Nonprofit Resource Contribution and Mission Alignment in Interorganizational, Cross-Sector Public Health Networks

Carrie L. Chapman[1] and Danielle M. Varda[1]

Abstract

Given the complexity of today's social and political dilemmas, a common method of program and policy implementation is surfacing in the form of interorganizational, cross-sector goal-directed networks. This article applies the "Core Dimensions of Connectivity" framework to analyze how the increasing inclusion of nonprofit organizations in public health goal-directed interorganizational networks is associated with goal achievement. Variables related to sector-based resource contributions and mission alignment were analyzed in their relation to outcomes in 177 networks. The findings indicate that significant differences exist across sectors. Compared to public and for-profit organizations, nonprofit organizations bring a greater number and diversity of resources to public health networks, and are perceived by their public and for-profit partners as having the strongest support of the network's mission. We also find that resource contributions and mission alignment affect outcome achievement. This article discusses practical challenges networks face and informs techniques for effectively managing interorganizational goal-directed networks.

[1]University of Colorado Denver, USA

Corresponding Author:
Carrie L. Chapman, School of Public Affairs, University of Colorado Denver, 1380 Lawrence Street #500, Denver, CO 80204, USA.
Email: carrie.chapman@ucdenver.edu

Given the complexity of today's social and political dilemmas, a common method of program and policy implementation is in the form of interorganizational goal-directed networks. Goal-directed networks are "set up with a specific purpose, either by those who participate in the network or through mandate, and evolve largely through conscious efforts to build coordination" (Provan & Kenis, 2007, p. 231). Although Provan and Kenis stated in 2007 that goal-directed networks occur less frequently than other types of networks, the "network way of working" (Popp, MacKean, Casebeer, Milward, & Lindstrom, 2013) that is, the growing expectation that organizations engage in cross-sector collaboration to achieve community-level public service and policy goals, continues to become increasingly used across sectors. This trend is notably evident in the public health sector, where both legislation and funding opportunities have led to an environment where Public Health Networks (PHNs), framed as goal-directed networks, routinely develop to address increasingly complex issues ranging from public health preparedness to vaccine use, early childhood intervention, and healthy living/eating, among other aspects (Mays & Scutchfield, 2010; Pinto, 2009; Singer & Kegler, 2004).

Although a number of studies have provided meaningful contributions to the development of theories that explain the evolution and success of networks, particularly those that posit theoretic suppositions regarding factors that contribute to network processes to meet a largely public or policy goal, few have been tested empirically for their validity and link to network outcomes (Provan, Fish, & Sydow, 2007). This article analyzes how the inclusion of nonprofit organizations (specifically 501(c)(3)'s) in public health goal-directed networks is associated with goal achievement. In 2008, Varda et al. published a framework that specified variables associated with outcomes in these types of networks. This article applies that framework, specifically analyzing variables related to sector-based resource contributions and mission alignment and their link to outcomes in 177 PHNs across the United States to better understand how organizations from the nonprofit sector work across boundaries with public and for-profit agencies to help achieve collective and other stated outcomes.

Background and Research Questions

Scholarly literature on networks is extensive, and the idea of network formation is certainly not novel (McGuire, 2006). What is new, however, is the frequency with which network arrangements, often in the form of interorganizational, cross-sector goal-directed networks, are emerging as a mode of governmental organization and the degree to which these arrangements are substantively changing the delivery of public services (Yankey & Willen, 2010). However, studies linking both network structure and collaborative process characteristics to outcomes have not been adequately developed or tested to provide a theory of networks that can have both academic and practical implications. Although the research has looked closely at single networks, or qualitatively assessed networks as case studies, samples that include many networks are rare, leaving the field to rely on anecdotal characterizations of how networks function. As a result, further theoretic and empirical development is needed to better

understand how interorganizational goal-directed networks operate and how to resolve dilemmas that affect the successful provision of stated network goals (McGuire & Agranoff, 2011).

