchetti, 2000) discuss resilience as a solution to dealing with a state of continuous, long term, and unexpected stress. Resilience is defined as the “dynamic process wherein individuals display positive adaptation despite significant adversity or trauma” (Luthar & Cicchetti, 2000, p. 863). The construct of resilience has become an increasingly attractive focus of research (Koliou, Van de Lindt, McAllister, Ellingwood, Dillard, & Cutler, 2017). If collaboration and resilience seem to be the solutions, how can we better help foster them within communities?

One recent community-focused effort to foster such conditions is called the 100 Resilient Cities (100RC) project. 100RC was created by the Rockefeller Foundation in 2013 to increase resilience within cities. When a city becomes a member of 100RC it becomes part of a global network of member cities that can learn from and assist each other. Since cities regularly seek

to solve problems that already have been addressed by other cities (Wiig, 2016) working collaboratively 100RC cities can modify previously identified solutions and lessons, tailoring them to be more cost-efficient and effective specific to an individual city's needs (100 Resilient Cities, n.d.).

Consistent with the community resilience research (e.g., Houston, Spialek, Cox, Greenwood, & First, 2015; Norris, Watson, Hamblen, & Pfefferbaum, 2007), 100RC cities value the importance of community relationships and leadership in building resilience (100 Resilient Cities, n.d.). The 100RC organization specifically recommends creating a key leadership position, a Chief Resilience Officer (CRO), as part of a city's resilience strategy. The CRO position is specifically designed to "break down existing barriers at the local level, account for pre-existing resilience plans, and create partnerships, alliances, and financing mechanisms that will address the resilience vulnerabilities of all city residents, with a particular focus on low-income and vulnerable populations" (The City of Miami, 2016, para. 5). This study focuses specifically on the functions of interorganizational collaboration (IOC) of the CROs in 5 cities across the United States. IOCs are commonplace across the boundaries of organizations, departments, and economic sectors (Connaughton & Shuffler, 2007).

CROs are key to creating interorganizational relationships both between and within cities. Research discusses the importance of "strategic alliances, joint working arrangements, networks, partnerships and many other forms of collaboration" (Williams, 2002) at the institutional and organizational levels. A CRO's collaboration with his or her counterparts in other cities, as well as with community leaders and city personnel, is crucial in aiding cities to face the challenges of complexity and scalability associated with addressing wicked problems. The CRO can act as a key network collaborator or boundary spanner, managing relationships, communication and strategic responses within and across organizations. A boundary spanner is defined as an individual who enacts extensive communication through his or her individual ties to external organizational members (Adams, 1976).

In Chapter 2 literature related to basic assumptions of interorganizational collaboration, relevant aspects of leadership communication, and the role of a boundary spanner is reviewed. This study builds upon previous research about the IOC and leadership functions of boundary spanners, specifically CROs operating in the social network of 100RC cities to better understand their boundary spanner role. This study aims to describe the role of a CRO as part of the social construction of an IOC focused on increasing community resilience. Chapter 3 describes this study's three data collection methods (i.e. Identification of Alters Exercise, interviews, resilience strategy case studies). The study investigates six research questions using qualitative and quantitative methodologies. Two of the research questions (RQ3 and RQ4) are addressed using survey data gathered through the identification of alters exercise. Four of the research questions (RQ1, RQ2, RQ5, and RQ6) are addressed using interview data. Chapter 4 presents case study materials associated (e.g. resilience strategies) with each city, gathered from existing documents that presented each city's resilience strategies, and then the results related to the six RQs. Chapter 5 discusses the findings, addresses study limitations, suggests future research, and details the implications of these findings for both theory and practice.

Here are the research questions investigated in this study:

RQ1: How do CROs describe how they create and maintain IOCs?

RQ2: How do CROs characterize their role functions?

RQ3: What does the composite IOC network of a CRO look like in terms of the other organizations?

RQ4: What does the nature of their communication (frequency, mode, content) look like in a composite IOC network?

RQ5: How do CROs describe their leadership role?

RQ6: How do CROs describe their boundary spanning role as reticulist, entrepreneur and innovator, and leader?

Chapter 2: Review of Literature

The following review of literature initially details the 100 Resilient Cities program with a description of the CRO role. Next, I explain the basic assumptions of resilience. Then I detail the literature discussing interorganizational collaboration. Finally, I address the roles and profiles of leader and boundary spanner to situate my argument.

100 Resilient Cities: I've Got 99 Problems but Resilience Ain't One

To better understand the 100 Resilient Cities (100RC) program, I provide a brief history of the organization. Then, I explain their resilience resource roadmap and its four main pathways. Finally, I discuss two problems cities continually face and how 100RC seeks to address these problems with their program.

100RC was created by the Rockefeller Foundation on their centennial celebration in 2013 to increase resilience within cities. By observing the macro-trends of globalization, urbanization, and climate change, the foundation began their initiative to help cities around the world become more resilient to the physical, social, and economic challenges that are a growing part of the 21st century (100 Resilient Cities, n.d.). The Rockefeller Foundations acknowledges that global problems are becoming increasingly interconnected and an assembly of skills to organize and communicate across organizations is becoming a necessity. Presently, there are 107 cities (see Appendix A) working side-by-side with the foundation to build city resiliency, and in the process, a more resilient world for all.

Cities that are members of the 100RC network are provided with resources to become more resilient. 100RC developed a *Resource Roadmap to Resilience* for cities to navigate their way to becoming more resilient. The four main pathways to resilience are described as follows:

1. Financial and logistical guidance for establishing an innovative new position in city government, a Chief Resilience Officer (CRO), who will lead the city's resilience efforts
2. Expert support for development of a robust Resilience Strategy

3. Access to solutions, service providers, and partners from the private, public, and non-governmental organization sectors who can help them develop and implement their Resilience Strategy
4. Membership in a global network of member cities who can learn from and help one another

The developers of 100RC believe that through these four main pathways, individual cities will become more resilient. Given that 100RC has provided this idea of a roadmap, I expand on this metaphor by using transportation related terms and concepts throughout my literature review.

In creating this resource roadmap, 100RC found that there are two major problems that cities continually find themselves facing: multiple actors and the need for expandable knowledge. First, cities are complex systems with multiple chauffeurs, if you will, like government agencies, local businesses, nonprofits and offices of international organizations. These chauffeurs often “don’t communicate or interact with one another as much as they should” (100 Resilient Cities, n.d.). Heath and Isbell (2017) discuss how the nature of large-scale problems requires a significant increase in connectedness among a diverse group of people and places. 100RC capitalized on this concept to create a benefit for becoming one of the Resilient Cities -- gaining membership in a global network of member cities that can learn from and assist each other.

Second, city solutions are typically not treated as expandable knowledge. Cities regularly solve problems that already have been addressed by other cities (Wiig, 2016). However, rather than exhausting their resources to generate solutions, they could be working collaboratively to modify solutions and lessons, tailoring them to be more cost-efficient and effective specific to a city’s needs (100 Resilient Cities, n.d.). “Strategic alliances, joint working arrangements, networks, partnerships and many other forms of collaboration” (Williams, 2002, p. 103) typically are generated at an institutional and organizational level. However, considering that networks are an optimal structure to organize, the challenge is that there is very little

attention given to the crucial role of individuals in the boundary management of inter-organizational relationships. Given concerns related to multiple actors and expandable solutions, the Resilience Cities' program recommends the creation of the Chief Resilience Officer (CRO) role.

In congruence with community resilience research (e.g., Houston et al., 2015; Norris et al., 2007), the 100 Resilient Cities project values the importance of leadership in building community resilience. Part of this leadership emerges from community relationships, "connection, association, or involvement between citizens" (Houston et al., 2015, p. 275). In order to help bridge the gap between the community and the city's chauffeurs, 100RC created the CRO role. This position ideally "reports directly to the city's chief executive, and acts as the city's point person for resilience building, helping to coordinate all of the city's resilience efforts" (100 Resilient Cities, n.d.). The CRO role is instrumental in facilitating collaboration among the community and city delegates so as to aid cities so they can better address the challenges of complexity and scalability. The CRO is the centerpiece of the 100RC's vision for helping cities deal with challenges, while empowering them to develop improved resilience (100 Resilient Cities, n.d.). The CRO position is a key network collaborator, managing within and across organizations -- similarly referenced as a "boundary spanner" (Williams, 2002) within the context of management and leadership research.

Resilience: What Doesn't Kill You Makes You Stronger

In order to dive into resilience, first it is important to introduce the definition of resilience that I will use throughout this study. Additionally, I provide a brief background on the relevant research on resilience. Then, I discuss two main areas of study within resilience communication: organizational resilience and community resilience. This study utilizes new normalcy and alternative logics in order to contextualize organizational resilience. Additionally, this section culminates in a discussion of adaptive capacities and the *Communication Model of Community Resilience*.

Mankind has endured trial after trial including natural disasters, poverty, disease, hunger, mental illness, and more. Each trial that we face results in unpredictability that affects how we live. Luther and Cicchetti (2000) describe resilience as the dynamic process wherein individuals display positive adaptation despite significant adversity or trauma. In this individual-level context, adversity refers to any negative life circumstance that typically results in maladjustment. Examples of maladjustment may include circumstances such as the following: depression, poverty, divorce, and violence. Positive adaptation refers to one's capability to cope effectively with the challenges of an outside environment. One achieves social competence and developmental success despite the adverse circumstances.

Early research of individual resilience was studied within the context of child development (Masten, Best, & Garmezy, 1990) in terms of the characteristics of children that are associated with positive outcomes in the face of adversity (e.g., Rutter, 1985; Werner, 1984). Luthar, Cicchetti, and Becker (2000) expanded this research to include external factors that might promote resilience, such as relationships with supportive adults. Since then, resilience has been applied to a variety of other human systems (e.g., communities, families, adults). Presently, theories of resilience (Haddadi & Besharat, 2010) view an individual's resilience as a multidimensional construct that includes constitutional variables like temperament and personality, in addition to specific skills that aid in coping with traumatic life events.

Recently, resilience has been discussed at levels ranging from the individual to the nation state. The editor of the *Journal of Applied Communication Research* invited five contributors to join a forum to discuss resilience in terms of individual/relational resilience (i.e., Afifi, 2018), family resilience (i.e., Theiss, 2018), organizational resilience (i.e., Buzzanell, 2018), community resilience (i.e., Houston, 2018), and national resilience (i.e., Bean, 2018). Each author explored how resilience is constituted and cultivated within their specific area of expertise. While all these areas are vital to the full comprehension of communication resilience

research, this study will focus on the research of Buzzanell (2018) and Houston (2018) to explain resilience within the context of organizational and community resilience. Their research displays how resilience is “developed, shaped or framed, sustained, and grown over the lifespans of individuals, relationships, organizations, communities, and nations” (Buzzanell & Houston, 2018, p. 2). The following sections examine the communicative processes discussed by Buzzanell and Houston (2018) to help gain a holistic understanding of organizational and community resilience as it pertains to this study.

Organizational Resilience. Using Richardson’s (2002) definition of resilience as “the process of reintegrating from disruptions in life” (p. 309), Buzzanell (2010) begins her explanation of communication processes of resilience. While “disruptions” often prompt resilience strategies, the word indicates that there was a trigger event, or turning point, that set someone into motion. The emphasis on communication as an emergent process allows us to see resilience as dynamic, conforming, changing over time and through events, changing into patterns, and reliant on uncertainty (Poole, 2008).

In organizational communication, resilience encompasses the processes where individuals and organizations reintegrate and foster productive change during and after obstacles (Buzzanell, 2010). Organizational communication scholars research micro (individual), meso (team, organizational, and community), and macro (interorganizational, national, global organizing networks, multinational corporations, and non-governmental organizations) levels. It is important to note that these levels intersect “as people engage in sensemaking, adaptation to, and transformation of their realities” (Buzzanell, 2018, p.120). Buzzanell (2010) situates her research at the organizational communication level, but develops processes and interventions from various communication contexts “to center on office workplaces through interorganizational networks and internet-enabled mediated connections” (Buzzanell & Houston, 2018, p.3).

Buzzanell (2010) theorizes resilience as adaptive-transformative processes triggered by loss or disruption that involves five key sub processes: crafting a new normalcy; affirming or anchoring important identities during difficult times; using and/or maintaining salient communication networks; looking beyond conventional ways of thinking about and doing life by putting alternative logics to work; and foregrounding productive action while backgrounding unproductive behaviors or negative feelings. The two key subprocesses most pertinent to this study are crafting a new normalcy; and looking beyond conventional ways of thinking about and doing life by putting alternative logics to work, both of which will be discussed next. The importance of crafting a new normalcy through the CRO position was illustrated by Michael Berkowitz, president of the Rockefeller Foundation, when he said the office of CRO and the concept is becoming the norm. He made the remark that "you wouldn't run a city without a CRO any more than you would a chief of police" (Clancy, 2017, p.1). Second, the crucial aspect of looking beyond conventional ways of thinking about and doing life by putting alternative logics to work was vocalized in an interview with Piero Pelizzaro, Milan, Italy's new CRO. He stated that he wanted to make resilience understandable and possible for everyone but that resilience "calls for a different approach to business and policy-making" (Szewcow, 2018, p. 1).

New Normalcy. When disaster strikes, people say and do things in order to gain control back in their life so as to re-achieve normalcy. Media reports often include lines such as "things are getting back to normal," or saying that communities look forward to when things will get back to normal. In these cases, "normal" is both an ongoing process and a perceived desirable outcome (Buzzanell, 2010). Buzzanell (2010) uses an example from a study she conducted with a colleague (i.e., Buzzanell & Turner, 2003) to explain this phenomenon of new normalcy. The researchers interviewed families about job loss and uncovered recurrent phrases and patterned talk both within and across each of their interviews that supported the theme of "the construction of normalcy". These families described how they produced a system of meaning that enabled them to maintain the regularities in life. New normalcies were crafted through talk and the

maintenance of family routines. Buzzanell and Turner (2003) concluded that while an outsider might say that nothing was normal in these families lives, from a social constructionist lens, participants did, in fact, achieve normalcy. Buzzanell (2010) notes that this concept can be translated from micro levels to global levels. In this study I focus on how the CRO role can help cities prepare to meet disruptions occurring at both the local and global levels.

In the 100RC, the CRO's role is designed to be someone who helps create meaning before, during, and after disruptions faced by the city of which they are a part. In reference to creating meaning and building a framework to understand resilience, Christine Morris, CRO of Norfolk, VA, stated that "when the conversation [of resiliency] starts, and the framework gets put into place, it's a very powerful opportunity" (100 Resilient Cities, n.d.). As a first - perhaps primary - communicative process, we see that people, organizations, and nations bring a new normalcy to life - one generated by talk-in-interaction and embedded in material realities. This perception of a new normalcy is imperative in the ultimate resilience of the community. In each city, the CROs craft narratives that encourage individuals to be ready to help create a new normalcy when disruptions occur, that challenge standard ways of doing things, in hopes the community can become more resilient.

Putting Alternative Logics to Work. Whether at the individual or organizational levels, resilient systems incorporate contradictory ways of doing work through alternative logics or reframing the situation entirely (Buzzanell, 2010). For alternative logics or reframing to work, alternative sensemaking is created with and by others. Buzzanell (2010) uses Remke's (2006) research on a human services agency working to assist people living in rural poverty in the United States in order to link this concept of putting alternative logics to work to resilience. Remke found that agency members "organized in ironic, contradictory, paradoxical, and even nonsensical ways" (Buzzanell, 2010, p. 6). While the rules and procedures of the agency were designed to ensure equal treatment and opportunity, some procedures seemed to exclude the families and children that needed assistance the most. Through participant-observations and in-

depth interviews with these agency members, Remke (2006) found that teachers manipulated systems and work practices in order to adapt to the nonsensical situations. The teachers created highly nuanced and complex sets of rules to get by everyday - alternative logics that could coexist with official agency logics. Resilience became the communicative construction where the teachers collectively created their own logic that allowed them to bounce back and reintegrate during and after especially “crazy” and potentially detrimental workplace experiences (Buzzanell, 2010).

Communication theories of resilience highlight how sensemaking is created through five different ways: storytelling, routine, rituals, slogans, and social media (and other new technologies) (e.g., Chewning, Lai, & Doerfel, 2012). Sensemaking offers a communication approach that focuses us on how people use communication to make sense of unexpected events around them. Scholars have investigated sensemaking from multi-methodological, issue-centered, and multi-theoretical perspectives (Buzzanell, 2018). Organizational resilience can be achieved as sensemaking occurs within and across micro-meso-macro levels in order to gain an adaptive-transformative design and implementation (Buzzanell, 2018). The CRO role encourages this same concept of putting alternative logics to work by ensuring an inclusive strategy development process. Each city has a core team working closely with the CRO to support them in the development, design and implementation of a Resilience Strategy (Szewcow, 2018, p. 1) for its various communities.

Community Resilience. Communities are the social and institutional components of a city (Godschalk, 2003). They include everything from formal school associations, to informal social book clubs. Using the transportation metaphor offered earlier, think of the community as the terminal of a city - guiding its activities, answering its needs, and learning from past experiences. Similarly, the community is a place in which resilience can be formed. 100RC’s founders believe that resilience should be rooted in the community. Kevin Bush, CRO of Washington, D.C., created his mandate to create initiatives “through partnerships involving the

city, businesses and communities - that strengthen and improve the city's infrastructure, making it resilient" (Chason, 2017, p. 1).

