

**Governance and Outcomes of Collaboration:
A Large Sample Study of Nonprofit Networks**

by

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Abstract

Collaboration has become a common way for nonprofit organizations to address important social and economic issues facing communities. The form of governance of a collaborative network, which involves coordinating and guiding its participants' actions, represents a critical feature that shapes the ability of the network to achieve its goals. However, little is known about the factors that influence the adoption of a particular form of network governance (e.g., a centralized form over a non-centralized form, the specific forms of centralized governance), and little is understood about how the form of governance influences network outcomes.

In response, this study examined these questions using a mixed-methods approach involving in-depth semi-structured interviews together with a large-*n* survey of collaborative networks in the Foundation Center's Nonprofit Collaboration Database. A total of 20 semi-structured interviews with network representatives provided a nuanced understanding of network governance and outcomes and helped refine the research questions and hypotheses. An original survey of 177 representatives of nonprofit networks allowed for the statistical analysis of the patterns of collaboration governance and outcomes as well as the testing of hypotheses derived from the literature review and interviews.

The survey results demonstrate the pervasiveness of a centralized form of governance, with almost equal adoption of either a lead organization or an administrative organization, across the collaborative networks studied. The research revealed contextual factors and network characteristics with significant influences on the adoption of a centralized form over a non-centralized form of governance, an administrative

organization form over a lead organization form of centralized governance, and the involvement of member organizations in governance. The results show that networks with centralized governance are more successful in achieving goals compared to networks with non-centralized governance. The study also found that networks governed by a central organization with greater member involvement in governance achieve higher levels of social capital, collaborative learning, and progress toward goals in comparison to those with less member involvement.

This dissertation contributes new evidence about collaborative governance in the nonprofit sector, the adoption of centralized and non-centralized forms of network governance, and the achievement of collaboration outcomes.

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Chapter One: Introduction

1.1. Context of the Study

Collaboration has become a common way for nonprofit organizations to address important, complex issues facing communities and society, including those related to health care, education, environment, and community development (Chen & Graddy, 2010; Kernaghan, 2009; Lindenberg, 2001; Mandell, 2001; Selden et al., 2006).

According to the 2018 State of the Nonprofit Sector Survey conducted by the Nonprofit Finance Fund, 68 percent of nonprofits in the United States collaborate with other organizations (Nonprofit Finance Fund, 2018). Collaborative networks are growing in number because they provide nonprofit organizations with opportunities to expand their reach and impact on complex social problems (Gowdy et al., 2009). Indeed, nonprofit organizations increasingly see their work “as a collaborative, evolving process, rather than as something they can completely control internally” (Gowdy et al., 2009, p. 13).

Governance of a network, as a means of coordinating and guiding participants’ actions, is a key factor in the functioning of a collaborative network and achieving its goals (Bryson et al., 2006). Organizations that participate in a collaborative network need to make decisions about how to coordinate and direct their efforts within a network or, in other words, to choose and implement a form of network governance. Meanwhile, little is known about the factors that influence the adoption of a particular form of network governance—for example, a centralized form over a non-centralized form and the specific forms of centralized governance. The literature on network governance has provided some theoretical speculations about the determinants of the choice of governance forms (Bryson et al., 2006; Emerson et al., 2012; Provan & Kenis, 2008).

Empirical research on network governance, which is mainly conducted in the form of case studies involving a small number of networks, has not given close attention to the patterns of network governance and the factors that influence such patterns.

Another important question is whether centralized governance can help networks generate better outcomes than non-centralized governance. Previous studies acknowledge the important role of network governance in producing desired results (Bryson et al., 2006; Provan & Kenis, 2008) and suggest that centralized governance is more effective in achieving goals than non-centralized governance (Provan & Milward, 1995; Raab et al., 2015). However, there is little research available that compares the results of networks governed in different ways. The scarcity of network-level research involving large samples of networks limits the understanding of the adoption of various network governance forms and their resulting influence on outcomes achieved.

1.2. Purpose of the Study

Based on this context, this research aims to:

1. Identify governance forms adopted in nonprofit collaborative networks.
2. Evaluate factors that influence the adoption of a centralized form over a non-centralized form of network governance.
3. Investigate how governance forms and other factors influence the collaboration outcomes that collaborative networks achieve.

This research employs a mixed-methods approach involving qualitative interviews with representatives of collaborative networks and a quantitative survey of networks included in the Foundation Center's Nonprofit Collaboration Database. Semi-structured interviews with 20 representatives of a purposive sample of networks generate

a nuanced understanding of network governance and outcomes achieved in networks. A survey of 177 networks allows for statistical analysis of patterns of governance and outcomes of collaboration as well as the testing of hypotheses derived from the literature review and qualitative interviews.

1.3. Significance of the Study

This study contributes new evidence about collaborative governance in the nonprofit sector, the factors influencing the centralization of governance, and the outcomes achieved in collaborative networks. In particular, this study examines the contextual factors and network characteristics that influence the adoption of centralized network governance versus non-centralized governance and the roles of governance forms in achieving outcomes. Additionally, this study considers member organizations' involvement in governance as part of network governance and provides evidence for the effects of such involvement on collaboration outcomes. The performance of collaborative networks is examined based on both intermediate and ultimate collaboration outcomes.

This research contributes to the literature on interorganizational networks as one of the first large-*n* studies of network governance. Using a large sample of networks, the analysis identifies patterns of governance, including the frequency of adopting centralized governance and whether it takes the form of a lead organization or an administrative organization. It also examines factors associated with the centralization of network governance and member involvement in governance. And, importantly, the study probes the relationships between network governance forms and collaboration outcomes.

The results of this research may help network participants and coordinators, who are interested in improving the governance and outcomes of their collaborative networks, learn about outcomes achieved from the use of centralized and non-centralized forms of network governance as well as gain an understanding of contextual and network-related factors that influence the centralization of network governance. Knowledge of such factors and relationships may help organizations adopt network governance forms most likely to lead to desired outcomes for collaborative networks.

1.4. Outline of the Dissertation

Chapter 2 begins with a review of literature on interorganizational networks, network governance and its forms, and the factors that shape network governance. The chapter then presents hypotheses on the factors influencing the adoption of centralized over non-centralized governance in collaborative networks as well as relationships between the forms of network governance and collaboration outcomes. Chapter 3 explains the rationale for using a mixed-methods approach, describes the qualitative interview method used in the study, and summarizes the interview findings. Chapter 4 provides information about the survey of networks, describes the questionnaire, and presents the quantitative analysis of survey data and its findings. Chapter 5 discusses the implications of the research and its contributions to the theory and practice of network governance in the nonprofit sector.

1.5. Key Definitions

Before going on, it is important to define several key terms used throughout this dissertation:

Interorganizational network. An interorganizational network is a group of three or more autonomous organizations working together to accomplish a common goal (adapted from Provan and Kenis (2008) and Raab and Kenis (2009)).

Collaborative network. A collaborative network is a group of three or more autonomous but interdependent organizations that engage in collaborative activities to achieve a common goal.

Nonprofit collaborative network. Collaborative network consisting mostly of organizations representing the nonprofit sector, which may include a few organizations from other sectors when the goal that needs to be achieved (or the problem that needs to be solved) also applies to these sectors.

Network governance. Network governance is a means for providing coordination and direction for organizations that have joined a network and act in their common interest (adapted from Lynn et al. (2000)). The form of network governance is a way to coordinate and guide collective action within a network.

Centralized network governance. Networks with centralized governance (or a centralized form of network governance) are those that are governed by a central organization.

Chapter Two: Literature Review and Hypotheses

The chapter begins with a description of interorganizational networks, while paying particular attention to collaborative networks and their characteristics. It proceeds with a review of literature on network governance, its centralized and non-centralized forms, and then presents hypotheses about the influences of contextual and network-related factors on the adoption of centralized network governance. Finally, the chapter examines outcomes that are likely to be achieved in collaborative networks and outlines expectations regarding the effects of centralized and non-centralized forms of network governance on these outcomes.

2.1. Nature of Interorganizational Networks

Existing literature views interorganizational networks as a way to address complex issues that require greater capacity and resources than individual organizations might possess (Bryson et al., 2006; Keast et al., 2004; Weber & Khademian, 2008). Major challenges facing communities, such as poverty, crime, health, and education problems, are unlikely to be effectively tackled by organizations working independently (Popp et al., 2014). Ostrom (2008) points to the existence of “collective action problems” that require “the inputs and efforts of multiple individuals in order to achieve joint outcomes” (p.1). Collective action problems are likely to be addressed using a polycentric approach (Ostrom, 1972), in which officials or representatives of multiple entities are involved in determining and enforcing decisions. Often, interorganizational arrangements emerge or are created as cross-sectoral networks because “many of society’s most difficult public challenges require collaboration amongst government, business, non-profits, communities and/or the public as a whole” (Popp et al., 2014, p. 19).

In general terms, a network is defined as “a set of actors connected by a set of ties” (Borgatti & Foster, 2003, p. 992). Network actors, also called nodes, can be individuals, groups, and organizations, which can be connected directly or indirectly through shared points (Borgatti & Halgin, 2011). Network ties can indicate communication, resource or information exchange, and formal or informal relations between actors (Kapucu et al., 2017). Interorganizational networks are defined as “groups of three or more legally autonomous organizations that work together to achieve not only their own goals but also a collective goal” (Provan & Kenis, 2008, p. 231). Jones et al. (1997) define the network form of governance as “a select, persistent, and structured set of autonomous firms (as well as nonprofit agencies) engaged in creating products or services based on implicit and open-ended contracts to adapt to environmental contingencies and to coordinate and safeguard exchanges” (p. 914). Existing definitions of networks also stress the nature of relationships among network participants, describing networks as “structures of interdependence involving multiple organizations or parts thereof, where one unit is not merely the formal subordinate of the others in some larger hierarchical arrangement” (O’Toole, 1997, p. 45). Despite a lack of a universally accepted definition of interorganizational networks, researchers seem to agree on their main attributes: they are groups of formally autonomous organizations that pursue a common goal and have embedded relationships, exchanges, and resource flows (Brass et al., 2004; Jones et al. 1997; Larson, 1992; Powell, 1990; Provan & Kenis, 2008; Raab & Kenis, 2009).

Interorganizational networks have attracted the attention of researchers from various disciplines, such as sociology, organizational theory, business administration,

public policy and administration, and nonprofit management. Networks, as a complex concept, have been studied from different perspectives – at the levels of organizations composing a network, their dyadic or triadic relationships, and the entire network (Raab et al., 2015). Social science research has traditionally focused on the actor or participant level, which has primarily guided knowledge on networks (Provan et al., 2007). Actor-level studies attempt to explain how the involvement of individual organizations in a network impacts their actions and outcomes, often focusing on their positions and dyadic relationships within network structure (Ahuja, 2000; Burt, 1995; Gulati & Gargiulo, 1999; Powell et al., 1996; Sydow & Windeler, 1998; Uzzi, 1997; Walker et al., 1997). Concepts most commonly examined in actor-level studies include structural holes, measures of centrality, density of a network, and brokerage positions and relationships (Ahuja, 2000; Brass & Burkhardt, 1992; Burt, 1995; Provan et al., 2007). Yet research focused on dyadic relationships does not promote an understanding of a network as a whole, as it considers a network “as a collection of two-party relationships rather than as a unique, multiorganizational social structure or even a social system in its own right” (Provan et al., 2007, p. 483). As Salanchik (1995) notes, actor-level network studies focus “on the trees rather than the forest” or “on the actions of individual organizations rather than on the organization of their actions” (p.345).

Network-level research focuses on the properties of a network as a whole, including its structure, processes, and results, and examines concepts, such as network governance, centralization, fragmentation, and effectiveness (Provan et al., 2007; Raab & Kenis, 2009; Raab et al., 2015). Such network-level characteristics can be compared across multiple networks or time periods to determine whether and how network

capacity, performance, and sustainability can be enhanced (Provan et al., 2007).

Network-level research acknowledges that the success achieved by individual organizations may not determine the success of an entire network (Provan et al., 2007). A network theory should clarify “how structures of interactions enable coordinated interaction to achieve collective and individual interests” (Salancik, 1995, p. 348). Raab and Kenis (2009) emphasize several aspects of network theory development:

First, network should be considered as a distinctive form of organizing and as a variable. Especially important, network and not dyadic relations should be the unit of analysis (‘what’). Second, theories should clearly state the relationship between the independent and network as the dependent variable (‘how’). Third, the theories should be able to convincingly argue why there is a relationship between the independent and the network as the dependent variable (‘why’) and fourth, the theories should clearly state the limitations to external validity, i.e. ‘where,’ ‘when’ and ‘for whom’ are they valid. (p. 205).

Research conducted at the network level should take into account that the characteristics and results of a network may differ depending on purposes pursued and levels of integration among network actors. Interorganizational arrangements, which differ in terms of their participants’ goals and desired outcomes, may rely on various ways of working together or mechanisms for network integration (Keast et al., 2007). According to Keast et al. (2007), horizontal integration between network organizations may have varying levels of intensity—“ranging from autonomous, loose, fragmented located at one end of the spectrum to a fully connected system at the other” (p. 12). Based on the level of integration, the literature on interorganizational networks distinguishes cooperative, coordinative, and collaborative networks (Keast et al., 2007; Mandell et al., 2009; McNamara, 2012). The next section examines these three types of interorganizational networks and then describes collaborative networks in more detail.

2.3. Collaborative Networks and Their Features

To describe the processes of cooperation, coordination, and collaboration among organizations, existing literature on networks uses to a continuum of integration, also called a continuum of interaction (Bryson et al., 2006; Keast et al., 2007; McNamara, 2012). Cooperation, which is placed at one end of the continuum, is defined as “an interaction between participants with capabilities to accomplish organizational goals but chose to work together, within existing structures and policies, to serve individual interests” (McNamara, 2012, p. 391). Cooperative networks are mainly used to share information, expertise, space or referrals, and interactions among their participants are often temporary and not formalized (Brown & Keast, 2003; Keast et al, 2007; Mandell, 2008). Coordination, placed in the middle of the continuum, can be defined as an interaction between participants that coordinate their efforts to achieve mutual goals in the most effective manner (Hicks et al., 2008; McNamara, 2012). In coordinative networks, organizations may be involved in joint planning and financing of their activities (Cigler, 2001; Keast et al., 2007; Mandell, 2008).

Collaboration, placed at the other end of the continuum, can be described as an interaction between participants who work together to solve complex problems that cannot be effectively addressed by individual organizations (Head, 2008; Mandell, 2008; McNamara, 2012). Such problems, for example, may concern poverty, public health, community development, education, and environmental issues (Gray, 1989; Head, 2008; Mandell, 2008). Collaborative network members accept roles, functions, and commitments that are specific to their collaboration, share responsibilities, risks, and rewards for joint projects, and become interdependent (Mandell, 2008). Collaboration

partners jointly develop norms and rules to support processes and structures of governance that are used to address common problems (McNamara, 2012; Thomson, 2001). Participants of collaborative arrangements rely on consensus in decision making as well as open and frequent communication, which helps promote a common understanding of collaboration goals, share and create knowledge, and find effective ways of working together (Keast et al., 2007; Mattessich & Monsey, 1992; McNamara, 2012). Trust among organizations is considered an important feature of collaboration that increases the likelihood that participants will engage in collective action, develop a common understanding of goals and ways to achieve them, integrate policies, and leverage resources (McNamara, 2012).

Collaboration, which represents the most integrated form of interorganizational interaction, is also likely to rely on the processes of cooperation and coordination (Gray, 1989). Cooperation among network participants, manifested in their willingness to take into account each other's goals, creates a basis for higher levels of integration, such as coordination and collaboration (Keast et al., 2007). Also, coordination of the efforts of partners is seen as necessary for collaboration (Hicks et al., 2008). Collaborative networks are most likely to achieve optimal integration "by mixing and matching the integration mechanisms to best suit the goals sought and the operational context" (Keast et al., 2007, p. 26).

In the literature, interorganizational collaboration is often defined as a process, emphasizing the role of relationships and interactions among participants in achieving the goals of collaboration. For example, Thomson (2001) defines collaboration as "a process in which autonomous actors interact through formal and informal negotiation, jointly

creating rules and structures governing their relationships and ways to act or decide on the issues that brought them together” (p. 83). Gray (1989) defines interorganizational collaboration as “a process through which parties who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their own limited vision of what is possible” (p. 5). According to Mandell (2008), the purpose of a collaborative network is “not to develop strategies to solve problems per se”, but “to achieve the strategic alignment among participants that will eventually lead to finding innovative solutions” (p. 65). Mattessich and Monsey (1992) also emphasize the role of establishing relationships among organizations by defining collaboration as:

A mutually beneficial and well-defined relationship entered into by two or more organizations to achieve common goals. The relationship includes a commitment to: a definition of mutual relationships and goals; a jointly developed structure and shared responsibility; mutual authority and accountability for success; and sharing of resources and rewards. (p. 7)

As a complex multidimensional concept, collaboration is described using various typologies and frameworks. Mayer and Kenter (2015) identify the key aspects of collaboration based on a review of 100 studies on public sector collaboration; these aspects include shared vision, shared goals, diverse stakeholders, shared resources, consensus decision-making, leadership, communication, trust, and social capital. Although some of these aspects are not mutually exclusive (Mayer & Kenter, 2015), they shed light on a wide variety of collaboration characteristics discussed in the literature. Original studies also consider collaboration as consisting of multiple dimensions. For example, the model of collaboration developed by Thomson (2001) includes five key dimensions, such as governance, administration, mutuality, trust, and organizational autonomy. Gray (2000) suggests that collaborative efforts should be evaluated based on five dimensions, such as achieving goals (or solving problems), shared meaning, social

capital, changes in network structure, and shifts in power distribution. According to DeLeon and Varda (2009), collaborative policy networks can be evaluated based on several criteria, such as mutuality of goals, shared norms, reciprocity, representation, flattened power structures, participatory decision making, trust, and collaborative leadership. Head (2008) suggests that aligning the perspectives of different stakeholders, developing trust among stakeholder groups, adopting clear rules and procedures, bridging and connecting stakeholder groups, collective leadership, and collaborative learning are indicators of success for collaboration. According to Czajkowski (2007), the characteristics of successful collaboration include common purpose, trust and partner compatibility, shared governance and joint decision making, clarity around roles and responsibilities, open and frequent communication, and adequate resources.

The importance of guidance and coordination of the actions of collaboration participants is acknowledged through discussion of the concepts of governance (Thomson, 2001; Thomson et al., 2009), shared governance and joint decision making (Czajkowski, 2007), and collective or collaborative leadership (DeLeon & Varda, 2009; Head, 2008; Mayer & Kenter, 2015). Yet the collaboration literature, which mainly examines the aspects of collaboration from the perspective of participating organizations, pays little attention to whether and how governance processes, as well as joint decision making or collective leadership, influence outcomes at the level of an entire collaborative or a network. Some issues of network governance and its outcomes are discussed in the literature on interorganizational networks. The next section reviews the existing literature on network governance, focusing on factors shaping and influencing governance and outcomes that are likely to be achieved as a result of governance.

2.4. Governance and Outcomes of Collaborative Networks

The section begins with an examination of the concept of governance and its relevance and role in interorganizational networks. Then, it describes centralized and non-centralized forms of network governance and develops hypotheses about the factors that influence the centralization of network governance. Finally, this section reviews collaboration outcomes that are likely to be influenced by network governance and formulates research expectations about the effects of governance centralization on these outcomes.

2.4.1. Governance in the Context of Networks

A major question related to interorganizational networks is how to achieve concerted action between multiple actors working toward a common purpose (Klijn & Koppenjan, 2000). The presence of concerted action is especially important for consciously formed and goal-directed networks, called “whole” networks, which differ from “serendipitous” networks formed spontaneously (Provan et al., 2011, p.316). Cooperation among actors of goal-directed networks is unlikely to occur without governing efforts (Klijn & Koppenjan, 2000; O’Toole, 1988). Agranoff (2007) describes the need for network governance as follows:

Whereas networks are nonhierarchical and largely self-organizing... the process of structuring and operating does not automatically happen... Someone must guide the process, the work needs to be divided, courses of action need to be agreed to, agreements are carried out. (p. 4)

The importance of network governance is also discussed in connection with various tensions that arise in networks, such as between diversity and unity (Saz-Carranza & Ospina, 2011), cooperation and competition (Jessop, 2000), and internal and external legitimacy (Provan & Kenis, 2008). To effectively pursue their goals, networks

should embrace the diversity of their participants; however, diverse actors may have divergent views on goals, ways of working together, and results of collaboration, which may lead to disagreements and conflicts (Klijn & Koppenjan, 2000; Saz-Carranza & Ospina, 2011; Verweij et al., 2013). Governance can help align the perspectives and actions of diverse network participants and reach consensus on key aspects of collaboration (Cristofoli et al., 2014; Klijn & Koppenjan, 2000; Saz-Carranza & Ospina, 2011). Provan and Kenis (2008) discuss the tension that exists between internal and external legitimacy, defining such tension as “individualistic versus collectivistic legitimacy concerns” and “building internal network interactions versus building the credibility of the network to outsiders” and emphasizing the role of network governance in balancing existing concerns (p. 244). Previous studies also recognize the role of governance in ensuring that network participants engage in collective action, that their interaction and cooperation improve over time, and that the network survives and achieves the desired results (Klijn & Koppenjan, 2000; Provan & Kenis, 2008; Stone et al., 2010).

The concept of governance appears across various disciplines, including organizational studies, political science, public administration and policy analysis, as well as across various sectors. In the context of private for-profit organizations, governance refers to the role of boards of directors that oversee management to protect shareholder interests (Fama & Jensen, 1983; Tricker, 1984). Governance in nonprofit organizations is studied with a focus on the role of boards of trustees, who represent the interests of community members and other constituencies (Drucker, 1990; Provan, 1980; Provan & Kenis, 2008). In the public sector, governance is often discussed in connection with the

involvement of non-state actors in collective decision making in the process of developing and implementing public programs (Ansell & Gash, 2008; Emerson et al., 2012).

In more general terms, governance is concerned with creating rules and conditions for collective action (Ostrom & Ostrom, 2014; Stoker, 1998). According to Kooiman and Van Vliet (1993), “the governance concept points to the creation of a structure or an order which cannot be externally imposed but is the result of the interaction of a multiplicity of governing and each other influencing actors” (p. 64). Lynn et al. (2000) refer to governance as a means for achieving direction and coordination of wholly or partially autonomous organizations or individuals acting in joint interest. Lynn et al. (2000) elaborate on the role of governance as follows: “governance comprises structures and processes guiding administrative activity that create constraints and controls ... and that confer or allow autonomy and discretion on the part of administrative actors, all toward fulfilling the purposes of the enacting coalition” (p. 239).

In the literature, governance at the level of organizations has received greater attention than that at the level of collaborations or networks. In the context of corporate governance, the role of governance is described in the following terms:

The governance role is not concerned with running the business of the company, *per se*, but with giving overall direction to the enterprise, with overseeing and controlling the executive actions of management and with satisfying legitimate expectations for accountability and regulation by the interests beyond the corporate boundaries... All companies need governing as well as managing. (Tricker, 1984, p. 6-7)

Renz (2016) provides a description of the governance of nonprofit organizations and specifies its functions as follows:

Governance is the process of providing strategic leadership to the organization, a process that begins with making informed organizational choices: choices about

why we're here, what we want to accomplish, how best to achieve those results, the resources we'll need to do these things and how we will secure them, and how we will know whether we are making a difference. It comprises the functions of setting direction, making decisions about policy and strategy, overseeing and monitoring organizational performance, and ensuring overall accountability. (p. 132)

Renz (2006) asserts that, in the context of nonprofit organizations, governance is a function and a board is a structure, and therefore these notions should not be equated. A similar viewpoint is expressed by Demb and Neubauer (1992), who argue that “to equate corporate governance with the role of the board is to miss the point. It is much too narrow” (p. 16). Cornforth (2012), who examines governance of a nonprofit organization, acknowledges the role of boards in governing and at the same time points to the contributions of other actors, such as executives, members, and advisory groups, to carrying out governance functions.

Renz (2006) argues that governance processes and functions extend above and beyond individual organizations and are applicable to the next level, such as an interorganizational alliance. Stone et al. (2010) also note that governance can be conceptualized at the levels of individual organizations, collaborations, or interorganizational networks as well as communities or societies. At all these levels, governance involves collective decision making on key issues, such as defining an overall purpose, developing strategies for achieving the purpose and goals, and adopting control and accountability systems (Renz, 2006; Stone et al., 2010). In addition, network governance may include establishing rules and procedures for the interaction of network actors and the coordination of their activities (Renz, 2006).

Governance in interorganizational networks may be performed in different forms. The next section examines the centralized and non-centralized forms of network governance, which are most often discussed in the literature.

2.4.2. Centralized and Non-Centralized Network Governance

To ensure the successful functioning of a collaborative network, participants must decide how to govern their network. Milward and Provan (2006) describe the process of choosing a form of network governance as follows:

While some networks more or less form on their own with little conscious decision about what form it will take, most networks, at some point in their evolution, will be guided by a design decision. That is, some decision will need to be made about how the network should be structured and governed, and then the governance form chosen must be implemented. (p. 21-22)

In the literature on interorganizational networks, the terms “governance mode” and “governance form” are often used interchangeably (Milward & Provan, 2006; Provan & Kenis, 2008). For example, Milward and Provan (2006) use “governance form”, “structural governance form”, “form of network governance”, and “mode of network governance” as equivalent terms. A mode or form of governance can be defined as the pattern/way of governance in which coordination of activities is achieved and sustained (Lowndes & Skelcher, 1998). Researchers also use the terms “regime” or “collaborative governance regime” (Emerson et al., 2012; Krasner, 1982); governance regime is defined in more abstract terms as “principles, norms, rules, and decision-making procedures around which actor expectations converge in a given issue-area” (Krasner, 1982, p.6).

Previous research describes centralized and non-centralized (also called decentralized or shared) forms as the most frequently observed approaches to network governance (Arsenault, 1998; Markovic, 2017; Provan & Milward, 1995; Sarason & Lorentz, 1998; Turrini et al., 2010). It should be noted that network-level studies pay

attention to the concept of centralization of network governance as opposed to the concept of centrality addressed through the use of social network analysis in actor-level studies (Provan et al., 2007). Accordingly, this research focuses on centralized network governance with a particular emphasis on governance through a central organization.

A centralized form of network governance uses a central governing or brokering entity, which facilitates the coordination of network actors' activities (Provan & Kenis, 2008; Provan & Milward, 1995). Centralization of network governance is referred to as "the propensity in the network for organizations to receive ties from other actors who do not have direct ties with one another" (Atouba & Shumate, 2010, p. 298). Provan and Milward (1995) describe the centralization of network governance as "the power and control structure of the network, or whether network links and activities are organized around any particular one or small group of organizations" (p. 10). Provan and Kenis (2008) refer to centralized governance as a brokered type of governance and note that network governance can be brokered by one of the network participants called a lead organization or by an external entity called a network administrative organization.

In a lead organization form of network governance, one of the member organizations positioned centrally—usually, the one with greater resources, power, and legitimacy—takes responsibility for coordinating major network activities and decisions. A lead organization facilitates and coordinates the key activities and decisions of a network, while member organizations may interact with one another on operational issues (Provan & Kenis, 2008). A lead role in governing a network is usually assumed by an organization that has a central position because of the flow of clients and resources; for example, lead roles can be performed by a health clinic or hospital in a community health

network, by a government health department in a local health policy network, and by a transportation agency in an infrastructure network (Provan & Kenis, 2008). A lead organization form of governance is common in collaborations required by funders, especially government agencies (Graddy & Chen, 2006). In these cases, government departments or agencies that are interested in solving important social problems through interorganizational collaboration may award funds to major service providers, which become the lead organizations of their networks (Graddy & Chen, 2006; Kenis & Provan, 2009). Because of the controlled resource flows and operations, a lead organization form of governance is associated with increased efficiency and legitimacy (Kenis & Provan, 2009; Provan & Kenis, 2008). On the other hand, a lead organization that has its own agenda and interests can establish dominance over other network members. Such dominance may lead to the indignation of member organizations and the loss of their interest in network-level goals (Kenis & Provan, 2009).

Another centralized form of network governance, called a network administrative organization model, uses a separate administrative entity to govern network activities. In such a network, all major activities are connected through and coordinated by an administrative organization, while network organizations may interact and work with each other under accepted agreements (Kenis & Provan, 2009). Networks may create an administrative organization or choose an organization outside their network as a governing entity. The roles of an administrative organization can be performed by a nonprofit organization, a for-profit organization, and in some cases by a government entity (Provan & Kenis, 2008). The main strengths of an administrative organization form of network governance are legitimacy, especially among outside stakeholders, and, to a

lesser extent, efficiency; its main drawback is the possible bureaucratization of decision-making processes (Kenis & Provan, 2009).

In a non-centralized or shared form of governance, most or all network members are involved in the process of governance on a more or less equal basis (Provan & Kenis, 2008). Governance of collective action in these networks is performed by network members without creating a distinct governing entity (Kenis & Provan, 2009). In some cases, a major role in coordinating collective action can be performed by a subset of a whole network, rather than by all participants (Kenis & Provan, 2009). In a network with shared governance, member organizations are likely to develop a sense of ownership and commitment to their network (Arsenault, 1998). Yet the development of multiple linkages within such a network may complicate its functioning as a complete system as well as achieving its goals (Provan & Milward, 1995).

Prior literature acknowledges a critical role of network governance in achieving positive network-level outcomes (Klijn & Koppenjan, 2000; Provan & Milward, 1995; Provan & Kenis, 2008; Turrini et al., 2010) and assumes that centralized governance allows achieving higher effectiveness in terms of goal achievement compared to non-centralized governance (Provan & Milward, 1995; Provan & Sebastian, 1998). Provan and Milward (1995) explain the advantages of centralization as follows:

centralization appears to facilitate both integration and coordination, something that decentralized systems have a difficult time accomplishing because of the number of organizations and linkages involved. In addition, monitoring and control over activities and outcomes by the core agency become possible once a network is centralized. Such control may be critical for encouraging otherwise autonomous agencies to act in ways that lead to system-level, as opposed to agency goals. (p. 24)

Raab et al. (2015), who used qualitative comparative analysis to investigate crime prevention networks in the Netherlands, found centralized integration to be a necessary

condition for network effectiveness. They argue that to be effective, networks must be centrally integrated, as this “promotes the efficient coordination of network activities by preventing overlapping or conflicting actions” (Raab et al., 2015, p. 505). Markovic (2017), who examined health and social care networks in Switzerland, also found a positive influence of centralization on network effectiveness. Networks with a central organization perform effectively due to higher managerial capacities and skills developed for network-level needs (Markovic, 2017).

According to Provan and Kenis (2008), lower results of non-centralized governance can be explained by the tension between inclusiveness and efficiency: “The more that organizational participants are involved in the network decision process, the more time consuming and resource intensive that process will tend to be” (p. 242). On the contrary, centralized governance, especially its lead organization form, can increase efficiency, since “the burden of direct involvement can be reduced significantly” (Provan & Kenis, 2008, p. 242). However, a lead organization form that allows achieving efficiency in the short term may be ineffective in the long term, mainly because of the focus on the needs of a lead organization and the low commitment of participants (Provan & Kenis, 2008). An administrative organization form is believed to provide a greater balance between efficiency and inclusiveness as well as overall effectiveness (Provan & Kenis, 2008). Yet empirical studies do not provide convincing evidence for greater effectiveness of networks governed by an administrative organization compared to those governed by a lead organization. In the study by Raab et al. (2015), the hypothesis that governance by an administrative organization is a necessary condition for network effectiveness has not been confirmed.

Some studies suggest that member participation is likely to have a positive effect on network effectiveness. For example, Cristofoli et al. (2014) assert that participation of a larger number of members (“a group of institutional bodies which are usually representatives of different organizations”) in network administration helps networks achieve goals, stability, and accountability (p. 90). Chen & Graddy (2010) argue that the coordination of network activities by committees consisting of member organizations leads to positive outcomes. On the other hand, Verweij et al. (2013), who examined the impacts of network management, complexity, and stakeholder involvement on network results, found that none of these factors is necessary and/or sufficient to achieve desired outcomes. However, it has been shown that some combinations of these variables, such as stakeholder involvement and adaptive network management, provide improved results (Verweij et al., 2013).

Regarding the forms of network governance, extant literature informs that “the choice of one form versus another is not simply arbitrary but involves careful consideration of which form is best suited to network needs and conditions” (Milward & Provan, 2006, p. 22). Previous studies suggest several determinants of the choice of network governance (Bryson et al., 2006; Emerson et al., 2012; Provan & Kenis, 2008). Some of these determinants relate to contextual factors that may create opportunities as well as limitations for network governance (Emerson et al., 2012; Bryson et al., 2006). Emerson et al. (2012) argue that context variables, such as policy and legal frameworks, connectedness, and levels of conflict or trust, may influence collaborative governance regimes. Bryson et al. (2006) emphasize the importance of matching the structure of network governance to initial conditions of cross-sector collaborations, including

agreement on a problem, environmental factors, pre-existing relationships, and conveners, for achieving desired effectiveness. The adoption of the forms of network governance may also be influenced by network characteristics. Some of these characteristics are suggested in the seminal work on network governance by Provan and Kenis (2008), who attempt to develop a theoretical rationale for choosing one governance form over another in a way that helps ensure network effectiveness. In particular, these authors hypothesize that the successful adoption of governance forms is based on several contingencies, including the need for network-level competencies, network size, goal consensus, and density of trust across a network (Provan & Kenis, 2008).

To date, most empirical studies have been performed for networks governed in a particular way—using either shared governance (Cristofoli et al., 2014) or a central organization, such as a lead organization (Chen & Graddy, 2010; Graddy & Chen, 2006; Müller-Seitz, 2012) or a network administrative organization (Raab et al., 2015; Saz-Garranza & Ospina, 2011)—and have not comparatively analyzed networks governed in different ways. Also, the existing studies, which have been mainly conducted in the form of case studies involving small samples of networks, have not generated evidence for the determinants of centralized network governance and the relationship between centralization of network governance and its outcomes.