There is a common muddying of the terms collaboration and networks in the literature, and many definitions of each exist (cf. Bailey & Koney, 2000; Gazley, 2008; Guo & Acar, 2005; McGuire, 2006; Sink, 1998). In this article, we focus on how networks are structured and how different processes and perception among members of these networks affect outcomes. It is not assumed that all networks in our study are collaborative, given that some of the activities in the networks include voluntary, commercial, and/or contractual relationships. What is common across these networks is the activity of cross-sector organizations forming interorganizational goal-directed networks. Specifically, we look at the organizations that are members of PHNs to examine the kinds of resources that are exchanged and perceptions of mission alignment that are achieved, as they relate to achieving public health goals and outcomes.

Likewise, the use of the term nonprofit can be so broad that it is unclear what type of nonprofit is referenced in the research. In this research, we refer to nonprofits primarily as 501(c)(3) organizations that provide some kind of service (either direct or indirect) in the field of health or public health. Although some variation exists in the classification of the nonprofits included in this study, they are limited to those involved in public health collaboratives.

Literature Review

Broadly speaking, networks are "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). Networks engage in concerted action, joint production, are typically intersectoral, and operate in specific policy domains (Agranoff & McGuire, 1999; Kickert, Klijn, & Koppenjan, 1997). Interorganizational goal-directed networks fit this typology, although they typically are formed to address a specific focus by which a number of independent organizations agree on a common goal as a solution.

For instance, in the public health context, goal-directed networks are often formed to address population health issues that benefit from coordinated efforts, such as healthy living, tobacco reduction, improved oral health, and public health preparedness. These types of networks are typically convened when funding becomes available to support the effort, and while some members will receive some financial support to participate, most network members participate voluntarily. It is common, but not necessary, for a public health organization, such as a Public Health Department, to act as convener; however, these networks primarily rely on membership from a wide range of organizations that all agree on a common goal. Today, public health issues are typically addressed through the collaboration of organizations from all sectors with specification of a common goal to motivate formation of interorganizational goal-directed networks.

Members of a PHN will typically include either the state or local public health agency, hospitals, community organizations that work on related public health issue areas, mental health agencies, family service organizations, child advocacy groups, social and human services, schools, universities, direct service providers, and other related for-profit, government, and nonprofit agencies. The inclusion of nonprofit organizations in these networks is increasingly evident, with a growing emphasis by the public health sector on a perceived unique value (such as mission-driven agendas and greater contributions of in-kind and volunteer resources, among other things) that some may bring to the collaborative process. It is within this context that we seek to explore the role of nonprofit organizations, as well as the effects of resource contributions and mission alignment on collective outcome achievement.

The Rise of Nonprofits as Network Partners

The past 30 years has witnessed a surge of scholarship dedicated to identifying the nature, strengths, and challenges of network undertakings (Leifeld & Schneider, 2012), in part because of the changed landscape in which organizations interact and the adoption of the "network way of working." In the 1970s, when widespread network activity began in earnest, an organization's participation in a broader partnership was more a function of the changing landscape than a strategic decision. The U.S. federal government was experiencing rapid decentralization and turning to the for-profit sector for service provision. Simultaneously, the change in landscape prompted some nonprofits to reevaluate their fit and strategic position in the sector, as they faced a series of fiscal, effectiveness, and legitimacy crises (Salamon, 1999). The common solution that emerged for the nonprofit sector was collaboration, valued for its ability to provide effective services, diffuse information efficiently, and reduce expenditures (Brown, O'Toole, & Brudney, 1998; Guo & Acar, 2005). Today, nonprofit organizations are commonly found as members of interorganizational networks, valued for their flexibility and commitment to common public sector goals.