Communication scholars have applied the term of resilience to understand whether a community is able to bounce forward after a negative event (e.g., Manyena, O'Brien, O'Keefe, & Rose, 2011). According to Norris and colleagues (2007), the conceptual definition of resilience is a process that links a set(s) of adaptive capacities to shift to a positive trajectory of functioning and adaptation after a disturbance (stressors or shocks). These adaptive capacities have been applied to describe the resilience of human communities (e.g., Brown & Kulig 1996/97; Sonn & Fisher 1998). Ganor and Ben-Lavy (2003) define community resilience in three sections: the ability of individuals and communities to deal with a state of continuous, long term stress; the ability of individuals and communities to find unknown inner strengths and resources in order to cope effectively; and the measure of adaptation and flexibility of individuals within communities. In order to build collective resilience, communities must aim for the following: reducing risk and resource inequities, engaging local people in how to alleviate the severity, seriousness, or painfulness of the stressors or shocks, creating organizational linkages, boosting and protecting social support, and planning for not having a plan (Norris et al., 2007). All of these require flexibility, decision-making skills, and trusted sources of information that function in the face of unknowns (Norris et al., 2007). Tying this to the city profiles, this literature echoes the same attributes listed as goals in the resilience strategies as key research in this section.

When discussing community resilience, scholars often note that the whole is more than the sum of its parts, meaning that a handful of resilient individuals does not promise a resilient community (e.g., Pfefferbaum et al. 2005; Rose 2004). Community resilience emerges from collective activity where individuals participate in collaboration to foster response and recovery for the whole (Pfefferbaum & Klomp, 2013). Longstaff and colleagues (2010) note that the communities must have both "the resources available and the ability to apply or reorganize them in such a way as to ensure essential functionality" (p. 5) before, during, or after a crisis.

Ultimately, a community's resilience is shown through by a community's ability to adapt following anything that mimics a stresser or shock, in this case a disaster or crisis (Houston et al., 2015).

Adaptive Capacities. In congruence with their definition of resilience, Norris and associates (2007) define community resilience as “a process linking a set of networked adaptive capacities to a positive trajectory of functioning and adaptation in constituent populations after a disturbance” (p. 131). These adaptive capacities are utilized to store and remember experiences. Then, they are used to tap into that memory to experience, learn, and innovate to adapt to changing environmental demands. Additionally, they are used to connect with others in the community to share those experiences (Longstaff et al., 2010). Thus, Longstaff and colleagues (2010) found institutional memory, innovative learning, and connectedness to be the three foundational components of adaptive capacity at the community level. Specifically, the innovative learning and connectedness components will be important for this study.

It is crucial to understand that resilience within the larger IOC emerges from a set of adaptive capacities but community resilience also emerges from a set of *networked* adaptive capacities. This idea that community resilience comes from networked adaptive capacities is important because “resilience rests on both the resources themselves and the dynamic attributes of those resources (robustness, redundancy, rapidity)” (Norris et al., 2007, p. 142). Hence, the term ‘adaptive capacities’ is used to fully encompass the concepts. Similar to the resilience roadmap provided by the 100 Resilient Cities to each member city, Norris and colleagues (2007) use adaptive capacities as a roadmap for enhancing community resilience to facing disasters but adds “this is perhaps more like a rotary than a highway, as one can enter and exit anywhere” (p. 145). We are left to answer the question, what is the vehicle ensuring that communities are staying on the ‘highway’ of this resilience roadmap? Some scholars (i.e., Houston et al., 2015) believe that communication would be the cities’ primary mode of

transportation, in this metaphor, steering them in one direction or another. To that end, Houston et al. (2015) developed a communication model of community resilience.

Communication Model of Community Resilience. Houston and colleagues' (2015) communication model of community resilience provides a key theoretical foundation for this study. They approached community resilience from three communication perspectives: communication ecology, public relations, and strategic communication. Using this communication ecology lens allows individuals to “construct knowledge and to achieve goals” (Broad et al., 2013, p. 327) based on the mediated, organizational, and interpersonal communication sources; a public relations perspective provides attention to cultivating relationships and community (e.g., Hutton, 1999; Ledingham, 2001); and the field of strategic communication adds a reflection on intentional communication (e.g., Hallahan, Holtzhausen, Van Ruler, Vercic, & Sriramesh, 2007). Using these three perspectives, Houston et al. (2015) expanded and refined the previous community resilience models to develop their own model. Their model includes four components: communication systems and resources, community relationships, strategic communication processes, and community attributes. This model allows the researcher to separate elements of community resilience while still being able to comprehend and consider other elements of community resilience. Proving important to this study because the researcher recognizes that resilience is not from one singular source, rather it is dynamic from internal and external collaborative partnerships (Houston et al., 2015). The use of this specific community resilience model provides an opening to explore the importance of communication to community resilience.

Communication proves to be an essential component to community resilience models because resilience is aligned with good communication (Nicholls, 2012). To that same note, Norris et al.'s (2008) community resilience model includes communication and information as one of the four core adaptive capacities that constitute community resilience. This adaptive capacity includes the attributes of narratives, responsible media, skills and infrastructure, and

trusted sources of information (Houston et al., 2015). This study focuses on the two attributes of narratives and skills, and infrastructure to bring needed “clarity and organization to current notions of community resilience, thus advancing our understanding in this area” (Houston et al., 2015, p. 272).

Challenges and adversities affect entire communities. One of the reasons why 100RC focuses on resilience at the community level is because challenges and adversities affect every individual differently, but all community members together. Each community has their own needs, wants, desires, resources, and ideas. So, if resilience is the end goal, what is the plan to get there? 100RC gives cities the resource roadmap for resilience so that communities can have a plan. Although having a plan may seem counterintuitive, communities must also plan to *not* have a plan. This requires communities to strive to appreciate flexibility, cultivate trusted sources of information, and develop decision making skills (Longstaff, 2005). CRO of San Francisco, Patrick Otellini, echoes the importance of adaptability by noting that “resiliency is changing all the time, it’s not fixed” (100RC, n.d., p. 1). In addition to adaptability, there are three key elements that enhance resilience: connectedness, commitment, and shared values (Gurwitsch et al., 2007). An increased trust in community leaders is valued high in relation to a sense of connectedness. All of these elements show the importance of a leader in a resilient community. Various researchers (e.g., Alvesson & Sveningsson, 2003; Barker, 1997) have claimed that despite the fact that leadership is one of the more developed phenomena, we know very little about it in terms of resilience. Hence, the reason for developing this study. With limited literature leadership in the context of resilience, this study seeks to further the academic conversation on these topics.

The next section shifts focus to the network of organizational entities which are necessary to build resilient communities. Leaders work within these networks to create strong and flexible interorganizational collaborations. Therefore, CROs must be exceptional interorganizational collaborators. Heath and Isbell (2017) note that this is because “the skills to

organize and communicate in bureaucratic organizations are not the same skills required to facilitate working across organizational sectors” (p. 1). This study focuses on the communication role of the CRO, designed to facilitate collaboration between key actors both within and external to the city government.

Harder, Better, Faster, Stronger: Interorganizational Collaboration

To understand the importance and relevance of interorganizational collaboration (IOC) to this study, this section begins with a brief historical overview of IOC and shifts to discuss a fallacy in the traditional view of hierarchical organizing. Then, it highlights three phenomena that challenge these orthodox concepts to showcase why more effective collaboration is needed. From there, the paper identifies the three most important aspects of IOC, beginning with the structure of IOC and describing the five antecedents that are categorized under it to represent ideal collaboration. Moving on, creating and maintaining IOC shows how sensemaking is important for creating a meaningful environment. The final aspect of IOC is simply the ability to identify IOCs. This section provides descriptions that detail specific defining characteristics, actions, or qualities that contribute to understanding the context of IOC.

IOC is a phenomenon that gained traction with scholars due to the work of Barbara Gray (1989) and her colleagues. Gray (1989) defined collaboration as “a process through which parties can constructively explore their differences and search for solutions that go beyond their own limited vision of what is possible” (p. 5). The purpose of collaboration is to “capitalize on stakeholder differences [and] to come up with creative and innovative ideas and solutions” (Heath & Isbell, 2017, p. 20). Collaborating organizations experience shifting boundaries that are fluid, mobile, and permeable (Goethals et al., 2004). Such organizations require increasingly complex and strategic plans to manage their boundaries.

Cities face local and global problems that are becoming increasingly interconnected making an accessory of skills related to organizing and communicating across organizations necessary (Heath & Isbell, 2017). The jurisdiction of solving what are described as “wicked

problems” does not fall to one specific organizational type, such as the government, communities, corporations, nonprofits, or private citizens. They require that organizational leaders and members from all backgrounds and role types to learn to work outside of their traditional boundaries, customs and expectations.

IOC influences the order of organizational networks (Heath & Isbell, 2017). The order, or hierarchical structure, of networks can be very effective during normal operations (Kapucu, 2005). However, they perform very poorly in emergencies because if any of the components of the hierarchy fail, large networks can be isolated from one another. To minimize the possibility of failure, “flexible and redundant modes of connectivity can distribute the information congestion associated with problem solving across the system” (Kapucu, 2005, p. 208). The CRO role was designed to help facilitate flexible communication structures when they are needed. San Francisco’s CRO said that the role “relies heavily on coordination and collaboration” (Clancy, 2017, p.1), furthering the emphasis of the need for IOC.

According to systems theory “communication is the observable phenomenon binding together constituent components of systemic entities...Thus, group members (or sets of groups) are joined together as a social system through their communication” (Mabry, 1999, p. 72). Within the past decade, there has been interest in the communication functions of IOC (e.g., Atouba & Shumate, 2010; Keyton, Ford, & Smith, 2008). When groups work from a shared framework of collaboration, they begin to share a common vocabulary with others and have the opportunity to identify their unique strengths and weaknesses in the collaborative process (Heath & Isbell, 2017).

Effective collaboration requires organizational boundary spanners to understand the social constructions of other actors. More information on the boundary spanning role is provided in a later section of this thesis, however an initial discussion of the concept is provided here. Boundary spanning involves people and organizations collaborating to “manage and reduce common issues, to promote better co-ordination...to reduce duplication...and to satisfy unmet

needs” (Williams, 2011, p. 27). The types of issues that boundary spanners combat are highly complex and typically move across boundaries - “boundaries of organization, profession, sector, governance level, geographical area, time, and policy” (Williams, 2011, p. 27). Boundary spanners must “define the issue in relation to their own values and interests, know what ‘outcomes’ and processes each would value, know who needs to be involved, know who could mobilize influences and so on” (Hosking & Morley, 1991, p. 228).

While collaboration requires cooperation and coordination, those behaviors on their own do not signify IOC. Identified below are the three key aspects in understanding IOC as it pertains to this study: how to create and maintain IOCs, identifying IOCs, and IOCs as a type of structure. First, collaboration will be viewed as a system to understand how IOCs are created and maintained.

Creating and Maintaining IOC. Heath and Isbell (2017) identify creating and maintaining IOC as the first key aspect to successful collaboration. Communication is key to the creation and maintenance of the IOC and influences how organizational actors make sense of the collaborative environment. Weick (1979, 1995), proposes that ‘sense-making’ creates meaningful environments. Sensemaking involves turning circumstances into a situation that allows for action (Weick, Sutcliffe, & Obstfeld, 2005). This is where meaning materializes and situations, organizations, and environments are talked into existence. Kaats and Opheij (2014) see a direct relationship between the concept of ‘sense-making’ and the concept of ‘enactment’, being that CROs are in a position that lends them to be able to see a potential problem, assess it, and then [attempt to] pass related legislature. Sense-making is not only about the maintenance of the existing environment, but also about the creation of a meaningful environment.

Collaborative partnerships are the product of sense-making when a problem requires interdependent groups to act together. Ultimately, these partnerships combine a selection of diverse viewpoints. At the same time, a collaborative partnership also requires an organizational

model based on standard management principles; in other words, the operationalization of strategy, structure, systems, management style, personnel and culture. 100RC stresses the importance of creating and maintaining IOC in that “it’s not about what we are trying to accomplish, it’s about how we do it from the bottom up” (100RC, n.d., p. 1).

Identifying IOC. The interdependent groups’ ability to identify collaboration is the second key aspect to successful collaboration. Heath and Isbell (2017) state that three ways to identify collaboration are as: a type of structure, composed of types of processes, and the idealized principles and outcomes associated with structures and/or processes. This study focuses on identifying collaboration by its structure and collaboration as a process.

The first way to identify collaboration is by its structure; not to be confused with the structure of the IOC discussed later. This section focuses on the underlying motives in the creation of the structures. Understanding the interdependent motives that bring stakeholders together and the relationships between them is key for identifying an IOC. In IOC, “power is shared; partners do not work for each other; and they likely have collateral positions and responsibilities in other organizations and teams” (Heath & Isbell, 2017, p. 5). Related issues involve temporality, whether or not they are long-term or temporary, and whether the IOC partnership is voluntary or mandated. This study focuses on whether the relationship is voluntary or involuntary. Lastly, it is important to take a systems perspective to identify which organizations are participating within the communities where collaboration is happening. It is for this reason that the researcher creates a composite of all the IOC for the CROs.

The second way to identify collaboration is through the process. Collaboration is defined by its processes and the procedures through how it is attained (Heath & Isbell, 2017). Gray (1989) describes collaboration as a process in which “joint ownership of decisions is involved; stakeholders assume collective responsibility for the future direction of the domain, and collaboration is an emergent process” (p. 11). Communication scholars have studied how these processes occur. Stallworth (1998) claimed that four elements are key to the collaboration

process: a shared goal, interdependence, equal input of participants, and shared decision making. Two of the elements listed, equal input and decision making, are process-oriented and communicative in nature. The two ways to identify collaboration, as a structure and process, are contingent -- allowing people to come together and take ownership of the collaboration through a shared goal.

Structure of IOC. Finally, one of the more complex aspects that contributes to the success of an IOC involves its structure. Heath and Frey (2004) identified four structural levels when seeking to understand collaboration: the individual person who collaborates, the stakeholder organization they represent, the group of stakeholders who collaborate, and the community in which the collaboration takes place. This research focuses on the fourth structural level, the community in which collaboration takes place -- giving a more holistic view on the structure of the IOC important to the CRO role.

Heath and Frey (2004) identify five antecedents that represent the structural context of ideal collaboration in the collaborating community: embracing nontraditional public policy; neutralizing a legitimization entity for collaboration; transcending the stakeholders' needs and being rooted in the larger community need; providing boundary spanners, leaders, and conveners; and communicative groundwork by those boundary spanners, leaders, and conveners. The first antecedent involves embracing nontraditional public policy. Heath and Isbell (2017) echo this antecedent when stating, "previously learned communication skills, such as persuasion and debate, are grounded in different values and assumptions. They are not sufficient for solving the contemporary problems posed by our diverse yet interconnected society" (p. 5). Second, a community provides a neutral legitimizing entity for the collaboration. In other words, no one person has all the expertise, insight, information, influence, or resources to build community resilience. Mitch Landrieu, the mayor of New Orleans, Louisiana, captures the idea that the community gives a legitimization to collaboration when he said, "The most innovative thing, quite frankly, is the simplest. Everything is individual, and everything needs to

be tied together and you can't live in isolation" (100RC, n.d.). Third, interdependent needs transcend stakeholders' needs and are rooted in the larger community need. Fourth, the structural context of ideal collaboration in the collaborating community is that it provides boundary spanners, leaders, and conveners. 100RC intentionally designed the CRO role to be a leadership position that is a convener and a boundary spanner to be used as a resource for the city they represent. In the roadmap that the 100RC provides to the city, it suggests that the cities hire a CRO position to work across government departments and with external stakeholders to create collaborations, to build resilience (100RC, n.d.). The fifth antecedent is that boundary spanners, leaders, and conveners initiate the communicative groundwork for collaboration. The 100RC organization puts this into motion by stating, "by facilitating communication that reaches across sometimes - significant internal divisions, the CRO promotes new collaboration" (100RC, n.d.). 100RC addresses these five structural antecedents of ideal collaboration in the resource roadmap they give to member cities.

In recognizing the growing number of wicked problems faced, collaborative efforts have grown. Allen (2016) states that "the most powerful tool we have is the ability to collaborate as we attempt to problem solve, plan, implement, assess, and redesign in an ongoing process" (p. 242). Leaders stress the importance of interorganizational collaboration efforts and "seek to build on the strengths of various stakeholders working together (i.e., businesses, governments, NGOs, communities) to plan and implement interventions and responses" (Allen, 2016, p. 242). The hope is that interorganizational collaboration can be the tool to solve these problems as collaborators pool and leverage their financial and material resources, and increase innovation because of the available strength, knowledge, and skills brought forth by each collaborator (Allen, 2016).

Based on the literature reviewed here, we see that the CRO role involves collaboration and relies on sense-making, shared power, and joint decision making. This role embraces helping to develop non-traditional public policy, focuses on the community, and stems from

community-based leaders who initiate the collaborations. In order to better understand the communication aspects of the CRO role within IOCs, the researcher poses the following research questions:

RQ1: How do CROs describe how they create and maintain IOCs?

RQ2: How do CROs characterize their role IOC functions?

RQ3: What does the composite IOC network of a CRO look like in terms of the other organizations?