To help fill the gap in the literature, this dissertation aims to examine the following research questions:

1. What contextual factors and other characteristics of collaborative networks influence the adoption of centralized network governance?

2. Does the adoption of centralized network governance over non-centralized governance make a difference for collaborative network outcomes?

The next section reviews contextual factors as well as network characteristics that might impact network governance and then develops hypotheses about their influences on the centralization of network governance. To understand collaborative network outcomes, two streams of literature—on interorganizational collaborations and networks—are examined. Then, hypotheses are developed about the effects of centralized and non-centralized forms of network governance on the outcomes of collaborative networks.

2.5. Determinants and Outcomes of Network Governance

2.5.1. Determinants of Network Governance

This section describes contextual factors and network characteristics that may determine the form of network governance and develops hypotheses about their influence on the adoption of a centralized form of network governance over a non-centralized form.

The Influence of Contextual Factors. Prior research has shown that the formation and functioning of collaborative networks are likely to be influenced by a number of contextual factors (Bryson et al., 2006; Sharfman et al., 1991; Stone et al., 2013; Turrini et al., 2010). Such contextual¹ factors can be related to the environmental context of collaboration, such as the characteristics of a problem addressed by collaboration and external demands placed on a network of collaborating organizations, and/or initial conditions of collaborative network formation, including initial connectedness, trust, and agreement on goals among organizations.

¹ According to Oxford Dictionaries (2019), context can be defined as “The circumstances that form the setting for an event, statement, or idea, and in terms of which it can be fully understood and assessed.”

Problem Characteristics: Complexity and Dynamism. The role and importance of interorganizational collaboration are often discussed in relation to its potential for solving problems (Dörner & Funke, 2017; Head, 2008; Gray, 1985; Mayer & Kenter, 2015). Existing studies use the terms “messes” or “systems of problems” (Ackoff, 1974; Askoff, 1997) or “wicked” problems (Rittel & Webber, 1973) to characterize complex social problems. According to Gray (1985), collaboration is “a viable and necessary approach to confronting many complex problems faced by our society”. Previous research also acknowledges the role of networks in addressing complex problems—“network structures are unique responses to very complex, messy, wicked problems that do not lend themselves to business as usual.” (Keast et al., 2004, p. 370)

Problems can be described using several characteristics, such as complexity, dynamics, and informational uncertainty (Funke et al., 2018; Kirschke et al., 2017). Particularly, complexity is defined as “the number of elements that go to make up a system— social or natural—and the nature of interactions that take place between the elements” (Boisot & Child, 1999, p. 238). In some cases, problem complexity is considered from a wider perspective, describing not only elements of a problem, but also its causes, dynamics, and uncertainty about a problem (Kirschke et al., 2017). Dynamics of a problem/task is sometimes referred to as dynamic complexity that occurs due to changes in the environment and that might have an impact on the components of a problem and their relationships over time (Liu & Li, 2012; Wood, 1986).

There are mixed views regarding whether higher problem complexity leads to the adoption of centralized governance in organizational and interorganizational arrangements. Organizational studies suggest that, under higher uncertainty and

complexity, a decentralized form allows for greater flexibility and creativity than a centralized form of governance (Lynn, 2005). Härmäläinen (2005) argues that problem complexity can be reduced and absorbed through the use of governance arrangements that encourage the participation of multiple stakeholders and collective learning. In interorganizational network studies, some scholars argue that solving network-level problems requires network-level competencies and that a centralized form of governance is likely to achieve higher levels of such competencies than a non-centralized form of governance (Provan & Kenis, 2008). According to Provan and Kenis (2008), lower needs for network-level competencies are associated with shared (non-centralized) governance, while moderate and high needs for network-level competencies require centralization of governance (Provan & Kenis, 2008). A central organization of a network, especially an administrative organization, is likely to have personnel with the expertise and competencies necessary to resolve complex issues (Provan & Kenis, 2008). On the other hand, organizations governing jointly can share their diverse perspectives and come up with new and creative ways of dealing with complex problems (Härmäläinen, 2005; Lynn, 2005). Therefore, the complexity of a problem can be positively or negatively related to the adoption of a centralized form of network governance over a non-centralized form.

Dynamism of problems is discussed in terms of adaptation to and regulation of changes (Lynn, 2005). Problem dynamism associated with changes in the environment necessitates a timely adjustment of strategies and actions. Non-centralized network governance involves numerous consultations between participants, and this can lead to slow decision making (Provan & Kenis, 2008). In networks with centralized governance, facilitation of discussions and coordination of implementation efforts by a central

organization (Provan & Kenis, 2008; Stone et al., 2013) can enable faster responses to dynamic problems. Hence, collaborative networks created to solve problems with high dynamism are likely to adopt a centralized form of governance.

External Demands. According to institutional theory, organizations are strongly influenced by and interact with their environment (DiMaggio & Powell, 1991; Meyer & Rowan, 1977; Suchman, 1995). Institutional environment is featured “by the elaboration of rules and requirements to which individual organizations must conform if they are to receive support and legitimacy” (Scott & Meyer, 1983, p. 149). Interorganizational networks, like individual organizations, confront multiple demands from their environment to which they must conform (Raab et al., 2015; Turrini et al. 2010). External control over a network is defined as “the network dependence on constituencies, variously identified in the different contexts where the network operates” (Turrini et al., 2010, p. 540). Improving relationships with external stakeholders and responding to their demands are critical to the success of networks that rely on external funding and support (Kenis & Provan, 2009; Luke et al., 2013; Stone et al., 2013). Networks, like organizations, must maintain external legitimacy to get support from their environment (Provan et al., 2008; Stone et al., 2013). Singh et al. (1986) refer to external legitimacy as “having ... actions endorsed by powerful external collective actors... and developing strong relationships with external constituencies” (p. 176). Support and demands of funders, government agencies, clients, and a broader community, as well as changes in policy and regulations, are discussed in the literature as possible factors affecting interorganizational networks and their outcomes (Bryson et al., 2006; Provan, Kenis, & Human, 2008; Raab et al., 2015; Turrini et al., 2010). To be able to respond to external

demands, networks should continuously monitor changes in their environment and maintain relationships with actors outside their network (Gray, 1985; Stone et al., 2013).

Networks that experience higher external pressures and, consequently, greater needs for responding to them, are likely to adopt centralized governance (Provan & Kenis, 2008). In this case, the central organization of a collaborative network may serve as a single point in establishing and maintaining relations with external stakeholders. Governance by a central organization may allow networks to deal with external concerns faster and more competently than non-centralized governance (Provan et al., 2008; Provan & Kenis, 2008). Hence, higher external demands placed on a collaborative network are likely to lead to the adoption of a centralized form of network governance.

Initial Connectedness. Pre-existing relationships among organizations are viewed as an important antecedent to collaboration (Bryson et al, 2006; Stone et al., 2010; Stone et al., 2013; Williams, 2015). Prior relationships allow organizations to identify new opportunities for collaboration (Grasse & Ward, 2015; Gulati & Gargiulo, 1999), judge about the legitimacy and reliability of their partners (Bryson et al., 2006) and reduce uncertainties associated with new partnerships (Gulati & Gargiulo, 1999). Networks of exchange, such as referrals, information sharing, and joint programs, are useful channels through which organizations can learn about the competencies and reliability of their partners (Gulati & Gargiulo, 1999). Moreover, organizations may be embedded through board interlocks and membership associations, which are influential “in providing actors with access to timely information and referrals to other actors in the network” (Gulati & Gargiulo, 1999, p. 1445).

Organizations with prior connections and relationships are likely to establish congruence in their goals and processes as well as in communication patterns (Grasse & Ward, 2015). The more organizations know about each other, the greater likelihood that information, values, and norms will diffuse across a network, allowing social mechanisms, such as reputation and collective sanctions, to coordinate exchanges and ensure the mutual accountability of organizations (Stone et al., 2010). Thus, participants that have previous relationships may prefer to work with each other directly and govern their network jointly, rather than through an intermediary or a central organization.

On the contrary, organizations with little or no prior relationships may experience challenges with obtaining information about the goals, competencies, and reliability of their potential partners (Gulati & Gargiulo, 1999). In that case, centralized network governance that can connect potential participants, facilitate the exchange of information and resources, and coordinate their joint work would be preferable to non-centralized governance. Furthermore, when actors have no prior relationships or these relationships are negative, collaboration, in which there is no central organization, is highly vulnerable and unlikely to survive (Stone et al., 2013). Thus, a collaborative network whose participants have no or limited previous connections is likely to adopt a centralized form of governance, while a network consisting of organizations with pre-existing connections is likely to be governed jointly without creating or using a central entity. In other words, initial connectedness among network organizations is expected to be negatively related to the centralization of network governance.

Initial Trust. Trust is an important factor of collaboration across all its stages, including initiation (Ferguson & Dickens, 2011). Pockets of trust formed initially among

network participants can be capitalized on at the later stages of network development through the use of management strategies (Keast et al., 2004). Ferguson and Dickens (2011) point out that alliances are likely to occur if potential participants can answer affirmatively the questions of whether they trust their partners' motives, competence, dependability, and collegiality. Cordero-Guzman (2001) emphasizes the importance of trusting other organizations' leadership, mission, and capacity to accomplish goals during the development phase of an interorganizational network. However, some studies show that suspicion, rather than trust, is the starting point for most collaborations (Huxham, 2003; Weech-Maldonado & Merrill, 2000).

Collaboration participants having high trust each other are likely to be more successful in developing relationships and working together than participants that hardly trust each other. Therefore, participants having trust in each other may prefer to use shared governance (Provan & Kenis, 2008). When trust among network organizations is low, centralized network governance is likely to lead to better results than non-centralized governance (Provan & Kenis, 2008). In this case, a central organization of a network may help collaboration participants, who hardly trust each other, negotiate and reach agreement on key aspects of collaboration, such as goals and ways of working together (Gray, 1989; Provan & Kenis, 2008). Hence, lower initial trust among organizations may require a centralized form of network governance, while higher initial trust may lead to the adoption of non-centralized governance. Thus, the relationship between initial trust among network organizations and the centralization of network governance is expected to be negative.

Initial Agreement on Goals. Previous research considers agreement on goals to be one of the antecedents to collaboration (Bryson et al., 2006). Goal agreement is associated with the interest of potential participants in a problem and their need to collaborate with others to solve this problem (Bryson et al., 2006). Provan and Kenis (2008) suggest that, when participants generally agree on network-level goals, they may choose to govern their network jointly. In case of lower goal agreement, centralized governance is preferable to non-centralized governance, as a central organization acting as an intermediary can help network members reconcile their disagreements on goals and arrive at a compromise. In some cases, a central organization, such as a lead organization, can assume responsibility for making and implementing network-level decisions if disagreements cannot be resolved (Graddy & Chen, 2006). Hence, lower initial agreement on goals among collaboration participants can lead to centralized network governance, while higher agreement on goals can lead to the adoption of non-centralized governance. In other words, it is expected that initial agreement on goals among network organizations is negatively related to the centralization of network governance.

The Influence of Network Characteristics. Network characteristics with possible influence on centralization of network governance are grouped into several categories, such as heterogeneity/homogeneity of a network, which includes similarities/dissimilarities and sectoral differences of network organizations, size and scope of a network, and interdependencies among network organizations.

Similarities/Dissimilarities of Network Organizations. A theory of homophily suggests that individuals tend to associate with those who are characterized by similar attributes, interests, and behaviors (Grasse & Ward, 2015; Powell et al., 2005). Likewise,

organizations may choose to collaborate with organizations that have common characteristics, goals, services, and target populations (Atouba & Shumate, 2015; Grasse & Ward, 2015; Powell et al., 2005). Yet, the value of collaboration is to bring together actors with diverse skills, knowledge, expertise, and resources to solve problems (Ahuja, 2000; Gray, 1989). Thus, interorganizational networks can be homogenous or heterogeneous in terms of sectors, interests, services, and resources of their participants (Provan & Lemaire, 2012).

Existing research suggests that similarities or dissimilarities of collaboration participants may influence network dynamics and cooperation (Head, 2008). Organizations that are similar in terms of their goals and services are likely to have a common understanding of problems and ways to achieve them (Smith, 2008) and, therefore, may reach an agreement on these issues by governing their network jointly. In addition, common interests, interpretations, and procedures help make their interaction easier and smoother (Knoben & Oerlemans, 2006). On the other hand, homogenous network organizations are likely to compete, for example, for clients and/or resources (Evan, 1965; Provan & Kenis, 2008). In such networks, centralization of governance through a lead organization or an administrative organization may help “bring these organizations together, enabling them to find common ground and demonstrating the value of cooperation over competition” (Provan et al., 2008, p. 131). Thus, in collaborative networks, similarities, as well as dissimilarities among organizations, may be positively or negatively related to the centralization of governance.

Sectoral Differences. Collaboration among organizations from different sectors is considered as the preferred way to solve complex problems extending the sectoral

boundaries (Moore et al., 2002; Smith, 2008). Also, nonprofit collaborations aimed at solving important social issues can be initiated and/or funded by government organizations that can become participants in such networks (Chen, 2008; Graddy & Chen, 2006). Yet organizations from different sectors have their own missions, management styles, organizational cultures, and are accountable to various stakeholders with different expectations (Ackermann et al., 2005; O’Leary & Vij, 2012). These organizations may also exhibit differences in network coordination. Herranz (2008) discusses community, bureaucratic, and entrepreneurial orientations of organizations from the nonprofit, public, and private for-profit sectors, respectively. In particular, nonprofit organizations tend to be community-oriented and driven “by the underlying communitarian values associated with the civil society sector: participative, relational, voluntaristic, and self-organizing” (Herranz, 2008, p. 9). This contrasts with the bureaucratic orientation of public organizations (“the attributes associated with the public sector: legalistic, procedural, and hierarchically organized”) and the entrepreneurial orientation of for-profit organizations (“the behavior associated with the market sector: profit-seeking, opportunistic, customer focused, and marketplace organized”) (Herranz, 2008, p. 10). These differences may create problems for the governance and operations of networks whose participants belong to different sectors (Babiak & Thibault, 2009; Herranz, 2008). In particular, problems may arise due to the complexity of determining the roles and responsibilities of collaboration participants from various sectors and the overall complexity of such collaborations (Babiak & Thibault, 2009). Furthermore, combining diverse values, norms, power, and experiences can cause tensions and conflicts among collaborating organizations (DeLeon & Varda, 2009; Le Ber & Branzei,

2010). The use of a centralized form of network governance may allow for bridging sectoral differences of network actors and reconciling their conflicting interests (Weare et al., 2014). Hence, sectoral differences of network organizations are likely to lead to the centralization of network governance.

Network Size. Existing studies associate a centralized form of network governance with the need to accommodate multiple participants and coordinate their activities (Provan & Kenis, 2008). As the number of organizations participating in a network increases, a non-centralized form of governance with organization-to-organization interactions becomes very complex and inefficient (Provan & Kenis, 2008). Therefore, in larger networks, centralized governance that provides effective coordination of participants' actions in terms of time, effort and resources is more likely to be preferred over shared governance (Provan & Kenis, 2008). Provan and Kenis (2008) assume that a non-centralized form of governance may work well if a network consists of less than six to eight organizations. Yet some studies have investigated networks jointly governed by dozens of participating organizations (Cristifoli et al., 2014; Cristofoli & Markovic, 2016). These studies suggest that, despite the large size of a network, shared governance may be successful if the complexity of relationships is adequately addressed (Cristifoli et al., 2014; Cristofoli & Markovic, 2016). In the existing literature, there is a lack of empirical studies providing evidence for the effect of network size on the centralization of governance. Given the role of a central organization in coordinating the actions of multiple participants, this research hypothesizes that network size is likely to have a positive effect on the centralization of its governance.

Geographic Scope. Geographic scope of collaboration is associated with organizations involved in collaboration within a geographic unit, such as a county, state, and region, and problems affecting communities located in the area. Smaller scope of collaboration may also indicate the geographical proximity of partners. Network organizations operating in a smaller area, which is characterized by shorter distances between these organizations, are often involved in frequent and direct interactions (Knoben & Oerlemans, 2006). Moreover, these organizations may share a sense of and commitment to the same community (Chaskin, 2001) and take an active interest in governing their collaboration jointly. Thus, geographically concentrated networks are likely to adopt shared or non-centralized governance (Kenis & Provan, 2009).

In collaboration of larger scope that operates across several states or regions, as well as nationally or internationally, it may be difficult for participants to reach consensus on collaboration goals, norms, and priorities. Geographical dispersion also increases the cost of direct communication between participants and the time to reach consensus (Gray, 1985). Moreover, cultural differences between regions or nations can lead to different interpretations of the norms, rules, and circumstances of collaboration (Knoben & Oerlemans, 2006). In such situations, a centralized form of network governance that can connect dispersed participants and facilitate their interactions may be preferable to non-centralized governance. Hence, the geographic scope of collaboration is expected to have a positive effect on the centralization of network governance.

Collaboration Areas. Networks operating in different policy or service areas (e.g. health, social services, education, community development, and environment) may have distinctive features, institutional influences, and governance approaches (Head, 2008).

Existing studies on network governance and administration have primarily been conducted for networks or collaborations functioning in one specific area, such as health and mental health (Provan & Milward, 1995; Provan et al., 2011; Provan & Sebastian, 1998), human services (Cristofoli et al., 2015; Cristofoli & Markovic, 2016; Graddy & Chen, 2006), community development (Vangen et al., 2015), employment (Herranz, 2008; Herranz, 2010), environment (Klijn et al., 2010), human rights (Saz-Carranza & Ospina, 2011), and justice and crime prevention (Raab et al., 2015). There is a lack of empirical studies that compare governance and outcomes of networks functioning in different or multiple service areas. Thus, hypotheses about the influence of service areas on the centralization of network governance cannot be convincingly developed. Also, collaborative networks may operate in more than one service or policy area; the issues of whether and how functioning in several areas affects network governance have not been previously addressed. When networks operate in several service/policy areas, a centralized form of network governance can provide better facilitation and coordination of various activities and, therefore, may be preferable to a non-centralized form of governance.

Interdependencies. Interdependencies among network organizations can be differentiated from their initial connectedness (Keast et al., 2004). As Keast et al. (2004) note:

In a network structure, members are not just interconnected, they are interdependent. This means that each member begins to see himself or herself as one piece of a larger picture. When participants first come together, however, they do not necessarily see themselves as a whole. (p. 368)

Interdependencies among participants are one of the most important features of interorganizational networks: “partners are actively seeking to learn from alliances to

broaden or deepen their skills or to develop new skills jointly, all of which require crucial ongoing inputs from all partners and involve high levels of interdependence” (Gulati & Singh, 1998, p. 797). Interdependencies arise because network partners share risks and responsibilities, integrate resources, jointly develop and provide services, and work together to develop or improve key activities and processes (Gulati & Singh, 1998). Moreover, interdependencies tend to increase with repeated interactions between collaboration participants and the further integration of their processes, services, and resources (Imperial, 2005; Keast et al. 2007).

Existing research suggests a direct link between the interdependence of network partners and the coordination of their activities (Aggarwal et al., 2011; Gulati & Singh, 1998; Provan & Kenis, 2008). In particular, Aggarwal et al. (2011) note that, when interdependencies between network participants increase, coordination of their activities becomes increasingly important; in other words, higher interdependence between organizations leads to a higher need for coordination of their activities. Therefore, a network whose members are more interdependent needs a form of governance that can provide ongoing coordination (Gulati & Singh, 1998). Gulati and Singh (1998) also show that greater anticipated interdependence leads to the adoption of more hierarchical governance. Gray (1985) considers the degree of ongoing interdependence as a condition that facilitates network structuring. Interdependent organizations that are interested in influencing the future of the domain in desired directions are likely to support the structuring of a network as well as its formalization (Gray, 1985). Participants of collaborative networks that have a higher level of interdependence may prefer a centralized form of governance, which relies on a formalized structure and can provide

more effective coordination of network activities than a non-centralized form of governance. Hence, interdependencies among collaborative network participants are expected to have a positive effect on the adoption of centralized network governance.

2.5.2. Relationship Between Network Governance and Collaboration Outcomes

In literature on interorganizational collaboration, researchers primarily examine collaboration outcomes achieved at the level of participants or organizations (Concha, 2011; Chen, 2008; Thomson, 2001; Thomson et al., 2009). These studies acknowledge the multidimensional nature of collaboration and, consequently, the multidimensional nature of its outcomes. For example, Gray (2000) suggests evaluating collaborative efforts along several dimensions, such as goal achievement (or problem resolution), shared meaning, social capital, changes in structure, and shifts in power distribution. Among the results achieved in collaboration, Concha (2011) analyzes the achievement of goals, range of services, quality of working relationships, organizational development, and learning by collaborating organizations. Chen (2008) evaluates five types of collaboration outcomes, including goal achievement, quality of collaborative relationships, broadened views of partners, opportunities for future interactions, and equitable power relationships.

These and other collaboration studies reviewed in section 2.3 suggest that collaboration is likely to have multiple outcomes. Some of the outcomes that are achieved during the process of collaboration and which create a basis for higher-level outcomes can be considered as intermediate outcomes of collaboration. Such intermediate outcomes may include social capital, quality of relationships, trust, broadened views of partners, changes in structure, and learning. Some outcomes of collaboration can be

viewed as ultimate outcomes—for example, achieving a goal or solving a problem. Further, some collaboration outcomes suggested in previous studies seem to overlap or be part of a wider outcome. For instance, trust, shared vision (also called shared meaning, shared understanding, shared views of partners), and information exchange can be viewed as various aspects of social capital (Andrews, 2017; Nahapiet & Ghoshal, 1998). In addition, some of the outcomes may depend on the nature and context of collaboration—for example, a range of services can be applied to collaboration that focuses on service provision, while some outcomes, such as achieving goals or improving social capital, are more general and applicable to all collaborations.

In the literature, outcomes achieved at the level of a network are characterized using various terms, including goal attainment, effectiveness, efficiency, equity, quality, productivity, growth, and stability (Head, 2008; Kenis & Provan, 2009; Turrini et al., 2009). Sometimes, the same terms used by different authors have different meanings. For example, Raab et al. (2015) indicate that the term “network effectiveness” can be used to describe various outcomes, depending on the goals of a network, its stakeholders, and the focus of a researcher. Provan and Kenis (2008) define network effectiveness in general terms as “the attainment of positive network-level outcomes that could not normally be achieved by individual organizational participants acting independently” (p. 230). Kenis and Provan (2009) note that there is no scientific way to determine whether one criterion is better or worse than another when evaluating network performance. Moreover, “any criterion is, from a normative point of view, as legitimate as any other to assess a network”, but “not every criterion is equally appropriate or reasonable for evaluating a network” (Kenis & Provan, 2009, p. 444).

Goal Achievement as an Ultimate Outcome. When evaluating the effects of network governance on collaboration outcomes across networks, there is a need to select outcomes that are relevant to all collaborative networks. Goal achievement can be considered the main and ultimate outcome of nonprofit collaborative networks. However, complex and long-term goals, such as solving important social problems existing in communities, are unlikely to be achieved in the early stages of collaboration. In most cases, it may be more appropriate to evaluate progress made toward an ultimate goal, rather than its achievement, or interim results—“the results achieved as the network works toward its ultimate goal or intended impact” (Taylor et al., 2015, p. 24). Progress made toward goals can be used as a proxy indicator of achieving goals for evaluating the performance of collaborative networks at different stages of their development from a comparative perspective.

Prior literature suggests that centralized governance allows networks to achieve greater effectiveness in terms of goal achievement than shared governance does (Provan & Milward, 1995; Provan & Sebastian, 1998). Shared or non-centralized governance, in which network members directly interact with each other, is likely to have lower effectiveness due to dependence on time-consuming and resource-intensive processes (Provan & Kenis, 2008). A centralized form of network governance is believed to provide effective coordination of network activities by eliminating the actions of participants that overlap and conflict with each other (Raab et al., 2015). Also, central organizations of networks can hire administrators with the skills and abilities needed for network-level tasks (Markovic, 2017), which may play a role in improving network effectiveness. Cristofoli et al. (2014) found that networks are likely to demonstrate higher

performance measured as an ability to achieve goals if they use well-defined and formalized coordination mechanisms implemented by a group of network administrators. Based on the review above, this research hypothesizes that, in collaborative networks, centralized governance is likely to lead to higher effectiveness in terms of goal achievement or progress made toward goals compared to non-centralized governance.

Intermediate Outcomes. For collaborative networks, evaluating ultimate network outcomes (e.g., goal achievement or progress made toward goals) may not be sufficient. Head (2008) indicates the importance of evaluating different types of outcomes: “In considering how to assess collaborative network ‘performance’ or network ‘effectiveness’, both the sustainability of good processes (‘built to last’), as well as the achievement of desired service outcomes ... should be considered” (p. 735). Intermediate collaboration outcomes are likely to be the result of interactions between network organizations that are at the center of interorganizational collaboration (Head, 2008; Wood & Gray, 1991). Interactions among collaboration participants are often associated with communication (Ansell & Gash, 2008; Mohr & Spekman, 1994), shared or joint decision making (Alter & Hage, 1993; Chen, 2008; Wood & Gray, 1991), collaborative learning (Head, 2008; Knight & Pye, 2005; Mariotti, 2012), and social capital (Adler & Kwon, 2002; Chen, 2008; Connick & Innes, 2003). Furthermore, these intermediate outcomes, also called process outcomes, may influence the ultimate outcomes of collaboration (Head, 2008; Innes & Boheer, 1999). Innes and Boheer (1999) emphasize that good processes are expected to lead to good results. In the literature, the outcomes of different levels are also classified into first-, second- and third-order effects (Bryson et al., 2006; Innes & Boheer, 1999). First- and second-order effects often occur at the earlier

stages of collaboration, while third order-effects may not be evident until the later stages of collaboration (Bryson et al., 2006; Innes & Boheer, 1999). Inner and Bohher (1999) suggest that first-order effects may include social capital as well as intellectual and political capital, second-order effects may include joint learning and changes in practices and perceptions, and third-order effects may be represented by new norms, new institutions, and coevolution (Innes & Boheer, 1999).

Because of the importance of a collaboration process for achieving goals, this research also evaluates intermediate outcomes of collaborative networks, described in the literature as first- and second-order effects. In particular, it focuses on social capital and collaborative learning, which are two major intermediate outcomes of collaborations frequently mentioned in the literature. Investigating social capital also takes into account some other outcomes of a collaboration process, such as trust, communication, and shared vision, that are considered the relational, structural, and cognitive dimensions of social capital (Andrews, 2017; Nahapiet & Ghoshal, 1998).

To gain more clarity about social capital and collaborative learning as intermediate outcomes of collaboration and to establish research expectations regarding the impact of centralized network governance on their achievement, these outcomes are discussed in more detail below.

Social Capital. Social capital is referred to as a process, resources, and/or relationships that help establish connections and facilitate interactions within or across social units, such as groups, organizations, and networks (Adler & Kwon, 2002; Knoke, 1999; Nahapiet & Ghoshal, 1998; Putnam, 1995a). Knoke (1999) defines social capital as “the process by which social actors create and mobilize their network connections within

and between organizations to gain access to other social actors' resources” (p. 18).

Putnam (1995a) defines social capital as “features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit” (p. 67). Nahapiet and Ghoshal (1998) refer to social capital as “the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit” (p. 243).

Adler & Kwon (2002) describe social capital of collectivity, which also applies to a collaborative network, as follows:

the social capital of a collectivity (organization, community, nation, and so forth) is not so much in that collectivity's external ties to other external actors as it is in its internal structure - in the linkages among individuals or groups within the collectivity and, specifically, in those features that give the collectivity cohesiveness and thereby facilitate the pursuit of collective goals. (p. 21)

Social capital plays a major role in collaboration, helping advance it from the formation stage to the fully functioning one (Mayer & Kenter, 2015). In collaboration, social capital can be an input, a critical part of start-up collaboration, and an output, resulting from synergies between participants (Morris et al., 2013).

Previous studies characterize social capital as a concept with multiple but interrelated facets (Nahapiet & Ghoshal, 1998; Putnam, 1995a). Nahapiet and Ghoshal (1998) describe the social capital of an organization as consisting of structural, relational, and cognitive dimensions. The structural dimension points to the overall pattern of connections among network actors—with whom and how they connect, communicate, and share information; the relational dimension refers to the “assets created and leveraged through relationships” such as trust, norms, expectations, and obligations within a network; the cognitive dimension is associated with achieving and sustaining a common understanding and interpretations across a network (Nahapiet & Ghoshal, 1998, p. 244).

In the literature, the cognitive, relational, and structural aspects of social capital are conceptualized and investigated through the notions of shared vision, trust, and information sharing, respectively (Andrews, 2017; Fredette & Bradshaw, 2012; Leana & Pil, 2006; Tantardini & Kroll, 2015). These three aspects of social capital seem to be highly interrelated and act synergistically (Nahapiet & Ghoshal, 1998).

The social capital of a collaborative network is further developed and strengthened during interactions between participants. Interactions of collaborating organizations vary in their degree and intensity, and these processes can be influenced by forms of network governance (Doerfel et al., 2017). Networks with non-centralized governance, the participants of which jointly govern their network and actively interact with each other, are likely to further improve their social capital. Networks with centralized governance, in which collaborating organizations are connected through and coordinated by a central organization and have fewer interactions between their members, are likely to develop lower levels of social capital than networks with non-centralized governance.

Previous studies also suggest that social capital, which enhances participants' capacity for collective action, may act as a determinant of higher-level outcomes (Adler & Kwon, 2002; Nahapiet & Ghoshal, 1998). Putnam (1995b) emphasizes the role of social capital in achieving greater effectiveness, describing it as "networks, norms, and trust - that enable participants to act together more effectively to pursue shared objectives" (p. 664–665). Leuenberger and Reed (2015) suggest that systems with higher levels of social capital are more efficient and adaptable to changes in the environment than those with lower levels of social capital. Consequently, the social capital of a

collaborative network is likely to have a positive effect on goal achievement or progress made toward goals.

Collaborative Learning. Existing literature defines network learning as “learning by a group of organizations as a group” (Knight, 2002, p. 428). Learning in a collaborative network or collaborative learning may be defined in a similar way, but with an emphasis on collaboration—as learning by a network of organizations involved in collaboration as a group. Network learning is not just a sum of the learning by organizations composing a network (Kniggt, 2002); such learning is associated with changes in network-level properties (e.g., network structure, rules, culture, interaction processes, and patterns of action) (Knight, 2002; Knight & Pye, 2005).

Collaborative learning can take many forms. Mariotti (2012) points to three aspects of interorganizational learning, defining it as a process through which network organizations learn to interact, share knowledge within a network, and create new interorganizational knowledge. Learning to interact is discussed in terms of building relationships, identifying capabilities of network actors, and harnessing these capabilities (Mariotti, 2012). Organizations may learn to share knowledge more successfully if a network has norms and procedures that encourage and support knowledge sharing between organizations (Dyer & Nobeoka, 2000; Mariotti, 2012). In addition, during their collaboration, network participants with diverse skills, competencies, and experiences are likely to create new synergistic knowledge (Knight, 2002; Mariotti, 2012).

Further, literature on interorganizational learning discusses the roles of a central organization in facilitating learning in networks with centralized governance (Blatner et al., 2001; Gibb et al., 2017). Such roles include coordinating network-wide learning,

including the flows of knowledge within a network, creating mechanisms for transferring and adopting knowledge, and disseminating knowledge among network organizations (Gibb et al., 2017). Blatner et al. (2001) emphasize the importance of facilitation of learning by a coordinator; on the other hand, these authors acknowledge that decentralized systems can be more flexible and adaptable in situations where learning is critical. Participants in networks with shared governance can learn as a group during their active interactions; furthermore, social capital, which is likely to be higher in networks with shared governance than in networks with centralized governance, can allow their participants to successfully engage in collaborative learning. On the other hand, in networks with centralized governance, a central organization can further facilitate and coordinate the processes of collaborative learning within a network. Hence, both centralized and non-centralized forms of governance can be positively associated with collaborative learning. Because of the facilitating efforts of a central organization, networks with centralized governance may achieve higher levels of collaborative learning than networks with non-centralized governance.

Also, in networks with centralized governance, a central organization that coordinates learning processes is likely to direct collaborative learning toward higher performance (Gibb et al., 2017). On the contrary, learning in networks with non-centralized governance may be more chaotic than directed and systematic. Collaborative learning, which involves aspects of learning to interact and to perform as a group (Mariotti, 2012; Gibb et al., 2017), is likely to be positively associated with achieving collaboration goals or progress toward goals. Yet collaborative learning may not lead to a simultaneous improvement in network performance. Network learning is viewed as a

potential source of increased performance: learning improves capabilities, but opportunities to use learned capabilities may not appear until later stages of network development (Mariotti, 2012). Following the existing literature on organizational and network learning, this research hypothesizes that collaborative learning is positively associated with achieving goals in collaborative networks. However, the effect of collaborative learning on network performance may not be direct and/or immediate.

Shared Decision Making. Shared power and decision making among participants are mentioned among the features of collaboration (Chen, 2008; Gray, 2000; Popp et al., 2014). In the context of collaboration, shared or joint decision making characterizes the extent to which organizations participate in setting goals and planning joint actions (Chen, 2008). Such a decision-making process is also referred to as participative decision making (Alter & Hage, 1993; DeLeon & Varda, 2009; Wood & Gray, 1991). Shared decision making is associated with a sense of ownership and shared responsibility for the process and outcomes of collaboration (Ansell & Gash, 2008). For collaborating parties, participation in decision making may reduce risks and ensure that their perspectives are not neglected (Ansell & Gash, 2008). The dominance of a lead organization or other more influential partners in decision making may lead to decisions that are incompatible with the interests of other network members (Margerum, 2001).

In collaborative networks with non-centralized governance, whose members are expected to be actively involved in all aspects of their collaboration, participation in decision making can be viewed as part of network governance. In networks with centralized governance, which are likely to have low levels of member involvement (Provan & Kenis, 2008), shared decision making can be considered as the outcome of

network governance. Qualitative research involving interviews with representatives of collaborative networks may bring greater clarity about decision making in networks with centralized governance.