A key characteristic of interorganizational, cross-sector goal-directed networks is the interaction between organizations from the public, for-profit, and nonprofit sectors around a common agenda. Scholars have increasingly focused on demonstrating the value that nonprofits bring to such network arrangements to articulate the unique role they play, particularly in terms of mission alignment and resource contributions. The nonprofit sector is often regarded as playing an important role in ensuring that networks remain mission-oriented and adaptable (Provan & Milward, 1995), as opposed to their sometimes restricted (public) or cost-driven (for-profit) partners. Nonprofits have also been found to contribute different resources than public sector organizations (Gazley & Brudney, 2007). Through a public service commitment and contributions of particular, though often nonfinancial, resources, nonprofits have demonstrable value to interorganizational networks. These specific types of resources are important to network success.
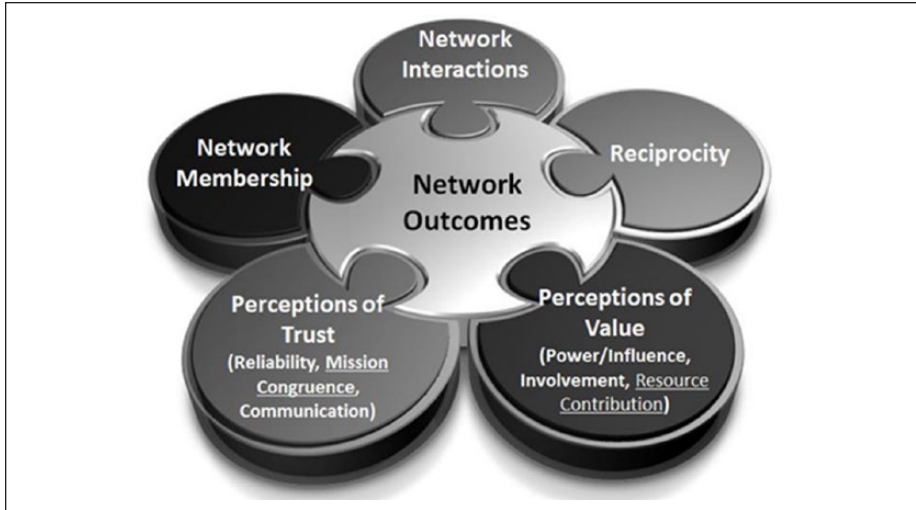
Figure 1. Variables identified in the core dimensions of connectivity framework.

Theoretical Framework

Core Dimensions of Connectivity

In 2008, Varda et al. published a framework informed by network theory and social network analysis, which identified a number of "core dimensions" of connectivity in PHNs. The framework identifies a number of factors presumed to be associated with better network outcomes, referred to as network "connectivity" (defined as the "measured interactions between partners in a collaborative such as the amount and quality of interactions and how these relationships might change over time," Varda, Chandra, Stern, & Lurie, 2008, p. E1). These factors include network membership (emphasizing diversity), network interaction (noting creating subgroups is most efficient and more frequent interaction is not always better), perceptions of value (measured as power/influence, level of involvement, and resource contribution), trust (operationalized as reliability, mission congruence, and communication), and reciprocity (see Figure 1).

Many of these variables are highlighted throughout the literature as important to network effectiveness, and the framework has been applied in multiple analyses, each one further validating the theory (e.g., Varda & Retrum, 2012; Varda & Retrum, 2015; Varda, Retrum, & Chapman, 2014). For this analysis, we investigate two variables from the framework as independent variables, chosen for their prevalence in the nonprofit literature—resource sharing (a measure of value) and mission congruence (a trust measure)—to examine the unique role nonprofits play in goal-directed networks. Previous research has noted an emphasis on nonprofits as having high mission congruence to goal-directed networks (Goldsmith & Eggers, 2004; McGuire, 2006), as well as identified the expected types of resources that nonprofits tend to contribute (Silvia, 2011).

Resource Sharing as a Factor of Interorganizational Success

An adequate supply of resources, and a reciprocal or positive cycle of exchange among participant members, can help facilitate the outcomes networks hope to achieve (Silvia, 2011). However, much research on resources, as they relate to networks, has tended to focus on (a) resource dependency and (b) their relation to network structure as the outcome of interest (Huang & Provan, 2007; Park & Rethemeyer, 2014). Goal-directed networks are not known for attracting organizational partners who rely on the certainty of shared resources for participation; instead, they are typically formed because of common agreement among members regarding a specific goal. Despite their formative tendencies around issue salience, goal-directed networks still depend on sufficient resources to assist in maintaining their longevity. Of resources typically identified as essential to network success, funding appears frequently (Saidel, 1991).