RQ4: What does the nature of their communication (frequency, mode, content) look like in a composite IOC network?

Collaboration is the key to a resilient city and with the CRO at the helm of 100RC's vision, the leader's communication relationships, structures, and channels are critical as they help cities combat challenges that arise. Additionally, this study examines the CRO's roles as a leader and boundary spanner within the context of IOCs. The following sections reveal the importance of understanding these aspects of the roles and the effect they have on the overall collaboration.

Leadership: Who Runs the World?

This section focuses us on leadership communication, taking a social constructivist lens and discussing collective meaning making. Sharing collective meaning creates an interpersonal responsibility through two themes in leadership: leadership as the co-management of meaning, and leadership as a site of power and influence. Through closely managing relationships, CROs are leaders who hold the powerful position of transformative agents in IOCs and often serve as boundary spanners. This section reviews literature profiling the CRO's boundary spanning roles as reticulist, entrepreneur and innovator and leader. Various communication skills, abilities, experiences, and personal characteristics influence the effective collaborative behavior and competence of a leader.

Although psychology traditionally dominated leadership research (Bass, 1981; House & Aditya, 1997), the emergence of social and cultural interactions in leadership roles forced

scholars to turn toward a more dialectical communicative view of leadership. Fairhurst and Connaughton (2014) describe how the focus on leadership communication evolved and identify key contemporary themes in the leadership communication research. They state that we need “to see [leadership] as an individually informed yet relational phenomenon between people and even objects” (p. 401). They emphasize that leadership is a medium by which people catalyze others to act but also as a highly desired (attributional) outcome of this occurrence. The authors conclude by saying that leadership is “definitionally unstable - across time, between people, and even among scholars - and yet oddly enduring” (Fairhurst & Connaughton, 2014, pg. 401).

Looking at the enactment of leadership differs depending on whether one is looking at a traditional hierarchical organization or an IOC attempting to manage complex problems. Leadership is defined as the ability to influence others (Goncalves, 2013). The process can be evident in “unstructured group situations where leadership emerges in a natural and spontaneous manner” (Smircich & Morgan, 1982, p. 164). Unlike tame problems which allow for “managerial solutions based on an established process,” wicked problems demand “collaborative leadership, because no one person has the answer” (Fairhurst & Connaughton, 2014, p. 411). In a review of articles and studies looking at the future of the workplace, Currier (2015) found that 84% of global business and human resource executives were struggling to develop leaders capable of addressing contemporary problems. As the number of IOCs increase to address contemporary problems, it is understandable that leadership needs are changing. Organizations need developed leaders who are proficient in building relationships with a wide range of people (Lowitt, 2013). Lowitt (2013) predicted that organizations will slowly begin to rely on the partnership of players in multiple organizational types, such as the government, communities, nonprofits, or private citizens. Organizations need leaders proficient in building relationships with a wide range of people (Lowitt, 2013).

Over time, leadership research has refocused to place the spotlight on leaders as well as all participating actors (formal and informal leaders, followers, or other stakeholders -

transformative agents). This is key to this investigation of the IOC's that emerge within 100RC's. In this study of the CRO's leadership role, the researcher takes a social constructivist view.

Social Constructivist View. The social constructionist view of leadership argues that communication is a central, defining, and constitutive of leadership. Leadership, like other social phenomena, is socially constructed through interaction (Berger & Luckmann, 1996), "emerging because of the constructions and actions of both leaders and led" (Smircich & Morgan, 1982, p. 258). Organizational communication management scholars who support social constructionism (Berger & Luckman, 1966) categorize leadership as a "co-constructed product of socio-historical and collective meaning making" (Fairhurst & Connaughton, 2014, p. 407). Three themes characterize this approach. First, Fairhurst and Connaughton (2014) emphasize a meaning-centered view of communication that accents the following: authorship, the formative influence of language, contested meaning, and the role of socio-historical systems of thought (ways of thinking and talking). Second, due to the emphasis on the centrality of communication to leadership, a key concern is acknowledging leadership in the constructionist process. Third, the treatment of power is encompassed (Fairhurst, 2007). These three themes generated a research agenda including the following: leadership as the co-management of meaning, leadership as influential acts of human and material organizing, leadership as a site of power and influence, and leadership as alive with the potential for moral accountability, reflexivity, and change. For the purpose of this study, the researcher focuses on two of the three themes, leadership as the co-management of meaning and leadership as a site of power and influence. These two areas are discussed next.

Leadership as management of meaning. A focus on how meaning is created, sustained, and changed provides an understanding for leadership as a process. This approach focuses on the leader's actions as being able to shape and interpret situations in order to guide followers to the same interpretation of reality (Smircich & Morgan, 1982). Followers and other leadership actors manage meaning in areas such as sensemaking, framing, identity work, and

leadership aesthetics (Fairhurst & Connaughton, 2014). Drazin, Glynn, and Kazanjian (1999) explain that “meaning - or sense - develops about the situation, which allows the individual to act in some rational fashion; thus meaning, or sensemaking, is a primary generator of individual action” (p. 293). When meaning is applied to a situation, it is referred to as frames (Goffman, 1974), enactments (Weick, 1979), schemas (Lord & Hall, 2003), or cognitive maps (Drazin et al., 1999). If a frame represents the meaning structure given to a situation, then the process of communicating those structures has been called framing (Fairhurst, 2011). One of the key challenges for a leader rests on his or her ability to frame the experience of others (Smircich & Morgan, 1982). Framing is a significant part of leadership research in that it captures how actors use language and actions to craft meaning and construct reality to encourage their followers to then respond (Fairhurst & Connaughton, 2014). In understanding actor’s sensemaking, identity work, framing strategies, and aesthetics with a meaning-centered view of communication, some scholars argue that your view is richer (e.g., Ashcraft, Kuhn, & Cooren, 2009). This study will look at various framing strategies and their importance for the CRO role because “leaders cannot control events, but they can control the context under which events are seen if they recognize a framing opportunity” (Fairhurst, 2011, p. 2). Specifically, the researcher will look at important concepts the CROs inform their team on and the ways in which they inform them to form this discussion.

Leadership as a site of power and influence. According to the social constructionist approach to leadership, leaders must not only persuade themselves, but also others of their leadership. This acknowledges potential instances of contestation and conflict among multiple actors (Fairhurst & Connaughton, 2014). This view of leaders recognizes that determining who can become a leader is less a function of hierarchy and more a function of who can recognize and manage the tensions, contradictions, and paradoxes of complex organizational life (Fairhurst & Connaughton, 2014). Grint (2000, 2005) discusses constructionist leadership as a

series of art forms and illuminates the role of persuading others to believe one's leadership performances.

Grint (2000, 2005) reminds us that leaders categorize situations in one of these two buckets (i.e., wicked vs. tame problems) in order to rationalize their decision-making style. Wicked problems demand "collaborative leadership, because no one person has the answer" (Fairhurst & Connaughton, 2014, pg. 411). Tame problems allow for "managerial solutions based on an established process; crises require commanders who do not waste time" (Fairhurst & Connaughton, 2014, pg. 411). This study focuses on leaders who use IOC as a way to create more resilient cities capable of weathering wicked problems.

Leadership in Interorganizational Collaboration. Researching leadership in the context of collaborative relationships is crucial to understanding organizational interconnectedness. Wise leaders in boundary management roles have an appreciation for the issues at hand and the context surrounding them. The pivotal question is not "Should there be leaders?" but rather "What kind of boundaries are needed?" and "How should they be managed?" In this study I explore leaders' ability to manage the tensions, contradictions, and paradoxes of complex organizational life as transformative agents within IOCs. The function of viewing CRO leaders as transformative agents was illustrated in an interview with Christine Morris when she states, "it's a disruptive position, being chief resilience officer...it's our job to disrupt the norm" (NorfolkTV, 2015, 21:19).

Transformative agents are "high-status, non-kin, agents who occupy relatively high positions in the multiple dimensional stratification system, and who are well positioned to provide key forms of social and institutional support" (Stanton-Salazar, 2010, p. 2). By definition, these agents hold powerful positions because they are strongly networked with access to multiple levels of institutional resources and support (Stanton-Salazar, 2010). The CRO role is a transformative agent role. CROs work "across a city's maze of agencies and stakeholders to shape policy and action — without necessarily having official authority" (Clancy, 2017, p. 1). To

succeed, the transformative actor must be closely involved in managing relationships with external partners (Zhang et al., 2015). There is a clear need for a specific type of individual to be successful in this arena. But who are these pivotal actors? Boundary spanners are in an ideal position to collaborate with like groups who may be separated by location, hierarchy, or function (Cross & Parker, 2004). Therefore, this study will investigate CROs leadership behaviors within IOCs to see if and how they enact the boundary spanning role.

Boundary Spanners: I Walk the Line

Collaborative networks by definition, seek to bring disparate groups together so that they can work effectively and synergistically together (Long, Cunningham, & Braithwaite, 2013) which require the spanning of organizational boundaries. Boundary spanners are defined as individuals who enact extensive communication through their individual ties to external organizational members (Adams, 1976). In the context of this study, external organizational members consist of individuals representing other departments inside city halls' walls or outside organizations.

Boundary spanners are the conduit between their organization and other groups in its environment (Leifer & Delbecq, 1978) and the linking pin between an organization and the community it serves (Organ, 1971). The boundary spanner role can include being a conflict manager, information gatherer, idea creator, and decision-making assister (Floyd & Wooldridge, 1997; Tushman & Scanlan, 1981a). Despite their importance, little is known about the role of boundary spanners in IOCs. Noble and Jones (2006) argue that the lack of investigation of boundary spanners in IOCs is due to literature being "dominated by institutional and organizational level discourses to the detriment of analyses of the dynamic role of individual actors in the management of [collaborative] forms of inter-organizational relationships" (p. 891).

Research on the boundary spanner role was more prominent in the 1970s during the emergence of the networks' perspective on organizing (Aldrich & Herker, 1977). Early literature on boundary spanners sought to identify specific characteristics that led to a more effective and

efficient organization (Organ, 1971; Tushman & Scanlan, 1981a). Organ (1971) wrote one of the earliest articles on boundary spanners and argued that people in this position needed certain abilities, traits, and values to be successful in interorganizational communication. Other researchers (e.g., Tushman & Scanlan, 1981a) found that boundary spanners needed confidence in an organizational setting as well as the ability to process an overwhelming amount of information and the ability to represent the information well (e.g., Aldrich & Herker, 1977). Still other scholars discussed boundary spanners' ability to mitigate conflict (e.g., Rugkasa, Shortt, & Boydell, 2007), predisposition toward collaboration (e.g., Foster & Meinhard, 2002), willingness and ability (e.g., Einbinder, Robertson, Garcia, Vuckovic, & Patti, 2000), and sharing, surfacing, and attending to unique information (e.g., Sutcliffe, 2001).

Since this study focuses on CROs within the 100RC context, it is important to identify research investigating the boundary spanning role within governmental organizations. Nicholson and Orr (2016) noted that civil servants need to become better at working across organizational boundaries and changing their mindsets from inherent competitiveness to partnership (City of Austin, 2001). The Chief Resilience Officer of Athens, Greece, Eleni Myrivili, agrees that rather than being competitive we need to be “continuously trying to co-create the framework and root resilience in the city’s long-term planning and vision” (100RC, n.d.). Another report states that in Britain’s local government “new skills and capacities are essential, particularly strategic capacities, and skills in listening, negotiation, leadership through influence, partnership working, performance management and evaluation” (Stewart, Goss, Gillanders, Clarke, Rowe, & Shaftoe, 1999, p. 7). From this list, this study focuses on organizational partnership working and skills in negotiation as key functions of a boundary spanner in the CRO role.

A small body of research was identified that looked specifically on the process of boundary spanner communication (e.g., Noble & Jones, 2006), rather than the outcomes of the communication process. Noble and Jones (2006) looked at boundary spanners' characteristics from a sensemaking perspective. They created a model of boundary spanning that explored the

communication of boundary spanners in numerous stages of collaboration. Lewis and Scott (2003) found a link between boundary spanners' attitudes about network collaboration and perceptions of the current quality of collaboration and identification of network providers. Tushman and Scanlan (1981b) saw boundary spanners as communication stars, people who are frequently consulted on work related matters and have impeccable skills in IOC. In an attempt to argue that CROs are, indeed, boundary spanners, the next section will provide a detailed discussion of the various profiles of a boundary spanner.

Profiles of Boundary Spanners. The role of a boundary spanner can be sectioned into a number of individual, yet connected components. This research builds on the work of Williams (2002) who identified six key profiles of boundary spanners: boundary spanner as reticulist, boundary spanner as entrepreneur and innovator, boundary spanner and otherness, boundary spanner and trust, boundary spanner and personality, and boundary spanner as leader. These individual elements can surface depending on the challenges faced, requiring the boundary spanner to be agile and react appropriately. This study focuses on three of the profiles, namely; the boundary spanner as reticulist, the boundary spanner as entrepreneur and innovator, and the boundary spanner as leader. These three profiles directly relate to my research in investigating the IOC of a CRO in a social network and are identified below.

Making Connections: The Reticulist. The reticulist element of the role of a boundary spanner refers to individuals "who are especially sensitive to and skilled in bridging interests, professions, and organizations" (Webb, 1991, p. 231). This particular boundary-spanning role involves an ability to appreciate the complexity and interdependence of managing policy problems within a prescribed political and organizational framework that is a network in its form of governance (Friend et al., 1974). This role manifests the ability to wield influence through building coalitions and support around issues and strategies (Williams, 2011). Friend and colleagues (1974) emphasize the importance of cultivating interpersonal relationships, communication, political skills, and an appreciation of the interdependencies around the

structure of problems. With the stress of political influence and policy related issues, this profile is of particular interest within the context of a city-related IOC.

Making Things Happen: The Entrepreneur and Innovator. The entrepreneurial and innovative profile of the boundary spanner becomes useful when there is a need for new ideas in the search for effective solutions to complex issues. The wicked problems cities face demand new ideas, innovative thinking, and unlearning of professional and organizational norms. “Wicked problems are complex interconnected problems that need complex and interconnected stakeholder participation to generate solutions” (Heath & Isbell, 2017, p. 6). Therefore, boundary spanners must be equipped with the capabilities to take risks and seek opportunity to solve wicked problems. Challis and colleagues (1998) emphasized the entrepreneurial and innovative profile of the boundary spanner when they noted that flexibility is a defining characteristic. These entrepreneurs act as mavericks “who bring together problems and solutions that otherwise would bubble chaotically in the conventional currents of a modern policy stream” (DeLeon, 1996, p. 508). Kingdon (2003) states that this role has a strategy prepared for the moment a door opens - they are “ready to paddle, and their readiness, combined with their sense for riding the wave and using the forces beyond their control, contribute to success” (p. 190). Thus, the ability to generate solutions yet be flexible to adapt under pressure makes this profile especially relevant to the CRO role.

Decisions, Decisions: The Leader. The final profile investigated in this study is the boundary spanner as leader. Luke (1998) gives a description of the leadership style in collaboratively inclined organizations and describes this profile as a facilitating and catalyzing approach shown by leaders in collaborative settings. He classifies the following imperative skills needed for catalytic leaders: thinking and acting strategically, interpersonal skills for facilitating productive working groups or networks, and underlying character (Luke, 1998). Underlying character inherently aligns with trust, developing over time and often by unconscious actions. Webb (1991) notes that “attitudes of mistrust and suspicion are a primary barrier to cooperation

between organizations and professional boundaries: collaborative behavior is hardly conceivable when trusting attitudes are absent” (p. 237). Additionally, Jupp (2000) addresses the highly overlooked issue of training and development in collaborative roles. He suggests that growing skills such as brokerage, facilitation, negotiation, coordination, and project management need to become the focus of leadership development. This study examines the following concepts from the literature listed above in the context of the CRO role: thinking and acting strategically (Luke, 1998); and negotiation, coordination, and project management (Jupp, 2000).

Given that community leaders represent the residents of their community (Gurwitch et al., 2007), it makes sense that these individuals would decide upon objectives and goals but also be ready to modify these in light of new learning and information (Godschalk, 2003, p. 137). Godschalk (2003) envisioned that the ideal resilient city “would both plan ahead and act spontaneously...they would eschew simple command and control leadership, preferring to develop networks of leadership and initiative” (p. 137). The leader's role in community resilience promotes the community's well-being and ability to make decisions (Gurtwitch et al., 2007). The three boundary spanning roles listed above were chosen because they described certain characteristics and aspects potentially important to the role of a CRO. Given the social constructionist viewpoint of leadership as management of meaning, and the literature discussing the characteristics of the three boundary spanning roles, it is important to continue understanding more about CRO's leadership roles within an IOC. To understand how leadership and boundary spanners connect, the researcher proposes the following research questions:

RQ5: How do CRO's describe their leadership role?

RQ6: How do CRO's describe their boundary spanning role as reticulist, entrepreneur and innovator, and leader?

Chapter 3: Methodology

This study investigates the role of five CROs who worked for a city involved in the 100RC program. It focuses on how the CROs create and maintain IOCs, how they characterize their role in such IOCs, the composition of such IOCs, and the nature of their communication in IOCs. Then the study focuses on their leadership and boundary spanning roles. The study uses a case study approach to discuss each city's problems and resilience foci and combines qualitative analysis and network analysis research techniques to answer six research questions.