2.6. Research Framework

As indicated earlier, the research questions for this dissertation have been formulated as follows:

1. What contextual factors and other characteristics of collaborative networks influence the adoption of centralized network governance?
2. Does the adoption of centralized network governance over non-centralized governance make a difference for collaborative network outcomes?

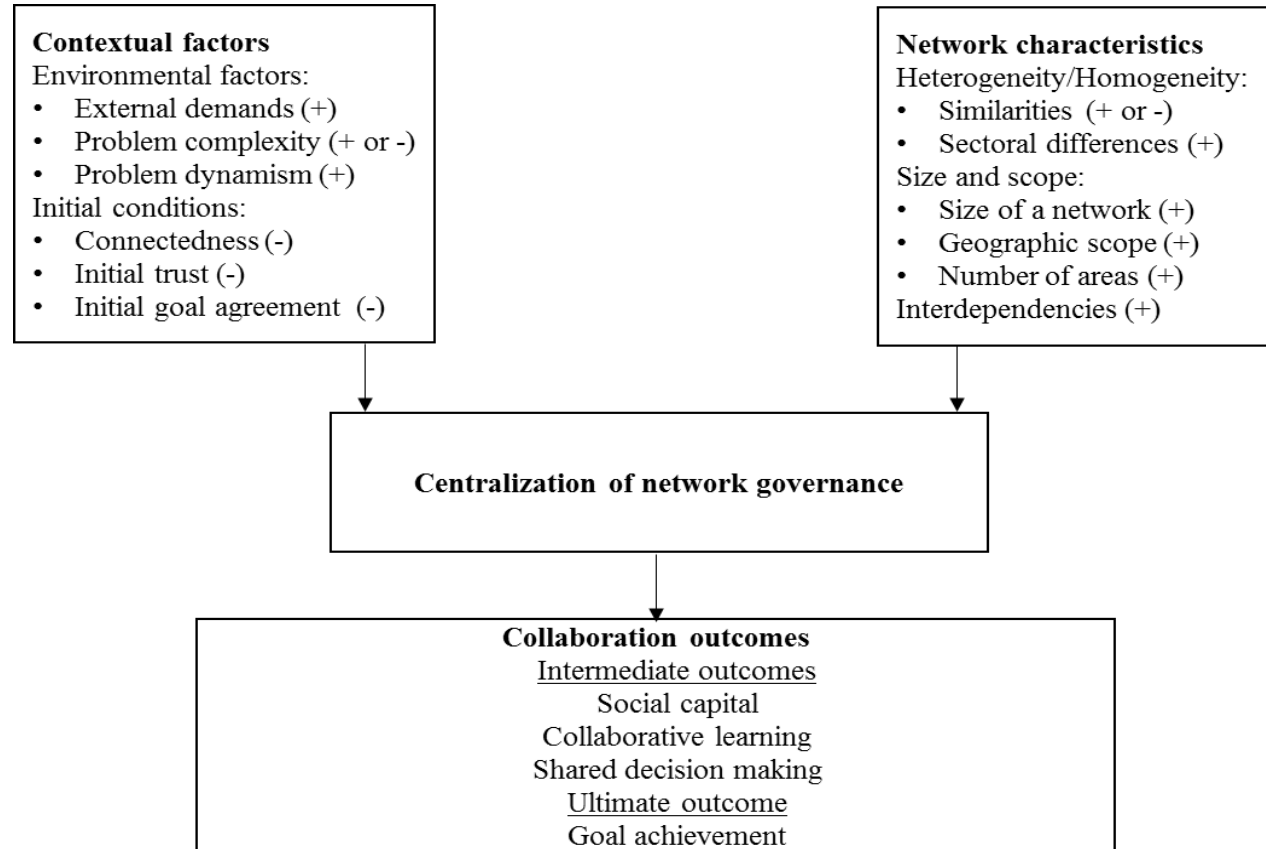
To clarify expectations regarding possible outcomes of the research, hypotheses have been developed about factors' influence on the centralization of network governance as well as relationships between the centralization of governance and collaboration outcomes.

Based on the review of literature, this research hypothesizes that the adoption of a centralized form of governance in collaborative networks may be influenced by several contextual factors and network characteristics. Contextual factors may include external demands imposed on a network, characteristics of a problem addressed by collaboration, such as its complexity and dynamism, previous connections between collaboration participants, as well as their initial trust and agreement on goals. Network characteristics, such as similarities or dissimilarities among network participants, their interdependencies, network size, geographic scope of collaboration, and collaboration areas, may also determine the adoption of a centralized form of network governance.

Further, the effectiveness of centralized and non-centralized forms of network governance is investigated based on intermediate and ultimate collaboration outcomes. Achievement of goals (or progress made toward goals) is considered to be an ultimate collaboration outcome. Social capital and collaborative learning are tested as intermediate outcomes of collaboration. Shared decision making can be considered as an outcome in networks with centralized governance and as part of network governance in networks with non-centralized governance. Figure 2.2 “Research framework” summarizes the key relationships and related hypotheses examined in this research. It illustrates the contextual factors and network characteristics that potentially influence the adoption of a centralized form of network governance over a non-centralized form of governance. The framework also depicts the intermediate and ultimate collaboration outcomes that can be determined by network governance. Exploratory qualitative research may help generate additional factors, forms of network governance, and collaboration outcomes, and suggest their possible relationships. Hence, the research framework will be refined after the completion of qualitative research involving semi-structured interviews with representatives of collaborative networks.

Figure 2.1

Research Framework



Chapter Three: Qualitative Method and Findings

This chapter describes the study's qualitative research methods and findings. First, it discusses the rationale for a mixed-methods approach as well as the choice of a research setting. Then, it describes the sampling technique for qualitative interviews, explains the coding scheme for interview data, and presents and summarizes interview findings.

3.1. Rationale for the Use of a Mixed-Methods Approach

As the review of literature revealed, there is little empirical research on the circumstances of adopting centralized and non-centralized forms of network governance and the results achieved in networks using these forms of governance. More research is needed to understand how, under what considerations, and with what expectations different forms of network governance are adopted in collaborative networks. In addition, there is a need to establish how common these governance forms are across collaborative networks and what their effects are on collaboration outcomes. To gain insight into centralized network governance and to identify patterns of governance and outcomes in collaborative networks, this research employs a mixed-methods approach.

Broadly, mixed methods research is defined as “the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study” (Johnson & Onwuegbuzie, 2004, p.17). Strauss and Corbin (1998) point to the role of mixed methods research in theory development: “the qualitative should direct the quantitative and the quantitative feedback into the qualitative in a circular, but at the same time evolving process with each method contributing to the theory in ways that only each can” (p. 34). Mixing quantitative and

quantitative methods may allow for capturing “more complete, holistic, and contextual portrayal of the unit(s) under study” (Jick, 1979, p. 603). The use of a mixed-methods approach helps researchers:

(a) validate and explicate findings from another approach and produce more comprehensive, internally consistent, and valid findings; (b) provide more elaborated understanding and greater confidence in conclusions; (c) handle threats to validity and gain a fuller and deeper understanding; and (d) provide richer/more meaningful/more useful answers to research questions. (Johnson et al., 2007, p. 122)

The combination of methods for studying the same phenomenon is also known as triangulation (Denzin, 1978). Methodological triangulation can be simultaneous or sequential (Morse, 1991). Simultaneous triangulation is characterized by the simultaneous use of qualitative and quantitative methods, results of which complement each other at an interpretation stage (Morse, 1991). Sequential triangulation is used when the results of one method are needed to plan the next method (Morse, 1991). In the “exploratory sequential mixed methods” approach, “the qualitative phase may be used to build an instrument that best fits the sample under study, to identify instruments to use in the follow-up quantitative phase, or to specify variables that need to go into a follow-up quantitative study” (Creswell, 2014, p. 16).

To address research questions, this dissertation utilizes the sequential mixed-methods approach. The qualitative research method provides insights into network governance, factors of network governance, and outcomes attained in collaborative networks. Qualitative semi-structured interviews with network representatives are used to explore the governance processes and outcomes of networks and to generate results and findings that are grounded in the empirical field. According to Strauss and Corbin (1998), “grounded theories, because they are drawn from data, are likely to offer insight, enhance

understanding, and provide a meaningful guide to action” (p. 12). Also, generating a theory from data can help construct “an explanatory scheme that systematically integrates various concepts through statements of relationship” (Strauss & Corbin, 1998, p. 25)

Further, the results of qualitative interviews guide the implementation of the quantitative method involving survey research. In general terms, a survey can be used:

... to answer questions that have been raised, to solve problems that have been posed or observed, to assess needs and set goals, to determine whether or not specific objectives have been met, to establish base lines against which future comparisons can be made, to analyze trends across time, and generally, to describe what exists, in what amount, and in what context. (Isaac & Michael, 1997, p. 136)

Survey research allows researchers to quantitatively describe the aspects of a phenomenon and relationships among variables (Glasow, 2005). Before conducting survey research, “the researcher must predicate a model that identifies the expected relationships among these variables. The survey is then constructed to test this model against observations of the phenomena.” (Glasow, 2005, p.1-1).

In this dissertation, concepts and insights derived from interviews are used to construct survey questions, including those that ask about centralized network governance, member involvement in governance, and outcomes of collaboration. Survey data are analyzed using quantitative methods to test the influences of context- and network-related factors on the adoption of centralized governance and to evaluate the effects of governance centralization on collaboration outcomes. Also, the quantitative method helps establish the frequency of adopting various governance forms and existing patterns in network governance and outcomes across nonprofit collaborative networks. Prior to launching the study, its design and methods were approved by the Institutional Review Board (IRB) of Rutgers University.

The sections of this chapter provide more detailed information about the qualitative method, including sampling techniques and coding procedures for interview data. The next chapter provides information on the quantitative, survey research methods used in this study.

3.2. Research Setting: The Foundation Center's Collaboration Hub

This research uses a unique source of information about nonprofit collaborations in the United States: the Foundation Center's Collaboration Hub, which houses the Nonprofit Collaboration Database (<https://grantspace.org/collaboration>). This database includes nonprofit collaborations that applied for the Collaboration Prize awarded by the Lodestar Foundation. The Collaboration Prize competition was conducted in 2009, 2011, and 2017. At the time of conducting this research, collaborations that submitted applications for the Collaboration Prize in 2009 and 2011 were included in the Foundation Center's database. The Foundation Center's Nonprofit Collaboration Database, which contains information on more than 680 collaborations operating in various policy areas (e.g., health care, mental health, human services, education, community development, housing, environment, and arts and culture), is the largest publicly accessible data source on nonprofit collaborations.

According to the 2011 Collaboration Prize eligibility requirements, nonprofit collaborations that have existed for over 18 months and consist of two or more participants were eligible to participate in the competition and should have demonstrated that their collaboration achieves a greater impact than individual participants do (Collaboration Prize, 2011). There were no strictly defined criteria for collaboration success, and therefore each of the applicants decided whether and how their collaboration

model should be highlighted. In addition to gaining public recognition, nonprofit collaborations that won this competition might receive monetary prizes. In 2011, the grand prize winner received an amount of \$150,000, and eight other finalists received smaller cash prizes. Because of the large number of applicants and various incentives involved, collaborations included in the Foundation Center's Nonprofit Collaboration Database can be considered a fairly broad cross-section of nonprofit collaborations in the United States.

It should be recognized that these nonprofit collaborations might have changed or been transformed over the years. The purpose of utilizing the Nonprofit Collaboration Database, however, is not to explore collaboration models that existed at the time of submissions but rather to use it as a sampling frame for original data collection about actual collaborations that would otherwise be difficult to identify. The influences of context- and network-related factors on the adoption of centralized network governance should not differ depending on whether collaborations participated in a competition and whether they meet the criteria established for collaboration prize. This sample of collaborations can also be useful for identifying differences in the levels of intermediate and ultimate collaboration outcomes achieved in networks with centralized and non-centralized governance. Since this research focuses on collaborative networks of three or more organizations, a screening question about the number of participants was added to the survey questionnaire.

Table 3.1 provides information on policy or service areas of collaborations included in the Nonprofit Collaboration Database. These areas were specified by

collaborations when submitting their information, and they could also indicate several policy or service areas in which their collaboration is active.

Table 3.1

Policy (Service) Areas of Collaborations in the Nonprofit Collaboration Database

Policy or service area*	Number of collaborations
Human services	269
Health and mental health	194
Education	154
Community development and housing	145
Arts and culture	62
Environment	46
Other areas (civil rights, public affairs, animal protection, technology)	154
Total	683**

Note. *Policy/service areas were grouped based on the Nonprofit Collaboration Database information (<https://grantspace.org/collaboration/>).

**Some collaborations operate in several policy/service areas, and therefore a total of collaborations is not equal to the sum of collaborations grouped into various fields.

3.3. Qualitative Sampling and Method

The qualitative part of this study involved semi-structured interviews with the representatives of nonprofit collaborative networks to explore the forms of network governance, considerations on the choice of governance forms, and the outcomes achieved. Interview questions were formulated to collect information about the purposes and goals of collaborative networks, the ways networks are governed, the features of forms of network governance, and the collaboration results. A semi-structured interview guide used for this research is presented in Appendix A.

Interviews were conducted with the representatives of 20 networks that were purposively selected from various service areas and locations across the United States. Purposive (or judgmental) sampling means the selection of cases that are “in alignment with the inquiry’s purpose, primary questions, and data being collected” (Patton, 2015, p.

264). Heterogeneity sampling, as one of the strategies of purposive sampling, is defined as “purposefully picking a wide range of cases to get variation on dimensions of interest”; this strategy is used to examine diversity and to identify common patterns across diversity (Patton, 2015, p. 267).

Prior to conducting empirical research, information on 663 nonprofit collaborations was collected on the Foundation Center’s Collaboration Hub as well as through an online inquiry form from specialists of the Foundation Center. Contact information of collaborations included in the Foundation Center’s Nonprofit Collaboration Database, such as the names of network representatives and their email addresses, was updated using Internet-based research². The updated contact list contained key contacts of collaborations, which included their executives, board members, and/or coordinators. Then emails informing potential respondents about the topic and scope of the study and asking them to participate in an interview were sent to one representative of each of the selected networks. Interviews were conducted from January 2018 through March 2018 by telephone or Skype and lasted between 30-60 minutes. The interviews were audio recorded and subsequently transcribed. In accordance with obtained informed consent, the names and positions of study subjects and other information that may allow identifying them individually are kept confidential. Each network was assigned a code, and these codes are referred to when presenting findings in the next section. Table 3.2 provides information about policy/service areas, geographic scope, participants, and governance forms of the networks whose representatives participated in interviews.

² For some collaborations included in the Nonprofit Collaboration Database, the contact information was not correct and/or possible to update. Therefore, the sample did not include all collaborations in the database.

Table 3.2*Profiles of the Interviewed Collaborative Networks*

Network ID	Service/policy area	Participants*	Geographic scope	Governance form**	Interviewee Location
A	Human services	NO	State	Centralized (AO)	South (GA)
B	Education, Community development	NO, GO, BO	National	Centralized (AO)	Northeast (PA)
C	Health	NO, GO	County	Centralized (AO)	Midwest (IL)
D	Community development, Housing	NO, GO, BO	National	Centralized (AO)	South (KY)
E	Human services	NO, GO, BO	City	Centralized (AO)	West (CA)
F	Health	NO, GO	State	Centralized (AO)	South (AL)
G	Health	NO	State	Centralized (AO)	Northeast (NC)
H	Technology	NO	International	Centralized (AO)	Northeast (VA)
I	Public affairs	NO, GO	National	Centralized (LO)	West (AZ)
J	Public affairs, Education	NO	National	Centralized (LO)	West (OR)
K	Education	NO, GO	State	Centralized (LO)	West (WY)
L	Education, Human services	NO, GO	County	Centralized (LO)	West (WA)
M	Education, Human services, Mental health	NO, GO	City	Centralized (LO)	Midwest (IL)
N	Environment	No, BO	National	Centralized (LO)	South (LA)
O	Human rights	NO, GO	State	Centralized (LO)	Northeast (PA)
P	Human rights	NO	National	Centralized (LO)	West (CA)
Q	Community development, Housing	NO, BO	State	Centralized (LO)	Northeast (DE)
R	Human services	NO	National	Centralized (LO)	West (OR)
S	Health, Mental health	NO, GO	County	Non-centralized	Midwest (MI)
T	Human services	NO	State	Non-centralized	Northeast (NY)

Notes. *Participants: NO–nonprofit organizations, GO–government organizations, BO–business organizations.

**Governance form: AO–governed by an administrative organization, LO–governed by a lead organization.

The interviewed networks represent the following service or policy areas: human services (6 networks), health or mental health (5), education (5), community development (3), human rights (2), public affairs (2), environment (1) and technology (1). As reported by interviewees, seven networks operate in two or more policy/service areas, and thirteen networks operate in one area. Nine networks include only nonprofit organizations, seven networks include nonprofit and government organizations, three networks include nonprofit, government, and business organizations, and one network is composed of nonprofit and business organizations. Five networks operate within one municipality/county, seven networks function within one state, and eight networks operate nationally or internationally.

Qualitative data analysis was performed using inductive and deductive approaches. According to Patton (2015), the early stages of qualitative analysis rely on an inductive approach to discover patterns, categories, and themes in data and generate theories from data. Confirmatory stages of qualitative analysis that include developing hypotheses and interpreting results regarding whether they support existing conceptualizations, explanations, and/or theories can use a deductive approach (Patton, 2015). Strauss and Corbin (1998) also emphasize that grounded theorizing is based on inductive and deductive approaches: “At the heart of the theorizing lies interplay of making inductions (deriving concepts, their properties, and dimensions from data) and deductions (hypothesizing about the relationships between concepts)” (p. 22). In the present research, the analysis of interview data mostly relies on inductive processes, while some interpretations of the interview findings may be based on deductive reasoning. When using a deductive approach, results, and relationships discovered in

interview data may be interpreted based on the assumptions about the nature of a phenomenon learned from literature (Strauss & Corbin, 1998).

Interview data were analyzed using the coding approach proposed by Strauss and Corbin (1998). Strauss and Corbin (1998) suggest a series of activities for developing grounded theory, such as open, axial, and selective coding. A process of coding started with closely examining the interview data to identify important ideas, properties, and dimensions (open coding). Then, the initial ideas and concepts were examined and logically related to constructs or coding families (axial coding). During selective coding, the constructs were integrated into four major themes, such as: (1) central organization, (2) member organizations' involvement in governance, (3) factors shaping governance, and (4) collaboration outcomes. Detailed results of coding interviews are presented in Appendices B–E. The following section discusses the interview findings in each of the four thematic areas.

3.4. Findings from Qualitative Interviews

Findings from the qualitative, semi-structured interviews are presented according to four major themes identified during the analysis of interview data, such as “Central organization”, “Involvement in governance”, “Factors shaping governance”, and “Collaboration outcomes”.

Theme 1: Central Organization

Appendix B shows the initial codes and constructs for central organization-governance. Codes and constructs related to the presence of a central organization in networks were grouped into several categories, such as “Roles/functions of a central organization”, “Central organization types”, and “Changes in centralized governance”.

Most of the interviewed representatives (18 out of 20) pointed out that their network has a central organization, which is responsible for coordinating and guiding the collaborative efforts of participant organizations. Two of the interviewed networks indicated that their members govern their network jointly or use non-centralized governance. Networks that are governed by a central organization can be divided into two groups—governed by one of the member organizations, the so-called “lead” organization, or by an organization created to govern a network—an administrative organization. Specifically, ten of the interviewed networks are governed by a lead organization, and eight networks are governed by an administrative organization. In networks governed by an administrative organization, such an organization was created as a separate nonprofit organization (501(c)(3)).

Representatives of the networks governed by a central organization explained its presence by the need to facilitate and coordinate the activities of network organizations. Governing a network requires ongoing commitments that participant organizations are often unable to fulfill because of their other responsibilities. By facilitating collaborative work among organizations, as well as mobilizing their commitment and participation, a central organization ensures the continued functioning and success of collaboration. As one interviewee emphasized: “If you do not have some entity that is dedicated to coordinating a collaborative, it is often not successful... Investing time in the collaborative requires a commitment over and above the agenda of an organization” (Interviewee from Network N). Another interviewee pointed out: “Without having a core central organization for all the other members to revolve around, it would be hard to achieve [expected results] and keep that.” (Interviewee from Network H). Thus,

interviewees emphasized the importance of having a central entity focused on governance in their networks, which takes responsibility not only for coordinating joint efforts of network members but also for achieving positive results.

Interviewees representing networks with an administrative organization mainly described such an organization as a neutral party, which seeks to create equal opportunities for all participants of collaboration. For example, one interviewee noted: “For collaboration to happen you have to have someone focused on that. ... It would be better to have an independent, standalone so there is neutrality and no organization is privileged over any other.” (Interviewee from Network N). Another interviewee indicated: “Since we are asking organizations that are naturally competitive to participate in a collaborative process, you need a neutral party to keep all of those pieces moving smoothly.” (Interviewee from Network C)

In the case of lead organization governance, when a network is coordinated by one of the member organizations or a coordinator is hired by one of the members, the member organizations may receive unequal opportunities and treatment. According to interviewees, network coordinators need to understand that they serve the entire collaboration and not just one or several members, including their employer. Otherwise, they are not seen as independent unbiased coordinators, and this can cause distrust among network members and reduce their commitment. One interviewee noted the reason why a lead organization can take advantage of other participants as follows:

There's always a fear when you have a collaborative network, if there is one group that has more power than the other, it may not work so well. And somebody, who is taking the money and taking on the legal risk for the collaboration, would rightly be able to call more shots and dictate what the group is doing. (Interviewee from Network M)

Several interviewees representing networks with a lead organization indicated an existing imbalance of interests in their network. They also talked about their plans to reestablish network governance to make it more inclusive and representative of other members:

We are currently the lead agency. We facilitate the meetings, we develop all the logistics, we set the meeting dates, and we bring the experts in for discussions. We are the ones who establish everything. ... But it is hard for the members to get a real buy into the community development, they do not have an allegiance to it. If you do not have any stake in the actual collaborative network, then it is really easy for you to either fall out, stop attending meetings, or not participate. (Interviewee from Network Q)

My organization certainly outnumbered the representatives from the other groups. There was the imbalance - our board theoretically was able to be the strongest voice. But in truth, they [other member organizations] were much more powerful ... and stronger, more resourced than our smaller organization. ... And, currently it [network governance] is under review, we are taking another look at if there is a different way to do this ... being able to focus on specific activities, have very defined rules and equal representation among three organizations on a project by project basis. (Interviewee from Network I)

These quotes show that lead organization-governance is associated with greater power and disproportionate representation of one organization, chosen as a lead, and less cooperation and low commitment of others.

Theme 2: Involvement in Governance

The next major theme identified from the interviews was centered on the involvement of member organizations in the governance of collaboration. Initial codes were used to form constructs, such as “Evidence for member involvement”, “Role of member involvement”, “Involvement mechanisms”, “Evaluation of member involvement”, and “Improving member involvement” (see Appendix C).

Most interviewees pointed to the foremost importance of involving member organizations in governance in their networks. They argued that the participation of

member organizations in governance is crucial for building their commitment to collaboration as well as achieving collaboration goals. One of the interviewees, representing a network with shared governance, emphasized the wide participation of member organizations across all stages of collaboration as well as their strong enthusiasm for collaboration. In particular, she noted the following:

Every one of those partners ... was fully involved in the planning process from the very beginning, so they have a very strong sense of ownership over the program and commitment to it. Another positive strength is ... that we do encourage dialogue, we do welcome different perspectives and input... We recognize individual organizations' contributions, and we value and utilize specific roles and responsibilities based on the different members' skills and resources. (Interviewee from Network S)

This quote sheds light on the importance and role of member involvement in networks with shared governance.

Interviewees from networks governed by a central organization also emphasized the importance of member organizations' participation in governance. In these networks, involving member organizations in governance seems to be viewed as one of the functions of a central organization. Central organizations of networks often establish rules and policies for the participation of member organizations. For example, several interviewees representing networks governed by an administrative organization stressed that the bylaws have been designed to allow as many members as possible to have a voice in decision making. Furthermore, they discussed the role of not only involving members in governance, but also their active participation in achieving positive collaboration outcomes. Networks with centralized governance may also encourage their members to actively participate in governance:

When people came together, we wanted them to know that everybody gets a voice, and everybody has a right to participate. It is important for people to feel

like an active participant of an organization and a valued stakeholder... That is codified in our bylaws. (Interviewee from Network H)

Each time we have a challenge that we are trying to address, we look at who the key stakeholders are, who invest interest in solving that problem, and we invite them to the table to participate in a planning process, trying to decide what it is that needs to meet the end result of that discussion... They are all invited to participate. We're tackling problems that are affecting all of those organizations, so they have an incentive to want to resolve the issue effectively. (Interviewee from Network C)

Our member organizations are given an opportunity to participate and have a voice in the work that we do which ensures that the work that staff is doing remains relevant to our organization and member organizations. (Interviewee from Network H)

These quotes illustrate the attention paid to member organizations' participation in networks governed by an administrative organization and its significance for collaboration results.

Similarly, networks governed by a lead organization recognize the important role of members' participation in collaboration success:

What is important is allowing members to speak for themselves and to speak for their communities... We want to be inclusive of all of the different actors who operate in the community development space ... inclusive of all the voices and all of the different topics that make up this what is known as community development. (Interviewee from Network Q)

In local collaboration, organizations are deciding with each other how they want to do the work. So, if we take Arizona for example, where the company has five partners. Those five organizations are deciding together: How often we want to do workshops? Where do we want to do them? How are we going to do outreach? How do we want to do the screening? Who is going to recruit volunteers? What languages are we going to do? (Interviewee from Network P)

These quotes demonstrate the relevance and importance of member participation in collaborative networks governed by a lead organization.

Interviewees also mentioned the ways and mechanisms used in their networks to achieve active involvement and integration of member organizations. Both networks

governed by a lead organization and an administrative organization use mechanisms, such as work groups, a coordinating council, a steering or executive committee, and an operations committee, through which member organizations have opportunities to contribute to network governance and collectively discuss ideas. Representatives of networks with a lead organization described the ways to encourage member participation as follows:

The coordinating council we use is a way to get everyone's feedback, jointly make decisions and generate ideas... That we have a coordinating council or decision-making group is a strength; it is really shared. It no longer just belongs to one organization. (Interviewee from Network O)

We have two committees - an operations committee and an executive committee. In the operations committee, any number of staff from each organization can make recommendations. For example, we might say we want the local organizations to use technology more - how can we encourage that? So, different organizations will provide their opinions and discuss. Maybe a smaller group will meet and make recommendations, and a bigger operations committee will meet and come to some kind of agreement around operational issues. (Interviewee from Network P)

Every result area and strategies have work groups... In those meetings as well as in a quarterly meeting where everyone comes together, we seek input from the partners. Then that comes into a steering committee for endorsement, if it is such a decision. (Interviewee from Network M).

These quotes specify the mechanisms used to achieve higher member participation in networks governed by a lead organization and their role in network governance.

Likewise, representatives of networks governed by an administrative organization discussed the mechanisms used in their networks to involve member organizations in governance, including representation on boards and work groups. Several interviewees admitted that, due to the limited size of a board, it may not include all member organizations; however, they can participate in governance through work groups or

committees. Regarding the participation of member organizations in network governance, one of the interviewees said the following:

Every member is eligible to be on the board. Every member can participate in any activity inside the network. ... Any member can initiate new work. Any member can participate in the organization in any way he or she or their organization feels is appropriate... We look at how many members are actively participating in network activities and work groups, and how many members are taking part in our field projects... We track participation and we track active participation. (Interviewee from Network H).

This quote shows how networks governed by an administrative organization may pay attention to the participation of member organizations in governance. The participation of member organizations in network activities is monitored and evaluated to encourage their more active participation.

Still, networks seem to differ in the extent to which member organizations actually participate. Some interviewees indicated that their organizations are actively involved in network governance and that they have opportunities to share their ideas, as well as to participate in the development and implementation of network policies. In particular, one interviewee noted: “The advantage of our governance is that everyone makes input, everybody has to vote on the policies, and they can make recommendations to the group and get it heard. A wide variety of perspectives is being put into the system.” (Interviewee from Network H). A different interviewee remarked: “Another measure of collective impact is how engaged people are and people are highly engaged. The interviews that the consultants have done said that people are highly engaged. Somebody from the city said ... they have never seen such an engaged group making so many changes” (Interviewee from Network O). These quotes clearly suggest a high level of member involvement in these networks.

At the same time, other interviewees revealed that some of their member organizations were not actively involved in governance. For example, one interviewee noted: “I would like to have all partners be equally invested in the outcome. However, this is not really realistic because some are very progressive in their approaches and some, because of the culture of some of the organizations, are naturally more cautious.” (Interviewee from Network M). Some interviewees noted that they are in need of mechanisms to enforce participation among members. In particular, an interviewee from Network P said the following:

I would like to be able to enforce some requirements around how everybody participates. We do not have a real enforcement mechanism. For example, if we say all the national partners have to participate in all the meetings. But if the national partner does not participate in the meeting, we do not have a real way to enforce that. ... It can be a little bit difficult to enforce things. I think part of that is coming from having a culture of collaboration. ... If you change something and you make it hierarchical, you may lose some of the aspects of having a culture where people feel that they are part of something together.

As this quote shows, central organizations of collaborative networks are interested in encouraging greater participation of member organizations in governance; however, they may not have or use appropriate mechanisms to achieve this.

A comparative analysis of the interviews shows that networks using centralized governance, including those governed by a lead organization and an administrative organization, can provide member organizations differing opportunities to participate. Such opportunities seem to vary depending on the design and policies of network governance. Networks that pointed to low participation by member organizations indicated their interest in creating more inclusive network governance. The respondents who provided such views mainly represent networks with a lead organization form of governance:

We really want to lower barriers for participation and have as many different voices at the table as possible... Giving people the opportunity to step into leadership when they can and when there is an area of interest... We think to have more, a bit of a broader, more distributed leadership team, and perhaps, rotating facilitation is something we are looking at in the future for having different perspectives and a variety in taking the lead roles. (Interviewee from Network L)

We are in the process of redeveloping the community development network because it was led solely by our agency... We are going to reestablish the governing structure to give our agency less power and reestablish this as sharing power across more bodies. (Interviewee from Network Q)

As can be seen from the above quotes, the networks governed by a lead organization emphasize the need for greater member participation.

It is possible that networks governed by a lead organization, due to an imbalance of powers, initially involve their members in governance to a lesser extent than networks governed by an administrative organization. Levels of member involvement may also vary across networks governed by a lead organization, as well as networks governed by an administrative organization, depending on their design and policies. In other words, networks using centralized governance—governed either by a lead organization or by an administrative organization—may have (or allow for) more or less active participation of members in governance.

Theme 3: Factors Shaping Network Governance

The next major theme identified from the interview analysis relates to factors shaping network governance. Based on initial codes and constructs, factors that might influence governance were grouped into two categories, including “Context-related factors” and “Network-related factors” (see Appendix D).

It should be noted that not all interviewees were fully aware of factors that shaped governance in their networks or could recall all the factors. Some factors mentioned by interviewees, such as problem/purpose of collaboration, external requirements coming

from funders, communities, and other external stakeholders, as well as initial relationships of collaboration participants, can be considered as contextual factors. As emphasized by interviewees, the original problem or purpose behind the collaboration guides its governance. One interviewee stressed: “We start with the problem we are trying to solve, then we develop a governance structure that works for that problem” (Interviewee from Network T). In some cases, changes in governance aimed at making it more inclusive were introduced because of the complexity of a problem, which required taking into consideration multiple views in the process of modifying goals and strategies. One of the interviewees explained the reason for making changes to network governance as follows: “We are now in the process of forming a member leadership team. The purpose of that is to help us make sure our different strategies are in alignment with our overall mission, possibly to refine our mission and goals.” (Interviewee from Network L)

Interviewees also referred to demands from funders, such as foundations and government departments, which provided guidelines for governing the collaboration they agreed to support. For example, interviewees stressed the role of funders in shaping network governance as follows: “It was required by the foundation that we set up that way” (Interviewee from Network K); “When the coalition was formed, guidance around structure initially came from our funder [the Department of Children, Youth, and Families] that set the tone...” (Interviewee from Network L); “In the beginning, what happened was the foundations that were funding individual national partners for different types of work said: ‘We want these national organizations to work together’ and they decided that my organization would be the lead organization.” (Interviewee from Network P)

Further, interviewees' answers point to the possible role of initial connections among organizations in shaping network governance. In networks with centralized governance, there were few initial connections between member organizations. For instance, they said: "Some of them [organizations] may have worked individually with one or two organizations, but they didn't collaborate with so many. One of the benefits of being in the collaborative is that it allows connecting with organizations that they may not know" (Interviewee from Network E); "They were coming into this community doing work. But not everybody really knew who each other was or what they were doing. Creating a system allowed us to avoid and get rid of duplication and leverage each other's expertise". (Interviewee from Network M). These quotes suggest that the lack of initial connections between collaboration participants could lead to adopting a centralized form of network governance.

Initial trust between organizations, as well as their agreement regarding key collaboration parameters such as goals and strategies for achieving them, also seemed to contribute to shaping network governance. Low levels of initial trust ("the diversity of organizations that came together had very little trust"; "it partly was a [low] level of trust when we came together") and agreement regarding collaboration goals and ways to reach them ("was a little bit harder to get agreement around the way that we would resolve that challenge") were mentioned by representatives of networks governed by a central organization.

Among factors that shaped governance in their networks, interviewees also mentioned the characteristics of networks, such as the commonalities and differences between collaborating organizations and their geographical proximity. According to some

interviewees, networks with centralized governance consist of diverse organizations – “diverse groups and often conflicting groups with conflicting agendas”; “they serve different communities... very different populations, very different organization sizes... extremely diverse group and all over the country.... rural places, urban places, big places, small places”; “have members who are part of small organizations, county-wide organizations, and statewide initiatives” (Interviewees). In some cases, the participants of networks with centralized governance share similar characteristics – “We have some partners who do several and similar things”; “You have to work with others that have similar interests as you”; “hospitals, for example, were in competition with one another for patients ... they realized that their needs and interests were very similar” (Interviewees). These quotes suggest that both similarities and dissimilarities among collaborating organizations might be associated with the adoption of a centralized form of network governance.