In addition to financial contributions, previous research has indicated that several other resources are often exchanged among members of a network, including: in-kind (e.g., meeting space), paid staff, volunteers, information and feedback, expertise, access to the policy process, advocacy, technology, and decision making (Agranoff & McGuire, 1999; Gazley, 2008; Saidel, 1991). Commonly, a combination of these resources provides networks with the required capacity to reach common goals. The focus on leveraging resources to reach a common goal puts nonprofits in a unique position to contribute to goal-directed networks.

Mission Congruence

Because networks, by their very definition, lack a hierarchical locus of control, other factors provide alternative mechanisms for cohesion. One such mechanism is mission congruence (Austin, 2000; Mattessich, Murray-Close, & Monsey, 2001). Just as nonprofit organizations orient their initiatives and objectives around a mission, so do many goal-directed networks (Lundin, 2007). Past research has indicated that some form of mutuality, usually expressed as trust, agreement on goals, or having common objectives, is necessary for networks to function effectively (Edelenbos & Klijn, 2007; Goldsmith & Eggers, 2004; McGuire, 2006). In the Core Dimensions framework, "sharing a common mission with the group" was cited not only as a key characteristic of greater trust between partners, but also as an important indicator of network outcomes (Varda et al., 2008, p. E5).

Of interest is the tension between resource sharing and mission congruence. Existing literature is not clear on how one affects the other, that is, if it takes greater mission congruence to motivate network members to contribute more resources, or if greater resource contributions improve mission congruence. Although the literature is evident that both are important to networks, we are not clear on how their interaction affects outcomes.

In this article, we look closely at the unique role that nonprofits play in interorganizational goal-directed networks, in relation to outcomes, to answer these questions:

Research Question 1: Do nonprofit organizations differ in their perceptions of mission alignment from public and for-profit organizations in PHNs?
Research Question 2: Do nonprofit organizations contribute different types of resources than public or for-profit organizations in PHNs?
Research Question 3: To what extent do resource contributions and mission alignment affect outcome achievement in PHNs?

Method

Given these theoretical arguments for the unique role of nonprofits in goal-directed networks and previously identified levels of importance regarding resource contributions and mission congruence, we hypothesize and test the following:

Hypothesis 1: Nonprofit organizations will have greater mission alignment relative to the public and for-profit sectors in goal-directed interorganizational networks.
Hypothesis 2: Nonprofit organizations will have greater resource contributions relative to the public and for-profit sectors in goal-directed interorganizational networks.
Hypothesis 3: As resource contributions and mission alignment increase, greater outcome achievement is reported in goal-directed interorganizational networks.

To test these hypotheses, we examine the associations between resource contributions and mission alignment in both nonprofit organizations and in overall network outcomes, using a secondary data set of 177 PHNs).

Data Collection and Sample

This study is an analysis of data collected from the PARTNER (Program to Analyze, Record, and Track Networks to Enhance Relationships) data set. PARTNER is a social network analysis tool that is designed to evaluate structural network variables in interorganizational networks (www.partnertool.net). In particular, the PARTNER tool is designed for use by network members "to demonstrate how members are connected, how resources are leveraged and exchanged, the levels of trust and perceived value, and to link outcomes to the process of collaboration" (Retrum, Chapman, & Varda, 2013, p. 16). Networks that use the PARTNER tool often comprise cross-sector organizations that are involved with the provision of public health services in their communities. Each network is administered by one person, who uses the PARTNER tool to send surveys out to all members of their network (they identify the members of their own networks to include in data collection). The resulting convenience sample contains information on over 800 whole networks throughout the United States and on over 50,000 organizations. Although this is a convenience sample, no known differences exist across the sample of networks (i.e., all self-select to participate and all are managed by a self-selected manager) that would

Table 1. Organizational Representation.

Organization type	Total number represented	% of total organizations	Total number of respondents	Average response rate
Nonprofit	1,491	35.4	770	51.6
Public	2,201	52.2	1,073	48.8
For-profit	521	12.4	251	48.0
Total	4,213	100	2,094	49.5

make them noncomparable. However, the self- selection of networks into the sample limits the generalizability of the findings.