Recruitment and Sample

After receiving approval from the Institutional Review Board (IRB) (see Appendix A), 32 perspective participants were contacted via LinkedIn message. These 32 perspective participants were contacted because they either were currently the CRO of a city which had a CRO (see Appendix B for a current list of cities apart of 100RC), or they had previously been the CRO of a city. Five CROs offered to participate in the study. The sample consisted of one woman and four men. Ages ranged from early 30s to late 50s. Two participants identified as Black and the remaining three participants identified as White. While all five of the participants have held the position of a CRO, only two were CROs at the time of the interviews. One participant was a Deputy CRO. The remaining two participants are no longer acting as CROs.

In order to protect the identity of the cities and the confidentiality of the interviewees, very little demographic information beyond placing each city in a size range will be provided. Additionally, different names will be assigned to every city and used throughout the analysis in order to further protect each city's identity. Keeping with the transportation metaphor used throughout this paper, each city is renamed to represent major vehicle manufacturers. City 1, identified as Toyota for this study, is located in the northeast with over 300,000 residents. City 2, identified as Nissan, is located in the northeast with over 7,000,000 residents. City 3, identified as Honda, is located in the northeast with over 600,000 residents. City 4, identified as Mazda, is located in the Midwest with over 100,000 residents. City 5, identified as Kia, is located in the

south with over 400,000 residents. As shown, the CROs represented cities of varying sizes in several regions of the United States.

Procedures

There were three primary ways that data were collected: Identification of Alters Exercise (shown in Appendix C & D), one-on-one interviews, and a review of documents discussing each city's resilience strategies. After gaining IRB approval, an interview was scheduled through email correspondence. Once an interview was scheduled, an additional email was sent asking the CRO to complete the Identification of Network Alters Exercise (Parts 1 & 2) prior to the one-on-one interview. This component to the data collection allowed CROs to provide an ego network identifying their IOC communication contacts within and surrounding the city to provide an understanding of their day-to-day communication and interactions. The Identification of Network Alters Exercise was conducted on their own time and was given to the researcher in person at the time of the interview.

The principal researcher traveled to four of the five cities during a two-week period in February 2019 to conduct one-on-one semi-structured interviews with each CRO. Three of the interviews were conducted at the CRO's office building. One interview was conducted over the phone due to travel constraints. At the interview, the researcher began by reading the informed consent form (shown in Appendix E) to the participant to ensure a full understanding of their requirements and rights. By beginning the interview, the CROs gave their consent to participate in the study. During each interview, the researcher asked 11 questions, pulled from the approved list of interview questions (shown in Appendix F). Interviews were recorded, and a verbatim transcript created. Each interview was roughly 30 minutes in length with the exception of the Mazda interview which lasted 45 minutes.

The final data collection component involved obtaining information describing each city's resilience strategy. Three out of the five CROs gave the researcher documents detailing their

city's resilience strategies after the interviews. The remaining two were found on the respective city's websites and downloaded for analysis.

Data Collection and Tools

Identification of Network Alters Exercise. This self-administered questionnaire is comprised of two parts (shown in Appendix C & D) and took around 20 minutes to complete. The researcher used the innovative name generator (inspired by Von der Lippe & Gaede, 2013) to gather this part of the data. This name generator is targeted at asking questions that create a list of people with whom the participant has some type of relationship. This format is referred to as free recall and is a validated tool because it does not present a complete list of actors in a network, but requires the participants to create the list themselves. Perry, Pescosolido and Borgatti (2018) say that the advantage of this focused approach is that it allows the participant to simultaneously “conserve resources and capture the most influential aspects of social networks with respect to the outcomes of interest” (p. 73). The instructions were listed on the first page shown on the questionnaire (see Appendix C). McCarty, Killworth, and Rennell (2007) found that network measures (like density) do not change substantially when people ask respondents to create networks listing more than 20 people. For this reason, the researcher limited the number of people they asked the CROs to generate to 20. Once all the names were listed, participants were prompted to access the second page of the questionnaire where the names are placed in a table (see Appendix D). Participants were instructed to complete the questions and scales corresponding with each name listed. In order to create a detailed network list, they were allowed to add additional people by going back to the previous page if they found they excluded a person. The goal was to create a visual list that is subjectively valid to the participant. This exercise was added to the data collection to address RQ3 and RQ4.

Interview Questions. Initially 27 open ended interview questions (see Appendix F) were developed by the researcher, based on the previously reviewed literature, in order to gain a holistic response from the interviewees. Although all 27 questions were approved by the IRB,

the researcher narrowed that down to 11 questions due to time constraints when interviewing the CROs. The researcher prioritized the questions based on potential overlap among the questions and relevance to the research questions. There were four sets of questions regarding the following themes: the CRO role, IOC communication and structure, leadership, and the boundary spanner role. Interview questions 4-8 ask about the creation and maintenance of the IOCs in order to answer RQ1. Interview questions 1-3, and 26 investigate what CROs do in their role in order to answer RQ2. The survey helped answer RQ3 and RQ4. Then, interview questions 9-14 focus on leadership behaviors in order to answer RQ5. Interview questions 15-26 dive into the specific roles of a boundary spanner to answer RQ6.

Data Analysis

Iterative Analysis. Originally, the researcher used grounded theory to analyze the data; however, they found that there is a problem-based approach of qualitative data analysis that extends grounded theory (Tracy, 2013). Given that the researcher draws on the literature to write specific RQs and then goes back to the literature to interpret the findings based on coding, using ground theory to analyze the data is not sufficient. Iterative analysis is a better way to analyze the data because it alternates between emergent readings of the data and the use of existing theories or models. This approach “encourages reflection upon the active interests, current literature, granted priorities, and various theories the researchers brings to the data” (Tracy, 2013, p. 184). This is a reflexive process that allows the researcher to constantly revisit the data, connecting and refining the focus on various understandings (Srivastava & Hopwood, 2009). This allows the researcher to fully immerse herself in the data. Therefore, this approach was chosen to analyze both the Identification of Alters exercise, the interview-level data, and the resilience strategies.

In order to analyze the interview data, the researcher reduced, reorganized, and represented the data (Seidman, 2013) captured in the transcripts of the five interviews. It was important to gather every detail of these interviews and “come to the transcripts with an open

attitude, seeking what emerges as important and of interest from the text” (Seidman, 2013, p. 119). The researcher read over the transcriptions multiple times to identify the units of analysis and agree on the identifications. These units of analysis can range from a word, to a phrase, to a complete sentence. This was followed by looking at the transcripts and making notes in the margin with post-it notes to identify consistent characteristics. The second step in coding was to identify themes that arose - these themes were identified as single words or two-word phrases. At the third step the researcher grouped the codes at an abstract level. The process of analyzing these interviews ended when the researcher was satisfied that she had found the major themes in the interview data. The codes are listed in a codebook complete with the label code, definition and a sample bit of text are shown in Appendix G. As the researcher asked ____ questions, they analyzed the data and moved it based on the category it related to. If a certain theme arose in a response to a question that did not coincide, the researcher simply shifted it to the correct category of RQs that it applied to.

Social Network Analysis. Social network analysis (SNA) uses the data gathered using the Identification of Alters exercise. Scholars employ the SNA method to study the complex collaborative communication of organizations (Guan, Zhang, & Yan, 2015). SNA is the study of relationships and connections most commonly, although not exclusively, between individuals (Christakis & Fowler, 2009). Crossley (2010) describes social networks as social worlds made up of various individuals with shared meanings, purposes, knowledge, understandings, identities which affect how and who they interact with. It is one of the most commonly used methods for studying collaboration networks (Milojevic, 2010) and focuses on the relationships between the participants (Abbasi, Chung, & Hossain, 2012).

Traditional social science approaches concentrate on the individual characteristics of places and people to understand and explain the social world. However, using a network-based approach allows a concentration on the complex patterns of relationships between these places and people. SNA is usually employed to map and visualize relationships (Wasserman & Faust,

1994). Typically, SNA gathers information about the content, as well as the structure of networks and in this study, this data collection method was used to gather quantitative data. There are two subcategories of SNA that facilitate a personalized view of relationships: ego network and cognitive social structures. This study only focuses on the subcategory of ego networks being drawn by the CROs. Using ego networks facilitates identifying the type of organizations the CROs link with in order to answer RQ3, the channels and frequency of their communication, and the content of the messages the CROs exchange in order to answer RQ4.

Ego Network. An ego-centered network is the “virtual network built around any arbitrary person accompanying those persons with whom it has a direct relationship” (Biswas & Biswas, 2015, p. 6914). The person around whom a network is drawn is referred to as ego; people connected with ego are referred to as alters. Connections between ego and alters are called ties. An ego network consists of multiple relationships between ego and different alters. For example, when studying people, one respondent may list a set of alters to which they are tied, otherwise referred to as personal network data (Wasserman & Faust, 1994, p. 42). An ego network analysis is ideal for this study because the researcher’s primary focus is to determine the networks and relationships for individuals in the overlapping networks (Simmel, 1955). Moreover, in ego network studies, “the researcher has considerable flexibility to define and redefine the boundaries of personal networks during analysis, as dictated by evolving and emerging research questions” (Perry, Pescosolido, & Borgatti, 2018, p. 28). Therefore, utilizing social network analysis, specifically ego-network analysis, compliments interorganizational collaboration; thus, showing the importance of using it in the study.

For this study, the researcher gathered a list of only people in the CROs ego network vs. in their alters network. The researcher is interested in drawing a composite network created from the names of the organizations their contacts represented to answer RQ3. It is important to create a composite network because it allows the researcher to see what organizations each CRO is connected to and the importance of each connection. The researcher created this

composite network by viewing the Identification of Alters Exercise and seeing what organizations were listed. Then, the researcher distinguished what type of group the organization falls under (i.e., NGO, state government, private company, etc.). Finally, researcher combined all the listed organizations and grouped them based on category and create a composition of such networks (as shown in Figures 1 & 2). These figures display all three CROs responses to show their network of collaboration of organizations. Additionally, the researcher separated all of the ego networks into a single, large data file, forming a network of unconnected components that correspond to ego networks. Note that the size of circles is proportional to the amount of times the CRO listed an alter that worked in that type of organization, showing the significance of each organization based on how large/small the circle is. *Canva* was the program used to create these figures and manage the data.

Once people in their ego network were identified, the researcher went on to ask about the frequency of their communication with each alter, the primary mode of communication used with each alter, and the type of content communicated with each alter. The list of choices for frequency of communication offered the following options: once a year or less, every few months, every few weeks, once a week, multiple times a week, or every day. The two choices listed for primary mode of communication used with that alter were either mediated (email, skype, cell phone, etc.) or face-to-face (meetings, lunches, etc.). The options listed for typical message content are as follow: to generate new ideas or ways to innovate existing practices; to troubleshoot new plans or programs; for advice on how to implement a plan or program; for advice on how to read the political and interpersonal dynamics at play in an interorganizational or interdepartmental collaboration; to draw on their knowledge and/or experience; to get their advice on handling stresses of my CRO position; and other (please specify). The list of options given for type of message content was curated by the researcher based on literature written on the CRO position by the 100RC program and from the boundary spanning literature.

Chapter 4: Results

The results section is divided into two parts. In Part one, the scene is set. This section provides a brief description of the challenges each city faces and the key elements of their roadmaps for resiliency, as drawn from their websites and resiliency documents. This information is offered to help the reader better understand the situations facing the various CROs. In Part two, the research questions are addressed.

Part One: Setting the Scene

The following section details a case study of five cities and their resilience strategies. The researcher begins by documenting the challenges each city faces and then describes what is in their roadmaps for resiliency. Because one interviewee did not want the name of his/her city connected with the study, pseudonyms (i.e., Toyota, Nissan, Honda, Mazda, Kia) are provided for each city and the titles of the existing documents from which the descriptive information is drawn are not provided.

The City of Toyota // Resilience Description

Challenges: The City of Toyota faces problems including air and water pollution, labor and racial unrest, and economic boom and bust cycles. The resilience document describes how Toyota must overcome stressors related to its industrial legacy and crumbling infrastructure, while responding to ongoing pressures stemming from urbanization, globalization, and climate change. The city has a history of fragmented governance, planning and service delivery. Socioeconomic inequities undercut the quality of life for its residents. The city's livability and affordability are not broadly shared between residents, and ongoing stresses and cuts continue to strain city resources.

The city faces multiple potential chronic and acute shocks. Chronic stresses are long-term, slow burning issues that overwhelm the capacity of city resources and erode resident wellbeing. Examples of these chronic stresses include but are not limited to water management, air quality, equal opportunity, and aging infrastructure. City leaders identified three key chronic

stressors they seek to prepare for: fragmentation, aging infrastructure, and economic and racial inequity. In contrast, acute shocks are sudden, large-scale disasters that disrupt city services and threaten residents. The acute shocks can emerge due to things like extreme weather events related to climate change, national economic collapse, or infrastructure failure. City leaders identified two acute shocks to be aware of: climate change and extreme weather, and infrastructure collapse.

Resiliency Strategies: In 2017, city leaders decided they wanted the entire community to share the same opportunity for prosperity – to be cared for and prepared to face potential risks and adversities. They established a resilience strategy to build on collective efforts and created a guide for future activities. As the Mayor stated in the resilience strategy document,

“this process is built with the belief that with the right tools, the ability to empower our people, and the acknowledgement that the City of Toyota will continuously improve – we will all come together as neighbors to find solutions to our common problems.”

The city’s resilience strategy consists of a holistic set of goals, objectives, and actions that address each of the resilience challenges. Its four goals focus on **people, place, planet, and performance**. The resilience framework seeks to create a community-centered approach that allows various sectors to work collectively to make Toyota more resilient.

In regards to people, Toyota seeks to empower all its residents to contribute in thriving and supportive communities by making sure all basic needs are met, celebrating diversity and ensuring that all residents have equal access to resources and opportunities. In regards to place, Toyota strives to use its land to benefit all residents; to increase social cohesion, connectivity, public and ecological health; and to protect against current and future risks - providing benefits and services to its neighborhoods during times of calm and crisis. In regards to planet, Toyota seeks to achieve long-term environmental health through wise stewardship, improved use of technology and a reduced carbon footprint. In regards to performance, Toyota

seeks to work closely with neighbors and partners for improved planning and decision-making - focusing on encouraging entrepreneurial ventures, civic engagement, collaboration, and measurement of success.

Each of these four goals (i.e., people, place, planet, performance) is supported by sector-specific objectives. The objectives are designed to work across stresses and shocks to produce a “resilience dividend” – multiple benefits for resilience from a single activity. While several public, private, and non-profit organizations had made significant impacts to address various stresses and shocks, none have been aligned or coordinated to ensure successful implementation for all Toyota residents. The city leaders recognized it was time to strengthen collaborations and support the existing initiatives. They understood that addressing the goals of the resilience strategy requires not only the initiation of new actions but also better coordination, amplification, and acceleration of ongoing initiatives.

Given the current project’s focus on IOCs related to resilience, several actions Toyota took to build collaboration are addressed here. Using near-term and long-term implementation steps, the Toyota CROs office was identified as the lead office for strategy implementation. One near-term implementation step involved convening action leadership groups. A series of events and round-tables brought together a diverse set of organizations which work to solve systemic issues such as water quality, education, energy, and public health. Improved coordination seeks to increase more resource efficiency, better communication and lasting partnerships, and agility across sectors. One of the long-term implementation steps involved coordination among government and nongovernmental sectors. Coordination and collaboration between these two groups is essential because the strategies rely on integrated actions by many sectors and stakeholders working together. Each action group, a group that has been designated to take on a specific goal, requires lead and supporting actors who contribute to goal and objective achievement. Within the context of coordination, it is important to consider the governance

structures that will “scaffold” the strategy. Community leaders are key because they can serve as ambassadors for the strategy’s goals and objectives over time.

Toyota acknowledges the complex interconnections among city challenges, with social, economic, and environmental effects resulting from every major decision. It recognizes siloed and single-sector actions are not enough. Successful implementation of their resiliency strategy will mean that Toyota can become a city that promotes inclusivity, diversity, innovation, and sustainable development.

Note: All of this information in the above description came from the resilience strategy released by the city in 2017.

The City of Nissan // Resilience Description

Challenges: Although the idea of creating a strategic resiliency plan originated after the devastation to the area after Hurricane Sandy, no significant progress was made until 2015 when Nissan released its resilience strategy. Their strategy was as an urgent response to the challenges of climate change and inequality. It was among the first resilience strategies released by any city in partnership with 100RC program and it set a global standard for the pursuit of sustainable development that has influenced other cities around the world.

The city initially made bold and innovative investments in preparedness and resiliency in the form of various coastal defense projects. However, Nissan took it a step further by taking stock of all their other significant challenges—population growth, aging infrastructure, increasing inequality, and climate change— and released a blueprint for tackling these challenges. Their resiliency-related strategic plan focuses on inclusive growth and climate action.

Resiliency Strategies: The current resilience strategy builds upon the visions identified in the 2015 strategy to make Nissan more resilient through its **neighborhoods, buildings, infrastructure, and coastal defense**.