Regarding collaboration with greater geographic scope, interviewees noted: “Situations where you have people from different states ... trying to negotiate agreements are very complex and challenging” and “The secretariat [central entity] has been the force that has kept the network going even though it is spread across different states.” Thus, when collaborating organizations are geographically dispersed and/or their collaboration has a larger scope, they are likely to choose centralized network governance rather than non-centralized governance. Also, interviewees referred to some other network characteristics, such as a size of a network (“We are too big to have 53 members to serve on our board of directors”; “King County's huge - 19 school districts, 35 different towns and communities plus unincorporated areas; so just having a true representation from all

communities and areas of the county is a challenge”) and sectoral differences (“It is a way to bring really diverse groups that are hostile to each other in other circumstances together [environmental NGOs and fisheries] on an issue on which they agreed”; “The diversity of organizations that came together ... spoke only for themselves and didn’t speak for the whole group”). Although these factors were not actively discussed, but only mentioned, they could play a role in the centralization of governance in collaborative networks.

Theme 4: Collaboration Outcomes

Based on the interview data, collaboration outcomes were grouped into two categories: (1) “Intermediate outcomes” with subcategories of “Trust”, “Consensus”, and “Learning”, and (2) “Ultimate outcomes”, such as “Goal achievement” (see Appendix E).

Interviewees discussed the importance of establishing trust among network organizations for the process of collaboration, as well as its success. The importance of trust was mentioned in relation to various stages of collaboration, such as planning, development, and implementation. An interviewee from a network with shared governance described the role of mutual trust between network participants at different stages of collaboration:

I think that they are really grounded in mutual trust. People do trust each other. ... Having those trusting relationships in place by engaging all of the stakeholders in the process from the very beginning and when they are planning or applying for funds, developing policies, developing learning lodges... to have full partner engagement. (Interviewee from Network S)

This quote suggests the importance of trust for a network with shared governance for the process of collaboration and its results.

In contrast, the interviewee from Network I, which is governed by a lead organization, indicated a low level of trust in their network as the reason for not achieving the goal:

Because that issue of competitiveness was in place when we formed a partnership, trust was built, but it was really one person to another rather than organizational trust... So, the idea of true organizational trust I don't think was ever achieved. And that probably explains why there wasn't more effort put into not just what is the goal, but how do we achieve the goal.

This quote indicates that low trust may hinder the achievement of collaboration goals.

Also, it suggests that, in networks governed by a central organization, trust among organizations needs to be promoted.

Consensus achieved within a network was discussed to be one of the features and outcomes of a collaboration process. According to interviewees, it is important for network members to achieve consensus on key issues of collaboration; in particular, the consensus was mentioned in relation to goals, values, and decisions. One of the interviewees underlined the importance of achieving consensus for their collaboration as follows: "It is much more about ... being good partners as opposed to being the only leaders of early learning. We are highly collaborative, which probably has a lot to do with the fact that we really focused on consensus..." (Interviewee from Network L). Another interviewee described how they strive for consensus within their network:

Every organization, every one of ten national partners have one vote and we aim for consensus. At the end if there is no consensus with them, there is a possibility to go with the majority vote, but we do work really hard to have the decisions ... everybody can move forward with, because we are all partners working together to try to advance the goal. We are really about figuring out what the strategy that we all think is the right line. And if we cannot agree on something, usually we do not do it ... We had to compromise rather than outvote each other. (Interviewee from Network P)

As these quotes show, network participants recognize the importance of consensus building for collaboration success.

Interviewees mentioned cases when decisions were not made because collaborating organizations could not reach consensus. One of the interviewees emphasized how consensus is defined in their network:

When we have our monthly meetings, if there is an issue that we need to address, we create the space so that it can be discussed openly. We make sure that everybody's voice is heard respectfully and discussed. For consensus it is not really that 100 percent of the people are embracing 100 percent of the solution. Basically, we define consensus "Yes, I can live with that". It may not be my individual preferred ideal solution, but I can live with that and I think that is the best solution at this time. (Interviewee from Network S)

Based on this quote, it can be assumed that consensus is reached through open discussion and exchange of ideas and that it reflects a solution generally accepted by member organizations and allows them to act together to advance common goals.

Learning within a collaborative network was discussed by interviewees from several perspectives. One aspect of learning relates to learning to work together or collaborate. One of the interviewees emphasized this aspect as follows: "We had a lot of learning as a collaborative... how to operate this program together and how to streamline it." Another aspect of learning indicates what and how member organizations learn together as a group in relation to the purpose and area of collaboration. One interviewee described this aspect of learning for their network as follows:

We are developing a theory of change for family engagement in early learning. We are working on developing a community of practice to support culturally responsive practice across the home visiting program. We work at the system level trying to improve systems so we listen to different aspects of the community, whether it is parents or childcare providers or licensors... where we can influence and where there is an interest and capacity, and then we try to work on those aspects that will move the system forward. (Interviewee from Network L)

This quote illustrates that network organizations are likely to develop new approaches as well as improve existing systems and practices in the area of their collaboration.

The third aspect of learning discussed by interviewees relates to learning to develop and share knowledge during collaboration. Several interviewees emphasized that network organizations willingly share knowledge within a network and learn together about new ways of working. One of the interviewees representing a network with centralized governance described a synergistic effect of learning as a group of organizations:

There was an opportunity for learning that might not have otherwise happened. It was not learning by just bringing in experts—it was learning from your coworker, from your collaborative partner, and leveraging skills of each of those partners in a way that increases the power of the whole. (Interviewee from Network N)

This quote suggests that learning from and together with their partners allows network organizations to enhance their knowledge and achieve greater benefits than they can achieve independently.

According to interviewees, collaboration participants share their knowledge with their partners and introduce their ideas to others in various ways—for example, in work groups, at membership meetings, conferences and/or through newsletters. Also, learning within a network is often facilitated by the central organizations of networks. One of the interviewees, representing a network governed by a lead organization, described the ways in which the central organization of their network supports collaborative learning:

We have a very strong culture around best practices and innovation. We have hundreds and hundreds of practices that we have collected. We get that data every single quarter and get reports from our partners about everything they are doing. And we analyze the data. So, when we see something new and interesting, we figure out ways to share it. We send out a newsletter with tips or sometimes we write toolkit. We do webinars, and we do a big conference every year. At the conference, the local partners are presenting to each other about how they do the work. We do experiential learning where organizations from one place go to do

work with the organizations from other places and see how they are doing the work on something ... and we do that when we see something that we think is good and effective. (Interviewee from Network P)

This quote shows how the central organization of a network can effectively facilitate collaborative learning.

Network representatives also expressed interest in promoting greater learning. For instance, one of the interviewees explained that they evaluate learning outcomes to further encourage learning in their network. In this case, learning outcomes are measured along with broader outcomes of a network, such as goal achievement or community impact, that they may influence. These various outcomes, including learning outcomes, are evaluated with the help of consultants:

There is a document that we have from a local evaluator which talks about influence outcomes, leverage outcomes, and learning outcomes... We have different areas of work that we focus on broadly – there are advocacy and policy components, there is family engagement, there is learning from communities ... and what we learn to inform our members in a form of different programs and approaches and also to inform state agencies... We go to achieve those different outcomes along the way to community-level outcomes. (Interviewee from Network L)

This quote suggests that learning within a network, as an intermediate or process outcome of collaboration, is likely to have an impact on higher-level outcomes, such as achieving goals or impact on communities.

Interviews also suggest that achieving collaboration goals is the most important outcome of collaboration. Since most nonprofit collaborations pursue big and long-term goals (crime prevention, improving public health, or reducing educational disparities, for example), they are unlikely to be achieved at earlier stages of collaboration. Several interviewees emphasized that they are tracking positive movement or progress toward goals, rather than their ultimate achievement:

It is always work in process. Our goals are very big, so it is not something that happens in a year. These are long-term issues that we are trying to address. For example, if we are focusing on obesity in children, that is not going to be solved in a year or five years, but I feel like we are making progress. (Interviewee from Network E)

It is hard to measure sometimes if it is that you have got is not a measurable outcome. What we look for is a positive movement. Can we say that we have changed something or have moved something in our direction or in the direction that we wanted to go? Do we have more members engaged in this particular discussion? Have we moved a state agency closer to our way of thinking or closer to a potential solution for a particular problem? We would look for positive movement more than we look for a specific outcome (Interviewee from Network D)

As these quotes illustrate, nonprofit collaborations pursuing long-term goals are constantly monitoring and evaluating the progress made toward these goals.

Interviews also suggest that representatives of networks with centralized governance that actively involve member organizations in governance have a higher level of satisfaction with outcomes achieved during their collaboration than those that indicated limited participation of members in their networks. For example, interviewees from networks I, N and Q, who spoke about the low involvement of member organizations in governance and their plans to improve member participation by making changes to network governance, described problems with building trust, reaching agreement on key aspects of collaboration, and accomplishing goals in their networks. On the other hand, interviewees from networks C, D, H, L, O, and P, who informed about the active participation of member organizations in network governance, characterized their collaboration as successful in making progress toward goals and indicated other positive results, such as reaching consensus among participants and learning in their networks.

3.5. Conclusions from the Qualitative Interviews

Qualitative interviews suggest that the involvement of member organizations in network governance is relevant and important not only for networks governed jointly, but also for networks governed by a central organization. Participation of member organizations in governance is likely to be lower in networks governed by a lead organization than in networks governed by an administrative organization. Moreover, differences in the levels of member involvement in governance appear to exist across networks governed by the same type of a central organization, such as a lead organization or an administrative organization. Based on the findings of qualitative interviews, the research framework was expanded to include the involvement of member organizations as a concept or part of governance in collaborative networks with centralized governance (see Figure 3.1).

Although the interviews were not particularly useful in providing new information about factors determining the centralization of network governance, they suggested several contextual and network characteristics with possible roles in shaping network governance. Contextual factors that could influence the adoption of network governance forms include a problem/purpose of collaboration, external demands imposed on a network, and initial relationships of collaboration participants. In addition, the form of network governance may depend on network characteristics, such as similarities and differences among network organizations, the scope of collaboration, and network size. These factors suggested by the interviews are largely similar to those included in the research framework after conducting the literature review, although the latter covered more factors. It is possible that, during interviews, the network representatives could not

recall all the factors or relate them to governance. For this reason, the factors previously included in the research framework as impacting the centralization of network governance are to be retained and tested using quantitative methods.

The analysis of qualitative interviews revealed several process or intermediate outcomes of collaboration achieved at the network level, such as the development of trust among network members, achievement of consensus on key collaboration parameters, and network learning. As noted earlier, extant literature discusses the concepts of trust, consensus, and communication as reflecting the relational, cognitive, and structural aspects of social capital. Thus, social capital can be considered as an intermediate collaboration outcome, although it was not explicitly mentioned by interviewees. Also, intermediate outcomes may be interrelated or some outcomes may depend on the achievements of others. Possible relationships between various collaboration outcomes need to be tested through quantitative research. The results of qualitative interviews suggest that intermediate collaboration outcomes, such as the levels of trust, consensus, and learning, may be higher in networks with shared governance as well as in networks with centralized governance that allow for higher member involvement in governance.

Achievement of collaboration goals was described by interviewees as the main or ultimate outcome of collaborative networks. The goals of most nonprofit collaborative networks are unlikely to be achieved in the early stages of collaboration; hence, networks monitor and measure their progress in achieving goals. Interview findings suggest that networks governed by a central organization allowing for greater participation of member organizations in governance are more satisfied with progress in achieving their goals than those that allow for less member participation.

3.6. Refined Research Framework

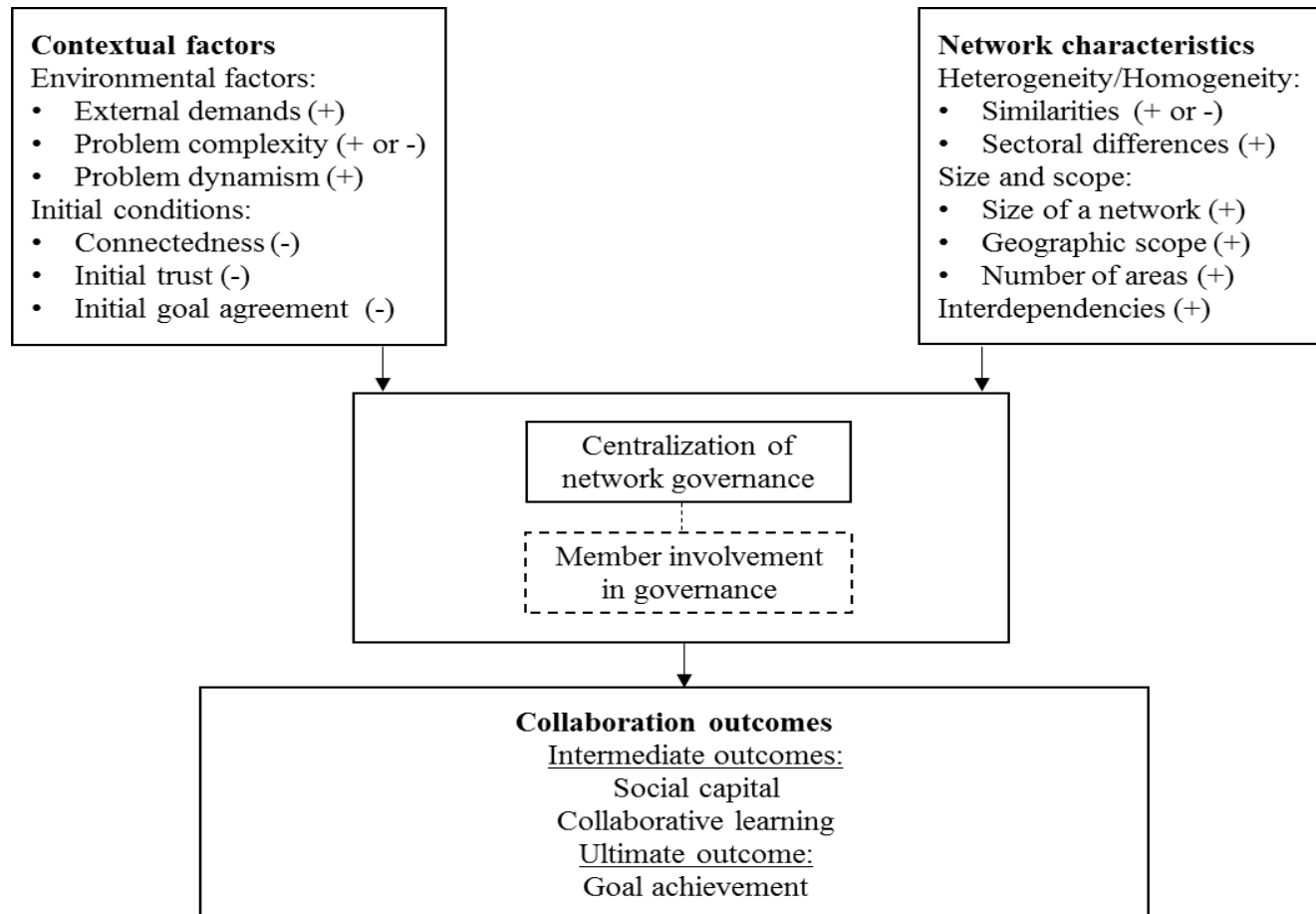
Based on the results of qualitative research, the research questions have been modified as follows (additions or changes are in italics):

1. What contextual factors and other characteristics of collaborative networks influence the adoption of centralized network governance *and member involvement in networks with centralized governance?*
2. Does the adoption of centralized network governance over non-centralized governance make a difference for collaborative network outcomes?
3. *Does higher member involvement in networks with centralized governance make a difference for collaborative network outcomes?*

The research framework has been modified to include the concept of member involvement in governance as part of network governance. Shared decision making that was used by interviewees interchangeably with member involvement and member participation in governance was excluded from the research framework as a collaboration outcome. The concept of shared decision making is reflected through member involvement in governance, which is more part of network governance than it is an outcome. In the next chapter, the quantitative method is used to examine what contextual and network-related factors influence the extent to which networks with centralized governance involve their member organizations in governance. Also, the quantitative methods help establish whether higher member involvement in governance in networks with centralized governance makes a difference for outcomes achieved in collaborative networks.

Figure 3.1

Refined Research Framework



Chapter Four: Quantitative Method and Findings

This chapter of the dissertation describes the study's quantitative methods and results. It provides information on the sampling procedures for the national survey of networks, the design of the questionnaire, and the analytical approach to the survey data. The chapter then presents the findings of the quantitative survey research and discusses their implications.

4.1. Survey Procedures

Collaborative networks, which are the unit of analysis, were selected from the group of nonprofit collaborations included in the Foundation Center's Nonprofit Collaboration Database. These collaborations applied for the Collaboration Prize, a competition for nonprofit collaborations, conducted by the Lodestar Foundation³. The information about nonprofit collaborations was accessed on the Foundation Center Website (<https://grantspace.org/collaboration>) and additional information, including contact information of collaborations' representatives, was received via the online inquiry form. The contact information, which may have changed since 2009 and 2011, was updated by performing a search on the Internet and visiting the web pages of collaborations and/or their participants.

After updating the information, one representative for each collaboration (for example an executive, board member, consultant, or coordinator) was contacted to ask about eligibility and willingness to participate in the survey. Initially, survey invitations were sent to 663 nonprofit collaborations included in the Nonprofit Collaboration

³ The Collaboration Prize competition was conducted by the Lodestar Foundation in 2009, 2011, and 2017. The Foundation Center's Nonprofit Collaboration Database includes the U.S. nonprofit collaborations participated in the competition in 2009 and 2011.

Database. Additionally, contact information for twelve nonprofit collaborations was provided by representatives of collaborations, who received invitations to participate in a survey. Thus, a total of 675 nonprofit collaborations were contacted regarding their participation in the survey.

A web-based survey was conducted using Qualtrics survey software. This particular mode of survey data collection was chosen over other survey modes (e.g., mail survey, face-to-face, telephone survey) because of the advantages it has in terms of cost and convenience (Dillman et al., 2014; Ritter & Sue, 2007). The disadvantage of a web-based survey is that the response rate may be lower than in other survey modes (Dillman et al. 2014; Schaefer & Dillman 1998; Kwak & Radler, 2002). To increase the response rate, invitations to participate in a survey were personalized by including the names of potential respondents (Dillman et al., 2014), and the invitations were sent from the official (university) email address of the researcher. Follow-up emails were sent a week later using the same method. A sample survey invitation is presented in Appendix F.

After receiving the invitation to take part in the survey, 31 collaborations reported that their case cannot be considered as a collaborative network and, therefore, did not qualify for research. Also, the definition of a collaborative network was given as a screening question in the online survey questionnaire. Based on answers to the screening question, an additional 28 collaborations were excluded from the survey. In total, the survey received 181 usable responses. Careful examination of responses led to the exclusion of four more cases from the analysis; among these cases, two respondents indicated that their interorganizational relationships represent a merger, and the other two

called their relationships an affiliation⁴. After excluding the ineligible cases, the response rate to the survey was 29 percent⁵.

4.2. Survey Questionnaire

The survey questionnaire began with a statement about the topic of research and asked for informed consent. The main part of the questionnaire contained 36 primary questions (excluding an opening statement and background questions), among which were one open-ended question and 35 closed-ended questions in multiple-choice and matrix formats (see Appendix G). The questionnaire can be divided into four sections. The first section (A) asked about the characteristics and goals of a collaborative network; the second section (B) asked questions on network governance; the third section (C) contained questions about factors of network governance; and, the fourth section asked about the outcomes of collaboration (D).

A. Collaborative Network Characteristics and Goals

The definition of a collaborative network, which was given at the beginning of a survey, served as a screening question. The goal was to identify and include in the study only qualifying respondents. Specifically, respondents were asked whether their organization is part of a collaborative network defined as “a network consisting of three or more legally autonomous organizations engaged in collaboration” (adapted from Provan and Kenis (2008)).

Network age. Respondents were asked how long their collaborative network has existed (less than 3 years, 3-5 years, 6-10 years, 11-15 years, or 15+ years).

⁴ These types of interorganizational relations do not fall under the suggested definition of a collaborative network that emphasized the autonomy of participants.

⁵ $(181-4) / (675-31-28) * 100 = 28.7 \sim 29$ percent.

Network size. The size of a network was measured by the number of organizations participating in collaboration (3-5, 6-10, 11-15, 16-20, 20-30, or 30+ organizations).

Formality of a network. Respondents were asked to indicate whether their network has a formal (written) agreement, such as a memorandum of understanding or a contract.

Collaboration area. Respondents could indicate collaboration areas using a list of options provided (“check all that apply”), which included health, human services, education, community development, housing, environment, arts and culture, employment and job training, crime or violence prevention, emergency preparedness or disaster relief, legal services, and human rights, and/or specify their area.

Collaboration type. Respondents were asked to indicate the type of collaboration, such as joint programming, administrative consolidation, alliance, joint venture, and merger⁶, or to specify their type.

Collaboration goals. Respondents were asked to indicate the importance of collaboration goals from the list of options, which included “developing solutions to a new problem/need(s)”, “addressing unmet needs in communities”, “serving more and/or different beneficiaries/clients”, and “achieving resource and administrative efficiencies”⁷ or to specify their goal if it is not in the list and its importance. The importance of goals was measured using a 4-point scale ranging “not that important” to “very important”. In addition, respondents were asked to indicate which goal they consider to be a primary goal of their collaborative network.

⁶ These options were adapted from the documentation for Collaboration Prize. Since this study was interested in collaborations in which organizations retained their autonomy, those that identified their type as a merger were later excluded from consideration.

⁷ These options were adapted from an application form for Collaboration Prize.

B. Collaborative Network Governance

Presence of a central organization. Respondents were asked about whether their collaborative network has a central organization (a central entity) that takes primary responsibility for guiding and coordinating the activities of network organizations.

Type of a central organization. Respondents who affirmatively answered the question about the presence of a central organization were asked about its type. In particular, they were asked to choose the answer that best describes a central organization of their network: (1) one of the member organizations (a lead organization) or (2) an organization specifically created to coordinate the network (e.g., a separate 501[c](3)). Also, respondents could choose the third—“other”—option and provide a description of their central organization. The “other” option was added to collect information on other possible types of a central organization.

Member organizations’ involvement in governance. This survey question was included to gather information on whether and to what extent member organizations are involved in governance in networks governed by a central organization. Respondents were given the following question: “Governance of a collaborative network can be divided into four general functions shown below. To what extent each of the following actors/groups are involved in each of these functions of governance in your network?” These four functions were: (a) establishing the collaboration purpose and goals, (b) developing strategies to achieve the purpose and goals, (c) creating policies and rules for member engagement and coordination of actions, and (d) adopting oversight and accountability mechanisms (adapted from Renz (2006) and Stone et al. (2010)).

Respondents were also asked about the involvement of other actors/groups in governance, such as a board/steering committee, President/CEO/Executive director, and community advisory groups. Involvement in governance was measured on a 5-point scale ranging from “no involvement” to “substantial involvement”.

Mechanisms for involving members in governance. Respondents were asked to indicate the importance of mechanisms for involving member organizations in network governance from the list of mechanisms provided, which included all-member meetings, work groups, online participation tools, individual meeting and consultations, and inclusion in a board/steering committee, and/or to specify their options. The importance of chosen mechanisms was measured on a 4-point scale ranging “not that important” to “very important”.

Changes in the form of governance. Respondents were asked whether the form of network governance has changed and how it has changed over the period of collaboration (an open-ended question)

C. Factors Influencing Governance

This section can be divided into two subsections, characterizing contextual and network factors.

Contextual Factors. This subsection included questions about problem characteristics, external demands imposed on a network, initial connectedness, initial trust, and initial agreement on goals.

Problem characteristics. Respondents were asked to indicate whether they agree or disagree with the following statements regarding the primary issue or problem addressed by their collaboration: (1) it is caused by multiple factors, (2) it is highly

dynamic, and (3) it is characterized by high informational uncertainty, on a 5-point scale (strongly disagree, disagree, neither agree nor disagree, agree, strongly agree).

Additionally, respondents were asked to self-report the complexity of a problem, addressed by their collaboration, on a 5-point scale ranging from “low” to “high” complexity.

External demands placed on a network. Respondents were asked to assess external demands, imposed on their network on a 5-point scale ranging from “low” to “high”.

Requirement to collaborate. The survey question asked whether interorganizational collaboration was required as a condition of funding. Respondents, who answered this question affirmatively, could indicate one of the two options – required by a foundation or by a government agency.

Initial connectedness. Respondents were asked to indicate the extent to which organizations shared information, shared resources, and/or jointly provided services prior to joining a collaborative network using a 4-point scale (never, sometimes, often, always).

Initial trust. Respondents were asked to indicate to what extent organizations trusted each other prior to joining a collaborative network on a 4-point scale (never, sometimes, often, always).

Initial agreement on goals. Respondents were asked to indicate to what extent organizations agreed on goals prior to joining a collaborative network on a 4-point scale (never, sometimes, often, always).

Network-Related Factors. This subsection included questions on sectoral differences, similarities/dissimilarities among network organizations, and geographic scope of collaboration. Questions about the size and age of a network, which are also network characteristics, were included in the section A described above.

Sectoral differences. Respondents were asked to specify the types of organizations composing their collaborative network (“check all that apply”), including nonprofit organizations, for-profit organizations, federal government organizations, state government organizations, and/or local government organizations.

Similarities/dissimilarities. Respondents were asked to indicate how similar network organizations are with respect to goals, services, and resources on a 4-point scale (very dissimilar, somewhat dissimilar, somewhat similar, very similar).

Geographic scope of collaboration. Respondents were asked whether their network operates within one municipality/county, within one state, in few neighboring states (or region), nationally or internationally. In addition, respondents were asked to indicate the states in which their network operates.

D. Collaboration Outcomes

This section asked questions about collaboration outcomes, including goal achievement, social capital, and collaborative learning.

Goal achievement. Respondents were asked whether they agree or disagree with two statements regarding a primary goal of their network, one of which relates to satisfaction with the progress made toward a goal, and another statement relates to confidence in achieving a goal. The question uses a 5-point scale that ranges from “strongly disagree” to “strongly agree”.

Social capital. Social capital was measured as a multidimensional concept based on a nine-item survey question adapted from Andrews (2017). The first three items of the scale measured communication and information sharing (the structural dimension), the next three items measured trust (the relational dimension), and the last three items measured shared vision (the cognitive dimension). Respondents could indicate their agreement or disagreement with statements on a 5-point scale ranging from “strongly disagree” to “strongly agree”.

Collaborative learning. Learning within a collaborative network was measured using a four-item scale adapted from Hocevar (2010). Respondents were asked to indicate whether they agree or disagree with the statements that they allocate sufficient resources to learning, that they understand how other organizations in a network make decisions, that they work with others to improve collaboration, and that their network has values and norms that encourage learning. The question uses a 5-point scale, ranging from “strongly disagree” to “strongly agree”.

The survey questionnaire was pre-tested on a small sample of nonprofit professionals before launching the full-scale survey. During the preliminary test, more than twenty people read through the questionnaire and then provided their feedback on survey questions and response categories. Their suggestions were used to improve the wording, format, and order of questions.

4.3. Analysis of the Survey Data

Profile of the Collaborative Networks

The profile of collaborative networks, representatives of which responded to the survey, is presented in Table 4.1. These collaborative networks represent various service or policy areas. About half of the networks operate in one specific area, such as human services (16 networks), health or mental health (14), environment (11), education (10), community development and housing (8), arts and culture (5), and legal services (4). One-fourth of the networks operate in two or three areas, and another one-fourth function in more than three areas.

About 60 percent of the collaborative networks associated themselves with one type of collaboration, such as an alliance, joint programming, joint venture, and administrative consolidation, while 40 percent of the networks indicated two or more types of collaboration. Addressing unmet need(s) in communities was indicated as a primary goal of collaboration by almost 40 percent of the networks. Each of the other goals listed in the questionnaire, such as developing solutions to a new problem(s), serving more/different beneficiaries, and achieving resource/administrative efficiencies, was indicated as a primary goal of collaboration by less than 20 percent of networks. A majority (70 percent) of networks have a formal agreement, such as a memorandum of understanding or a contract, while about a third of the networks operate without a formal agreement. Most (66 percent) collaborative networks were initiated by their participants, while one-third of collaborations were initiated by their funders as a condition of financial support. Specifically, 21 percent of collaborations were required by foundations, and 13 percent were required by government organizations.

Table 4.1*Profiles of the Collaborative Networks Participated in the Survey*

Characteristics	Number of networks	%	Characteristics	Number of networks	%
<i>Policy/service areas:</i>			<i>Network age:</i>		
1 area	86	49	Less than 5 years	61	35
including			6-10 years	29	16
Human services	16	9	11-15 years	31	18
Health	14	8	15+ years	55	31
Environment	11	6	<i>Presence of a central organization:</i>		
Education	10	6	Has a central organization	145	82
Community development	8	5	including		
Arts and culture	5	3	Lead organization	74	42
Legal services	4	2	Administrative org.	71	40
Other	18	10	No central organization	32	18
2 areas	28	16	<i>Geographic scope:</i>		
3 areas	18	10	Within one	66	37
4 or more areas	45	25	municipality/county		
<i>Collaboration type*:</i>			Within one state/region	61	34
1 type	107	60	National	25	14
including			International	25	14
Joint programming	36	20	<i>Networks participants:</i>		
Adm. consolidation	5	3	Nonprofit org.	177	100
Alliance	40	22	Federal government org.	32	18
Joint venture	5	3	State government org.	49	28
Merger**	0	0	Local government org.	89	50
Other	21	12	For-profit org.	47	26
2 or more types	70	40	<i>Formality:</i>		
<i>Primary goal:</i>			With a formal agreement	121	70
Developing solutions to a new problem(s)	34	19	Without a formal agreement	53	30
Addressing unmet need(s) in communities	69	39	<i>Requirement to collaborate:</i>		
Serving more/different beneficiaries	31	18	By a foundation	37	21
Achieving resource/admin. efficiencies	28	16	By government	22	13
Other	15	8	Not required	116	66
<i>Network size:</i>			<i>Total number of networks</i>		
3-10 org.	75	43	174-177		
11-30 org.	45	25			
30+ org.	56	32			

Notes. * Respondents could check several options; ** 2 merger cases were excluded after collecting the survey data.

All surveyed collaborative networks include nonprofit organizations as their participants. Some of them also include local government organizations (50 percent),

state government organizations (28 percent), federal government organizations (18 percent), and for-profit organizations (26 percent). The surveyed networks also vary by their size. Over 40 percent of the networks have between three and ten member organizations, and one-third of the networks have over 30 organizations. The surveyed networks also differ in their geographic scope. Over one-third (37 percent) of the networks work within one municipality/county, one-third of the networks are active in one state, 14 percent of the networks operate nationally, and another 14 percent operate internationally.

Over 80 percent of the respondents (145 networks) reported that their collaborative network has a central organization that takes primary responsibility for guiding and coordinating the activities of member organizations or, in other words, adopted centralized governance.

The respondents were also asked to indicate the type of a central organization of their collaborative network—whether it is governed by one of the member organizations (a lead organization) or by a specifically created administrative organization. The third—“other”—option was included to collect additional information about the types of a central organization. 23 respondents selected the “other” option and briefly described a central organization of their network. In 21 cases, the respondents informed that their collaborative network is governed by an existing organization outside of their collaboration (e.g., a national convener or intermediary, fiscal sponsor, funding organization); when analyzing the survey data, these cases were accounted for an administrative organization. Two cases for which the respondents indicated that their network has two lead organizations or is governed by a coordinator hired by one of the

member organizations were considered as networks governed by a lead organization. Thus, out of 145 networks with centralized governance, 74 networks have a lead organization and 71 networks have an administrative organization as a central organization of their network. 32 networks, which have no central organization with governing responsibilities, use shared or non-centralized governance.

Description of Study Variables

Several study variables were measured based on multiple-item survey questions. Among these variables are member involvement in governance, initial interconnectedness of network organizations, similarities among network organizations, goal achievement, social capital, and collaborative learning. Internal consistency of multi-item scales was evaluated using Cronbach's alpha. All scales have acceptable levels of internal consistency—Cronbach's alpha ranges from .70 to .86 (see Table 4.3).

Descriptive statistics for categorical variables, including “Presence of a central organization”, “Types of a central organization”, and “Network participants”, are shown in Table 4.1. Table 4.2 shows univariate statistics for the variables that are treated as continuous variables. Surveyed collaborative networks reported, on average, high levels of external demands imposed on their network ($M^8 = 3.79$), complexity of a problem addressed by collaboration ($M = 4.20$), problem dynamism ($M = 4.20$), and interdependencies among network organizations ($M = 3.74$), mean values of which were above the midpoints of their scales (3.00). The average values of initial connectedness ($M = 2.07$), initial trust ($M = 2.46$), initial goal agreement ($M = 2.06$) and similarities among network organizations ($M = 2.82$) were around the midpoints of their scales (2.50).

⁸ Hereinafter, M denotes the sample mean.

Surveyed networks reported high levels of collaboration outcomes: the average values of social capital ($M = 4.05$) as well as its components—trust ($M = 4.10$), communication ($M = 4.04$), and shared vision ($M = 4.05$)—were higher than the midpoints of their scales (2.50). Other outcomes, including collaborative learning ($M = 3.64$) and goal achievement ($M = 4.05$), were also above the midpoints of their scales (2.50).

Table 4.2

Univariate Descriptive Statistics for Study Variables

Variables	N	Mean (M)	Std.dev. (SD)	Min	Median	Max
<i>Contextual factors</i>						
External demands	177	3.79	1.19	1	4	5
Problem complexity	177	4.20	.91	1	4	5
Problem dynamism	177	4.20	.94	1	4	5
Initial connectedness	177	2.07	.63	1	2	4
Initial trust	177	2.46	.78	1	2	4
Initial goal agreement	177	2.06	.81	1	2	4
<i>Network characteristics</i>						
Similarities	177	2.82	.66	1	3	4
Network size	176	3.47	2.03	1	3	6
Geographic scope	177	2.05	1.04	1	2	4
Interdependencies	177	3.74	1.11	1	4	5
Network age	176	3.33	1.43	1	3	5
<i>Governance-related variables</i>						
Member involvement in governance	177	3.03	.92	0	3	4
<i>Collaboration outcomes</i>						
Social capital	177	4.05	.60	1	4	5
- Trust	177	4.10	.68	1	4	5
- Communication	177	4.04	.66	1	4	5
- Shared vision	177	4.05	.69	1	4	5
Collaborative learning	177	3.64	.64	1.75	3.75	5
Goal achievement	177	4.05	.68	1	4	5

Note. Descriptive statistics for categorical variables (e.g. “Network participants”, “Presence of a central organization”, “Types of a central organization”) are shown in Table 4.1.