For this study, we analyzed 177 PHNs from the PARTNER data set that collectively represent 4,213 individual organizations. The 177 PHNs identified for this analysis were selected, extracted, and cleaned based on a set of common criteria: (a) goal-directed mission focused on public health, (b) organizations as the unit of analysis, and (c) use of the same or similar PARTNER survey questions and response options. In this way, we can ensure that appropriate comparisons across networks can be drawn from data that were collected using the same methodology and survey questions. The data were collected between October 2009 and December 2012 from networks that are administered across the United States.

Data were analyzed based on validated quantitative survey responses by individual members representing participant organizations identified by each manager as a member of the PHN. Out of the 4,213 organizations included, 2,094 members completed surveys, yielding an average response rate of 49.7%. A threshold of 50% response rate has been previously identified as an acceptable level in network studies (Kossinets, 2006), while in other studies a 20% rate has been identified as acceptable (Valente, Coronges, Lakon, & Costenbader, 2008). Therefore, we elected to retain individual networks with less than a 50% response (minimum of 40%), as there were no significant differences across these groups. There was no substantial variation in representation across sectors (see Table 1).

Despite consistent representation across sectors, it is important to note the types of organizations that comprise the sectors in the data set. Most public organizations represent local public health departments, public schools, and social service agencies. Most for-profit agencies represent local businesses, private schools, and private hospitals. Nonprofit organizations, the focus of this study, overwhelmingly represent not-for-profit hospitals, community organizations that work on related public health issue areas, mental health agencies, family service organizations, child advocacy groups, social and human services, universities, and direct service providers, with occasional representation from other nonprofit agencies such as chambers of commerce and faith-based congregations. In this way, the results of this study are limited to reflecting only certain types of nonprofit organizations that are included in the data set, and in PHNs more broadly. However, by limiting the breadth of representation in a sector that encompasses nearly two million diverse organizations across the country, we can

ensure greater homogeneity of the included organizations such that comparisons across them can be drawn more accurately. Such comparisons are particularly meaningful when we identify each sector (public, for-profit, and nonprofit) categorically to measure network diversity for quantitative analysis.

Data for this study include both organizational and whole network levels of analysis. Organizational level data are used to test Hypotheses 1 and 2, while whole network data are examined to test Hypothesis 3.

Measures

The measures include both organizational and dyadic characteristics. In network studies, dyadic characteristics refer to the relational aspects of collaboration; that is, in addition to information regarding individual organizations, the nature of relationships among any two members of a whole network is also considered (Borgatti, Mehra, Brass, & Labianca, 2009). The nature of relationships refers to both structural indices (e.g., in a graph-theoretic application, the distance between actors, represented as nodes) and the quality of the relationship (e.g., perceived trust; frequency of engagement). In social network data sets, dyadic data are used to construct, in part, whole network level data. The various levels of analysis are important not only to understand how networks differ structurally from traditional hierarchies, but also because the relational and whole network characteristics are presumed to affect network effectiveness at generating outcomes (Provan et al., 2007).

Independent variables. As described earlier in this article, organizational level variables, used to test sector-based differences (Hypotheses 1 and 2), include sector, network member resource contributions, and perceptions of mission alignment. Organizations were coded as public, for-profit, or nonprofit to represent their legal status. For resource contributions, one set of PARTNER questions asks respondents to identify the type(s) of resources they contribute to the network based on a closed-ended list of 13 options (funding, in-kind; paid staff, volunteers, data, information/feedback, health expertise, expertise other than health, community connections, decision making, leadership, advocacy, and IT/Web resources). To calculate resource contributions by sector, we summed the total number of respondents who reported contributing that resource and divided by the total possible number of contributions, which was then averaged across all respondents to create a percentage score (segregated by sector).

At the organizational level, mission alignment was measured in two ways. The first measure was constructed from a PARTNER survey question that asks respondents whether mission alignment is a factor contributing to their network's success. Each respondent reports either 1 for "yes, it is a factor" or 0 for "no, it is not a factor." We summed the number of respondents indicating 1 and divided by the total number of responses for that question, again creating a mean percentage score by sector. Second, PARTNER users are asked to rank their identified network partners on a 4-point scale on the degree to which their partners are in support of the network's mission (1 = *not*

in support of mission and 4 = *complete support*). We averaged the scores by sector to determine whether any differences existed (meaning that nonprofit scores on this measure are based on how public and for-profit organizations rate nonprofits' mission support, with the same for public and for-profit organizations).