In terms of neighborhoods, since 2015, the city has supported the resiliency and preparedness planning of community and faith-based organizations and small businesses

across its neighborhoods. These community anchors make up a social infrastructure that helps Nissan residents prepare for and recover from extreme weather events. In 2017, the city focused on understanding volunteer and civic engagement trends in Nissan, addressing risks from heat waves and rising temperatures, and providing small businesses with trainings, technical assessments, and preparedness grants to enhance their resiliency.

In terms of buildings, since the unprecedented damage caused by Hurricane Sandy, Nissan has been adapting the existing building stock to withstand evolving climate risks using a multilayered approach, including: upgrading physical systems in 1- to 4-family homes and multifamily buildings; changing zoning and land use policy; working with the Federal Emergency Management Agency to produce more accurate maps; and educating building owners about climate risk and mitigation options. Regarding infrastructure, Nissan continues to address Hurricane Sandy's impacts by seeking to protect the power, transportation, and water systems, while also addressing emerging risks, like extreme rainfall, through resilient design. For example, their Climate Resiliency Design Guidelines provide a new standard for the design of capital projects in the city. In terms of coastal defense, since 2015, Nissan has advanced numerous projects from initial feasibility analysis, through conceptual design, and toward final design and construction. In coordination with community stakeholders, the city has developed cutting-edge flood risk mitigation solutions.

Since the release of the 2015 strategy, the city has become safer and more resilient. Their neighborhoods have updated evacuation maps, with better-prepared small businesses, schools, and homes, and strategies to address the impacts of extreme heat. Their building and zoning codes are updated and clear information is available about flood risk. Their infrastructure is stronger, including an upgraded traffic infrastructure, hardened telecommunications systems, and fortified wastewater treatment plants. Integrated coastal protections have been developed. Nissan plans to continue to adapt their strategies as they gain new knowledge about the risks they face.

Note: All of this information in the above description came from the *Progress Report: Nissan 2018*.

The City of Honda // Resilience Description

Challenges: The Resilient Honda Initiative was created to build the city's resilience to both catastrophic shocks and chronic stresses associated with natural or man-made challenges. The top identified catastrophic shocks include potential threats like terrorism, infrastructure failure, heat waves, cyber-attacks, floods, and financial/economic crises. The top identified chronic stresses include racial and economic inequality, the high cost of housing, and stressed transportation networks. In their resiliency document, they focus on four major changes which impact their resiliency: economic and population change, technological change, and climate change.

Resiliency Strategies: In creating their resiliency strategy, Resilient Honda organized interdisciplinary groups to examine these big questions and advance their collective understanding. Then, they identified opportunities for partnership and developed a resilience strategy that articulates Honda's resilience goals and initiatives. Honda's Resilience Strategy is a holistic, action-oriented plan to build partnerships and alliances as well as financing mechanisms, and focuses on meeting the needs of vulnerable populations. One main objective for Honda is to trigger action, investment, and support between the government and external partners to build the resilience of the city. A goal of their resilience strategy is to build upon, not to recreate, other planning processing efforts already underway to build resilience. City leaders recognize the city previously produced numerous plans and strategies that were not fully executed.

Honda's resilience strategy revolves around integrated citywide planning, climate action, economic and population growth, racial equity, technological change, and issues related to a nearby river. Specifically, they seek to address four major changes which impact their resiliency: **economic and population change, technological change, and climate change.**

Regarding population and economic change, Honda's demographics have shifted during the past several years, because of the robust economic growth. However, the growth has not benefited residents equally. Neighborhoods are experiencing dramatic changes in population, household income, educational attainment, and racial makeup. Additionally, segregation, displacement, and gentrification challenge Honda's social cohesion and cultural identity. Economic, health, housing and educational opportunities are all separated along racial lines. Inequality is will increase unless education and skill preparation can keep up with changes in employment requirements.

Honda needs to be resilient to technological disruption and automation. Cyberattacks can compromise systems and networks in ways that render communications and electric power distribution difficult or impossible, disrupt transportation and shopping, and destroy financial transactions. Managing the impact of cyber-attacks requires collaboration and partnership between the private and public sectors. Automation will disproportionately impact low-income district residents and residents of color, threatening to displace their jobs and to exacerbate existing economic inequality. Nurturing automation-resistant industries that show high potential for growth in Honda can help insulate the city from the effects of automation and ensure high-quality jobs in the future.

Finally, climate change will put district residents and infrastructure under greater stress and result in more heat emergencies, negative health outcomes, strains on the electrical grid and increasing GHG emissions. More frequent storms and increased rainfall put the city at risk for destructive flooding. Temperature and flood changes will exacerbate income and racial inequalities, as well as disrupt the transportation network.

Recognizing these three major changes (i.e., economic and population, technological, climate), Honda's resiliency strategy focuses on the strategy implementation phase. Building resilience requires a multi-sector approach, adequate governance structures, and integrated solutions. Strategic planning, capital budget decision-making, performance tracking and public

engagement must be aligned. Strategic and policy plans must be integrated with performance management. Their resilience strategy document ends with a list of areas of improvement.

Listed below are the five out of the nine improvement areas pertinent to this study.

1. Improve public engagement to build trust with residents; enhance program, policy, and project design and implementation; and create more equitable outcomes.
2. Better understand, share, and integrate climate change risk (i.e., vulnerability and exposure) into decision-making and resource allocation.
3. Identify and adopt cyber resilience best practices and promote their adoption externally.
4. Strengthen existing and identify new external partnerships to drive progress on the districts' economic mobility, climate action, and other goals.
5. Explore and test methods to fund and finance resilience projects.

Note: All of this information in the above description came from the briefing book of

Resilient Honda released in 2018.

The City of Mazda // Resilience Description

Challenges: Mazda's economy and high quality of life often mask underlying stresses that plague the community. The city of Mazda has identified some core resilience challenges (i.e., climate change impacts, ecological and social stresses, rising real estate costs, and the need for collaboration). The first challenge relates to natural events such as flooding and wildfires resulting from climate change. Like many cities, Mazda is adjusting to a "new normal" as the effects of climate change are becoming increasingly apparent. Complex climate and ecological connections complicate solutions to any single problem, thus, showing the need for a holistic approach. Natural disasters, such as floods and fires, disproportionately impact low-income residents who already struggle to thrive in a city that is becoming more unaffordable. Second, ecological and social stresses are tied to hazards and will negatively impact and exacerbate each other. Third, rising housing and commercial real estate costs may limit the diversity of residents and businesses and threaten long-term economic vitality. Successful,

thriving cities need young people to fuel their economic pipeline. The number of people between the ages of 25 to 44 living in Mazda is declining and real estate prices are rising. Mazda's residents, businesses and government need to work together to prepare for future disruption.

Resiliency Strategies: With its history of preserving open space and its bold climate action plans and programs, Mazda has originated some of the most progressive policies in the United States in a variety of areas. Looking back at 2002, Mazda's city leaders enacted a plan to reduce greenhouse gas emissions. Five years later, the city's voters approved a climate action tax. In 2014 Mazda hired a CRO to plan for natural disasters in the face of climate change. In order to mobilize the resources and support to increase social, economic and ecological resilience, the city understood the need to have a compelling vision of the future that allows them to adapt and thrive in the face of disruption. By tapping into the community's forward-thinking civic and planning culture, the idea is that the city can weave resilience into the day-to-day life and functions of the community and government. Through the resilience assessment and community discussions, Mazda identified three major resilience strategies: **connect and prepare, partner and innovate, transform and integrate.**

The connect and prepare strategy involves preparing all segments of the community for uncertainty and disruption by encouraging community preparedness, creating a culture of risk awareness and personalizing resilience. The following actions are listed as individual steps to address the first strategy: make resilience accessible, activate volunteerism, assess economic strength, prepare businesses, connect for rapid recovery, and foster artistic engagement. The partner and innovate strategy seeks to capitalize on the collective problem solving and creativity of Mazda's community by leveraging advances in data, research and observations to address emerging resilience challenges. Key actions include putting science in the hands of the community, ensuring food security, making data accessible to all, and promoting crowd sourcing solutions. The transform and integrate strategy seeks to embed resilience into city operations and systems to transform Mazda's approach to community resilience. It includes creating

community resilience centers, fostering climate readiness, integrating resilience principles into Mazda's Sustainability Framework, embedding resilience in the comprehensive plan, and developing an integrated urban ecosystem management plan.

The city is currently undertaking numerous actions across the community, as well as creating new initiatives. Mazda has taken inspiration and learned from its past successes. Mazda's avant-garde spirit and commitment to advancing initiatives has aided in fusing resilience into the day-to-day operations and activities of residents, businesses and government.

Note: All of this information in the above description came from the *City of Mazda Resilience Strategy* released in 2016.

The City of Kia // Resilience Description

Challenges: Citizens of Kia are no strangers to community shocks and stresses. From extreme weather events, to significant racial, economic, and health inequities, citizens have experienced it all. In order to achieve its full potential on the national and international stage, the city must first address several critical challenges. A history of discrimination and racial tension persists, along with dramatic disparities along racial lines in economic and health indicators. Kia remains dependent on traditional industries, such as oil, gas, and manufacturing, as economic anchors, hindering the city's ability to weather economic downturns and remain competitive with other cities. The city's location near the center of the United States presents significant transportation and distribution opportunities, however, that means it leaves the city vulnerable to natural disasters, notably tornados. Furthermore, the city is limited in its ability to prepare for these imminent challenges and disasters because of restrictive state policies.

Resiliency Strategies: Resilient Kia serves as the guidebook and cohesive vision to unite its citizens. There are four visions for the resilience strategy of Kia: **to create an inclusive future for all, to equip citizens to overcome barriers and thrive, to advance economic opportunities for all, and to transform city and regional systems to benefit everyone.**

In terms of creating an inclusive future that honors all citizens, city leaders believe confronting the past is the only way to foster stronger social bonds for the future of Kia. The city must celebrate its cultural diversity and reverse the negative outcomes that have resulted from systemic discrimination. Resources need to allow citizens to flourish, regardless of their race, ethnicity, neighborhood, health, income, gender, or criminal history. The city must ensure equal access to opportunities for residents of all backgrounds. In order to advance economic opportunity, all citizens need the tools to secure and maintain gainful employment irrespective of changes in labor demands. Therefore, the city must work to eliminate the economic barriers that hinder some residents' ability to achieve long term financial stability and prosperity. Finally, in order to transform city and regional systems to improve outcomes for all citizens, the city must model and advocate for local and regional systems that accurately identify and effectively address community needs on a day-to-day basis.

The Visions, Goals, and Actions outlined in *Resilient Kia* highlight opportunities to channel Kia's historic assets and current growth towards a more equitable and resilient future. The Goals and Actions build on one another, supporting all citizens of Kia to meet their basic needs, provide a sense of belonging, and create an environment where they can achieve their personal aspirations. Inclusivity is at the core of this strategy, and actions presented in *Resilient Kia* are meaningful and measurable. The Strategy includes specific actions that the City and partners will implement, in collaboration with the community, to reduce inequity and thereby make Kia more resilient. The City Resilience Framework (CRF) provides a lens to understand the city's complexity and the drivers that contribute to its resilience, and a common language that enables the city to share knowledge and experiences. The CRF is built on four essential dimensions of urban resilience: provide everyone living and working in the city with the resources they need to be healthy (health & wellbeing), ensure the social and financial systems enable the urban population to live peacefully and act collectively (economy & society), ensure man-made and natural infrastructure provide critical services and protect urban citizens

(infrastructure & environment), and work to grow effective leadership, empowered stakeholders, and integrated planning (leadership & strategy).

Resilient Kia is an expansive document that includes actions that are both new and already developed. The city relies upon collaborative partnerships among the local government, community members, businesses, nonprofits, philanthropy, the faith community, and national and international partners in order to achieve its visions and goals. These partnerships are critical as people work together to develop and implement innovative programs and policies that will complete Kia's transformation into a world-class city where all citizens experience the benefits of equity and resilience.

Note: All of this information in the above description came from the *Resilient Kia* strategy released in 2018.

Part Two: Addressing the Research Questions

This study investigated six research questions using a combination quantitative and qualitative methodology executed with a total of five respondents. Two of the research questions (RQ3 and RQ4) relied on data from survey questions through an identification of alters exercise. Four of the research questions (RQ1, RQ2, RQ5, and RQ6) relied on interview data.

The first research question asked, "How do CROs describe how they create and maintain IOCs?" This section begins by discussing factors that influence a CRO's choice of who to collaborate with. Then, it focuses on the challenges CROs face when collaborating with people representing other organizations or departments as they seek to maintain their IOC.

Choosing Collaborative Partners. The interviewer asked the CROs "Why do you pick the people you do to collaborate with?" When discussing who is a member of an IOC, it is important to know if the CROs presence is voluntary or obligatory. The interviewees indicated most of their partnerships/relationships were voluntary to one extent or another. Sometimes, the CROs do not pick those they collaborate with but join networks of existing departments or

groups working together on similar projects or processes. For example, the CRO from Nissan explained that they had an existing advisory board to assist in resilience efforts, illustrating when the CRO did not pick who they collaborated with. The CRO of Mazda said that their main objective was trying to achieve the task so they focused on “going where the sun was shining” when choosing collaborative partners.

When the CROs do create a new IOC group, they choose partners based on two areas: situational and issue-based. Based on responses from all the CROs, partners that were identified as key partners were situational, or based on location/surroundings (i.e., peers across the administration, advisory boards, or key partners internal to the organization). When identifying how to solve a problem or address an issue, then choosing who to collaborate with becomes dependent on the issue. With focusing on a specific issue, the CROs have to look at what organizations, departments, or people can help them achieve this task. The CRO of Kia stated that they relied on word-of-mouth by asking people “Who are three people I should know?” and “What are three organizations that are doing this work alongside you?” in an attempt to find partners to work with and create an IOC.

Challenges in Collaboration. Once an IOC is operational it is important to maintain it. Maintenance involves addressing challenges. Therefore, the interviewer asked the CROs to “Describe some challenges you face when collaborating with people representing other organizations or departments.” The CROs described a wide range of challenges they faced when collaborating, namely the following three: differing goals or agendas, operating in different silos or departments, and intolerances. The first challenge involves the IOC members bringing differing goals or agendas to the group. The CRO of Honda said, “each of the agencies is going to have its own mission, strategic priorities, processes, timeline.” CRIs went on to note that the struggle is trying to get everyone on your page and on your timeline which, most of the time, is not going to happen. The second challenge involves members operating in different silos or departments which constraint their ability to see the bigger picture of the

goals/initiatives/challenges. This was illustrated in a statement by the CRO of Kia who said, “people are so used to operating in their silos” that there is a challenge to thinking across departments and agencies. The final challenge the researcher found interesting involved intolerances in the workplace. One CRO described their experience handling racist, sexist, and ageist comments from internal peers. Some inappropriate comments involved the CRO’s age and gender, and the CRO shared that this happened “more often than I care to admit.” While intolerances were not listed as a challenge in the other interviews, the researcher felt it important to note this as a challenge. Despite the leadership role the CROs carries, intolerances can still occur. The challenges described above directly affect maintaining the CROs’ IOCs.

The second research question asked, “How do CROs characterize their role functions?” This section includes a discussion on what a typical day looks like as a CRO. It focuses on the functions of their role and how these functions contribute to their position as the CRO. Following, it includes a discussion on how the CROs think their role differs from leaders of other organizations and the unique situations that CROs face in comparison to other city government leadership roles. Then, it includes a discussion on the influence that the IOCs have on the success and effectiveness of the CROs. Finally, it ends with a discussion based on a hypothetical question that identifies what you really need to know to succeed as a CRO, and ultimately, as a leader.

A Day in the Life. The researcher asked the CROs to, “Describe to me what a typical day would look like as the CRO of your city.” Every CRO responded by saying there was no typical day. The CRO of Honda stated, “there really is not typical day”, showing that every day was different from the other. With that in mind, the themes that arose pertained to structural level activities common to any office work, specific actions to the CRO role, and their work with IOCs. When discussing the CROs day-to-day activities, many structural level activities were mentioned, such as office tasks (i.e., meetings, emails, ideating, staff management, project management). The CRO of Toyota summarizes this perfectly in the quote, “If somebody from

the outside came in, [they see] that this person sits in meetings all day, they talk to a bunch of people and they send a bunch of emails... so when my child asks me what do you do, that's what they see." These are identified as at the structural level because each is common and found in most jobs – they are not unique to the CRO position.

The specific actions theme allows for understanding different actions that might be specific to the CRO role, such as writing grant proposals, trying to pass legislation, assessing broad trends and data driven efforts, strategy writing, updating the strategic plan, or developing funding resources. Toyota's CRO states that their role includes a "host of conversations around how do you change specific policies, fostering collaboration, building networks, looking for opportunities, managing contracts, managing staff, trying to get legislation passed, developing funding resources, putting budgets together, writing grant proposals" - all of which are specific tasks that a CRO is involved in daily.

In addition to the task-related themes mentioned above, the final theme that identified aspects of the day-to-day activity of a CRO was membership in IOCs. One CRO described it as follows, "we bucket the responsibilities along different silos, the things we are trying to do on long term planning and resilience cut across those silos in such a direct way. That's not just a normal sort of collaboration between two teams." When the CROs come across a problem that cuts across the whole government, they mobilize people to think across departments to solve the issue. These three themes surfaced when discussing what a "typical" day looks like as a CRO, regardless of the city, and contribute to answering how they characterize their role functions.