The average level of member organizations’ involvement in governance reported by collaborative networks was relatively high ($M = 3.03$) or above the midpoint of its scale (2.00). Among networks governed by a central organization, those governed by a lead organization reported higher involvement of member organizations ($M = 3.19$) than networks governed by an administrative organization ($M = 2.97$). However, according to

a two-sample T-test performed for member involvement in networks governed by a lead organization and an administrative organization, there is no statistically significant difference between the means of these two groups (Appendix H).

Pairwise Pearson correlation coefficients were calculated to assess the strength of relationships between the study variables (see Table 4.3). The first dependent variable to be examined for the influences of factors is “Central organization”. The presence of a central organization has significant positive associations with external demands, problem complexity, network size, and similarities among network organizations; it is negatively associated with initial connectedness and initial trust among network participants. No strong correlations among factors possibly influencing the presence of a central organization (“Central organization”) were identified.

Other dependent variables of interest are collaboration outcomes, including “Social capital”, (with three components such as “Trust”, “Communication”, “Shared vision”), “Collaborative learning”, and “Goal achievement”. The components of social capital—trust, communication, and shared vision—are strongly correlated. Social capital is positively associated with several factors, including member organizations’ involvement in governance, initial trust among network organizations, similarities, and interdependencies of network organizations. Also, social capital has positive associations with other collaboration outcomes, namely, collaborative learning and goal achievement. Collaborative learning has positive associations with the presence of a central organization, member involvement in governance, as well as initial trust, initial connectedness, agreement on goals, similarities, and interdependencies among network organizations. Also, collaborative learning is positively related to goal achievement as

well as to social capital, including its components of trust, communication, and shared vision.

Achievement of collaboration goals has positive associations with the presence of a central organization, member organizations' involvement in governance, social capital and each of its components (i.e., trust, communication, and shared vision), collaborative learning, problem complexity and its dynamism, similarities among network organizations, and their interdependencies.

Thus, the presence of a central organization is positively related to the achievement of collaboration goals and collaborative learning. Member organizations' involvement in governance is positively associated with all collaboration outcomes tested in this study—social capital, as well as its components of trust, communication, and shared vision, collaborative learning, and goal achievement. Intermediate collaboration outcomes, including social capital and collaborative learning, are positively related to goal achievement, an ultimate collaboration outcome. Also, there is a positive association between two intermediate outcomes—social capital and collaborative learning.

Table 4.3
Pairwise Pearson Correlation Coefficients

		1	2	3	4	5	6	7	8	9	10	11	12
1	Central organization	1.00											
2	Member involvement	.11	1.00	(.80)									
3	Trust	.03	.29***	1.00	(.84)								
4	Communication	.04	.24***	.75***	1.00	(.78)							
5	Shared vision	.02	.26***	.66***	.61***	1.00	(.77)						
6	Social capital	.01	.30***	.91***	.89***	.86***	1.00	(.86)					
7	Collaborative learning	.15**	.26***	.53***	.51***	.62***	.62***	1.00	(.73)				
8	Goal achievement	.19***	.22***	.46***	.30***	.44***	.46***	.40***	1.00	(.70)			
9	External demands	.27***	.07	-.11	-.06	.06	-.04	.10	.08	1.00			
10	Problem complexity	.26***	.25***	.03	.03	.13*	.07	.13*	.21***	.33***	1.00		
11	Problem dynamism	.15*	.05	.09	.10	.01	.08	.06	.14*	.15**	.15**	1.00	
12	Initial connectedness	-.15**	.01	.05	.07	.10	.08	.20***	.02	.07	.02	-.02	1.00
13	Initial goal agreement	-.06	.08	.05	.10	.02	.06	.17**	.04	-.02	.08	.01	.59***
14	Initial trust	-.19***	.02	.23***	.21**	.09	.20***	.17**	.10	-.05	-.08	.08	.47***
15	Similarities	.15**	.10	.12	.14*	.14*	.15**	.27***	.16**	-.01	-.02	-.01	.02
16	For-profit org.	.08	-.01	-.08	-.07	-.08	-.08	-.13*	-.06	.11	-.02	.01	.12
17	Federal gov. org.	-.05	-.18**	.03	.11	.08	.08	.02	.03	.05	-.02	-.04	.16**
18	State gov. org.	-.07	.01	-.07	.01	-.02	-.03	-.12	-.05	.10	.06	.02	.14*
19	Local gov. org.	.01	-.06	-.01	-.07	.03	-.02	-.01	.08	.16**	.04	-.03	.10
20	Network size	.27***	-.15**	-.18**	-.15**	-.16**	-.19**	-.13*	-.06	.12	.08	.10	-.07
21	Geographic scope	.08	-.13*	-.07	-.02	-.09	-.07	-.05	-.11	.01	.02	.01	-.12
22	Number of areas	.15**	.01	.01	.01	-.02	-.01	.11	.03	.04	.10	.16**	.06
23	Interdependencies	.14*	.32***	.19***	.18**	.24***	.23***	.32***	.33***	.35***	.31***	.18**	.12
24	Network age	.12	-.06	-.17**	-.07	-.16**	-.15**	-.10	.01	.12	.01	.04	-.08

Notes. *significant at .1, ** significant at .05, ***significant at .01; Cronbach alpha coefficients (α) are provided in parentheses.

Table 4.3
Pairwise Pearson Correlation Coefficients (Continued)

	13	14	15	16	17	18	19	20	21	22	23	24
1 Central organization												
2 Member involvement												
3 Trust												
4 Communication												
5 Shared vision												
6 Social capital												
7 Collaborative learning												
8 Goal achievement												
9 External demands												
10 Problem complexity												
11 Problem dynamism												
12 Initial connectedness	(.83)											
13 Initial goal agreement	1.00											
14 Initial trust	.49***	1.00										
15 Similarities	.09	.05	1.00	(.70)								
16 For-profit org.	.12	.04	-.17**	1.00								
17 Federal gov. org.	.04	.02	-.17**	.32***	1.00							
18 State gov. org.	.13*	.01	-.16**	.37***	.43***	1.00						
19 Local gov. org.	-.01	-.05	-.09	.27***	.29***	.49***	1.00					
20 Network size	-.03	-.26	-.11	.25***	.20***	.15**	.13*	1.00				
21 Geographic scope	-.04	-.04	.07	.01	-.02	-.13*	-.35***	.17**	1.00			
22 Number of areas	.03	.02	.15**	.11	.11	.02	.16**	.14***	-.07	1.00		
23 Interdependencies	.15**	.08	.08	.01	.08	.03	.08	-.02	-.07	-.01	1.00	
24 Network age	-.04	-.20***	.14*	.02	.11	.11	.05	.32***	.11	.12	.11	1.00

Notes. *significant at .1, ** significant at .05, ***significant at .01; Cronbach alpha coefficients are provided in parentheses.

To examine the involvement of member organizations in governance across networks with centralized governance, scores on member involvement were divided into two groups, such as low and high member involvement⁹. This allowed creating a new categorical variable “Low/high member involvement” and then its combinations with the centralized form of network governance. A categorical variable “Combinations of a central organization and member involvement”, created from the values of variables “Central organization” and “Low/high member involvement”, has three categories: (1) Central organization involving member organizations in governance to a low extent (CO-Low MI); (2) Central organization involving member organizations in governance to a high extent (CO-High MI); (3) No central organization (No CO)¹⁰. A categorical variable “Combinations of central organization types and member involvement”, which was created based on the variables “Central organization types” and “Low/high member involvement”, has five categories: (1) Lead organization involving member organizations in governance to a low extent (LO-Low MI); (2) Lead organization involving member organizations in governance to a high extent (LO-High MI); (3) Administrative organization involving member organizations in governance to a low extent (AO-Low MI); (4) Administrative organization involving member organizations in governance to a high extent (AO-High MI); (5) No central organization (No CO).

Governance variables—“Central organization”, “Central organization types”, “Combinations of a central organization and member involvement” and “Combinations

⁹ A Stata command: cut(member_involvement), group (2).

¹⁰ Networks with non-centralized governance (or not governed by a central organization) were not divided into groups depending on the level of member involvement.

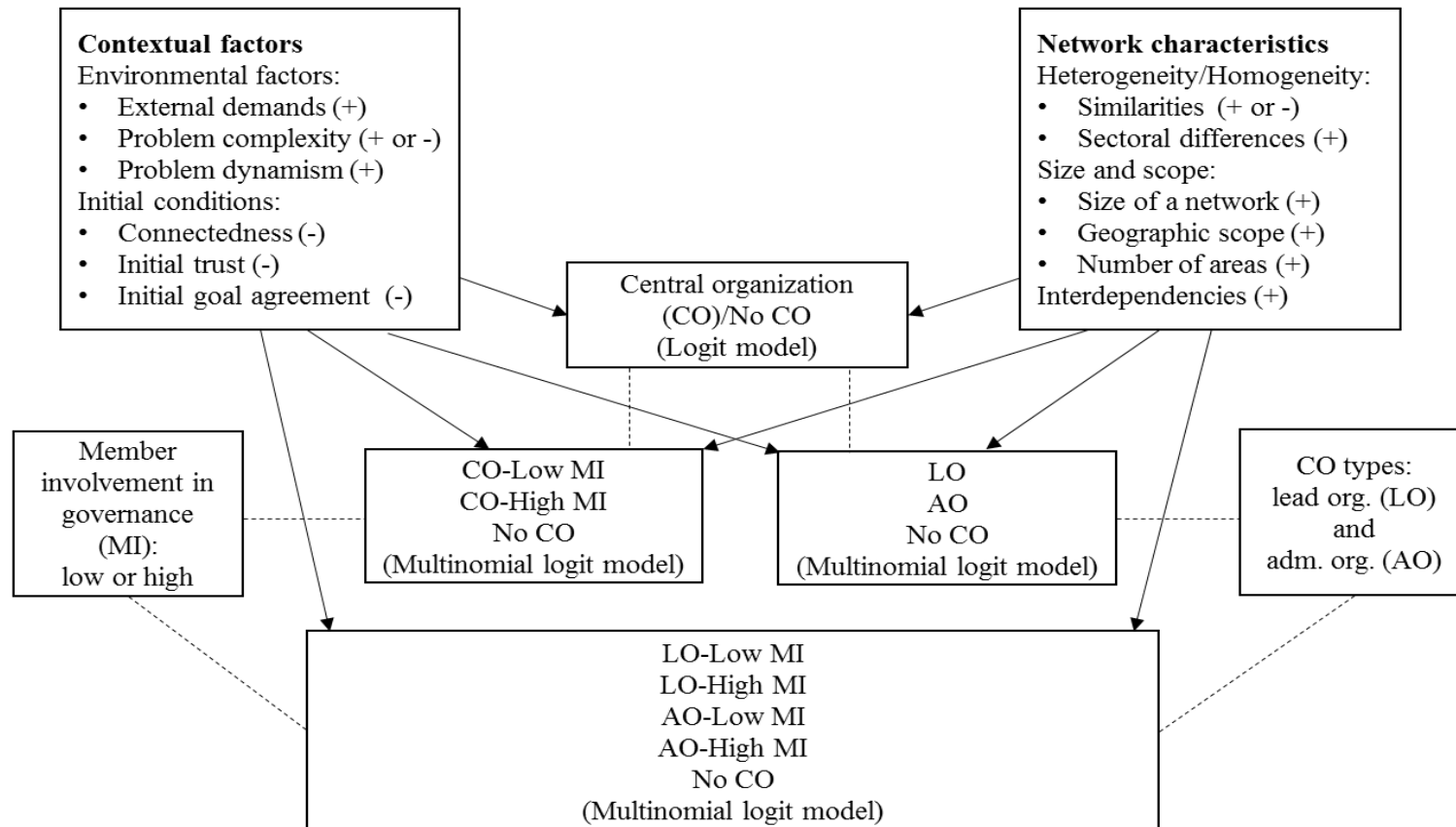
of central organization types and member involvement”—were used as dependent variables in models for governance and as independent variables in models for collaboration outcomes. This section describes these models and explains why and how they were used in this research. The results of the models are presented in the next section (4.4. Findings).

Models for Governance

Figure 4.1 depicts how the proposed research framework was used to investigate the influences of factors on the adoption of forms of network governance. The influences of context- and network-related factors on the probability of adopting a centralized form of governance versus a non-centralized form of governance were tested using a logistic regression model (see Table 4.4). Multinomial logistic regression models were used to investigate the impacts of context- and network-related factors on the adoption of a centralized form of governance involving member organizations in governance to a high extent versus a centralized form of governance involving member organizations in governance a low extent, the adoption of a lead organization form of governance versus an administrative organization form of governance, and the adoption of a lead organization form/administrative organization form involving member organizations in governance to a high extent versus those involving members in governance to a low extent (see Tables 4.5–4.7). The choice of logistic and multinomial logistic regression models was determined by dependent variables that are categorical with binary and nominal outcomes.

Figure 4.1

Scheme for Investigation of the Influences of Factors on Centralization of Network Governance and Member Involvement in Networks with Centralized Governance



Dependent Variables. In the logistic regression model of a central organization, a dependent variable “Central organization” has two categories: (1) Central organization (CO) and (2) No central organization (No CO) (a base category).

In the multinomial logistic regression model of combinations of a central organization and member involvement in governance, a dependent variable “Combinations of a central organization with member involvement” has three categories: (1) Central organization involving member organizations in governance to a low extent (CO-Low MI) (a base category), (2) Central organization involving member organizations in governance to a high extent (CO-High MI), and (3) No central organization (No CO).

In the multinomial logistic regression model of central organization types, a dependent variable “Central organization types” has three categories: (1) Lead organization (LO) (a base category), (2) Administrative organization (AO), and (3) No central organization (No CO).

In the multinomial logistic regression model of the combinations of central organization types and member involvement in governance, a dependent variable “Combinations of central organization types with member involvement” has five categories: (1) Lead organization involving member organizations in governance to a low extent (LO-Low MI), (2) Lead organization involving member organizations in governance to a high extent (LO-High MI), (3) Administrative organization involving member organizations in governance to a low extent (AO-Low MI), (4) Administrative organization involving member organizations in governance to a high extent (AO-High MI), and (5) No central organization (No CO). This model was run with two different

base categories: first, AO-Low MI was chosen as a base category to perform a comparative analysis with AO-High MI, and then LO-Low MI was used as a base category to compare with LO-High MI.

Independent Variables. All four models use the same independent variables: context-related factors, including external demands imposed on a network, problem complexity, problem dynamism, initial connectedness of collaboration participants, initial trust, and initial agreement on goals;

network-related factors, including similarities/dissimilarities among network organizations, types of network participants (i.e., nonprofit organizations, federal, state, and local government organizations, for-profit organizations), network size, geographic scope of collaboration, the number of policy/service areas, and interdependencies among network organizations.

Control Variable. Network age, which may influence changes in network characteristics and governance, was controlled when analyzing the influences of contextual and network-related factors on the adoption of forms of network governance.

Analysis of Variance of Collaboration Outcomes Across Groups of Networks

One-way analysis of variance (ANOVA) was conducted to compare the average levels of collaboration outcomes, such as goal achievement, collaborative learning, and social capital, including its components of trust, communication, and shared vision, across networks governed in different ways (see Appendices K–N). ANOVA I was used to investigate the effects of centralization of network governance, for which networks were divided into two groups: (1) governed by a central organization (CO) and (2) not governed by a central organization (No CO). ANOVA II was performed to examine the

effects of involving member organizations in governance to a high extent and a low extent in networks using a centralized form of governance. To perform this analysis, collaborative networks were divided into three groups: (1) governed by a central organization involving member organizations in governance to a high extent (CO-High MI), (2) governed by a central organization involving member organizations in governance to a low extent (CO-Low MI), and (3) not governed by a central organization (No CO). ANOVA III was conducted to analyze the effects of adopting different types of a central organization. In this analysis, the networks were grouped as follows: (1) governed by a lead organization (LO), (2) governed by an administrative organization (AO), and (3) not governed by a central organization (No CO). Finally, ANOVA IV was conducted to compare the effects of involving member organizations in governance to a high extent and a low extent in networks governed by different types of a central organization. To perform this analysis, networks were grouped as follows: (1) governed by a lead organization involving member organizations in governance to a high extent (LO-High MI), (2) governed by a lead organization involving member organizations in governance to a low extent (LO-Low MI), (3) governed by an administrative organization involving member organizations in governance to a high extent (AO-High MI), (4) governed by an administrative organization involving member organizations in governance to a low extent (AO-Low MI), and (5) not governed by a central organization (No CO).

Models for Collaboration Outcomes

Ordinary least squares (OLS) regression and structural equation modeling (SEM) were used to further learn about the effects of centralization of network governance and

member involvement in governance in networks with centralized governance on intermediate and ultimate collaboration outcomes. OLS regression models were developed for each collaboration outcome, including goal achievement, collaborative learning, and social capital, as well as its components of trust, communication, and shared vision. Along with governance variables, the models also included contextual and network-related factors as independent variables to identify the factors whose effects are not mediated or only partially mediated by governance variables. Contextual and network-related factors that significantly influence collaboration outcomes were then included as control variables when testing the effects of centralized network governance on collaboration outcomes using SEM.

For collaboration outcomes, three groups of OLS models included different governance variables as independent variables. Models I included the variables “Central organization” (CO) and “No central organization” (No CO) (the reference category). Models II included the variables “Central organization involving member organizations in governance to a high extent” (CO-High MI), “Central organization involving member organizations in governance to a low extent”(CO-Low MI) (the reference category), and “No central organization” (No CO). Models III included the variables “Administrative organization” (AO), “Lead organization” (LO), and “No central organization” (No CO) (the reference category). These three groups of models—Models I-III—were developed for each collaboration outcome, including goal achievement, collaborative learning, social capital as well as its components, such as trust, communication, and shared vision (see Appendices O–R). All OLS regression models for collaboration outcomes also used

contextual and network-related factors as independent variables, similar to those included in the models for governance described above.

The advantage of SEM over OLS regression is that the former allows investigating complex relationships between one or more independent variables and one and more dependent variables simultaneously. In this research, in addition to testing the effects of centralization of network governance and member involvement in governance on collaboration outcomes, SEM was used to examine the mediating effects of intermediate collaboration outcomes (i.e., social capital and collaborative learning) on the impacts of governance-related variables on the achievement of network-level goals.

Three SEM, developed in this research, used different exogenous but the same endogenous (or outcome) variables (see Figures 4.6–4.8). These outcome variables were goal achievement (an ultimate collaboration outcome), social capital, and collaborative learning (intermediate collaboration outcomes). Primary exogenous variables were the following governance variables:

“Central organization” (CO) and “No central organization” (No CO) (the reference category) (SEM I);

“Central organization involving member organizations in governance to a high extent”(CO-High MI), “Central organization involving member organizations in governance to a low extent” (CO-Low MI) (the reference category), and “No central organization” (No CO) (SEM II);

“Administrative organization” (AO), “Lead organization” (LO), and “No central organization” (No CO) (the reference category) (SEM III).

All SEM included context-and network-related factors with significant influences on collaboration outcomes, identified in OLS models, as control variables. These factors were statistically controlled to evaluate the unique (or true) effects of governance-related variables on collaboration outcomes. SEM was also used to analyze a relationship between two intermediate outcomes—social capital and collaborative learning—and their direct and indirect effects on goal achievement.

4.4. Findings

Models for Governance

The results of regression models for network governance are presented in Tables 4.4–4.7. Likelihood Ratios (LR) Chi2 are statistically significant for all four models. The goodness of fit of the models was assessed using McFadden's R^2 (ranges from .26 to .31) and Count R^2 (from .56 to .87), which inform that all models adequately fit the data. The values for variance inflation factors (VIF) vary from 1.10 to 1.82; multicollinearity among the independent variables is not an issue.

Logistic Regression Model of a Central Organization. According to the logistic model of a central organization (see Table 4.4), several contextual and network-related factors significantly influence the probability of adopting a centralized form of governance over a non-centralized form in collaborative networks.

Among contextual factors, higher external demands and problem complexity are positively related to the centralization of network governance ($z = 2.32, p = .02$ and $z = 1.87, p = .06$, respectively). Initial connectedness of collaboration participants has a negative effect ($z = -2.07, p = .04$) on the adoption of centralized governance. Network characteristics such as similarities among organizations and network size were found to

have positive impacts on the centralization of network governance ($z = 2.63, p < .001$ and $z = 2.27, p = .02$, respectively).

Table 4.4

Logistic Model of a Central Organization (CO)

Variables	Coef.	SE	z-score
Contextual factors:			
Environmental context:			
External demands	.55	.24	2.32**
Problem complexity	.53	.29	1.87*
Problem dynamism	.23	.26	.88
Initial conditions:			
Connectedness	-1.11	.54	-2.07**
Initial goal agreement	.33	.38	.88
Initial trust	-.51	.40	-1.28
Network characteristics:			
Heterogeneity/Homogeneity:			
Similarities	1.08	.41	2.63***
Participants:			
For-profit org.	.47	.65	.73
Federal gov. org.	-.90	.74	-1.21
State gov. org.	-.39	.70	-.56
Local gov. org.	.12	.62	.18
Size and scope:			
Network size	.36	.16	2.27**
Geographic scope	.02	.27	.09
Number of service/policy areas	.31	.17	1.81*
Interdependencies	.12	.27	.44
Control variable:			
Network age	-.10	.19	-.50
LR chi2	52.31		
Prob>chi2	< .001		
McFadden's R²	.31		
Count R²	.87		
N obs.	176		

Note. *significant at .1, ** significant at .05, ***significant at .01.

Multinomial Logistic Regression Model of Combinations of a Central

Organization and Member Involvement in Governance. For this model, the category

“Central organization involving member organizations in governance to a low extent”

was used as the base category that was compared with the category “Central organization

involving member organizations in governance to a high extent” to identify factors that

influence higher member involvement in networks with centralized governance (see Table 4.5)¹¹.

Table 4.5

Multinomial Logistic Model of Combinations of a Central Organization (CO) and Member Involvement (MI) (the Base Category—CO-Low MI)

Variables	CO-High MI versus CO-Low MI (base)		
	Coef.	SE	z-score
Contextual factors:			
Environmental context:			
External demands	-.07	.20	-.36
Problem complexity	.28	.25	1.10
Problem dynamism	.07	.23	.31
Initial conditions:			
Connectedness	-.55	.47	-1.16
Initial goal agreement	.30	.35	.85
Initial trust	.24	.34	.69
Network characteristics:			
Heterogeneity/Homogeneity:			
Similarities	.64	.34	1.87*
Participants:			
For-profit org.	.64	.51	1.27
Federal gov. org.	-1.62	.60	-2.70***
State gov. org.	.38	.56	.68
Local gov. org.	-.77	.50	-1.52
Size and scope:			
Network size	-.11	.11	-1.07
Geographic scope	-.06	.21	-.30
Number of service/policy areas	.17	.09	1.78*
Interdependencies	.70	.21	3.25***
Control variable:			
Network age	-.11	.16	-.74
LR chi2	93.24		
Prob>chi2	< .001		
McFadden's R²	.26		
Count R²	.68		
N obs.	176		

Note. *significant at .1, ** significant at .05, ***significant at .01.

Several network characteristics, including similarities among network organizations ($z = 1.87, p = .06$), their interdependencies ($z = 3.25, p < .001$), and the

¹¹ The output No CO vs. CO-Low MI is not shown and discussed here. Appendix I shows the models that test CO-Low MI vs. No CO and CO-High MI vs. No CO.

number of service/policy areas ($z = 1.78, p = .07$) positively influence member involvement in networks with centralized governance. Participation of a federal government organization in a collaborative network relative to the participation of a nonprofit organization (the reference category) has a negative effect on member involvement in networks with centralized governance ($z = -2.70, p = .01$).

This model was also run with the category “No central organization” as the base category (see Appendix I). Its results, especially in the output that evaluates factors of adopting centralized governance with high member involvement versus non-centralized governance, are largely similar to those found in the logistic model of a central organization.

Multinomial Logistic Regression Model of Central Organization Types. The model was used to evaluate the factors of adopting an administrative organization (AO) over a lead organization (LO) in collaborative networks with centralized governance (see Table 4.6)¹².

Similarities among network organizations ($z = 3.31, p = .001$), network size ($z = 3.11, p = .002$), and participation of a for-profit organization in a network ($z = 3.30, p = .001$) have positive effects on adopting an administrative organization over a lead organization as the central organization of a collaborative network. Higher levels of problem dynamism ($z = -1.71, p = .09$), initial agreement on goals ($z = -1.98, p = .05$), and participation of a federal government organization in a network ($z = -1.67, p = .09$) have negative impacts on adopting an administrative organization versus a lead

¹² The output No CO vs. LO that does not directly address the research question is not presented in Table 4.6. Appendix J shows the models that test LO vs. No CO and AO vs. No CO.

organization; in other words, these factors are likely to lead to the adoption of a lead organization as the central organization of a network.

Table 4.6

Multinomial Logistic Model of Central Organization Types (Lead Organization (LO) and Administrative Organization (AO)) (the Base Category—LO)

Variables	AO versus LO (base)		
	Coef.	SE	z-score
Contextual factors:			
Environmental context:			
External demands	.26	.21	1.21
Problem complexity	-.42	.27	-1.56
Problem dynamism	-.40	.23	-1.71*
Initial conditions:			
Connectedness	.26	.46	.55
Goal agreement	-.73	.37	-1.98**
Initial trust	.08	.35	.23
Network characteristics:			
Heterogeneity/Homogeneity:			
Similarities	1.28	.39	3.31***
Participants:			
For-profit org.	1.83	.56	3.30***
Federal gov. org.	-1.14	.68	-1.67*
State gov. org.	-.17	.60	-.28
Local gov. org.	-.43	.52	-.83
Size and scope:			
Network size	.38	.12	3.11***
Geographic scope	-.28	.22	-1.26
Number of service/policy areas	-.00	.09	.01
Interdependencies	.13	.21	.63
Control variable:			
Network age	.43	.16	2.76***
LR chi2	107.56		
Prob>chi2	< .001		
McFadden's R²	.29		
Count R²	.69		
N obs.	176		

Note. *significant at .1, ** significant at .05, ***significant at .01.

Appendix J shows the models that evaluate the influences of factors on the adoption of centralized governance, such as an administrative organization or a lead organization form of governance, versus non-centralized governance (a base category). Higher external demands ($z = 2.53$, $p = .01$), similarities among network organizations (z

= 3.88, $p < .001$), larger network size ($z = 3.28$, $p = .001$) and participation of a for-profit organization have positive effects on the adoption of administrative organization governance versus non-centralized governance. External demands ($z = 1.84$, $p = .07$), problem complexity ($z = 2.25$, $p = .03$) and the number of service/policy areas ($z = 1.83$, $p = .07$) have positive impacts on adopting a lead organization, while initial connectedness ($z = -1.96$, $p = .05$) has a negative effect on adopting a lead organization governance over non-centralized governance.

Multinomial Logistic Regression Model of Combinations of Central

Organization Types and Member Involvement in Governance. First, the model was used to evaluate the effects of factors on adopting a lead organization involving member organizations in governance to a high extent (LO-High MI) versus a lead organization involving members in governance to a low extent (LO-Low MI) (see Table 4.7). Then, the model was run to analyze the impacts of factors on adopting an administrative organization involving member organizations in governance to a high extent (AO-High MI) versus an administrative organization involving members in governance to a low extent (AO-Low MI) (see Table 4.7).

A lead organization is likely to involve network organizations in governance to a high extent if network organizations have greater interdependencies ($z = 3.21$, $p < .001$) and similarities ($z = 1.76$, $p = .08$) and if collaboration extends to multiple areas ($z = 2.12$, $p = .03$). Participation of a local government organization in a network is likely to result in low member involvement in governance ($z = -1.79$, $p = .07$).

Table 4.7

Multinomial Logistic Model of Combinations of Central Organization Types and Member Involvement (the Base Categories—LO-Low MI and AO-Low MI)¹³

	LO-High MI versus LO-Low MI (base)			AO-High MI versus AO-Low MI (base)		
	Coef.	SE	z-score	Coef.	SE	z-score
Contextual factors:						
Environmental context:						
External demands	-.12	.28	-.44	-.02	.29	-.05
Problem complexity	.19	.40	.47	.22	.34	.65
Problem dynamism	-.40	.38	-1.05	.30	.30	1.01
Initial conditions:						
Connectedness	-.92	.62	-1.46	-.00	.54	.01
Goal agreement	.77	.48	1.61	-.55	.54	-1.02
Initial trust	-.14	.50	-.27	.58	.48	1.21
Network characteristics:						
Heterogeneity/Homogeneity:						
Similarities	.88	.50	1.76*	.92	.54	1.70*
Participants:						
For-profit org.	.67	.80	.84	1.16	.73	1.58
Federal gov. org.	-1.28	.86	-1.49	-2.59	1.00	-2.61***
State gov. org.	.49	.82	-.60	.24	.78	.30
Local gov. org.	-1.43	.80	-1.79*	-.63	.68	-.92
Size and scope:						
Network size	-.09	.17	-.55	-.09	.16	-.53
Geographic scope	-.34	.31	-1.11	.23	.30	.74
Number of service/policy areas	.34	.16	2.12**	.12	.12	1.04
Interdependencies	1.03	.32	3.21***	.60	.30	2.00**
Control variable:						
Network age	-.37	.23	-1.59	.21	.22	.95
LR chi²	164.23			164.23		
Prob>chi²	< .001			< .001		
McFadden's R²	.29			.29		
Count R²	.56			.56		
N obs.	176			176		

Note. *significant at .1, ** significant at .05, ***significant at .01.

An administrative organization involves member organizations in governance to a high extent, when they have greater interdependencies ($z = 2.00$, $p = .05$) and similarities ($z = 1.70$, $p = .09$). Participation of a federal government organization in a network

¹³ The outputs that do not directly address the research questions (AO-High MI vs. LO-Low MI, AO-Low MI vs. LO-Low MI, No CO vs. LO-Low MI, LO-Low MI vs. AO-Low MI, LO-High MI vs. AO-Low MI, and No CO vs. AO-Low MI) are not presented in Table 4.7.

governed by an administrative organization leads to low involvement of member organizations in governance ($z = -2.61, p < .001$).

Analysis of Variance of Collaboration Outcomes Across Groups of Networks

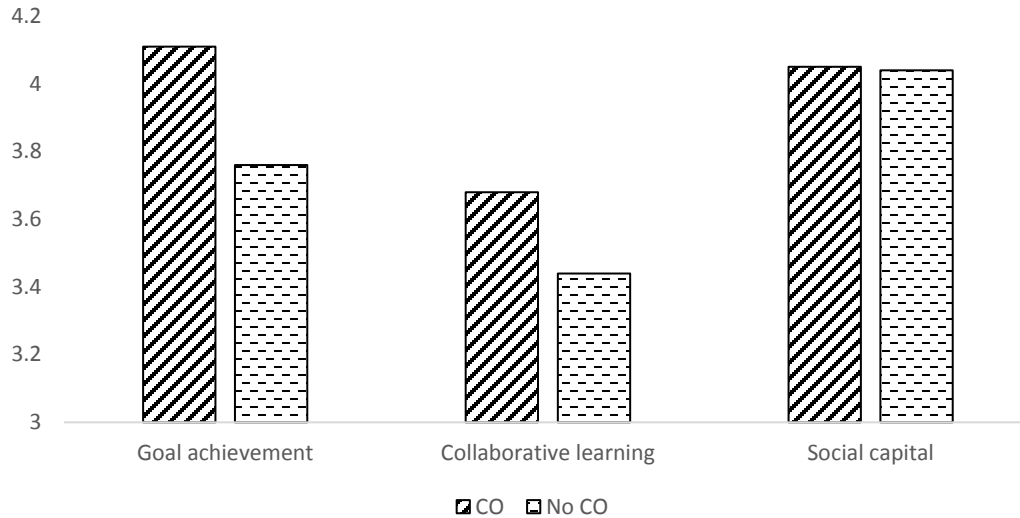
All ANOVA models met the assumption of homogeneity (equality) of variance, which was assessed using the Levene's test. The results of ANOVA I–IV are presented in Appendices K–N and described below.

ANOVA I. The overall F test shows that variation in the average levels of goal achievement in networks governed and not governed by a central organization is statistically significant ($F(1,175) = 6.89, p < .001$). Networks governed by a central organization reported a higher average level of goal achievement ($M = 4.11, SD = .62$) than those not governed by a central organization ($M = 3.76, SD = .84$); post hoc comparison performed using the Tukey test shows that a difference between these values is statistically significant ($t = 2.62, p < .001$).

Variation in the average levels of collaborative learning between networks governed and not governed by a central organization is also statistically significant ($F(1,175) = 3.96, p = .05$). Networks with a central organization achieved a higher level of collaborative learning ($M = 3.68, SD = .65$) than those with no central organization ($M = 3.44, SD = .55$). A difference in these mean values is statistically significant ($t = 1.99, p = .05$). However, no significant differences were found in the average levels of social capital, as well as its components of trust, communication, and shared vision, across networks governed and not governed by a central organization. Figure 4.2 illustrates the average levels of collaboration outcomes achieved in networks governed by a central organization (CO) and those not governed by a central organization (No CO).