How a CRO is Different. The researcher asked, "How do you think your role differs from leaders of other organizations?" and "What unique situations dot you as a CRO face in comparison to other city government leadership roles?". The themes that surfaced through analyzing their answers involved boundary spanning, ensuring effective productivity, and being well-read. The first theme, boundary spanning, is seen through many CRO's responses -

particularly the city of Toyota as they state it's because "the ability to connect dots between departments or between agencies or other sectors" proves imperative for this role. The CRO of Kia noted that the government is not set up for cross departmental collaboration requiring that each CRO be a boundary spanner. Effective productivity is the second theme listed because the CROs discussed how they have to produce an outcome which requires them to act in a coordinating role. The CRO of Nissan stated that CROs must be direct and rigorous in finding ways to re-engineer systems to come to an outcome. The final theme found was that the CRO must be well-read. They must have "familiarity with sectors and subjects outside their own" (CRO of Nissan). While the CRO cannot be an expert at everything, he/she needs to "understand and grow to appreciate the interrelation and interaction of these different subject areas" (CRO of Nissan). These three themes were found consistently throughout all interviews and facilitate in answering the research question of how CROs characterize their role functions.

IOC Influence on Success/Effectiveness. This section begins by looking at the responses from CROs when answering, "How does interorganizational or interdepartmental collaboration influence your success or effectiveness as CRO?" The CROs identified numerous ways IOCs influence their success or effectiveness. The CROs ability to foster resilience through conversation is key to how IOCs influence their success and effectiveness as a CRO. The CROs also identified if the system is integrated for built in redundancy, then they would be able to expand their workload, thus, influencing the IOC's influence on their success and effectiveness as CRO.

When responding, most CROs talked about what it takes to be successful or effective in their role. Those responses included building on their city's existing strategies and experience and that residing in the executive office has its benefits. When describing existing strategies and experience, the CRO of Nissan mentioned how their city's previous strategies or processes helped tremendously in influencing their success or effectiveness because there's a foundation of resilience, "a natural bed of resilience to build upon". Additionally, strategically placing the

CROs' office in the executive office allows for more collaboration. Honda's CRO noted that it "takes the executive office to bring together the different players that will need to be a part of the conversation."

What You Really Need to Know. The interviewer posed a hypothetical question asking them: assume "It is years down the road and you have recently retired from your position as CRO. It is my first day as the CRO of this city. What do I really need to know to succeed as CRO?" This question surprised some of the CROs, forcing them to sit back and think about their answer in depth. Three themes came up: characteristics a CRO must have, the decision between policy and politics, and next action steps. The CROs listed a multitude of characteristics that they must have to succeed in this role, namely a passion for the city and its people. The CRO of Toyota mentioned that they didn't know if they could be a CRO of a different city because of their passion for their city. Additionally, the same CRO noted that they must have an "innate knowledge of how that city operates, its history, and its DNA and makeup." The second theme involves the policy versus politics decisions that the CRO has to make from the very beginning. Given that this position often rests within a mayor's office, an office where someone gets elected every four years, the decision of policy vs. politics has to be at the forefront of the CRO's mind. CROs must remember why they are doing their job. Kia's CRO discussed the difference between the concepts of the signal and the noise, saying "the signal for me, the strong guiding thing for me was the policy" but the noise of the politics kept distracting them. It's not supposed to be a dichotomy but unfortunately, that's the way politics often manifests itself. The final theme found was the idea of next action steps. Each one of the CROs mentioned the next step they had planned for their respective city. They stressed the importance of "focusing less on developing individual projects and interventions" and instead, "unifying strategy and starting to focus on the processes of governance" (CRO of Kia). These three themes ultimately answer the heavy question of what a person really needs to succeed in this position.

The third research question asked, “What does the composite IOC network of a CRO look like in terms of the other organizations?” This RQ was answered through the completion of the Identification of Alters Exercise, Part 1 and Part 2 (shown in Appendix C & D). This section includes a discussion on the different organizations each CRO collaborates with most.

The CRO Composite & Galaxy. In Part 1 of the alters exercise, each CRO was asked to create a list of names of the people, excluding family and friends, most important to their role as CRO. In the Identification of Alters Exercise: Part 2 they were asked to identify what organization each alter worked in. These categories were broken down by the type of organization (e.g. NGOs, state government, city government, 100RC). This was asked in order to determine what organizations each CRO collaborates with so as to answer RQ3. Just as Lowitt (2013) predicted that organizations will slowly begin to rely on the partnership of players in multiple organizational types (i.e. government, communities, nonprofits, or private citizens) this shows the need for an organization's' leaders to be proficient in building relationships with a wide range of people (Lowitt, 2013). Thus, the importance for the researcher to create a composite of all responses to display the collaboration of organizations for the CROs (Figure 1). Note that the size of circles is proportional to the amount of times the CRO listed an alter that worked in that type of organization, showing the significance of each organization based on how large/small the circle is. As shown in the figure, CROs most frequently collaborated with people who worked within their city government, followed closely by NGOs. Additionally, people from the 100RC organization were listed as the third most important connection to the CRO. After identifying the composite data, the researcher separated within the combined grouping of the ego networks into a single, large data file, forming a network of unconnected components that correspond to ego networks. This breakdown is referred to as a “galaxy diagram” (Figure 2) as each ego network appears as an independent “solar system”; unconnected to another (Maya-Jariego & Armitage, 2007).

The fourth research question asked, “What does the nature of the CROs’ communication (frequency, mode, content) look like in a composite IOC network?” and the results are shown in Figures 3-5. This section begins with a discussion on the frequency of communication between the CROs and alters. Then it determines what primary mode of communication is used between the CRO and the alters. Finally, it discusses what the content of the message is between the CRO and alters.

Frequency. In the Identification of Alters Exercise: Part 2, the researcher asked the CROs to distinguish what is the frequency of communication was between the CRO and the alter listed. The CROs were given 7 options to choose from: once a year or less, every few months, every few weeks, once a week, multiple times a week, and every day. The researcher compiled all responses from each CRO to show the overall numerical data found (Figure 3). The CROs indicated that most often the majority of communication between the CROs and their alters occurs every few weeks. Closely following, they indicated that once a week was the second most frequently listed amount of communication. Thus, showing the significance of communicating once a week or weekly was ideal for most CROs.

Mode. In the identification of Alters Exercise: Part 2, the researcher asked the CROs to distinguish what is the primary mode of communication between the CRO and the alter listed. The CROs were given two options: mediated and face-to-face. The researcher compiled all responses from each CRO to show the overall percentages (Figure 4). The CROs split their mode of communication almost down the middle, with face-to-face slightly more used than mediated. Thus, showing the significance of face-to-face communication with CROs for IOC.

Message Content. In the Identification of Alters Exercise: Part 2, the researcher asked the CROs to identify the typical message content between the CRO and each alter listed. The CROs were given seven options drawn from existing literature: to generate new ideas or ways to innovate existing practices; to troubleshoot new plans or programs; for advice on how to implement a plan or program; for advice on how to read the political and interpersonal dynamics

at play in an interorganizational or interdepartmental collaboration; to draw on their knowledge and/or experience; to get their advice on how to handle the stresses of my CRO position; and other (please specify). The researcher compiled all responses from each CRO to show the overall numerical data found (Figure 5). Generating new ideas or ways to innovate existing practices was chosen as the most typically used message content. Closely following was communicating the alters to troubleshoot new plans or programs. Thus, showing the significance of a CRO's communication with alters innovative practices.

The fifth research question asked, "How do the CRO's describe their leadership role?" This section begins by discussing what best practices the CROs use regarding their leadership role. Then it focuses on how the CROs lead their teams by informing them on various topics and helping them create and execute new ideas.

Best Practices for a Leader. The researcher asked the CROs, "What best practices can you share regarding the leadership role of the CRO?" The CRO of Mazda stated that best practices for this position are different for every city, saying it "depends upon where and what the challenges are for each city." With that in mind, two themes still emerged when analyzing the data: relationship building and maintaining, and bringing people together. Every CRO mentioned relationship building and maintenance as being a best practice. Whether a CRO is navigating the political winds, briefing a new commissioner, or creating a new partnership, "relationships are critically important" as the CRO of Toyota stated. Additionally, as Honda's CRO noted you need to "know a lot of people around the city, both in city government as well as just in the larger community". The second theme involved bringing people together - the power of being a convener. Many of the CROs mentioned that there is an art to being able to "get a meeting and pull folks together." An interesting aspect to this was becoming a facilitator, and not bringing an expert voice that would dominate the conversation. Mazda's CRO said that it was important to not have an agenda but instead, "allow the people in the room to be their own experts." They also said that the CRO needs to act as a trusted advisor "to hear what they were

saying, to create a space where people who were working more or less on the same thing could express themselves.” Both of these themes, building and maintaining relationships and bringing people together, clearly show the overall leadership of the person holding the CRO position.

Informing IOC Members on Important Concepts. The researcher asked, “What are the important concepts that you inform your team on and how do you inform your team on these concepts?” A few of the important concepts the CROs gave their team information on are listed as follows: building a culture to see opportunities, showing a sense of purpose, communication is key, creating clear messaging, and properly approaching problems. Building a culture to see opportunities is especially important in terms of being able to work across boundaries and utilize alternative methods to find a solution. The CROs said they don’t necessarily inform their team on this concept, instead the CROs hire and choose their team based on the person’s ability to do this. The CROs inform their team on showing a sense of purpose by “modeling the right behavior and laying out the expectation of what it means to be a member of the team”, as stated by Nissan’s CRO. Informing the team on creating clear messaging is accomplished through developing messages, “thinking very specifically about what we say and how we say it” (CRO of Honda). The final concept that their team is informed on is properly approaching problems. The CROs assure this by co-developing an understanding and they “work under the assumption that we probably don’t know what we are talking about” (CRO of Mazda). In this sense, there are better people to answer the question at hand so we need to go find out who that is, rather than approaching problems being solution-oriented from the beginning.

The sixth research question asked, “How do CRO’s describe their boundary spanning role as reticulist, entrepreneur and innovator, and leader?” This section begins by discussing how their IOC helps them create and execute new ideas and what strategies seem to work when doing so. Then, it moves to the CROs describing a time when they had to think and act strategically in their role. Finally, the focus shifts to what specific skills in negotiation, coordination, and project management they use as a CRO.

Entrepreneur and Innovator: Creating and Executing New Ideas. The researcher asked, “How does your interaction with others in your networks help you create and execute new ideas as a CRO?” followed with “What strategies seem to work when you are doing this?” One thing to note is that the CROs said that the question presumes that they are coming up with new ideas and that is not always the case. The CRO of Honda stated that “there is never a shortage of ideas about what to do, the issue is the distance between one agency or sector and all the many things, people, and organizations that would have to be aligned for that solution to actually be deployed.” Additionally, the CRO of Honda says resilience is all about “finding ideas that already have been positive or forwarded and simply died on the vine in some regard” to then transfer or mold them in a way to work for another situation.

Despite this, one common theme that came through when seeking to help create and execute new ideas was idea sharing. As the CROs work together with their constituents, “there really is a give and take on learning best practices”, as Honda’s CRO stated. Additionally, Honda’s CRO mentioned that they participated in formal settings to gain new ideas, such as conferences. They also share ideas in informal settings through group-texts to “coordinate on how we all react on the latest outrage” and “share what we are up to”, the CRO of Honda shared. Additionally, Kia’s CRO shared the sentiment that it allowed them to research different opportunities saying “there’s more than one way to skin a cat.” The theme found when answering what strategies work when doing this is goal setting. Overall, the CROs mentioned that most of them created a goal, such as developing a resilience strategy, and then worked with whomever to make that happen. The CRO of Toyota recognized that “that partnership is required in order to facilitate that objective.”

Reticulist: Thinking and Acting Strategically. The researcher asked the CROs to, “tell me about a time when you had to think and act strategically.” All the CROs noted that thinking and acting strategically happened every day and that it was just a part of the job description. However, there were two themes that surfaced: creating and maintaining plans, goals, or

solutions, and communication with IOC partners. The first theme was shown in all the responses given, showing specific goals such as the alignment of budgetary capacities (stated by the CRO of Toyota), the launch and acceptance of reassessment processes (stated by the CRO of Nissan), and the launch and acceptance of strategies (stated by the CRO of Honda).

The second theme came through when thinking about how those goals actually came to fruition. Many CROs mentioned the importance of building the support of outside constituencies. Mazda's CRO noted that at times it was difficult to come up with goals and solutions or even collaborate because there were multiple "overlords" to answer to: internal partners, 100RC, and city council being some of the few. The CRO of Toyota stated that "communicating with people who you are working with" is key in being able to think and act strategically.

Leader: Negotiation, Coordination, and Project Management. The researcher asked interviewees, "What skills in negotiation, coordination, and project management did you use?" The CROs mentioned different activities and events they have participated in to enhance negotiation, coordination and project management. Some of these include hosting a retreat for IOC partners and teams you work closely with and taking those same partners to workshops. The second thing they mentioned involved goals; so not only do they set a goal, but they also maintain that goal and see it until completion. The CRO of Mazda said, "the most important part of that was setting a goal and setting a timeline and then, for lack of a better way to put it, just some political courage just to push and push hard and force everyone onto my timeline for a change." This characteristic of political courage was named as important but difficult in city government.

Chapter 5: Discussion

Poverty, social inequality, infrastructure failure, and natural disasters are just a few of the wicked problems the five cities are facing. These wicked problems are becoming increasingly interconnected and an assembly of skills to organize and communicate across organizations is needed to address them, thus the importance of the 100RC program. The communication model of community resilience (Houston et al., 2015) discusses how challenges and adversities affect entire communities. 100RC focuses on resilience at the community level because challenges and adversities affect every individual differently, but all community members together. 100RC was created to promote resilience among cities and provide each city with resources it needs to become resilient, one resource being to hire a CRO.

The CRO position was designed to help facilitate collaboration among many government and community partners alike to create resilience strategies that address some of the wicked problems member cities face. Because collaboration often is generated at the institutional or organizational level (Williams, 2002), CROs report directly to the city's chief executive. This thesis focused specifically on how five CROs describe how they create and maintain IOC networks, their functions in such networks, what a composite CRO's IOC network looks like, what communication is like in their IOC networks, and how CROs enact leadership and boundary spanning roles.

In congruence with the community resilience research (e.g., Houston et al., 2015; Norris et al., 2007), the leadership enacted through the CRO role aids in the "connection, association, or involvement between citizens" (Houston et al., 2015, p. 275) to further collaboration efforts. Because "resilience rests on both the resources themselves and the dynamic attributes of those resources (robustness, redundancy, rapidity)," adaptive capacities are important (Norris et al., 2007, p. 142). Similar to the resilience strategies created by each city which are briefly described in the setting the scene part of this thesis, Norris and colleagues (2007) write that adaptive capacities provide a roadmap for enhancing community resilience. As Buzzanell

(2010) notes, resilience is an adaptive-transformative process triggered by loss or disruption that involves key sub-processes, three of which are pertinent in this study. These sub-processes were seen throughout the data as CROs regularly used and maintained salient communication networks, crafted new normalcies, and used alternative logics and unconventional ways of thinking to solve problems.

This study investigated how CROs create and maintain IOCs. Consistent with the literature of sensemaking (Goffman, 1974) and enactment (Weick, 1979), the CROs identified the importance of these in order to maintain IOC. They noted that issues related to strategy, structure, systems, management style, personnel and culture presented challenges in creating and maintaining IOCs because everyone has their own agenda. Potential challenges to such collaboration include trying to collaborate with partners in government positions and community organizations who actually have little interest in collaborating, and/or existing processes that make collaboration difficult in the first place. In terms of creating IOC, the CROs determined that most of the time, partnerships are established through existing processes. They found that identifying partners' areas of shared responsibility also proved difficult when creating IOCs.

Looking at how CROs characterize their role functions, this study found that one of the more obvious functions of a CRO involved daily office tasks, similar to tasks that any office role would have. The CROs spent their days in back-to-back meetings and responding to numerous emails. CROs always appear to be looking to make a connection with others and collaborate. The findings supported the idea that CROs look across boundaries for ways to solve issues, which is consistent with the literature that states leaders must have "collaborative leadership, because no one person has the answer" (Fairhurst & Connaughton, 2014, p. 411). Resiliency literature shows that the community provides a neutral legitimizing entity for the collaboration (Heath and Frey, 2004). Thus, showing the value of recognizing that no one person has all the expertise, insight, information, influence, or resources to build community resilience.

This study created a composite IOC network to illustrate the type of organizations with whom a CRO collaborates. The results indicate that most of the collaborations involved the CRO partnering with people inside of city government, but across departments. Given that NGOs are often created to deal with key issues (e.g. poverty, environment, infrastructure failure) at the grassroots level (Uvin, Jain, & Brown, 2000), it makes sense that CROs identified NGOs as the second-most collaborative group. This supports Lowitt's (2013) point that organizations interested in creating community resilience will slowly begin to rely on the partnership of players in multiple organizational types (i.e., government, communities, nonprofits, or private citizens). In looking at best practices for the CRO position,

The findings describe what the nature of the CROs communication (frequency, mode, content) looks like in a composite IOC network. Most often communication between the CROs and their collaborative partners occurred between every few weeks and once a week. The CROs split their mode of communication almost down the middle, with face-to-face contacts occurring slightly more frequently than mediated. Most CROs noted the importance of meeting face-to-face for more effective communication in order to better collaborate. In terms of typical message content, the CROs mostly communicated with others in the IOC in order to generate new ideas or ways to innovate existing practices, in the hope that the IOC can be the tool to solve these problems as collaborators pool and leverage their financial and material resources. This is consistent with the literature (e.g., Allen, 2016) that talks about how collaboration can help increase innovation because of the available strength, knowledge, and skills brought forth by each collaborator in the IOC.