Figure 4.2

Average Levels of Collaboration Outcomes in Networks Governed and Not Governed by a Central Organization



ANOVA II. The F test informs that variations in the average levels of goal achievement among networks governed by a central organization involving member organizations in governance to a high extent, governed by a central organization involving member organizations in governance to a low extent, and not governed by a central organization are statistically significant ($F(2,174) = 7.55, p < .001$). Networks governed by a central organization involving members in governance to a high extent reported the highest average level of goal achievement ($M = 4.24, SD = .56$) compared with networks governed by a central organization involving member organizations in governance to a low extent ($M = 3.93, SD = .66$) and networks with no central organization ($M = 3.77, SD = .84$). A difference in the average levels of goal achievement between networks governed by a central organization involving members in governance to a high extent and those involving them to a low extent is statistically significant ($t =$

2.82, $p = .005$). A difference in the average levels of goal achievement is also significant between networks governed by a central organization involving members in governance to a high extent and networks not governed by a central organization ($t = 3.47, p < .001$).

Variations in the average levels of collaborative learning between networks governed by a central organization involving member organizations in governance to a high extent and those involving members in governance to a low extent and networks not governed by a central organization were also found to be statistically significant ($F(2,174) = 9.38, p < .001$). Networks with central organizations that involve members in governance to a high extent achieved the highest average level of collaborative learning ($M = 3.85, SD = .65$), followed by those involving members to a low extent ($M = 3.45, SD = .58$) and networks with no central organization ($M = 3.44, SD = .55$). A difference in the average levels of collaborative learning achieved by networks governed by central organizations that involve members to a high extent and such networks involving members to a low extent is statistically significant ($t = 3.81, p < .001$). There is also a statistically significant difference in the average levels of collaborative learning achieved by networks governed by a central organization involving members in governance to a high extent and networks not governed by a central organization ($t = 3.23, p < .001$).

According to the F test, networks that are governed by a central organization involving member organizations in governance to a high extent, governed by a central organization involving members to a low extent, and those that are not governed by a central organization significantly vary in their average levels of social capital ($F(2,174) = 4.51, p = .01$). Networks governed by a central organization involving members in governance to a high extent achieved the highest average level of social capital ($M =$

4.18, $SD = .61$), followed by networks with non-centralized governance ($M = 4.03$, $SD = .66$), while networks governed by a central organization involving members in governance to a low extent reported the lowest average level of social capital ($M = 3.88$, $SD = .51$). A difference in the average levels of social capital is significant for networks governed by central organizations that involve members in governance to a high extent and those involving their members in governance to a low extent ($t = 3.00$, $p = .003$). Significant differences also exist in the average levels of social capital components, including trust and communication, across these two groups of networks (see Appendix L).

Figure 4.3.

Average Levels of Collaboration Outcomes in Networks Governed by a Central Organization Involving Member Organizations in Governance to a High/Low Extent, and Networks Not Governed by a Central Organization

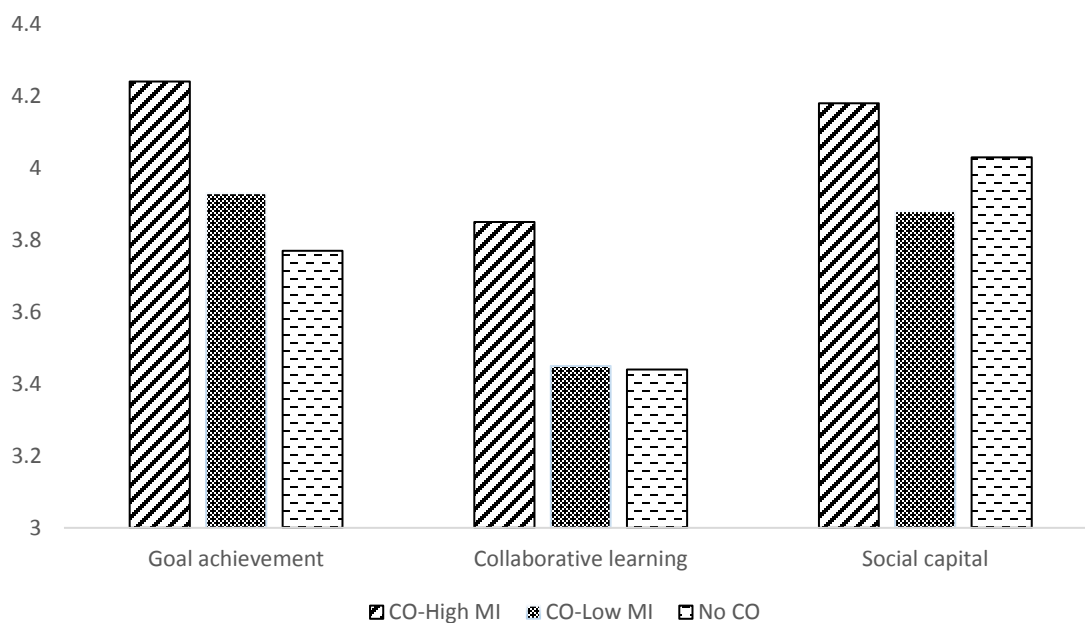


Figure 4.3 compares the average levels of collaboration outcomes achieved across three groups of networks, namely, networks governed by a central organization involving members to a high extent (CO-High MI), governed by a central organization involving members to a low extent (CO-Low MI), and not governed by a central organization (No CO).

ANOVA III. The F test shows that variations in the average levels of goal achievement across networks governed by a lead organization, governed by an administrative organization, and in networks not governed by a central organization are statistically significant ($F(2,174) = 3.61, p = .03$). Networks governed by a lead organization made the highest average progress in achieving goals ($M = 4.14, SD = .57$), followed by networks governed by an administrative organization ($M = 4.07, SD = .67$) and networks with no central organization ($M = 3.77, SD = .84$). There are statistically significant differences in the average levels of goal achievement between networks governed by a lead organization and those not governed by a central organization ($t = 2.64, p < .001$) as well as between networks governed by an administrative organization and networks not governed by a central organization ($t = 2.19, p = .03$). A difference in the average levels of goal achievement in networks governed by a lead organization and networks governed by an administrative organization is not significant.

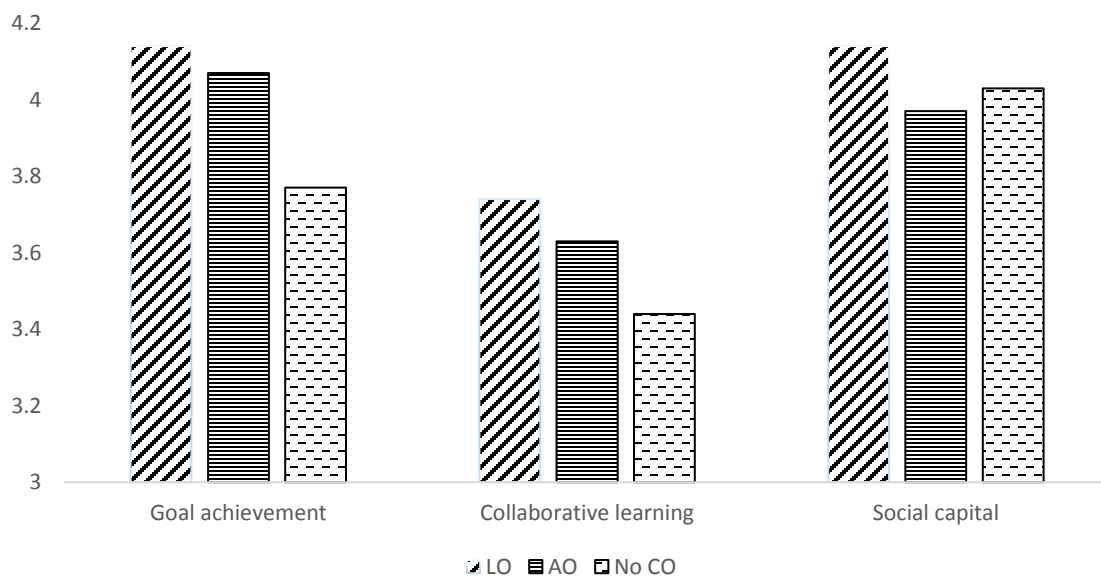
Variations in the average levels of collaborative learning across these groups of networks are also statistically significant ($F(2,174) = 2.50, p = .08$). Networks governed by a lead organization reported the highest average level of collaborative learning ($M = 3.74, SD = .65$), followed by networks governed by an administrative organization ($M = 3.63, SD = .65$) and networks with no central organization ($M = 3.44, SD = .55$). A

difference in the average levels of collaborative learning achieved by networks governed by a lead organization and networks not governed by a central organization is statistically significant ($t = 2.23, p = .03$). There is no significant difference in the levels of collaborative learning between networks governed by a lead organization and those governed by an administrative organization.

Further, there are no statistically significant variations in the average levels of social capital across networks governed by a lead organization, governed by an administrative organization, and not governed by a central organization. Among the social capital components, the average levels of communication were found to be significantly different between networks governed by a lead organization ($M = 4.18, SD = .57$) and those governed by an administrative organization ($M = 3.94, SD = .72$) (see Appendix M).

Figure 4.4

*Average Levels of Collaboration Outcomes in Networks Governed by a Lead/
Administrative Organization and Not Governed by a Central Organization*



Figures 4.4 shows the average levels of collaboration outcomes achieved in networks governed by a lead organization (LO), governed by an administrative organization (AO), and in networks not governed by a central organization (No CO).

ANOVA IV. According to the F test, variations in the average levels of goal achievement among networks governed by different types of a central organization, such as a lead organization and an administrative organization, that involve member organizations in governance to a low/high extent, and networks not being governed by a central organization are significant ($F(4,172) = 3.77, p = .01$). Networks governed by a lead organization involving members in governance to a high extent made the greatest average progress in achieving goals ($M = 4.26, SD = .54$), followed by networks governed by an administrative organization involving members to a high extent ($M = 4.21, SD = .60$). The next highest average levels of goal achievement are reported by networks governed by a lead organization involving members to a low extent ($M = 3.94, SD = .57$) and networks governed by an administrative organization involving members to a low extent ($M = 3.91, SD = .72$). The lowest average level of goal achievement is reported by networks not governed by a central organization ($M = 3.77, SD = .84$). There are statistically significant differences in the average levels of goal achievement between networks governed by a lead organization involving member organizations in governance to a high extent and those involving members to a low extent ($t = 1.94, p = .05$) as well as between networks governed by an administrative organization involving members to a high extent and such networks involving members to a low extent ($t = 1.96, p = .05$). The differences in the levels of goal achievement are also significant between networks governed by a lead organization involving members to a high extent and networks not

governed by a central organization ($t = 3.23, p = .001$) and between networks governed by an administrative organization involving members to a high extent and networks not governed by a central organization ($t = 2.87, p = .005$).

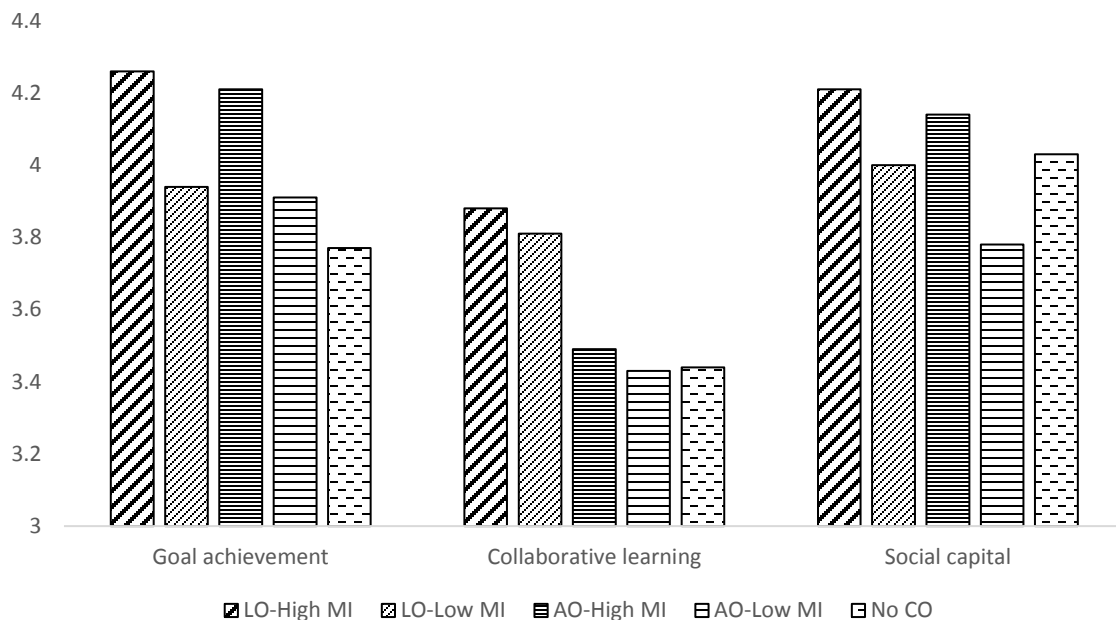
Variations in the average levels of collaborative learning for the groups of networks under consideration are also statistically significant ($F(4,172) = 4.77, p = .001$). The highest average levels of collaborative learning were achieved by networks governed by a lead organization involving member organizations in governance to a high extent ($M = 3.88, SD = .65$) and networks governed by an administrative organization involving members to a high extent ($M = 3.81, SD = .66$). The lowest average levels of collaborative learning were reported by networks governed by an administrative organization that involved members to a low extent ($M = 3.43, SD = .59$) and those not governed by a central organization ($M = 3.44, SD = .55$). Differences in the average levels of collaborative learning are significant between networks governed by a lead organization involving member organizations in governance to a high extent and those involving members to a low extent ($t = 2.59, p = .01$) and between networks governed by an administrative organization involving members in governance to a high extent and such networks involving members to a low extent ($t = 2.65, p = .01$). Furthermore, there are significant differences in the levels of collaborative learning between networks governed by a lead organization involving members to a high extent and networks not governed by a central organization ($t = 3.14, p = .002$) and between networks governed by an administrative organization involving members to a high extent and those not governed by a central organization ($t = 2.53, p = .01$).

These five groups of networks also significantly vary in their average levels of social capital ($F(4,172) = 2.87, p = .02$). The highest average levels of social capital are achieved in networks governed by a lead organization with high involvement of member organizations in governance ($M = 4.21, SD = .53$) and networks governed by an administrative organization with high involvement of members ($M = 4.14, SD = .70$). The average level of social capital was lowest in networks governed by an administrative organization with low involvement of members in governance ($M = 3.78, SD = .54$). There are significant differences in the average levels of social capital, including its components trust and communication, between networks governed by an administrative organization involving members in governance to a high extent and such networks involving members to a low extent ($t = 2.56, p = .01$; $t = 2.66, p = .01$; $t = 2.47, p = .02$, respectively) (see Appendix N).

Figure 4.5 illustrates the average levels of collaboration outcomes achieved in networks governed by a lead organization involving member organizations in governance to a high/low extent (LO-High MI and LO-Low MI), networks governed by an administrative organization involving members in governance to a high/low extent (AO-High MI and AO-Low MI), and networks not governed by a central organization (No CO).

Figure 4.5

Average Levels of Collaboration Outcomes in Networks Governed by a Lead/Administrative Organization Involving Member Organizations in Governance to a High/Low Extent and Not Governed by a Central Organization



Models for Collaboration Outcomes

OLS Regression Models. All OLS regression models have statistically significant F-values (see Appendices O–R). R-squared values, which show the proportions of the explained variance for dependent variables, range from .21 to .22 for the models for goal achievement, from .28 to .31 for the models for collaborative learning, and from .18 to .21 for the models for social capital. The VIF values ranging from 1.11 to 2.88 indicate that multicollinearity among explanatory variables is not present, and White’s test detects no heteroscedasticity (see Appendices O–Q).

The results of OLS models reveal several contextual and network-related factors whose influences on collaboration outcomes are not mediated or only partially mediated

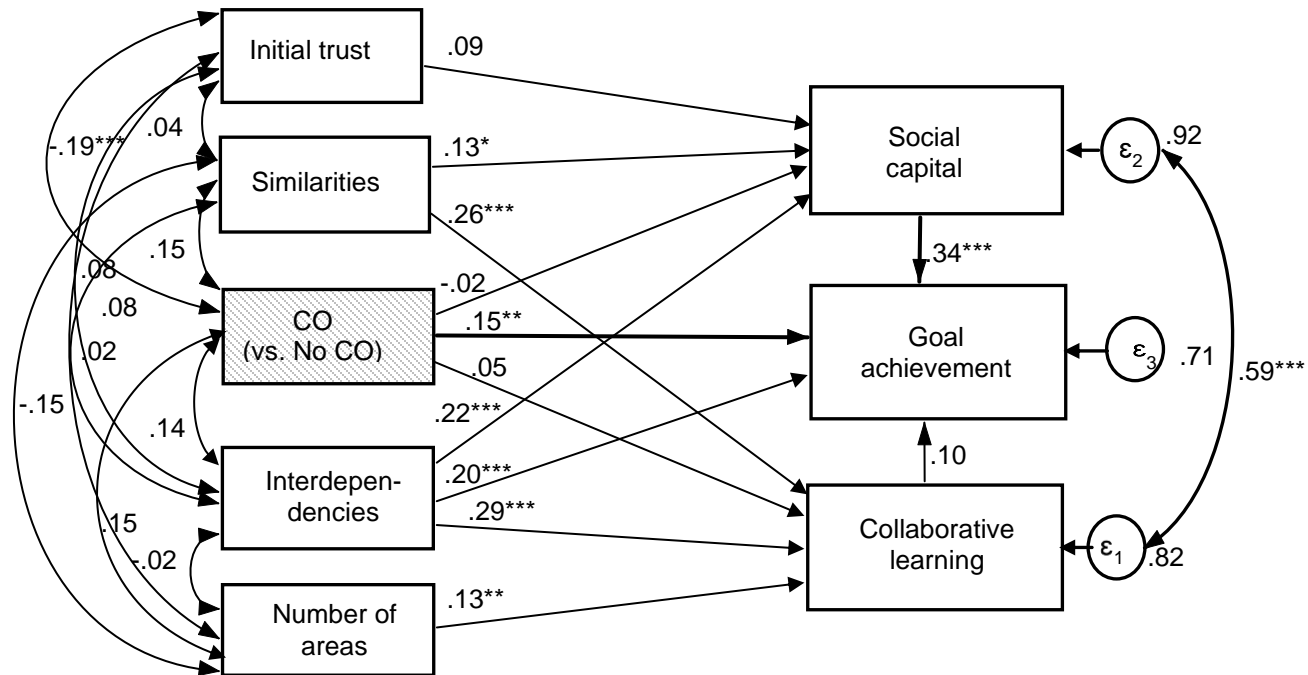
by governance variables (see Appendices O–Q). In the models for goal achievement, interdependencies among network organizations have a positive impact on achieving goals. In the models for collaborative learning, the outcome variable—collaborative learning—is positively influenced by similarities among network participants, their interdependencies, and the number of policy/service areas in which collaboration operates. In the models for social capital, initial trust among network participants as well as similarities and interdependencies among organizations have positive effects on the level of social capital developed in collaborative networks.

The OLS regression models also revealed the direct effects of governance variables on collaboration outcomes (see Appendices O–R). The presence of a central organization is positively related to achieving goals in collaborative networks. Higher member involvement in networks governed by a central organization is positively related to the achievement of goals, as well as to social capital and collaborative learning. Higher involvement of members in governance in networks with centralized governance also has positive effects on the components of social capital, including trust and communication among network organizations (see Appendix R).

Structural Equation Modeling (SEM). The goodness-of-fit for SEM I-III was evaluated using several statistics, such as the Chi-square, RMSEA, CFI, and TLI, all of which indicate that the models adequately fit the data (see Appendix S). Figures 4.6-4.8 show standardized (beta) coefficients. More detailed outputs for the models are presented in Appendix S.

Figure 4.6

SEM of the Effects of Being Governed by a Central Organization on Collaboration Outcomes (SEM I)¹⁴



¹⁴ Standardized coefficients shown; *significant at .1, ** significant at .05, ***significant at .01.

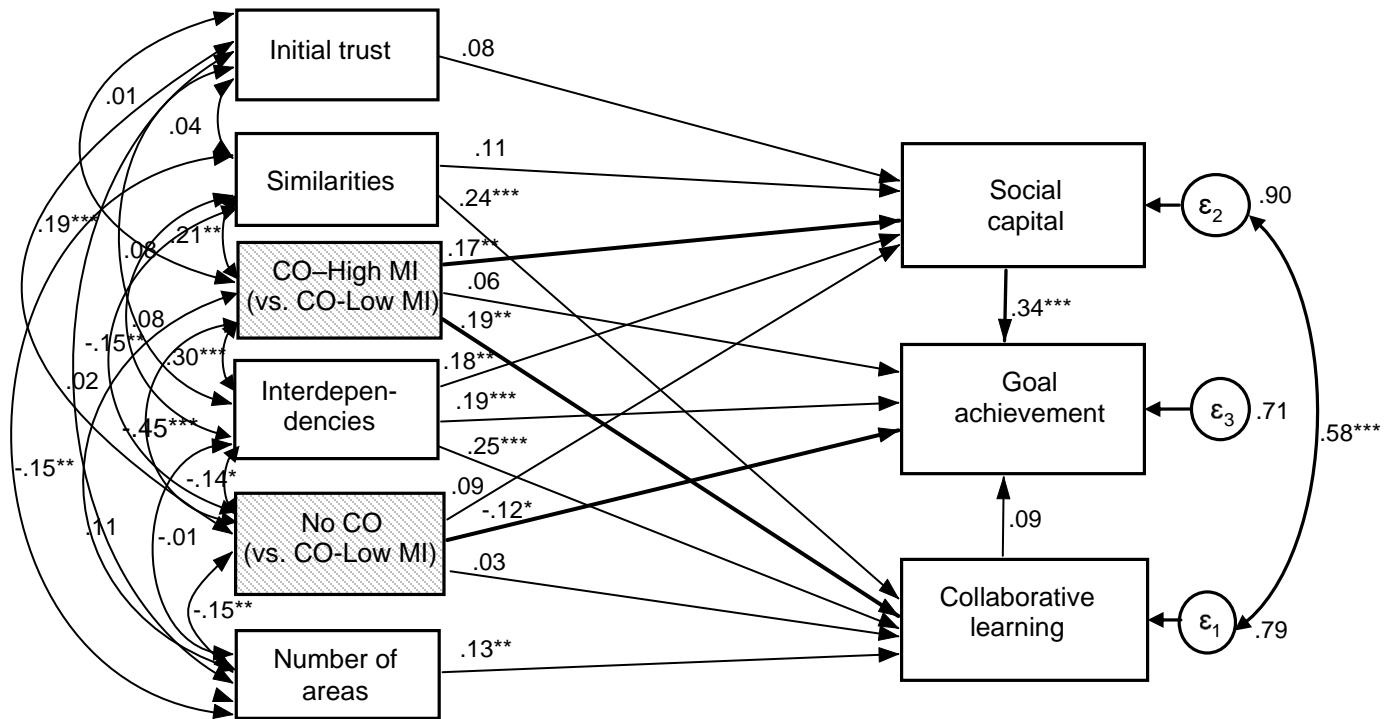
SEM I tested the effects of the presence of a central organization on achieving collaborative network outcomes, including social capital, collaborative learning, and progress toward goals (see Figure 4.6). The model also included direct effects of initial trust, similarities, interdependencies, and the number of policy/service areas on collaboration outcomes. Social capital and collaborative learning were modeled as intervening variables or mediators of the effect of a central organization on goal achievement. In turn, social capital and collaborative learning are presumed to be mutually reinforcing (as indicated by the correlation in their error terms).

As the estimates in Figure 4.6 show, being governed by a central organization was found to have a statistically significant positive effect on achieving goals ($\beta = .15, p = .02$) when compared to not being governed by a central organization. Social capital developed in collaborative networks has a positive influence on achieving their goals ($\beta = .35, p < .001$). Two intermediate collaboration outcomes—collaborative learning and social capital—are positively related to each other ($\beta (cov.) = .59, p < .001$). The positive relationship between collaborative learning and goal achievement (see Table 4.3) is mediated by social capital, when these two intermediate outcomes (i.e. social capital and collaborative learning) are included in the model together as independent (or exogenous) variables. As shown in Appendix T, collaborative learning has a significant positive impact on goal achievement, when social capital is not included in the model.

Figure 4.7

SEM of the Effects of Member Involvement on Collaboration Outcomes in Networks Governed by a Central Organization

(SEM II)¹⁵



¹⁵ Standardized coefficients shown; *significant at .1, ** significant at .05, ***significant at .01.

SEM II was used to examine the effects of being governed by a central organization involving member organizations in governance to a high extent relative to being governed by a central organization involving members in governance to a low extent (see Figure 4.7). In collaborative networks, governance by a central organization involving member organizations to a high extent is positively associated with social capital ($\beta = .17, p = .04$) and collaborative learning ($\beta = .19, p = .02$). However, SEM II does not show the positive effect of higher involvement of members in networks with centralized governance on achieving their goals, which was earlier revealed by the OLS regression model for goal achievement (see Appendix O).

The effect of member involvement on attaining goals could be mediated by social capital, which has a significant influence on goal achievement ($\beta = .34, p = <.001$). On the other hand, collaborative learning, the effect of which on goal achievement is mediated by social capital, could also mediate the effect of higher involvement of members in governance in networks with centralized governance on achieving their goals.

To establish the roles of collaborative learning and social capital in mediating the effect of higher involvement of member organizations in governance on achieving goals, the model was run with only one of these intermediate outcomes (see Appendices T and U). The model that included collaborative learning but no social capital (see Appendix T) shows that collaborative learning has a significant positive impact on achieving goals ($\beta = .30, p = <.001$). Higher member involvement in governance in networks with centralized governance has a significant impact on collaborative learning ($\beta = .19, p = .02$), but its effect on goal achievement becomes insignificant ($\beta = .08, p = .31$). This

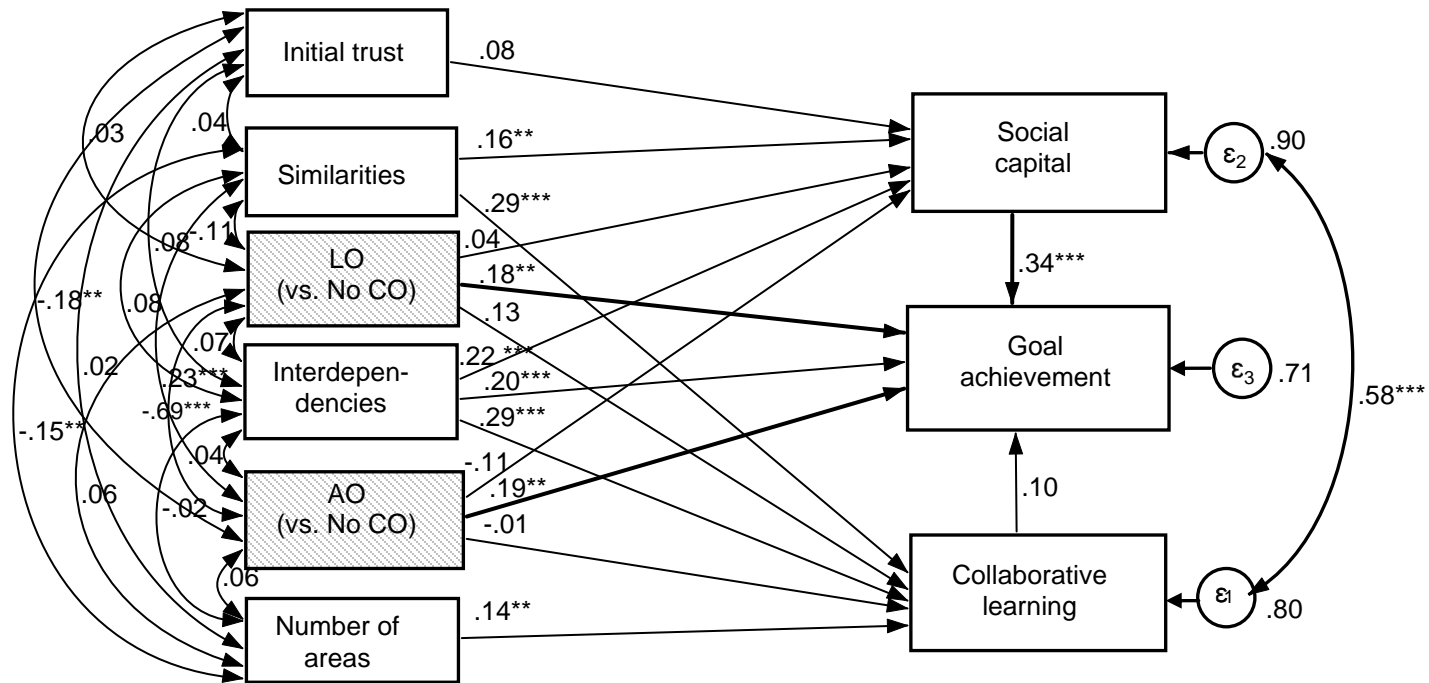
informs that the relationship between higher involvement of member organizations in governance and goal achievement in networks with centralized governance can be mediated by collaborative learning.

Another model that included social capital but no collaborative learning (see Appendix U) shows the positive effect of social capital on goal achievement ($\beta = .39, p = <.001$). Further, social capital is positively influenced by high involvement of members in governance ($\beta = .16, p = .05$), but the effect of the latter on goal achievement is insignificant ($\beta = .07, p = .32$). Thus, in networks governed by a central organization, the effect of higher member involvement in governance on achieving goals is likely to be mediated by two intermediate outcomes—social capital and collaborative learning.

Also, according to SEM II (see Figure 4.7), non-centralized governance or not being governed by a central organization negatively influences goal achievement ($\beta = -.12, p = .09$) relative to being governed by a central organization involving member organizations in governance to a low extent. This confirms the positive effect of centralized network governance (or the negative effect of non-centralized governance) on goal achievement, which was seen earlier from SEM I (see Figure 4.6), as well as from ANOVA and OLS regression models (see Appendices K and O).

Figure 4.8

SEM of the Effects of Types of a Central Organization on Collaboration Outcomes (SEM III)¹⁶



¹⁶ Standardized coefficients shown; *significant at .1, ** significant at .05, ***significant at .01.

SEM III (see Figure 4.8) was developed to investigate the impacts of being governed by different types of a central organization, such as a lead organization and an administrative organization, on collaboration outcomes. Both lead organization and administrative organization forms of governance were found to have positive effects on achieving goals when compared to non-centralized governance ($\beta = .18, p = .04$ and $\beta = .19, p = .03$ respectively). As in the previous cases, social capital is positively related to achieving goals ($\beta = .34, p < .001$) and has a positive association with collaborative learning.

4.5. Conclusions of the Quantitative Analysis

As the quantitative research found, an absolute majority (over 80 percent) of the studied collaborative networks are governed by a central organization or, in other words, have adopted a centralized form of governance. Regression models revealed the contextual and network-related factors with statistically significant influences on the adoption of centralized network governance, as well as on the extent of member organizations' involvement in governance in networks with centralized governance. The adoption of centralized network governance in collaborative networks is influenced by several contextual factors, namely, the complexity of a problem addressed through collaboration and external demands imposed on a network. Furthermore, the network characteristics, including similarities among network organizations in terms of goals, services, and resources, network size, and the number of policy/service areas covered by collaboration, also influence the centralization of network governance.

Across networks with centralized governance, two types of a central organization—a lead organization and an administrative organization—are used in almost

equal proportions. An administrative organization is preferred over a lead organization under the influence of several factors, including the participation of a for-profit organization in collaboration, similarities among organizations in terms of their goals, services, and resources, network size, low initial agreement on goals, and low dynamics of problems solved through collaboration.

Networks with centralized governance involve their member organizations in governance to a higher extent if they have greater interdependencies and similarities, and if collaboration operates in more policy or service areas. The inclusion of a federal government organization in a collaborative network as its participant leads to lower involvement of member organizations in governance. Minor differences were identified in the patterns of involving member organizations in governance by a lead organization and an administrative organization. An administrative organization is more likely to involve member organizations in governance if they are highly interdependent and similar concerning their goals, services, and resources, and it is less likely to involve members in governance if a federal government organization participates in collaboration. Likewise, a lead organization is more likely to involve other member organizations in governance when they have high interdependencies and similarities and less likely to involve them in governance if a local government organization participates in collaboration. Additionally, a lead organization involves members in governance to a greater extent if collaboration extends to more policy or service areas.

The quantitative methods, including ANOVA, OLS regression, and SEM models, were used to evaluate the effects of centralized network governance and member organizations' involvement in governance in networks governed by a central organization

on outcomes achieved by collaborative networks. These methods complemented each other in evaluating relationships between the forms of network governance and collaboration outcomes. ANOVA was used to compare the average levels of collaboration outcomes, including social capital, collaborative learning, and goal achievement, across networks governed in different ways. OLS regression models were developed to evaluate the effects of contextual and network-related factors and forms of network governance on each collaboration outcome. SEM was used to learn about the effects of forms of network governance on collaboration outcomes and to investigate the relationship between intermediate collaboration outcomes— social capital, collaborative learning— and their effects on goal achievement, an ultimate collaboration outcome.

These analyses show that centralized network governance makes a positive difference for goal achievement. Networks governed by a central organization, including those governed by a lead organization and an administrative organization, make better progress toward their goals compared with networks not governed by a central organization. Networks governed by a central organization also achieve higher levels of collaborative learning than networks not governed by a central organization do. Yet no significant differences were found between the levels of collaboration outcomes achieved across networks governed by different types of central organization, such as a lead organization and an administrative organization.

Networks with centralized governance that allow for greater involvement of member organizations in governance demonstrate higher collaboration outcomes in terms of goal achievement, social capital, and collaborative learning compared to those with less member involvement. The involvement of member organizations in governance in

networks governed by a central organization directly influences intermediate outcomes—social capital and collaborative learning—and indirectly influences goal achievement. In these networks, the relationship between member involvement and goal achievement is mediated by the intermediate outcomes, such as social capital and collaborative learning.

Some differences were identified in achieving outcomes by networks governed by different types of a central organization involving member organizations in governance to a high or low extent. Networks governed by a lead organization involving member organizations in governance to a high extent make better progress toward goals and achieve higher levels of collaborative learning compared to those involving their members in governance to a low extent. Networks governed by an administrative organization involving members in governance to a high extent achieve greater outcomes in terms of progress toward goals, social capital, and collaborative learning compared to those with low member involvement.

Social capital developed within a collaborative network, one of the intermediate outcomes of collaboration tested in this study, has a positive impact on the achievement of collaboration goals. Another intermediate outcome—collaborative learning—has an indirect effect on achieving goals of collaboration. That is the effect of collaborative learning on goal achievement is mediated by social capital. It was also found that these two intermediate outcomes—social capital and collaborative learning—have a positive association. Collaborative learning by network participants likely improves the social capital of a network. On the other hand, social capital developed within a network is positively related to collaborative learning.

Chapter Five: Discussion and Implications

5.1. Discussion of the Results

This dissertation investigated the factors that influence the centralization of network governance and the relationships between governance forms and the outcomes achieved by collaborative networks. At the first stage of research, qualitative interviews with representatives of nonprofit networks were conducted to expand existing knowledge on network governance and its centralization. These interviews provided a greater understanding of the centralized form of network governance and generated new insights into member organizations' involvement in governance in networks governed by a central organization. The literature suggests that centralized network governance is performed by one or a few entities that concentrate power and decision making in their hands and that member organizations are unlikely to participate widely in governance processes (Kenis & Provan, 2009; Provan & Milward, 1995). The interviews revealed that the central organizations of collaborative networks, such as a lead organization or an administrative organization, recognize the importance of participation of member organizations in governance for achieving positive collaboration outcomes and, more importantly, involve them in network governance, although to varying degrees. Thus, member organizations' involvement in networks with centralized governance represents a fundamental concept of network governance along with its centralization. Based on the involvement of member organizations in governance, it is possible to examine collaborative networks with centralized governance to determine if and how such involvement affects collaboration outcomes.

Based on the knowledge gained from the qualitative interviews, the initial research framework was expanded to cover both the concepts of centralization of network governance and member organizations' involvement in governance in networks with centralized governance. In this research, the concept of centralized network governance was operationalized as the presence of a central organization responsible for coordinating and guiding the activities of network organizations. The involvement of member organizations in governance was measured using the following four key functions of network governance: (1) establishing the collaboration purpose and goals, (2) developing strategies to achieve the purpose and goals, (3) creating policies and rules for member engagement and coordination of actions, and (4) adopting mechanisms of oversight and accountability. The presence of a central organization, types of a central organization, and member organizations' involvement in governance in networks governed by a central organization were the governance-related variables and analyzed from two perspectives: (1) as dependent variables when testing the influences of contextual and network-related factors on network governance, and (2) as independent variables when testing the effects of network governance on collaboration outcomes.

A quantitative method was used to test the hypotheses about the influences of context- and network-related factors on the adoption of a centralized form of governance over a non-centralized form in collaborative networks. The same factors were examined for their influences on adopting certain types of a central organization, such as a lead or administrative organization, for governing a network and member organizations' involvement in governance in networks governed by a central organization. The findings revealed that, in nonprofit collaborative networks, the adoption of centralized network

governance was based on several contextual factors, including the complexity of problems addressed by collaboration and external demands placed on a network. The role of problem complexity in adopting centralized network governance is largely consistent with previous research that links the centralization of network governance with a greater need for network-level competencies (Provan & Kenis, 2008). Solving complex social problems, which is often the purpose of nonprofit collaborations, requires the use of specialized competencies, expertise, and skills as well as coordinating the contributions and actions of various participants. Central organizations of networks, typically, hire administrators who develop capacities and skills for network-level needs, including those used to coordinate network activities (Markovic, 2017). The influence of external demands on the centralization of network governance is also consistent with previous studies, suggesting that environmental factors influence the structure and patterns of network governance (Bryson et al., 2006; Cooper & Shumate, 2012). Having a central, designated organization may enable networks to engage in continuous communication with external stakeholders, balance conflicting expectations, and respond to demands more effectively than they could if they used a non-centralized form of governance, which is less likely to have clear lines of responsibility for governance. Moreover, a network's central organization is likely to strongly focus on the compliance and reporting functions often required by external entities, such as funders and regulatory agencies.

The findings also revealed that several network characteristics positively influenced the adoption of centralized network governance, including network size and similarities of network organizations in terms of goals, services, and resources. Previous research has suggested that larger networks tend to prefer centralized governance because

it allows them to accommodate multiple participants and coordinate their activities (Provan & Kenis, 2008). Based on a large sample of networks, the present study provided evidence for a positive effect of network size on the adoption of centralized governance. Regarding the similarities and differences among network organizations, the existing literature, as well as qualitative interviews conducted in the present study, provided multiple perspectives about whether the similarities between collaboration participants lead to centralized network governance. To understand network homogeneity and its role in governance centralization better, this research identified the similarities and differences among network organizations in terms of their goals, services, resources, and sector to which they belonged. Similarities concerning goals, services, and resources were found to have a positive effect on the centralization of network governance. Likely, network participants that share such similarities delegate governing roles to a central organization to avoid the duplication of effort on issues common to all or most network organizations. As shown in previous research, centralized governance achieves efficient coordination of network organizations' actions while preventing conflicting and duplicate activities across a network (Raab et al., 2015). Participation of organizations that do not belong to the nonprofit sector or sectoral differences of network organizations were found to have no significant effect on the centralization of network governance.

Conversely, the inclusion of government organizations as network participants negatively influenced member organizations' involvement in networks with centralized governance. Government organizations' desire to maintain their roles within networks, rather than support participatory governance, might explain the low levels of member involvement in such networks. The positive effect of interdependencies among network

participants on their involvement in governance in networks with a central organization can be explained by organizations' desire to influence their existing and potential network ties through increased participation. Additionally, having more policy or service areas covered by collaboration positively affected member involvement in governance. When collaboration extends to several areas, a central organization might solicit input, thereby encouraging member organizations to participate more actively in governance.

Similarities among network organizations positively influenced member organizations' involvement in networks with centralized governance. A central organization may heavily involve network organizations with similar characteristics in governance to reduce competition and expand cooperation (Evan, 1965; Provan et al., 2008). Moreover, network organizations' similarities had a positive effect on the likelihood of adopting an administrative organization form instead of a lead organization form of centralized governance. Previous studies have suggested that a lead organization, one of the most powerful and resourceful organizations in a particular policy or service area, creates and governs a network of organizations with a common purpose and similar characteristics (Graddy & Chen, 2006; Provan et al., 2007). However, the present study's findings revealed that an administrative organization is preferable to a lead organization when network organizations are more similar than they are different in terms of their goals, services, and resources. Similar network organizations may prefer governance by an administrative organization, as it is perceived as a neutral party that can provide equal opportunities to all participants. Conversely, when a lead organization governs a network, the network participants' interests might not receive equal attention, especially if such interests coincide with those of the lead organization.

The participation of a for-profit organization in a network also increased the likelihood of governance by an administrative organization, rather than by a lead organization. An administrative organization, as a neutral governing body, aims to ensure the equality of all network participants, including those from the private for-profit sector. On the contrary, governance by a lead organization is associated with its dominant position in the network and presents potential bias toward other organizations (Milward & Provan, 2006); therefore it may not be the preferred choice for for-profit organizations. The positive role of network size in adopting an administrative organization rather than a lead organization is consistent with the existing literature. An administrative organization has the potential to accommodate a larger number of participants than a lead organization, ensuring consideration of their interests (Provan & Kenis, 2008).

According to the study results, a lead organization is more likely than an administrative organization to be chosen as a central organization of a network when problems solved through collaboration are more dynamic, participants have higher initial agreement on goals, and when a federal government organization participates in collaboration. One characteristic of a lead organization discussed in the literature is its ability to make and execute decisions without excessive consultations with other members, which can lead to faster responses in dynamic environments (Stone et al., 2013). Therefore, when problems solved through collaboration are highly dynamic, governance by a lead organization may be preferable to that by an administrative organization. The role of a federal government organization in adopting a lead organization form of governance can be explained by the tendency of government agencies to assign responsibility for the control and coordination of interorganizational

collaboration to one of the participants chosen as a lead organization (Kenis & Provan, 2009; Stone et al., 2013). Thus, a lead organization, compared to an administrative organization, is more likely to be used as a central organization of a network in collaborations involving government organizations.

When analyzing the effects of network governance on collaboration outcomes, this research focused on intermediate or process outcomes (i.e., social capital and collaborative learning) and an ultimate outcome (i.e., the achievement of collaboration goals). Since nonprofit collaborative networks often address society's major problems, their goals are unlikely to be achieved or fully achieved until later stages of collaboration. Therefore, collaborative networks tend to track progress toward achieving goals rather than their ultimate achievement. Accordingly, this research used progress toward goal achievement, measured by perceptions of network representatives, as a proxy for goal achievement. In accordance with the research expectation, collaborative networks with centralized governance were more successful in achieving their goals compared to networks with non-centralized governance. This finding is consistent with previous studies that have suggested that centralized network governance promotes greater effectiveness (Provan & Milward, 1995, Raab et al., 2015). In networks with centralized governance, effectiveness can be higher than that of networks with non-centralized governance due to coordination of network activities by a central organization and elimination of conflicting and duplicate actions (Provan & Milward, 1995; Raab et al., 2015).

Additionally, networks with centralized governance were found to achieve higher levels of collaborative learning when compared to networks with non-centralized

governance. Although there was no direct influence of a central organization on collaborative learning, participants in these networks may be able to share knowledge and disseminate best practices through a central organization, which can lead to improved learning.

There were no significant differences in the levels of collaboration outcomes achieved by networks governed by a lead organization and those governed by an administrative organization except for communication, which was higher in networks that use a lead organization. The results of this research do not align with the literature that has suggested that an administrative organization is more successful than a lead organization is in achieving overall network effectiveness (Provan & Kenis, 2008).

The present research also revealed the importance of higher member involvement for successful collaboration in networks governed by a central organization. Networks with centralized governance that involve members extensively achieved higher collaboration outcomes in terms of social capital, collaborative learning, and goal achievement compared to networks that limit their members' involvement. Higher member involvement in networks governed by a central organization directly influenced the levels of social capital and collaborative learning and indirectly, through these intermediate outcomes, influenced the achievement of collaboration goals. Greater involvement of member organizations in governance is likely to improve the network's social capital, since, during their interaction, organizations tend to communicate actively about their collaboration, reach a common understanding of collaboration parameters, and develop trust in their partners by observing their capabilities and actions.

Member organizations that participate actively in network governance are also likely to engage in collaborative learning given the opportunities to share knowledge across a network, become acquainted with various practices and approaches used in the network, and collectively discuss ways of addressing problems. Moreover, networks governed by a central organization allowing for higher member involvement in governance achieved a higher level of collaborative learning than did networks with non-centralized governance. However, there was a statistically insignificant difference in levels of social capital between networks governed by a central organization actively involving member organizations in governance and those not governed by a central organization. This finding suggests that centralized governance with high participation of member organizations provides them with the same opportunities to develop their social capital as shared governance does.

In this research, social capital and its components of trust, communication, and shared vision were expected to be higher in networks with non-centralized governance and lower in networks governed by a central organization. Some literature suggests that direct cooperation by partners in networks with shared governance is likely to stimulate trust and information exchange, while centralized integration is less conducive to building norms of reciprocity (Goodman et al., 1998; Raab et al., 2015). Interestingly, the results of the present study revealed that the average levels of social capital were not significantly different between networks governed and not governed by a central organization. However, there was a statistically significant difference in the levels of social capital across networks with centralized governance. Networks governed by a central organization allowing for higher member involvement in governance developed

higher levels of social capital, as well as trust and communication, compared to those allowing for less member involvement.

The social capital of a collaborative network was found to have a direct effect on the achievement of its goals. Social capital was also positively associated with collaborative learning within a network. In the literature, social capital is viewed from two perspectives. First, social capital may serve as a basis or glue for social interactions; second, social capital may be generated from social interactions or collective action within a network (Morris et al., 2013; Putnam, 1995b). According to the first perspective, social capital can facilitate joint work toward goals and, therefore, likely has a positive effect on achieving collaboration goals. Previous studies also emphasize the potential of social capital for increasing the efficiency of collective action (Leuenberger & Reed, 2015; Nahapiet & Ghoshal, 1998), as well as joint problem solving (Innes & Booher, 1999).

According to the second perspective, social capital can improve with increased social interaction, for example, when collaborating organizations engage in learning as a group. Such collective learning is likely to lead to changes in shared cognitive structures (e.g., common norms and interpretations) and social practices (Knight, 2002; Knight & Pye, 2005).

According to the results of this research, social capital mediates the relationship between collaborative learning and goal achievement in collaborative networks. Learning by collaboration participants as a group can increase social capital at the network level, as participants engage in more intensive interactions, reach greater consensus on collaboration parameters, and develop mutual trust while they learn together. In turn,

improved social capital is likely to positively influence the achievement of goals. On the other hand, collaborative learning also depends on social capital. Prior scholarly work emphasizes that interorganizational learning processes are based on formal and informal communication, norms of interaction, and shared practices (Mariotti, 2012). When collaboration participants develop higher levels of trust, communication, and a common understanding of collaboration aspects, they can more willingly share knowledge with their partners, learn from each other and as a group, and develop synergistic knowledge. The results of this research show that two intermediate outcomes of collaboration—social capital and collaborative learning—are positively interrelated and contribute to achieving collaboration goals.

5.2. Limitations

This research was based on a sample of nonprofit collaborative networks in the United States, most of which participated in a collaboration competition, and therefore could have a high degree of confidence in their collaboration results. Interest in participating in the competition was likely initiated by a series of incentives (e.g., monetary prizes for winners and public recognition). Because of the large number of collaborations and various incentives involved, the Foundation Center's Nonprofit Collaboration Database can be considered a fairly broad cross-section of nonprofit collaborations in the United States. This database of collaborations served as a sampling frame for the investigation of collaborative networks relative to their governance forms (centralized or non-centralized), factors leading to the adoption of these forms of governance, and relationships between governance forms and collaboration outcomes, which were the main areas of research interest.

Collaborative networks were the unit of analysis and were studied from the perspective of one representative from each network. Due to the large number of networks included in the study (survey invitations were sent to over 600 networks), it was impossible to include every participant in each network. Therefore, to ensure an equal weight of collaborative networks during the analyses, only one representative from each network was contacted. Although these representatives have a broad understanding of network governance and its outcomes, full knowledge of all aspects of a network cannot be assumed. Due to social desirability bias, some representatives of networks could overstate the results achieved in their network.

Additionally, this study was performed using cross-sectional data; thus, it did not investigate the dynamics of network governance and outcomes. Progress toward reaching a goal was used as a proxy for goal achievement—an ultimate outcome of collaboration. The development of governance forms and outcomes achieved throughout the life cycle of collaborative networks is a subject for further research.

This study was observational, which limited the extent to which it could demonstrate cause-effect relationships between variables. The study design did not involve experimental manipulations which could help determine causal relationships more precisely.

Finally, this study involved analyzing only the direct effects of contextual and network-related factors on adopting centralized network governance. Future studies should investigate the possible relationships between these factors as well as their mediating and moderating effects on other factors' influence on the centralization of network governance.

5.3. Implications for Research and Practice

This research makes several contributions that have potentially important implications for theory, research, and practice of collaborative networks. First, it develops a framework for investigating factors influencing the centralization of network governance and the effects of such centralization on collaboration outcomes. It suggests several contextual and network-related factors that impact the adoption of a centralized form of network governance as well as intermediate and ultimate collaboration outcomes achieved at the level of a network. Another contribution to the theory of collaborative networks is that this research considers member organizations' involvement in networks governed by a central organization as part of network governance and develops an approach to evaluating member involvement in governance and its impact on collaboration outcomes.

The next set of contributions of this research relates to its methodology. Previous empirical studies on network governance, mainly conducted as case studies involving a small number of networks, have not specifically focused on patterns and relationships of network governance and outcomes. The larger sample size used in this research made it possible to investigate patterns in network governance, including the frequency of adopting centralized governance, its lead organization and administrative organization forms, and outcomes achieved across nonprofit collaborative networks governed in various ways. Using a larger sample of networks also enabled statistical analysis of factors influencing the adoption of centralized forms of network governance and member involvement in networks with centralized governance. This research provided practical evidence regarding the role of centralization of network governance for achieving higher

effectiveness in collaborative networks. It also highlighted the importance of member involvement in networks governed by a central organization for improving intermediate collaboration outcomes, including social capital and collaborative learning, as well as for achieving collaboration goals. Furthermore, it investigated the relationships among social capital and collaborative learning as two intermediate outcomes of collaboration and their impacts on goal achievement.

This study has several implications for future research. The concept of involving of member organizations in governance in networks with centralized governance can be further investigated. Future studies may examine the extent and dynamics of member involvement and the influence of involvement on network outcomes using different measures. Researchers could also evaluate whether member organizations' involvement in governance by central organizations of networks leads to or increases member participation. Further research could investigate the approaches used by central organizations of networks to involve member organizations in governance and support their active participation. Future studies may also explore whether and how member involvement in governance changes the behaviors of central organizations (e.g., approaches to coordinating and controlling network activities and results). It may be worthwhile to further investigate contextual and network-related factors that influence the adoption of centralized network governance considering their possible mediating and moderating relationships. Such research may provide a comprehensive understanding of the process of adopting network governance and formulate specific recommendations for network practitioners. Finally, it could be useful for other researchers to evaluate the dynamics of collaborative network performance based on suggested intermediate and

ultimate collaboration outcomes and investigate the impacts of various factors on the dynamics of network performance. Studying the dynamics of collaborative networks could generate new knowledge about how networks perform at different stages of their development, and how their performance can be enhanced and sustained.

The research findings have practical importance for collaborative network participants and coordinators. Based on this research, network practitioners can learn about the collaboration outcomes that are likely to be achieved in networks governed and not governed by a central organization and the role of member involvement in improving collaboration outcomes. Practitioners can analyze the characteristics of their networks and contextual factors when adopting or changing the forms of network governance and consider their possible influences on network governance. The results of this research might also benefit the funders of collaborations, such as foundations and government agencies, interested in identifying and disseminating effective practices in interorganizational collaboration to achieve higher socio-economic impacts. They may suggest adopting certain governance forms to increase the likelihood of achieving intended outcomes and encourage increased and active participation of member organizations in collaborative networks with centralized governance.

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Appendix A. Interview Guide

Q. Could you describe the purpose and goals of your collaborative network?

Q. Who are the participants of your collaborative network?

- voluntary sector organizations
- government organizations
- business organizations

Q. How is your collaborative network governed?

- jointly by participants (all or few)
- by one or few the member organizations
- by an administrative entity

Q. What were/are the key factors that shaped the way your network is governed?

- purpose of collaboration, its scope and complexity
- external demands
- prehistory of collaboration
- network characteristics

Q. How does this form of governance work?

Q. Why do you think this form of governance was/is important in your situation?

- what were the expected benefits/collaboration outcomes?
- what are the achieved benefits/collaboration outcomes?

Q. How has a governance form changed over the period of collaboration?

Q. What are the key strengths of the adopted governance form?

Q. What are the key weaknesses of the adopted governance form?

Q. What would you like to change in the governance form of your collaboration?

Appendix B. Coding Results: Theme “Central Organization”

Table B1

Theme “Central Organization”

Categories	Constructs	Initial codes
Roles/ functions of a central organization	Focused on/dedicated to collaboration	collaboration does not happen unless someone focuses on collaboration; make it somebody's job; without having a core central organization for all the other members to revolve around, it would be hard to achieve and keep that; was dedicated to the collaborative and that was their job
	Coordination	to be some glue to keep them together; if you don't have some entity that is dedicated to coordinating a collaborative, it is often not successful; critical for the coordinator to be independent; to get the work done in between the meetings; collaboration is active as long as there is a coordinator; have some entity that is accountable; makes sure that all plans actually come to fruition
Central organization types	Lead organization form of governance	if there's one group that has more power than the other, it may not work so well; the critical thing for network coordinators is that ... they serve the entire collaborative; don't serve any one member, including their employer; collaborations fail because their coordinators' first loyalty is to the organization who pays their salary and not to the members; not seen as an independent, unbiased coordinator; seen through the lens of the agenda of the employer or the organization that employs them; my organization certainly outnumbered the representatives from the other groups; didn't have an equivalent voice on the board; there was the imbalance - our board theoretically was able to be the strongest voice; did not want to get bogged down in bureaucracy - that would happen if we made it its own separate entity; who's taking the money and taking on the legal risk for the collaboration; rightly be able to call more shots and dictate what the group was doing; trusted me to steer the organization in a fair way to all; didn't demand to have a louder voice than all the other members; it's hard for the members.. to really get a real buy into the community development; don't have a stake in the actual collaborative network; it's really easy... to either fall out or stop attending meetings

Table B1*Theme “Central Organization” (continued)*

Categories	Constructs	Initial codes
Central organization types	Administrative organization form of governance	better to have an independent, standalone so there is neutrality; no organization is privileged over any other; because we didn't want a single agency to get a monopoly over the work that was going on; collaborative, governed by a board of directors; ensure that the collaborative is sustaining and does what it's supposed to do; important to have an independent entity like ours 501c3; gives us funding opportunities... gives us a central way to track information and success; you need a neutral party to keep all of those pieces moving smoothly
Changes in governance	Plans to change governance	taking another look at if there a different way to do this; a new collaborative governance structure ...will spread out the responsibilities that more agencies become actively involved in leading the network; the challenge is ... is making sure that there's a buy in from all members; because we are the only agency that plans, it is hard to understand if the things ... are being successful; to have very defined rules and equal representation among the three organizations
	Challenges of changing governance	made probably three or four very specific plans; it never went beyond a much more than the planning stage; there was not a lot of buy in from the other members

Appendix C. Coding Results: Theme “Involvement in Governance”

Table C1

Theme “Involvement in governance”

Categories	Constructs	Initial codes
Role of member involvement	Evidence for member involvement	everyone makes input; can make recommendations to the group; every member can participate in any activity inside the network; a wide variety of perspectives is being put into; allowing members to speak for themselves or their communities; work on this together; joint decision making; generating ideas; that is by everyone, not by one group; everybody gets a voice; everybody has a right to participate; member organizations are given an opportunity to participate; seek input from the partners; do encourage dialogue; do welcome different perspectives and input; recognize individual organizations' contributions; value and utilize specific roles and responsibilities; want to be inclusive of all of the different actors, all the voices; organizations are deciding with each other how they want to do the work; ask organizations for their input; having different perspectives; seeking input and then using the input that you get; have as many different voices at the table as possible; all are invited to participate; any member can initiate new work; engaging all of the stakeholders in the process from the very beginning
	Importance of member involvement	ensures that the work ... remains relevant to our organization and our member organizations; feel like an active participant; have a very strong sense of ownership over the program and commitment to it; invest interest in solving that problem; get a real buy into the community development
	Involvement mechanisms	if they want to be on the work group; holding a meeting or a conference call; a coordinating council ... as a way to get everyone's feedback; invite them to the table to participate in a planning process; a board of directors is open to any member; every member is eligible to be on the board; every member can bring the business before the board; any member can participate in the organization in any way he or she or their organization feels is appropriate; the steering committee is an invite table; look for input from all of the work groups

Table C1*Theme “Involvement in governance” (continued)*

Categories	Constructs	Initial codes
Changes in member involvement	Evaluation of member involvement	how engaged people are; people are highly engaged; engaged group making so many changes; they have an incentive to want to resolve the issue effectively; would like to have all partners equally invested in the outcome; track participation; track active participation; have a voice in the work; actively participating in network activities; fully involved in the planning process from the beginning; enforce some requirements around how everybody participates
	Improving member involvement	make our bylaws a little more flexible and find a different way for organizations to be able to participate; be a little more flexible to allow for different types of member engagement and participation; going to reestablish the governing structure; reestablish this for sharing power across many more bodies; in the process of forming a member leadership team; distributed leadership teams; have more, a bit broader, more distributed leadership team; rotating facilitation; a variety in taking the lead roles; really want to lower barriers for participation; giving people the opportunity to step into leadership; making sure that there's a buy in from all members; a new governing structure... more agencies take on lead roles; allowing active participation in leading the direction of the collaborative ... by giving more responsibilities

Appendix D. Coding Results: Theme “Factors Shaping Governance”

Table D1

Theme “Factors Shaping Network Governance”

Categories	Constructs	Initial codes
Context-related factors	Problem/ purpose	we start with the problem we're trying to solve; develop a structure that works for that problem; it was really what the problem was; the key factor ... was a recognition that we had a changing demography ... and that there was more need for health services; we needed everyone to change the way they do their work because this issue is so foundational ..., it's such a widespread problem; it allows to be true champions of the work; were able to create opportunities that we didn't expect because of the fluidity of a way we operate our governance style allows that to happen; it allows us to be fluid and really meet the needs and requests of the community; we did national-level research... and we came up with different areas that we felt we should address; it was really focused back then on what to do about patients who are uninsured; the result of that planning conversation was the decision that this program needed to be created; out of the recognition that nonprofits have limited resources to spend on technology; come together to try to make a difference to one issue
	Connectedness	some organizations ... did collaborate pretty consistently and others did not; most organizations that came together had some relationship with one or more of the conveners; the partnership was set up really as a way to cope with, to set the competitiveness aside and see if working together we could go through both of our goals; originally the network was set informally from the nonprofits working in the technology sector; not everybody really knew who each other was or what they were doing

Table D1*Theme “Factors Shaping Network Governance” (continued)*

Categories	Constructs	Initial codes
Context-related factors	External demands	required by the foundation that we set up that way; one of them is to have a governance board, the other one is to have partnerships for...; the foundations that were funding the work ...said “we want these national organizations to work together” and decided that my organization would be the lead organization; when the coalition was formed, what guidance around structure initially from our funders that kind of set the tone.... like you need a functional structure..., like you need to have this position, this position, this policy; the program itself has developed partly in response to the funder mandate and partly in response to community needs there's also sort of a funding necessity where if you've got multiple centers working on the same project, they can't all receive funding; gives credibility in the community; how we work together ...responding to the community requirements; the other advantage is that it allows us ... meet the needs and requests of the community; we report to our partners, to our funders and to our community; a need for building legitimacy, ... promoting awareness
	Initial trust	it partly was a level of trust when we came together; the diversity of organizations that came together had very little trust
	Initial goal agreement	there was a lot of agreement around those goals; was a little bit harder to get agreement around the way that we would resolve that challenge; the partnership came together because we shared this goal

Table D1*Theme “Factors Shaping Network Governance” (continued)*

Categories	Constructs	Initial codes
Network-related factors	Similarities and differences	they all provide different services and support some crossover and some do not; the diversity of organizations that came together; diverse groups and often conflicting groups; with conflicting agendas; have some partners who do several and similar things; so many different kinds of people at the table with different expertise and different levels of education; they are very, very different - they serve different communities... very different populations, very different organization sizes... so an extremely diverse group and all over the country.... rural places, urban places, big places, small places; we got a lot of people on board and it was a very broad coalition and everything from children's organizations to the Cancer Society; we had a really diverse group; different types of members, different sizes of members; hospitals, for example, were in competition with one another for patients .. their needs and interests were very similar; have to work with others that have similar interests; selected each partner because each one of them brought certain expertise and capabilities; they were selected based on their area of expertise; because the members who make up this of this body are so diverse; organizations do something slightly different
	Geographical proximity	since all of us are fairly close... we are continuously meeting so no problem gets out of hand; some are geographically located in other areas; there were three different ways for involvement ... which allowed people to communicate even though if they were at distant places; situations where you have people from different states ... trying to negotiate agreements are very complex and challenging; K. County is huge ... so just having a true representation from all communities and areas of the county is a challenge; another challenge is the geographic spread ... not being able to be together face to face that often; it's even really hard to get people together on the phone or on a web site; the secretariat has been the force that has kept the network going even though it is spread across different states

Appendix E. Coding Results: Theme “Collaboration Outcomes”

Table E1

Theme “Collaboration Outcomes”

Categories	Constructs	Initial codes
Intermediate outcomes	Trust	was really one person to another rather than organizational trust; so, this idea of true organizational trust I don't think was ever achieved; and that probably explains why there was not more effort put into ... how do we achieve the goal; evaluating trust is very hard, we look at the proxies that lead us to believe that our members trust one another; I think that they really are grounded in mutual trust; people really do trust each other; having those trusting relationships in place; we had a consultant who did a study of our collaborative ... talked about how interesting it was because we simply trust each other; facilitate relationship development between all of the partners
	Consensus	keeping that as a shared value and shared goal really helped form the rest of the collaboration; network partners always went with consensus; it is fairly efficient, streamlined, it brings the right people to a table to have discussions and achieves consensus with relative ease; we aim for consensus. ... and if we can't agree on something, usually we don't do it; it does mean sometimes we are less powerful ... or not as quick ... because we have to come to consensus; if there wasn't consensus on a policy position then we would have voted on it; fortunately, we always had consensus and so we never really had to vote; we are highly collaborative, which I think has a lot to do with the fact that we really focused on consensus; we define consensus "yes, I can live with that" - it may not be my individual preferred ideal solution, but I can live with that and I think that is the best solution at this time; there is a group consensus, by every, each one of the partners

Table E1*Theme “Collaboration Outcomes” (continued)*

Categories	Constructs	Initial codes
Intermediate outcomes	Learning	<p>we had a lot of learning ... how to operate this program and how to streamline it; there was an opportunity for learning that might not have otherwise happened; it was not a learning by just bringing in experts – it was learning from your coworker, from your collaborative partner, and leveraging skills of each of those partners; it is harder to get awareness at different levels of the organization... beyond primary representatives; a very strong culture around best practices and innovation; have hundreds and hundreds of practices that we have collected; when we see something new and interesting, we figure out ways to share it; we send out a newsletter with tips or we write toolkit; we do webinars, we do a big conference every year; at the conference the local partners presenting to each other about how they do the work; we do experiential learning where organizations from one place go to do work with the organizations from other places; every organization has the opportunity to learn from others, but also to propose new ways; developing a theory of change for family engagement in early learning; work at the system level trying to improve systems so we listen to different aspects of the community; where we can have influence and where there is an interest and capacity; work on something that will move the system forward; people really value coming together and learning from each other and hearing from each other, from their different perspectives; there is learning from communities; what we learn to inform our members in form of different programs and approaches; influence outcomes, leverage outcomes and learning outcomes; learning, leveraging and influencing are probably the key components; you can learn from each other and learn best practices and learn new approaches</p>

Table E1*Theme “Collaboration Outcomes” (continued)*

Categories	Constructs	Initial codes
Ultimate outcomes	Goal achievement/ progress toward goals	how the goal can be achieved with some self-interest being addressed; it is [goal] hard to measure; if what you have got is not a measurable outcome; what we look for is positive movement – whether we have changed something or moved something ... in the direction that we wanted to go; that may be the way... we have more members engaged in this particular discussion; have moved a state agency closer to our way of thinking or closer to a potential solution for a particular problem; would look for positive movement more than we look for a specific outcome; our goals are very big, so it is not something that happens in a year; these are long term issues that we're trying to address; that's not going to be solved in a year or five years, but I feel like we're making progress

Appendix F. Survey Invitations

First email

Dear...,

My name is Razilya Shakirova and I am a doctoral student in the School of Public Affairs and Administration (SPAA), Rutgers University-Newark. For my dissertation project, I am doing a national study of nonprofit collaborations with a focus on their governance and outcomes.

I am writing to ask for your help with this important study. If your organization is a part of a collaborative network, I would like to kindly invite you to share your insights and experiences by participating in an online survey.

The questionnaire will take approximately 15 minutes to complete. You can reach the survey form at this link https://rutgers.qualtrics.com/jfe/form/SV_6seWjyY9KOnDaDj

In appreciation for your participation, I will be sharing with you a summary of the survey results. This research will provide important insights for scholars, interested in collaborations, as well as network practitioners working to solve some of society's most difficult yet important problems.

Thank you for your valuable input in this project.

Best regards,

Razilya Shakirova

SPAA, Rutgers University-Newark

razilya.shakirova@rutgers.edu

Reminder

Dear ...,

This is a friendly reminder to participate in a survey on nonprofit collaborations and share your valuable insights and experiences.

If you have already completed this survey, I would like to thank you very much. I truly appreciate your help.

If you have not already done so, please take a few minutes to complete the survey.

This is a link to the survey form

https://rutgers.qualtrics.com/jfe/form/SV_6seWjyY9KOnDaDj

Thank you for your important contribution, and I look forward to learning from your experiences.

Best regards,

Razilya Shakirova

SPAA, Rutgers University-Newark

razilya.shakirova@rutgers.edu

Appendix G. Survey Questionnaire

OS1 Welcome to the National Survey of Collaborative Networks sponsored by the School of Public Affairs and Administration (SPAA) at Rutgers, the State University of New Jersey. The survey takes about 15 minutes to complete. We would greatly appreciate your response -- and we will share a summary of the findings with you after the survey closes. Please note: Your identity and that of your organization will be confidential; all results and information gathered in this survey will be reported only in aggregate form.

OS2 INFORMED CONSENT

You are invited to participate in a research study, conducted by Razilya Shakirova, who is a doctoral student in the School of Public Affairs and Administration at Rutgers University. The purpose of the study is to understand the governance and outcomes of nonprofit collaborative networks. The research team and the Institutional Review Board at Rutgers University are the only parties that will be allowed to see the data, except as may be required by law. If a report of this study is published, or the results are presented at a professional conference, only group results will be stated. All study data will be kept for five years after the study is completed.

There are no foreseeable risks to participation in this study. Also, you may receive no direct benefit from taking part in this study.

Participation in this study is voluntary. You may choose not to participate, and you may withdraw at any time during the study procedures.

If you have any questions about the study or study procedures, you may contact me at razilya.shakirova@rutgers.edu. You may also contact my faculty advisor Professor

Gregg Van Ryzin at 111 Washington St, Newark, NJ 07102, e-mail -
vanryzin@rutgers.edu.

If you have any questions about your rights as a research subject, please contact an IRB Administrator at the Rutgers University, Arts and Sciences IRB: Institutional Review Board Rutgers University, the State University of New Jersey Liberty Plaza / Suite 3200 335 George Street, 3rd Floor New Brunswick, NJ 08901 Phone: (732) 235-2866. Email: humansubjects@orsp.rutgers.edu retain a copy of this form for your records. If you are 18 years of age or older, understand the statements above, and will consent to participate in the study, click on the "I agree" button to begin the survey. If not, please click on the "I do not agree" button and you will exit this program.