This study investigated how the CRO's describe their leadership role in terms of best practices, and how the CROs lead their teams by informing them on various topics and helping them create and execute ideas. Relationship building and maintaining was listed as a best practice as was bringing people together - the power of being a convener. This is consistent with the fifth antecedent of the structure of IOC in that boundary spanners, leaders, and

conveners initiate the communicative groundwork for collaboration (Heath and Frey, 2004). In terms of the important concepts the CROs informed their team on, the management of meaning comes into play, especially for sensemaking. Concepts such as building a culture to see opportunities, showing a sense of purpose, communication as being key, creating clear messaging, and properly approaching problems were noted. All of these concepts must be framed in order to capture how the CROs use language and actions to craft meaning and construct reality to encourage their team to then respond (Fairhurst & Connaughton, 2014).

Finally, the researcher asked how CRO's describe their boundary spanning role as reticulist, entrepreneur and innovator, and leader in attempt to show that the CRO truly is a boundary spanner - the conduit between an organization and the community they serve (Organ, 1971). All the CROs noted that thinking and acting strategically happened every day and that it is just a part of the job description - the role of the reticulist. Creating and maintaining plans, goals, or solutions, and communication with IOC partners were two of the themes that came up not only through the literature of Friend and colleagues (1974), but also through the data collection. The CRO role was found to be an entrepreneur and innovator through creating and executing new ideas, and embodying the characteristic of flexibility under pressure. Idea sharing was recognized in the literature (Kingdon, 2003) as an important concept. Multiple CROs said they valued idea sharing as a tool to problem solve. Lastly, the CROs mentioned different activities and events they have participated in to enhance negotiation, coordination and project management - the role of the leader. They identified the importance of not only setting a goal, but also maintaining that goal until it's completion. They identified that political courage was a characteristic needed for this position but oftentimes, this is difficult in city government. These findings confirm that boundary spanning is an important component of an CROs position and extends previous research by investigating three of the six profiles of a boundary spanner (Williams, 2002) while within the practical context of the CRO role.

Practical Implications. Community organizers, municipal governments, and the 100RC network can use these findings to both assess and address the CROs leadership in developing resilience strategies. Given that the community is a place where resilience can be formed, it only seems natural that this research may aid community organizers in understanding the importance of various leadership functions and boundary spanning activities and how each contributes to successful IOC. Ultimately, each city must decide whether or not to keep the CRO role after the two years of funding from the Rockefeller Foundation ends. This study focuses the crucial role the CROs play as they facilitate collaborations among the community and city delegates. It can help municipal government leaders better understand how the CRO role incumbents bridge with and influence others in their city. Additionally, cities that are not a part of the 100RC network can gain a better understanding of how CROs create and maintain IOCs, use communication strategically to achieve various goals related to the wicked problems they face, and display leadership and boundary spanning behaviors.

Finally, this research proves to be important for historical purposes as well as the 100RC network because it is the only study to date that investigates the functions of the CRO role. Additionally, this study documents some of the activities of the CRO position before the program closes. On April 1st of 2019, the Rockefeller Foundation announced that it would be formally dissolving the program in July, 2019. By all accounts, including the observations made by this researcher, the 100RC program was working. It allowed global boundaries to be crossed in order to foster conversations surrounding resilience and brought in over \$3.35 billion in funding for said initiatives (Anzilotti, 2019). The 100RC network foregrounded the importance of global collaboration. To the same end, Ellie Anzilotti stated that it “gave cities a crucial network of support and expertise, made up of both 100RC’s staff and leaders from other cities, to lean on throughout the process” (2019, p. 1). The entire concept of resilience is focused on long-term solutions, not patchwork jobs or retroactive fixes. It begs the question as to why the Rockefeller Foundation decided on such a drastic and abrupt pivot. This study was conducted before the

news broke that the foundation would be dismantling the program. The researcher has shown the importance of having leaders in place that foster IOC, and ultimately, the need for work in the area of resilience to continue.

Limitations. Like all research, this study has its limitations. The first limitation identified was that the researcher was only able to interview five of the twenty-four U.S. cities that participate in 100RC and all of the interviewees were from cities in America. The second limitation identified was that the researcher had roughly 30-45 minutes with each interviewee and was not able to ask all proposed interview questions. Although the researcher designed twenty-seven interview questions, only eleven questions were asked because of the CROs time constraints. The third limitation identified was only three of the five CROs interviewed CROs completed the Identification of Alters exercise. This was, due in part, by two of the CROs having very demanding schedules. Lastly, the fourth limitation identified was that this study did not analyze the relationship between the alters themselves; the researcher only looked at the ego network of the CRO.

Future Research. Given that various researchers have claimed that leadership is a well-researched phenomenon (e.g., Alvesson & Sveningsson, 2003; Barker, 1997), there is still much to learn about leadership in terms of resilience. This is one reason why furthering the academic conversation on leadership and resilience is important. Future studies might look to broaden their participant pool by seeking to interview CROs outside of the U.S. While future researchers may attempt to gain more time allotted for an interview, this seems highly unlikely due to the CROs demanding schedules. Similarly, future research may seek more CROs to participate in various exercises before the interview; however, this also seems highly unlikely due to their busy schedules. Additionally, within the context of this study, future studies might look at the relationship between the alters and how this affects the IOC of the network.

This research identified three of the six profiles that Williams (2002) and gave reason why those chosen profiles were used in this study. However, as shown in the data, much of the

data proved that the CRO has at least some characteristics from each of the six boundary spanner profiles. Some of the comments indicated that trust was a topic of importance that the researcher did not expect to see. Based on these findings, future research would want to investigate if there truly is evidence of the CRO role showing characteristics of the boundary spanning roles of otherness, personality, and trust.

Conclusion

The purpose of this study was to advance the current understanding about the IOC and leadership functions of CROs. The data revealed that the role of a CRO is indeed that of a boundary spanner as they operate within the social network of the 100RC program and their own communities. The researcher used a social constructionist lens to focus on how CROs work within IOCs to increase community resilience. The CRO role is a valuable one in creating and maintaining IOCs between multiple organizations working together to cultivate and promote community resilience.

Inherently this study revealed some challenges that the CROs faced, overall, the study highlighted the positive work cities are involved in to solve these wicked problems. Not only was the CRO role crucial to successful IOCs, but the 100RC program itself foregrounded the importance of global collaboration and gave cities the opportunity to collaborate with others that faced similar issues. Without the 100RC program as a platform for cities to collaborate, this raises the question of what will happen when the Rockefeller Foundation dismantles the program in July 2019.

While there are limitations that come with this study, its many strengths make it highly significant. To begin, this study is the first of its kind - researching the functions of the CRO role. While many have studied resilience and leadership, none have focused specifically on elements related to communication and IOC, building on a strong base of literature. Next, the researcher was able to interview CROs that represented a broad range of cities, varying in parts of the U.S. and of different size. The contemporary issue of resilience grows in relevance due to the various types of wicked problems that communities face.

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Appendix A: Institutional Review Board Expedited Approval



To: Kasey C Sisson
From: Douglas James Adams, Chair
IRB Committee
Date: 12/17/2018
Action: **Expedited Approval**
Action Date: 12/13/2018
Protocol #: 1811161687
Study Title: Chief Resilience Officers: Boundary Spanning, Interorganizational Collaboration, and Leadership
Expiration Date: 12/12/2019
Last Approval Date:

The above-referenced protocol has been approved following expedited review by the IRB Committee that oversees research with human subjects.

If the research involves collaboration with another institution then the research cannot commence until the Committee receives written notification of approval from the collaborating institution's IRB.

It is the Principal Investigator's responsibility to obtain review and continued approval before the expiration date.

Protocols are approved for a maximum period of one year. You may not continue any research activity beyond the expiration date without Committee approval. Please submit continuation requests early enough to allow sufficient time for review. Failure to receive approval for continuation before the expiration date will result in the automatic suspension of the approval of this protocol. Information collected following suspension is unapproved research and cannot be reported or published as research data. If you do not wish continued approval, please notify the Committee of the study closure.

Adverse Events: Any serious or unexpected adverse event must be reported to the IRB Committee within 48 hours. All other adverse events should be reported within 10 working days.

Amendments: If you wish to change any aspect of this study, such as the procedures, the consent forms, study personnel, or number of participants, please submit an amendment to the IRB. All changes must be approved by the IRB Committee before they can be initiated.

You must maintain a research file for at least 3 years after completion of the study. This file should include all correspondence with the IRB Committee, original signed consent forms, and study data.

cc: Myria Allen, Investigator

Appendix B: List of 100RC Member Cities

AFRICA

Accra, Ghana
 Addis Ababa, Ethiopia
 Cape Town, South Africa
 Dakar, Senegal
 Durban, South Africa
 Kigali, Rwanda
 Lagos, Nigeria
 Luxor, Egypt
 Nairobi, Kenya
 Paynesville, Liberia

ASIA PACIFIC

Bangkok, Thailand
 Can Tho, Vietnam
 Chennai, India
 Christchurch, New Zealand
 Da Nang, Vietnam
 Deyang, China
 Huangshi, China
 Jaipur, India
 Jakarta, Indonesia
 Kyoto, Japan
 Mandalay, Myanmar
 Melaka, Malaysia
 Melbourne, Australia
 Pune, India
 Semarang, Indonesia
 Seoul, South Korea
 Singapore
 Surat, India
 Sydney, Australia
 Toyama, Japan
 Wellington, New Zealand

EUROPE AND THE MIDDLE EAST

Amman, Jordan
 Athens, Greece
 Barcelona, Spain
 Belfast, United Kingdom
 Belgrade, Serbia
 Bristol, United Kingdom
 Byblos, Lebanon
 Glasgow, United Kingdom
 Greater Manchester, United Kingdom
 The Hague, The Netherlands
 Lisbon, Portugal
 London, United Kingdom
 Milan, Italy

Paris, France
 Ramallah, Palestine
 Rome, Italy
 Rotterdam, The Netherlands
 Tbilisi, Georgia
 Tel Aviv, Israel
 Thessaloniki, Greece
 Vejle, Denmark

LATIN AMERICA AND THE CARIBBEAN

Buenos Aires, Argentina
 Cali, Colombia
 Colima, Mexico
 Guadalajara Metro, Mexico
 Juarez, Mexico
 Medellin, Colombia
 Mexico City, Mexico
 Montevideo, Uruguay
 Panama City, Panama
 Porto Alegre, Brazil
 Quito, Ecuador
 Rio de Janeiro, Brazil
 Salvador, Brazil
 Santa Fe, Argentina
 Santiago de los Caballeros, Dominican Republic
 Santiago Metro, Chile

NORTH AMERICA

Atlanta, United States
 Berkeley, United States
 Boston, United States
 Boulder, United States
 Calgary, Canada
 Chicago, United States
 Colima, Mexico
 Dallas, United States
 El Paso, United States
 Greater Miami and the Beaches, United States
 Guadalajara Metropolitan Area, Mexico
 Honolulu, United States
 Houston, United States
 Juárez, Mexico
 Los Angeles, United States
 Louisville, United States
 Mexico City, Mexico
 Minneapolis, United States

Montreal, Canada
Nashville, United States
New Orleans, United States
New York, United States
Norfolk, United States
Oakland, United States
Pittsburgh, United States
San Francisco, United States

Seattle, United States
St. Louis, United States
Toronto, Canada
Tulsa, United States
Vancouver, Canada
Washington, D. C., United States

Appendix C: Identification of Alters Exercise (Part 1)

I would like for you to think about your position as the Chief Resilience Officer. As you look at the past six months, excluding family and friends, who are the people most important to your role as CRO? Think about which people are most helpful to you. Think about the people who are relevant to your success as a CRO. Also consider there might be other people you interact with that are important. Think of your professional contacts both in the 100RC program and in other key organizations with which you interact (both for profit, governmental, or nonprofit) to make this list of names.

Letter	Name of Person
A	
B	
C	
D	
E	
F	
G	
H	
I	
J	
K	
L	
M	
N	
O	
P	
Q	
R	
S	
T	

List all the people you have identified in the chart below, in no particular order

Appendix D: Identification of Alters Exercise (Part 2)

Please complete the following chart for the names listed in Part 1 with the corresponding letters, starting with letter. Repeat this process until all 20 names have been completed.

Letter	A
First & Last Name	
Job Title	
Organization / Department	
Frequency of Communication How often do you speak to this person, on average? 1 - Once a year or less 2 - Every few months 3 - Every few weeks 4 - Once a week 5 - Multiple times a week 6 - Every day	
Primary Mode of Communication 1 - Mediated (Email, Skype, Cell Phone, etc.) 2 - Face-to-Face (Meetings, Lunches, etc.)	
Voluntary/ Not Voluntary 1 - voluntary 2 - not voluntary	
Duration of Relationship 1 - long term 2 - short term	
Relevance to your CRO Role 1 - Of Little Relevance 2 - Relevant 3 - Very Relevant	
Typical Message Content (see key below)	

Typical Message Content Key:

- 1 - To generate new ideas or ways to innovate existing practices
- 2 - To troubleshoot new plans or programs
- 3 - For advice on how to implement a plan or program
- 4 - For advice on how to read the political and interpersonal dynamics at play in an interorganizational or interdepartmental collaboration
- 5 - To draw on their knowledge and/or experience
- 6 - To get their advice on how to handle the stresses of my CRO position
- 7 - Other (please specify)

Appendix E: Informed Consent Form

Evaluating “Chief Resilience Officers: Boundary Spanning, Interorganizational Collaboration, and Leadership” in a Research Study
Principal Researcher: Kasey Sisson

INVITATION TO PARTICIPATE

You are invited to participate in research about boundary spanning, interorganizational collaboration, and leadership. You are being asked to participate in this study because you are, or have been, in the Chief Resilience Officer role.

WHAT YOU SHOULD KNOW ABOUT THE RESEARCH STUDY

Who is the Principal Researcher?

Kasey Sisson, Department of Communication, kcsisson@uark.edu; 713-582-8161

What is the purpose of this research study?

The purpose of this study is to learn how the IOC functions of CROs in the social network of 100RC cities allow them to enact their boundary spanning roles.

Who will participate in this study?

At least 5 Chief Resilience Officers from various cities across the United States

What am I being asked to do?

Your participation will require answering a set of open-ended interview questions detailing your position as a CRO and filling out a short chart prior to our interview date.

What are the possible risks or discomforts?

There are no anticipated risks to participating in this study.

What are the possible benefits of this study?

While there may not be immediate benefits from participating in this study, a long-term benefit is that the participants will contribute to the furthering of research on boundary spanning, interorganizational collaboration, and leadership within the 100RC organization.

How long will the study last?

You will participate in an interview which may take up to 60 minutes.

Will I receive compensation for my time and inconvenience if I choose to participate in this study?

There is no compensation for your participation.

Will I have to pay for anything?

There will be no cost associated with your participation.

What are the options if I do not want to be in the study?

If you do not want to be in this study, you may refuse to participate. Also, you may stop participating at any time during the study.

How will my confidentiality be protected?

All information will be kept confidential to the extent allowed by applicable State and Federal law and University policy. All data will be stored on password-protected computers in locked offices. Your interview responses will not include any identifying information. The interview data will be audiotaped, then transcribed using a pseudonym instead of your real name. The audiotapes will be destroyed at the end of the study. Your name will not be linked with any of your data.

Will I know the results of the study?

At the conclusion of the study you will have the right to request feedback about the results. You may contact the Principal Researcher, Kasey Sisson, kcsisson@uark.edu. You will receive a hard copy of this form for your files in the research lab before you begin participating in this study.

What do I do if I have questions about the research study?

You have the right to contact the Principal Researcher or Faculty Advisor as listed below for any concerns that you may have.

Kasey Sisson,
Department of Communication
417 Kimpel Hall
University of Arkansas
kcsisson@uark.edu

You may also contact the University of Arkansas Research Compliance office listed below if you have questions about your rights as a participant, or to discuss any concerns about, or problems with the research.

Ro Windwalker, CIP
Institutional Review Board Coordinator
Research Compliance
University of Arkansas
109 MLKG Building
Fayetteville, AR 72701-1201
irb@uark.edu

By beginning the survey, you are indicating your willingness to participate in this study. This means that you have read the above statement and have been able to ask questions and express concerns, which have been satisfactorily responded to by the investigator. Completing the survey also indicates that understand the purpose of the study, the potential benefits and risks that are involved, and that participation is voluntary. Participation in the focus group

session indicates your consent to be audio recorded for that portion of the study. Findings developed during this research will be shared with you at your request. Finally, you understand that no rights have been waived and that you have been given a copy of the consent form.

Appendix F: Interview Questions

Research Questions

RQ1: How do CROs create and maintain IOC?

RQ2: How do CROs characterize their role functions?

RQ3: What does the composite IOC network of a RSO look like in terms of the other organizations?

RQ4: what does the nature of their communication (frequency, mode, content) look like in the IOC network?

RQ5: How do CRO's describe their leadership role?

RQ6: How do CRO's enact their boundary spanning role as reticulist, entrepreneur and innovator, and leader?

CRO Role

1. Describe to me what a typical day would look like as the CRO of (insert city).
2. What do you see as the most important aspects of your job?
3. How do you define what makes a community resilient from your perspective as CRO?

Interorganizational Collaboration

4. As a CRO, how do you define collaboration when you think of your interorganizational or interdepartmental networks?
5. Why do you pick which people to collaborate with?
6. How do you decide who is most important when forming a relationship focused on collaboration as it relates to your CRO role?
7. Describe some challenges you face when collaborating with people representing other organizations or departments.
8. How does interorganizational or interdepartmental collaboration influence your success or effectiveness as CRO?

Leadership

9. What is your definition of being a leader (leadership)?
10. How do you see yourself as a leader in the CRO role?
11. Based on your definition of leadership, what are the characteristics of a leadership role?
 - a. FU: Which of those characteristics do you see apparent as a function of the CRO role?
12. How do you think your role differs from leaders of other organizations?
 - a. FU: What unique situations that you as a CRO face in comparison to other city government leadership roles?
13. What best practices can you share regarding the leadership role of the CRO?
14. What are the important concepts that you inform your team on and how do you inform your team on these concepts?

Boundary Spanner

Questions specific to “Are they a Boundary Spanner?” (Characteristics):

To answer the following questions, reflect on your interorganizational and interdepartmental collaboration relationships.

15. As CRO how do you gather information from and share information with other organizations in your network?
16. How does your interaction with others in your networks help you come up create and execute new ideas as CRO? What strategies seem to work when you are doing this?
17. How do you make decisions with others in your network?

Questions specific to “Reticulist” Role of a Boundary Spanner:

18. How do you manage complex and interdependent policy problems within the prescribed political and organizational framework you work in as CRO?
19. As CRO, how do you cultivate interpersonal relationships, communication, political skills, and an appreciation of the interdependencies around the structure of problems?

Questions specific to “Entrepreneur and Innovator” Role of a Boundary Spanner:

20. As CRO, do you ever act as a catalyst who brings together problems and solutions as you work with others in your IO or ID networks? Can you provide an example?
21. As CRO do you encourage and cultivate innovative thinking among other members of your IO or ID networks? What strategies seem to work when you are doing this?
22. How, if at all, have you had to unlearn professional and organizational norms for your position as CRO?

Questions specific to “Leader” Role of a Boundary Spanner:

23. Now that you know the official definition of a boundary spanner, how do you see yourself as a boundary spanner in as you work as a leader in your CRO role?
24. As CRO, how do you have a facilitative approach in your role?
25. Tell me about a time when you had to think and act strategically in the CRO role?
26. What skills in negotiation, coordination, and project management did you use?

Wrap Up

27. Think about this...it is years down the road and you had recently retired from your position as CRO. It was my first day as the CRO of (insert city). What do I really need to know to succeed as a CRO?

Appendix G: Codebook

Code	Definition/Explanation	Examples
Structural level	Day to day, office tasks	Meetings, emails, conversations
Moving across silos/departments	Fostering collaboration, moving across departments	"You can describe this role as the chief silo-buster"
Job description	Things distinguished as something the CRO specifically does	"Being a voice for the administration" or engaging with the public
Actions	Specific things that is an actionable task	"Getting legislation passed, developing funding resources, putting budget proposals together"
Situational	Immediate partners based on the role of the CRO	Advisory boards already set in place
2nd removed	Partners specified by word of mouth or suggested by others	Asking "what are 3 organizations that are doing this work alongside you"
Actions	Actions listed to care for relationships	Building trust, meeting regularly
Issues based	Looking at the proximity to the issue, or the specific stressor or shock related to the issue	"Capturing key fault lines that relate to resilience"
Varying silos/departments	Operating in different silos/departments, different agencies that each partner is a part of	"Challenges to thinking cross departmentally"
Existing processes	Rules already set in place that challenge to progress	"Current process is an impediment to us achieving those overarching goals"
Varying goals/agendas	Having different missions as a department or organizations, this may include varying timelines	"Everyone having their own agenda"
Lack of interest or understanding	Absence of interest or knowledge surrounding a	Getting everyone to understand the importance of

	particular subject, namely resilience or	the topic and “Bring up the level of understanding in resilience”
Intolerances	Prejudices found in the workplace that are degrading	Racism, sexism, ageism in the workplace
Important concepts	Things the CRO informs their team on as important to the team	Knowing their sense of purpose, knowing how to properly communicate, and the clear messaging behind it
Actions on how to inform on important concepts	These are the ways in which the CRO makes the team knowledgeable on such topics	“Having those conversations almost every day” and modeling the behavior

Composite IOC Network of a CRO

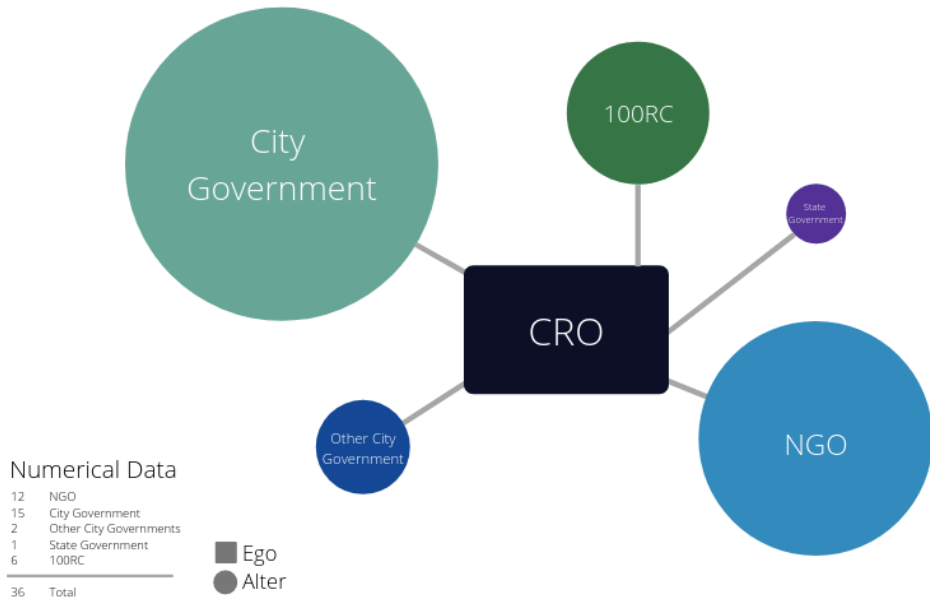


Figure 1. This figure displays a composite of all responses to display the collaboration of organizations for the CROs. Note that the size of circles is proportional to the amount of times the CRO listed an alter that worked in that type of organization, showing the significance of each organization based on how large/small the circle is.

Galaxy for IOC Network of a CRO

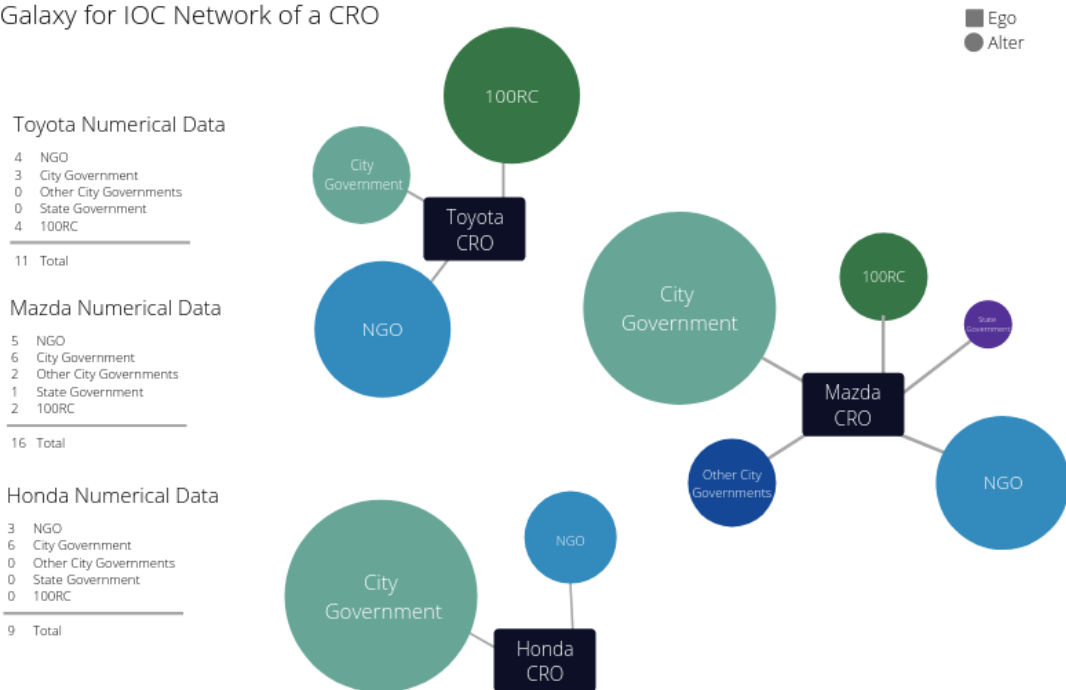


Figure 2. This figure displays the galaxy diagram of all three CROs responses to display the collaboration of organizations. The researcher separated all of the ego networks into a single, large data file, forming a network of unconnected components that correspond to ego networks. Note that the size of circles is proportional to the amount of times the CRO listed an alter that worked in that type of organization, showing the significance of each organization based on how large/small the circle is.

What is the frequency of communication between the CRO and significant alters?

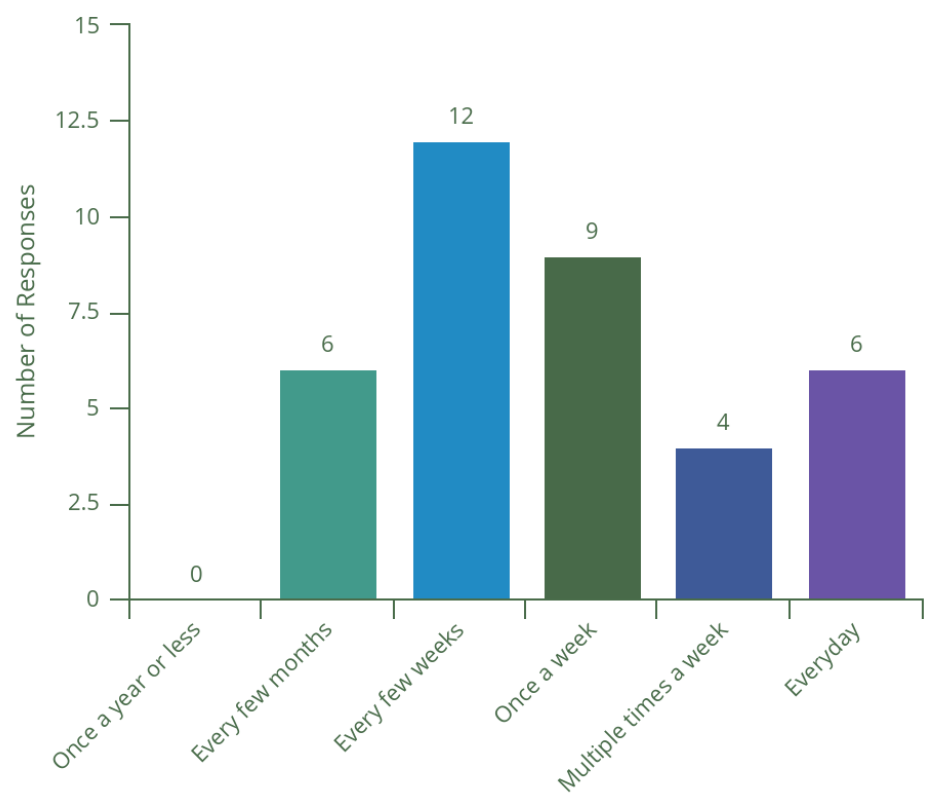


Figure 3. This figure shows the frequency of communication between the CRO and the alter listed based on the seven options given. The researcher compiled all responses from each CRO and is shown in the figure above.

What is the primary mode of communication between the CRO and significant alters?

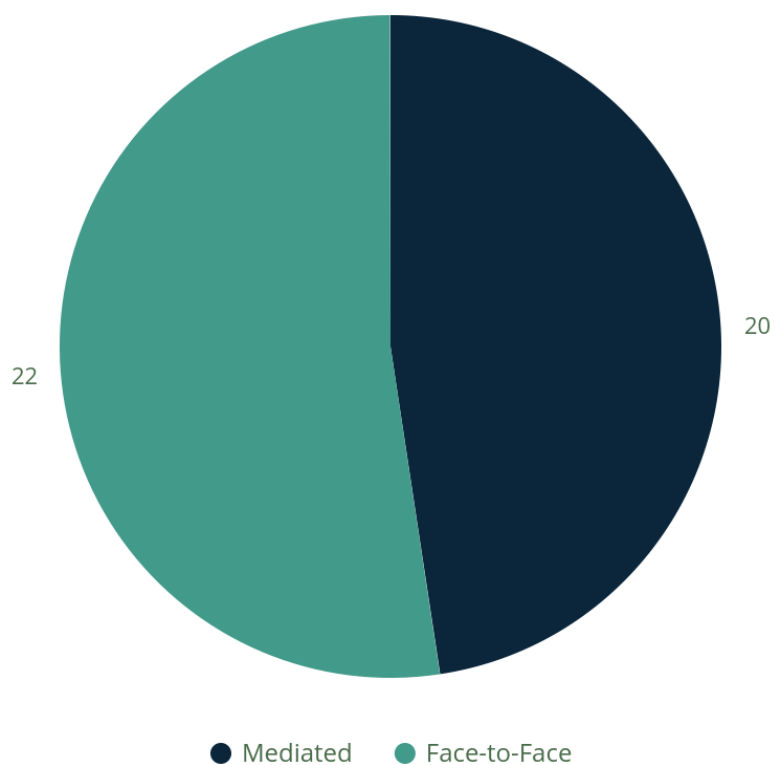
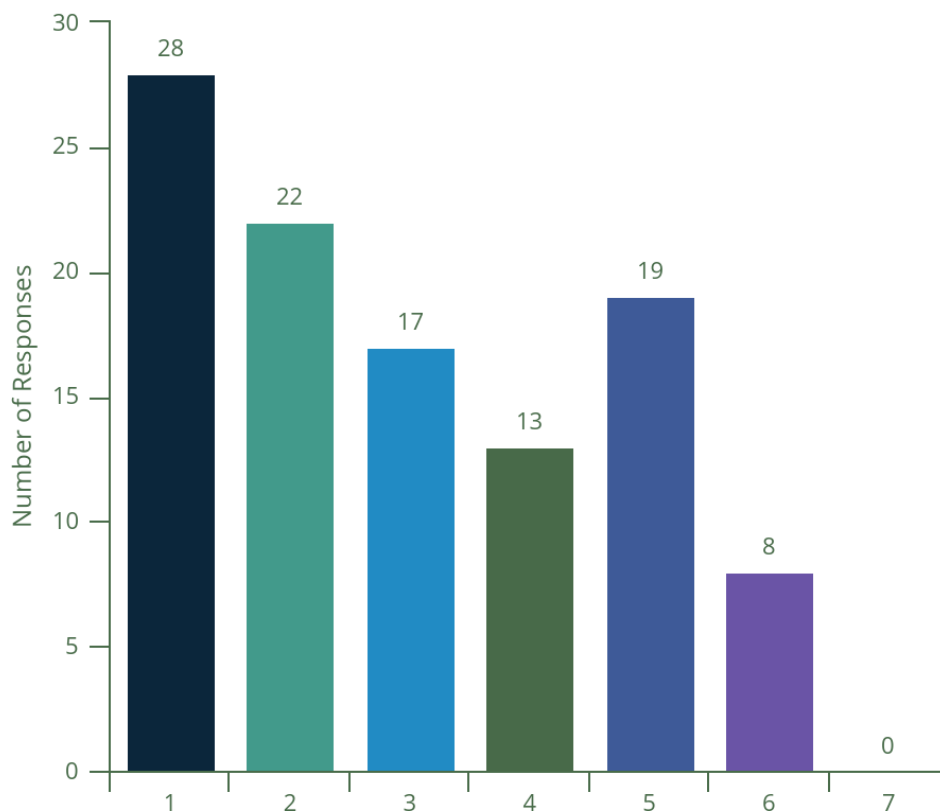


Figure 4. This figure shows the primary mode of communication between the CRO and the alter listed based on the two options given. The researcher compiled all responses from each CRO and is shown in the figure above.

What is the typical message content between the CRO and significant alters?



Legend

- 1 - To generate new ideas or ways to innovate existing practices
- 2 - To troubleshoot new plans or programs
- 3 - For advice on how to implement a plan or program
- 4 - For advice on how to read the political and interpersonal dynamics at play in an interorganizational or interdepartmental collaboration
- 5 - To draw on their knowledge and/or experience
- 6 - To get their advice on how to handle the stresses of my CRO position
- 7 - Other (please specify)

Figure 5. This figure shows the typical message content between the CRO and the alter listed based on the seven options given. The researcher compiled all responses from each CRO and is shown in the figure above.