☐ I agree to participate (continue survey)

☐ I do not agree (end survey)

Q1 A collaborative network can be defined as a network consisting of three or more legally autonomous organizations engaged in collaboration.

Is your organization is a part of a collaborative network?

☐ Yes (continue survey)

☐ No (end survey)

Skip To: End of Block If A collaborative network can be defined as a network consisting of three or more legally autonomou... = No (end survey)

Q2 What is the name of your collaborative network (if it has a name)?

Now I would like to ask several questions about this collaborative network

Q3 How long has your collaborative network been in existence?

- ☐ Less than 3 years
 - ☐ 3-5 years
 - ☐ 6-10 years
 - ☐ 11-15 years
 - ☐ 15+ years
-

Q4 How many organizations participate in your collaborative network?

- ☐ 3-5
 - ☐ 6-10
 - ☐ 11-15
 - ☐ 16-20
 - ☐ 20-30
 - ☐ 30+
-

Q5 Does your network have a formal (written) agreement (such as a memorandum of understanding or contract)?

- ☐ Yes
 - ☐ No
-

Q6 Please indicate the service or policy area(s) that are the main focus of your collaboration (check all that apply):

- ☐ Health
 - ☐ Human services
 - ☐ Education
 - ☐ Community development
 - ☐ Housing
 - ☐ Environment
 - ☐ Arts and culture
 - ☐ Employment and job training
 - ☐ Crime or violence prevention
 - ☐ Emergency preparedness or disaster relief
 - ☐ Legal services or human rights
 - ☐ Other _____
-

Q7 How would you characterize the type of your collaboration (check all that apply)?

- ☐ Joint programming
- ☐ Administrative consolidation
- ☐ Alliance
- ☐ Joint venture
- ☐ Merger
- ☐ Other _____

Q8 Please indicate the importance of the following goals for your network:

	Not that important	Somewhat important	Important	Very important
Develop solutions to a new social problem/need(s)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Address unmet needs in communities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Serve more and/or different beneficiaries/clients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Achieve resource(s) and administrative efficiencies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Carry Forward All Choices - Displayed & Hidden from "Please indicate the importance of the following goals for your network:"



Q9 Indicate which of these goals (from the previous list) you consider to be the "Primary Goal" of your network:

- ☐ Develop solutions to a new social problem/need(s)
- ☐ Address unmet needs in communities
- ☐ Serve more and/or different beneficiaries/clients
- ☐ Achieve resource(s) and administrative efficiencies
- ☐ Other _____

Q10 Please indicate whether you agree or disagree with the following statements about the primary issue or problem addressed by your collaborative network:

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The problem is caused by multiple factors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The problem is highly dynamic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is high uncertainty regarding the problem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q11 Does your collaborative network have a central organization that takes the main responsibility for guiding and coordinating member organizations' activities?

- ☐ Yes
- ☐ No

Display This Question:

If Does your collaborative network have a central organization that takes the main responsibility fo... = Yes

Q19 Please indicate to what extent you agree or disagree with the following statements about decision making in your network:

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Member organizations have a real say in how the network carries out its work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All member organizations get a chance to participate in decision making	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The network is designed to let every member organization participate in decision making	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q20 How important are the following mechanisms for the member organizations' participation in decision making in your network:

	Not that important	Somewhat important	Important	Very important
All-member meetings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Work groups	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Online participation tools (discussion forums, polls, surveys)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Individual meetings or consultations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inclusion in a board/steering committee	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Does your collaborative network have a central organization that takes the main responsibility fo... = Yes

Q21 How many of the member organizations are on a board/steering committee?

- ☐ None
 - ☐ Few
 - ☐ Some (less than half)
 - ☐ Most
 - ☐ All
-

Q22 Has the governance of your network changed over the time of collaboration?

☐ Yes

☐ No

Display This Question:

If Has the governance of your network changed over the time of collaboration? = Yes

Q23 Please indicate how the governance has changed:

Q24 Was having inter-organizational collaboration required as a condition of funding?

☐ Yes, by a foundation

☐ Yes, by a government agency

☐ No

Q25 Please indicate the importance of the following institutions/persons in initiating your collaborative network:

	Not important	Somewhat important	Important	Very important
Community organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community leaders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Foundation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Government agency	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Staff/volunteers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local politicians	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q26 Prior to joining the network, to what extent did the member organizations ...

	Never	Sometimes	Often	Always
shared information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
shared resources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
jointly provided services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
agreed on goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
trusted each other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q27 Please rate the following aspects of your network:

	Low	Medium	High
Problem/goal complexity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interdependencies among network actors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
External demands on your network	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q28 Using the scale below, please indicate whether your network places stronger emphasis on developing internal relationships (among members of the network) or

external relationships (with outside stakeholders such as funders, regulatory/government agencies, communities).

- ☐ Internal Relationships 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9
- ☐ External Relationships 10

Q29 What types of organizations are involved in your collaborative network (check all that apply)?

- ☐ Nonprofit organization
 - ☐ For-profit organization
 - ☐ Federal government organization
 - ☐ State government organization
 - ☐ Local government organization
 - ☐ Other (specify)
-

Q30 To what extent are the members of the network similar or dissimilar with respect to...

	Very Dissimilar	Somewhat dissimilar	Somewhat similar	Very similar
Goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q31 Please indicate the geographic scope of your collaborative network:

- ☐ Within one municipality/county
- ☐ Within one state
- ☐ In few neighboring states (or region)
- ☐ National
- ☐ International

Q32 In what states is your network located or active (check all that apply)?

☐ Alabama

☐ Alaska

☐ Arizona

☐ Arkansas

☐ California

☐ Colorado

☐ Connecticut

☐ Delaware

☐ District of Columbia

☐ Florida

☐ Georgia

☐ Hawaii

☐ Idaho

☐ Illinois

☐ Indiana

☐ Iowa

☐ Kansas

☐ Kentucky

☐ Louisiana

- ☐ Maine
- ☐ Maryland
- ☐ Massachusetts
- ☐ Michigan
- ☐ Minnesota
- ☐ Mississippi
- ☐ Missouri
- ☐ Montana
- ☐ Nebraska
- ☐ Nevada
- ☐ New Hampshire
- ☐ New Jersey
- ☐ New Mexico
- ☐ New York
- ☐ North Carolina
- ☐ North Dakota
- ☐ Ohio
- ☐ Oklahoma
- ☐ Oregon

- ☐ Pennsylvania
 - ☐ Puerto Rico
 - ☐ Rhode Island
 - ☐ South Carolina
 - ☐ South Dakota
 - ☐ Tennessee
 - ☐ Texas
 - ☐ Utah
 - ☐ Vermont
 - ☐ Virginia
 - ☐ Washington
 - ☐ West Virginia
 - ☐ Wisconsin
 - ☐ Wyoming
 - ☐ Outside the U.S (specify the country(ies))
-

Q33 What is your assessment of the progress made towards the primary goal of your collaborative network?

- ☐ Excellent progress
- ☐ Good progress
- ☐ Unsure
- ☐ Little progress
- ☐ No progress at all
-

Q34 Please indicate whether you agree or disagree with the following statements regarding the achievement of the primary goal of your collaborative network:

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I am satisfied with the progress our network has made towards its primary goal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confident that our network will accomplish its primary goal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q35 Please indicate to what extent you agree or disagree with the following statements regarding your network. Member organizations...

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Engage in open and honest communication with one another	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Share and accept constructive criticisms without making it personal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Willingly share information with one another	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have confidence in one another	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have a strong team spirit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Are trustworthy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Share the same ambitions and vision for the collaborative network	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enthusiastically pursue collective goals and mission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
View themselves as partners in charting the network's direction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q36 Please indicate to what extent you agree or disagree with the following statements regarding your network:

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Member organizations commit adequate human and financial resources to training with other organizations in the network	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Member organizations understand how the other organizations in the network make decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Member organizations work with other organizations in the network to identify lessons for improving collaboration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The network has strong values and norms that encourage learning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The last few questions are some background facts about you and your organization for statistical purposes.

Q37 Are you...

- ☐ Male
- ☐ Female

Q38 What is your age?

- ☐ Under 19
 - ☐ 20-29
 - ☐ 30-39
 - ☐ 40-49
 - ☐ 50-59
 - ☐ 60-69
 - ☐ 70 or older
-

Q39 Please indicate years of your professional experience:

- ☐ Less than 5
 - ☐ 5-10
 - ☐ 11-20
 - ☐ 21-30
 - ☐ 31-40
 - ☐ More than 40
-

Q40 Which one of the following best describes your position within the network/organization:

- ☐ Board Member
 - ☐ Executive
 - ☐ Director or Senior Manager
 - ☐ Manager
 - ☐ Coordinator
 - ☐ Consultant
 - ☐ Other _____
-

Q41 Which of the following best describes the type of your organization?

- ☐ Nonprofit organization
 - ☐ For-profit organization
 - ☐ Federal government organization
 - ☐ State government organization
 - ☐ Local government organization
 - ☐ Other (specify) _____
-

Q42 Do you have any comments or suggestions related to the topic of this survey?
(Optional)

Thank you!

**Appendix H. T-Test of Member Involvement in Governance in Networks Governed
by a Central Organization**

Table H1

Two-Sample T-Test of Member Involvement in Networks Governed by a Lead

Organization (LO) and an Administrative Organization (AO)

Variable	Obs.	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
AO	74	2.97	0.10	0.84	2.77	3.16
LO	71	3.19	0.10	0.88	2.98	3.40
Combined	145	3.08	0.07	0.87	2.93	3.22
Diff		-0.23	0.14		-0.51	0.05

Ha: diff < 0 Pr(T < t) = 0.06
 Ha: diff != 0 Pr(|T| > |t|) = 0.11
 Ha: diff > 0 Pr(T > t) = 0.94

**Appendix I. Multinomial Logistic Model of Combinations of a Central Organization
and Member Involvement in Governance**

Table I1

*Multinomial Logistic Model of Combinations of a Central Organization (CO) and
Member Involvement in Governance (MI) (the Base Category—No CO)*

Variables	CO-Low MI versus No CO (base)			CO-High MI versus No CO (base)		
	Coef.	SE	z-score	Coef.	SE	z-score
Contextual factors:						
Environmental context:						
External demands	.57**	.26	2.16**	.49*	.26	1.89*
Problem complexity	.38	.30	1.26	.66**	.32	2.04**
Problem dynamism	.24	.29	.84	.32	.29	1.09
Initial conditions:						
Connectedness	-.77	.61	-1.26	-1.32**	.58	-2.25**
Initial goal agreement	.19	.43	.45	.49	.41	1.19
Initial trust	-.72	.45	-1.61	-.49	.43	-1.13
Network characteristics:						
Heterogeneity/Homogeneity:						
Similarities	.71	.45	1.58	1.35***	.45	3.02***
Participants:						
For-profit org.	-.00	.71	-.00	.64	.69	.93
Federal gov. org.	-.13	.78	-.16	-1.75**	.83	-2.12**
State gov. org.	-.60	.76	-.80	-.22	.75	-.30
Local gov. org.	.63	.69	.92	-.13	.63	-.20
Size and scope:						
Network size	.41***	.17	2.46***	.29*	.16	1.76*
Geographic scope	.09	.29	.30	.03	.28	.10
Number of service/policy areas	.25	.18	1.37	.41**	.18	2.29**
Interdependencies	-.25	.30	-.83	.45	.30	1.53
Control variables:						
Network age	-.04	.21	-.21	-.16	.21	-.76
LR chi2	93.24			93.24		
Prob>chi2	< .001			< .001		
McFadden's R²	.26			.26		
Count R²	.68			.68		
N obs.	176			176		

Notes. *significant at .1, ** significant at .05, ***significant at .01.

Appendix J. Multinomial Logistic Model of Central Organization Types

Table J1

Multinomial Logistic Model of Central Organization Types (the Base Category–No CO)

Variables	AO versus No CO (base)			LO versus No CO (base)		
	Coef.	SE	z-score	Coef.	SE	z-score
Contextual factors:						
Environmental context:						
External demands	.72***	.28	2.53***	.46*	.25	1.84*
Problem complexity	.29	.32	.91	.71**	.32	2.25**
Problem dynamism	-.00	.30	-.00	.40	.29	1.40
Initial conditions:						
Connectedness	-.83	.64	-1.30	-1.08**	.55	-1.96**
Goal agreement	-.15	.46	-.32	.58	.40	1.44
Initial trust	-.52	.46	-1.13	-.60	.43	-1.42
Network characteristics:						
Heterogeneity/Homogeneity:						
Similarities	1.98***	.51	3.88***	.70	.43	1.62
Participants:						
For-profit org.	1.63**	.74	2.20**	-.20	.69	-.29
Federal gov. org.	-1.68*	.88	-1.91*	-.54	.80	-.68
State gov. org.	-.41	.80	-.52	-.25	.75	-.33
Local gov. org.	-.21	.71	-.30	.22	.67	.33
Size and scope:						
Network size	.58***	.18	3.28***	.20	.17	1.18
Geographic scope	-.13	.31	-.43	.15	.28	.53
Number of service/policy areas	.33*	.18	1.79*	.32	.17	1.83*
Interdependencies	.20	.30	.67	.07	.28	.24
Control variables:						
Network age	.20	.22	.92	-.22	.20	-1.13
LR chi2	107.56			107.56		
Prob>chi2	< .001			< .001		
McFadden's R²	.29			.29		
Count R²	.69			.69		
N obs.	176			176		

Notes. *significant at .1, ** significant at .05, ***significant at .01.

Appendix K. ANOVA I

Table K1

ANOVA Comparisons of Collaboration Outcomes in Networks Governed and Not Governed by a Central Organization

Groups				Tukey's HSD Comparisons t (P> t)
	N	Mean	SD	CO
<i>Goal achievement</i>				
CO	145	4.11	.62	
No CO	32	3.76	.84	2.62 (.01)
F(1,175) = 6.89, p <.001				
<i>Collaborative learning</i>				
CO	145	3.68	.65	
No CO	32	3.44	.55	1.99 (.05)
F(1,175) = 3.96, p =.05				
<i>Social capital</i>				
F(1,175) = 0.03, p = 0.87				
<i>Social capital components:</i>				
<i>Trust</i>				
F(1,175) = 0.13, p = 0.72				
<i>Communication</i>				
F(1,175) = 0.25, p = 0.61				
<i>Shared vision</i>				
F(1,175) = 0.25, p = 0.76				

Appendix L. ANOVA II

Table L1

ANOVA Comparisons of Collaboration Outcomes in Networks Governed by a Central Organization Involving Member Organizations to a Low/High Extent and Not Governed by a Central Organization

Groups	N	Mean	SD	Tukey's HSD Comparisons t(P> t)	
				CO-High MI	CO-Low MI
<i>Goal achievement</i>					
CO-High MI	85	4.24	.56		
CO-Low MI	60	3.93	.66	2.82(.005)	
No CO	32	3.77	.84	3.47(< .001)	1.11(.27)
F (2,174) = 7.55, p <.001					
<i>Collaborative learning</i>					
CO-High MI	85	3.85	.65		
CO-Low MI	60	3.45	.58	3.81(<.001)	
No CO	32	3.44	.55	3.23(<.001)	0.12(.90)
F (2,174) = 9.38, p <.001					
<i>Social capital</i>					
CO-High MI	85	4.18	.61		
CO-Low MI	60	3.88	0.51	3.00(.003)	
No CO	32	4.03	.66	1.17(.24)	-1.20(.23)
F (2,174) = 4.51, p = 0.01					
<i>Social capital components:</i>					
<i>Trust</i>					
CO-High MI	85	4.23	.66		
CO-Low MI	60	3.89	0.64	2.99(.003)	
No CO	32	4.14	.76	0.66(.51)	-1.68(.09)
F (2,174) = 4.54, p = 0.01					
<i>Communication</i>					
CO-High MI	85	4.18	.66		
CO-Low MI	60	3.87	0.63	2.83(.005)	
No CO	32	3.99	.70	1.44(.15)	-0.82(.41)
F (2,174) = 4.54, p = 0.01					
<i>Shared vision</i>					
F (2,174) = 2.30, p = 0.10					

Appendix M. ANOVA III

Table M1

ANOVA Comparisons of Collaboration Outcomes in Networks Governed by a Lead Organization, by an Administrative Organization and Not Governed by a Central Organization

Groups	N	Mean	SD	Tukey's HSD Comparisons t(P> t)	
				LO	AO
<i>Goal achievement</i>					
LO	71	4.14	.57		
AO	74	4.07	.67	-.60(.55)	
No CO	32	3.77	.84	2.64(.009)	2.19(.03)
F (2,174) = 3.61, p = .03					
<i>Collaborative learning</i>					
LO	71	3.74	.65		
AO	74	3.63	.65	-1.02(.31)	
No CO	32	3.44	.55	2.23(.03)	1.45(.15)
F (2,174) = 2.50, p = .08					
<i>Social capital</i>					
F(2,174) = 1.36, p = 0.26					
<i>Social capital components:</i>					
<i>Trust</i>					
F(2,174) = 1.06, p = 0.35					
<i>Communication</i>					
LO	71	4.18	.57		
AO	74	3.94	.72	-2.21(.03)	
No CO	32	3.99	.70	1.35(.18)	-.38(.71)
F(2,174) = 2.56, p = 0.08					
<i>Shared vision</i>					
F(2,174) = .34, p = 0.71					

Appendix O. OLS Regression Models for Goal Achievement

Table O1

OLS Regression Models for Goal Achievement

Variables	Model I	Model II	Model III
Governance variables			
CO (vs. No CO)	.15*		
CO-High MI (vs. CO-Low MI)		.16*	
No CO (vs. CO-Low MI)		-.09	
LO (vs. No CO)			.20*
AO (vs. No CO)			.19
Contextual factors:			
Environmental context:			
External demands	-.08	-.07	-.08
Problem complexity	.13	.12	.12
Problem dynamism	.08	.08	.08
Initial conditions:			
Connectedness	-.05	-.04	-.05
Goal agreement	-.04	-.05	-.04
Initial trust	.14	.14	.14
Network characteristics:			
Heterogeneity/Homogeneity:			
Similarities	.12	.10	.12
Participants:			
For-profit org.	-.04	-.06	.04
Federal gov. org.	.07	.10	.07
State gov. org.	-.09	-.10	-.09
Local gov. org.	.11	.13	.11
Size and scope:			
Network size	-.04	-.03	-.04
Geographic scope	-.08	-.08	-.08
Number of service/policy areas	-.01	-.03	-.01
Interdependencies	.26***	.22***	.26***
Control variable:			
Network age	-.01	-.01	-.01
Number of obs.	176	176	176
F-value	2.43	2.50	2.28
Prob. > F	.002	.001	.004
R-squared	.21	.22	.21

Notes. *significant at .1, ** significant at .05, ***significant at .01

White's general test for heteroskedasticity: Model I—chi2 = 171.54, Prob > chi2 = .35; Model II—chi2 = 176.00, Prob > chi2 = .46; Model III—chi2 = 176.00, Prob > chi2 = .46.

VIF: Model I—from 1.11 to 1.84; Model II—from 1.11 to 1.84; Model III—from 1.14 to 2.88.

Appendix P. OLS Regression Models for Collaborative Learning

Table P1

OLS Regression Models for Collaborative Learning

Variables	Model I	Model II	Model III
Governance variables			
CO (vs. No CO)	.12		
CO-High MI (vs. CO-Low MI)		.22**	
No CO (vs. CO-Low MI)		-.03	
LO (vs. No CO)			.16
AO (vs. No CO)			.12
Contextual factors:			
Environmental context:			
External demands	.02	.02	.02
Problem complexity	.02	.00	.01
Problem dynamism	-.00	-.01	-.01
Initial conditions:			
Connectedness	.12	.13	.12
Goal agreement	.03	.02	.03
Initial trust	.05	-.05	.06
Network characteristics:			
Heterogeneity/Homogeneity:			
Similarities	.25***	.22***	.26***
Participants:			
For-profit org.	-.12	-.14	-.11
Federal gov. org.	.10	.14	.09
State gov. org.	-.08	-.10	-.08
Local gov. org.	.02	.05	.02
Size and scope:			
Network size	-.08	-.06	-.07
Geographic scope	-.01	-.00	-.01
Number of service/policy areas	.16**	.14*	.16**
Interdependencies	.26***	.21***	.26***
Control variable:			
Network age	-.15	-.14	-.14*
Number of obs.	176	176	176
F-value	3.66	3.95	3.45
Prob. > F	<.001	<.001	<.001
R-squared	.28	.31	.28

Notes. *significant at .1, ** significant at .05, ***significant at .01

White's general test for heteroskedasticity: Model I—chi2 = 164.38, Prob > chi2 = .50; Model II—chi2 = 176.00, Prob > chi2 = .46; Model III—chi2 = 176.00, Prob > chi2 = .46.

VIF: Model I—from 1.11 to 1.83; Model II—from 1.11 to 1.84; Model III—from 1.14 to 2.88.

Appendix Q. OLS Regression Models for Social Capital

Table Q1

OLS Regression Models for Social Capital

Variables	Model I	Model II	Model III
Governance variables			
CO (vs. No CO)	.04		
CO-High MI (vs. CO-Low MI)		.19**	
No CO (vs. CO-Low MI)		.04	
LO (vs. No CO)			.07
AO (vs. No CO)			.00
Contextual factors:			
Environmental context:			
External demands	-.10	-.09	-.09
Problem complexity	.05	.04	.04
Problem dynamism	.06	.05	.05
Initial conditions:			
Connectedness	-.03	-.01	-.03
Goal agreement	-.06	-.07	-.07
Initial trust	.18*	.18*	.18
Network characteristics:			
Heterogeneity/Homogeneity:			
Similarities	.16**	.13*	.17**
Participants:			
For-profit org.	-.06	-.08	-.05
Federal gov. org.	.13	.18**	.12
State gov. org.	.01	-.01	.00
Local gov. org.	-.02	.01	-.02
Size and scope:			
Network size	-.10	-.08	-.08
Geographic scope	-.04	-.04	-.05
Number of service/policy areas	.05	.02	.05
Interdependencies	.23***	.18**	.23***
Control variable:			
Network age	-.14*	-.14	-.13
Number of obs.	176	176	176
F-value	2.03	2.21	1.95
Prob. > F	.01	.005	.02
R-squared	.18	.20	.18

Notes. *significant at .1, ** significant at .05, ***significant at .01

White's general test for heteroskedasticity: Model I—chi2 = 172.90, Prob > chi2 = .32; Model II—chi2 = 176.00, Prob > chi2 = .46; Model III—chi2 = 176.00, Prob > chi2 = .46.

VIF: Model I—from 1.11 to 1.83; Model II—from 1.11 to 1.84; Model III—from 1.14 to 2.88.

Appendix R. OLS Regression Models for Social Capital Components

Table R1

OLS Regression Models for Social Capital Components

	Trust			Communication			Shared vision		
	Model I	Model II	Model III	Model I	Model II	Model III	Model I	Model II	Model III
Governance variables									
CO (vs. No CO)	.00			.08			.01		
CO-High MI (vs. CO-Low MI)		.18**			.20**			.13	
No CO (vs. CO-Low MI)		.07			-.00			.03	
LO (vs. No CO)			.02			.16			.02
AO (vs. No CO)			-.03			.01			.02
Contextual factors:									
Environmental context:									
External demands	-.16*	-.15*	-.15*	-.10	-.09	-.08	-.00	-.00	-.00
Problem complexity	.04	.03	.03	.00	-.01	-.01	.09	.08	.09
Problem dynamism	.09	.08	.08	.08	.08	.06	-.01	-.01	-.01
Initial conditions:									
Connectedness	-.08	-.06	-.08	-.06	-.05	-.06	.07	.08	.07
Goal agreement	-.06	-.07	-.07	-.00	-.02	-.03	-.09	-.10	-.09
Initial trust	.24**	.23**	.24**	.20**	.20**	.20**	.04	.04	.04
Network characteristics:									
Heterogeneity/Homogeneity:									
Similarities	.12	.10	.13	.13	.11	.16**	.16	.14*	.16*
Participants:									
For-profit org.	-.03	-.05	-.02	-.06	-.08	-.03	-.07	-.08	-.07
Federal gov. org.	.07	.11	.06	.15*	.20**	.13	.13	.16*	.13
State gov. org.	-.04	-.05	-.04	.06	.05	.06	-.01	-.02	-.01
Local gov. org.	.04	.06	.04	-.09	-.06	-.10	.00	.02	.01
Size and scope:									
Network size	-.07	-.05	-.06	-.11	-.09	-.07	-.08	-.07	.08
Geographic scope	-.03	-.03	-.04	-.02	-.02	.04	-.05	-.05	.05
Number of service/policy areas	.05	.03	.05	.04	.02	.04	.03	.01	.03
Interdependencies	.22***	.18**	.22***	.17**	.12	.18**	.21**	.18**	.21**
Control variable:									
Network age	-.14*	-.13*	-.13	-.06	-.05	-.03	-.18*	-.17**	-.18**
Number of obs.	176	176	176	176	176	176	176	176	176
F-value	2.07	2.22	1.96	1.72	1.92	1.79	1.69	1.71	1.59
Prob. > F	.01	.005	.01	.05	.02	.03	.05	.04	.07
R-squared	.18	.20	.18	.16	.18	.17	.16	.16	.15

Note. *significant at .1, ** significant at .05, ***significant at .01.

Appendix S. SEM I-III Results

Table S1

SEM I-III Results

	SEM I	SEM II	SEM III
Collaborative learning			
CO (vs. no CO)	.05		
CO-High MI (vs. CO-Low MI)		.19**	
No CO (vs. CO-Low MI)		.03	
LO (vs. no CO)			.13
AO (vs. no CO)			-.01
Similarities	.26***	.24***	.29***
Interdependencies	.29***	.25***	.29***
Number of areas	.14**	.13**	.14**
Social capital			
CO (vs. no CO)	-.02		
CO-High MI (vs. CO-Low MI)		.17**	
No CO (vs. CO-Low MI)		.09	
LO (vs. no CO)			.04
AO (vs. no CO)			-.11
Initial trust	.09	.08	.08
Similarities	.13*	.11	.16**
Interdependencies	.22***	.18**	.22***
Goal achievement			
Collaborative learning	.10	.09	.10
Social capital	.34***	.34***	.34***
CO (vs. no CO)	.15**		
CO-High MI (vs. CO-Low MI)		.06	
No CO (vs. CO-Low MI)		-.12*	
LO (vs. no CO)			.18**
AO (vs. no CO)			.19**
Interdependencies	.20***	.19***	.20***
Covariates			
Collaborative learning and Social capital	.59***	.58***	.58***
CO and Similarities	.15**		
CO and Interdependencies	.14*		
CO and Number of areas	.15**		
CO and Initial Trust	-.19***		
CO-High MI and No CO		-.45***	
CO-High MI and Similarities		.21***	
CO-High MI and Interdependencies		.30***	
CO-High MI and Number of areas		.11	
CO-High MI and Initial Trust		.01	
No CO and Similarities		-.15**	
No CO and Interdependencies		-.14*	
No CO and Number of areas		-.15**	
No CO and Initial Trust		.19***	
LO and AO			-.69***
LO and Similarities			-.11
LO and Interdependencies			.07
LO and Number of areas			.06
LO and Initial Trust			.03

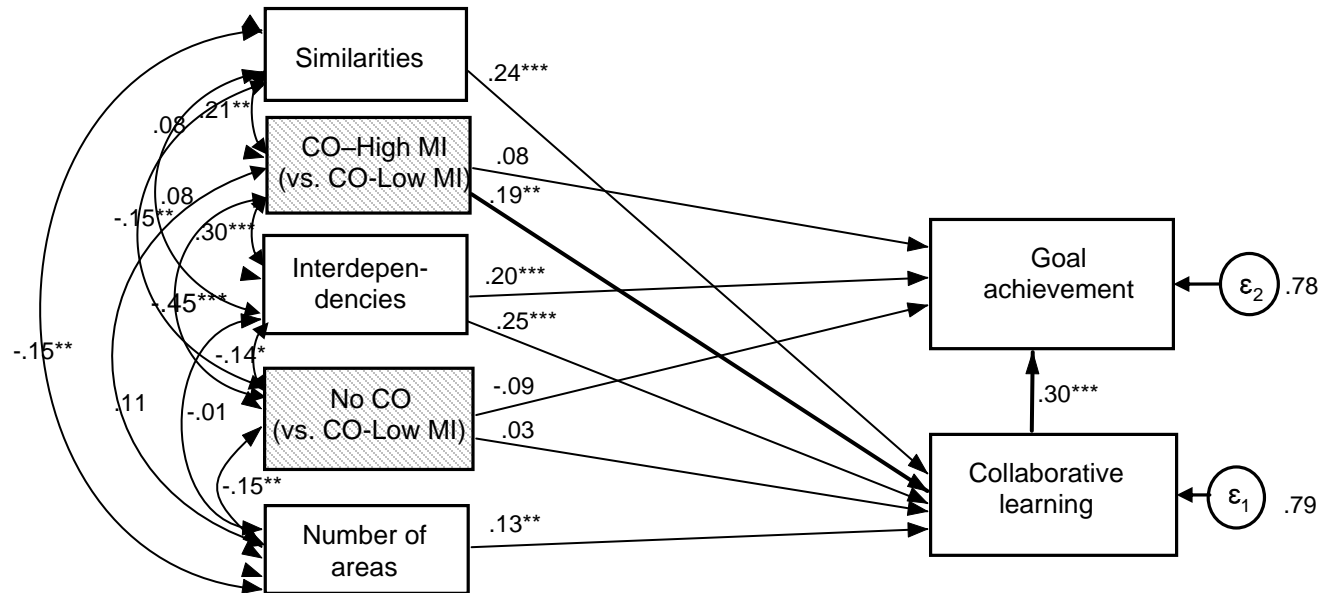
AO and Similarities			.23***
AO and Interdependencies			.04
AO and Number of areas			.06
AO and Initial Trust			-.18**
Similarities and Interdependencies	.08	.08	.08
Similarities and Number of areas	-.15**	-.15**	-.15**
Similarities and Initial Trust	.04	.04	.04
Number of areas and Initial Trust	.02	.02	.02
Number of areas and Interdependencies	-.01	-.01	-.01
Interdependencies and Initial Trust	.08	.08	.08
chi2	5.44	4.70	4.60
Prob > chi2	.36	.45	.47
RMSEA	.02	<.001	<.001
CFI	.998	1.00	1.00
TLI	.991	1.01	1.01
SRMR	.03	.03	.03
Number of obs.	177	177	177

Note. *significant at .1, ** significant at .05, ***significant at .01

Appendix T. SEM of the Effects of Member Involvement on Collaborative Learning and Goal Achievement

Figure T1

SEM of the Effects of Member Involvement on Collaborative Learning and Goal Achievement in Networks Governed by a Central Organization

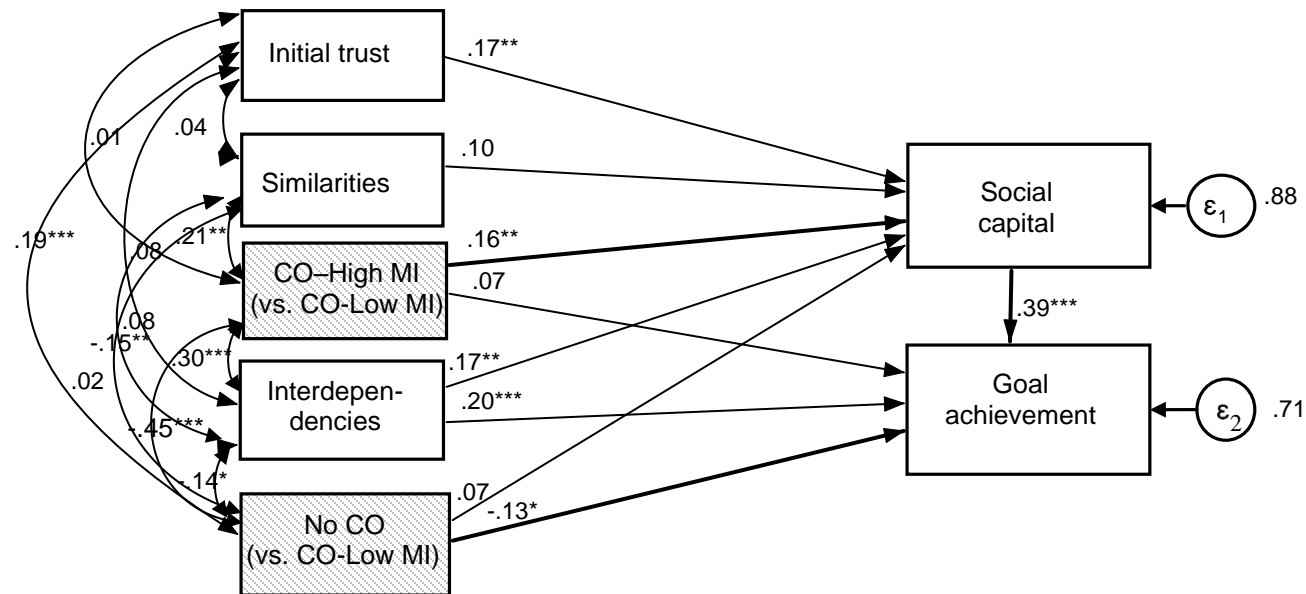


Notes. Model fit statistics: $\chi^2 = .32$, Prob > $\chi^2 = .85$, RMSEA = .00, CFI = 1.00, TLI = 1.12, SRMR = .01. Standardized coefficients shown; *significant at .1, ** significant at .05, ***significant at .01.

Appendix U. SEM of the Effects of Member Involvement on Social Capital and Goal Achievement

Figure U1

SEM of the Effects of Member Involvement on Social Capital and Goal Achievement in Networks Governed by a Central Organization



Notes. Model fit statistics: Chi2 = .75, Prob > chi2 = .69, RMSEA = .00, CFI = 1.00, TLI = 1.09, SRMR = .01. Standardized coefficients shown; *significant at .1, ** significant at .05, ***significant at .01.