Whole network level measures were constructed to test the third hypothesis. Similar to the measure of organizational resource contributions, whole network resource contributions were calculated by summing the total resources reported by all respondents and dividing by the total possible resources for that network. This resulted in a single percentage score for each network. At the whole network level, mission alignment was measured by averaging the "in support of mission" scores for respondents across the network. Each network thus received a score somewhere between 1 and 4.

Because this study is interested in sector-based differences, we also included a measure of organizational diversity, where each organization in a network was coded according to 15 possible organizational types, which include nonprofits, public health departments, citizen advocates, and businesses, among others. Each network received a score between 1 and 3 that indicates the level of diversity present in that network, where 1 = *low diversity* (1-3 organizational types out of the 15 possible are present), 2 = *moderate diversity* (4-7 types present), and 3 = *high diversity* (eight or more types present). We opted to use this whole network categorization of diversity, operationalized as the variable "breadth" by Mays and Scutchfield (2010), rather than the alternative measure of "homophily" at the dyadic level. Mays and Scutchfield (2010) hypothesize that networks with greater breadth will have more diverse resource contributions by their members, a key component for success in collaboration (Mays & Scutchfield, 2010; Mays, Halverson, Baker, Stevens, & Vann, 2004). In this case, we found that recoding the 15-organization type list into a 3-point scale sufficiently captured the variance in breadth across networks, and allowed us to empirically compare a network's level of breadth by using a discrete scale that best represents a network's level of organizational diversity relative to other networks in the sample.

In addition to these indicators, we also included two measures that are used frequently in network studies, to link to existing research and findings: density and centralization. Just as diversity seeks to capture who is involved in network activities, density examines the connectedness of network members. In networks, the presence of a relationship between actors is identified as a "tie." Density is measured by summing the ties that are actually present in a network and dividing by the total possible ties. A lower density score indicates that members are not very connected to one another, while a higher density score signals that there is greater internal cohesion. Centralization also examines the relationships among network actors, but determines the extent to which a single or limited number of actors/organizations occupy influential, or "central," positions within the network. At the individual level, an actor's score is called a "centrality index" (Sinclair, 2009); when taken collectively, the overall network receives a "centralization" score. The idea underlying this measure is that a few actors may hold a disproportionately high number of ties, thus revealing that the network may not be as cohesive as a density measure would suggest (Prell, 2012). Although there are many measures of centralization (see Butts, 2008, for an

overview), in this study, we use a measure consistent with Freeman's (1979) degree centralization. Beyond their usage in network studies generally, measures of density and centralization have also been used in network analyses specifically in the context of public health (see, for example, Mays & Scutchfield, 2010; Provan & Milward, 1995), and are thus further appropriate for inclusion in this study. Finally, because it is reasonable to assume that the number of actors involved in a network will likely affect its outcome potential, we have included network size (standardized using z scores to account for the skewed distribution) as a control variable.

Dependent variables. This study contains two dependent variables to assess outcome achievement: the number of outcomes identified as central to the network's activities and agreement among network members regarding the most important network outcome. One set of questions in the PARTNER survey provides respondents with a closed-ended list of 11 different outcomes, which include reduction of health disparities, improved awareness, and policy change, among others.

Respondents may select as many outcomes as they identify as goals of the network. However, because not every network included all 11 outcomes as response options, outcome identification was measured by summing the total outcomes reported by each respondent and dividing by the total number of outcomes possible for that network (which resulted in a smaller n of 126 networks to compare). The second measure is outcome agreement. This measure seeks to capture the degree to which consensus exists within the network regarding its most important objective. After identifying potentially numerous outcomes of their network's work, respondents are asked to indicate which one outcome they consider to be the most important. Networks were scored on a scale of 1 to 3 to reflect outcome agreement, where 1 reflects low agreement (respondents "voted" for at least seven different most important outcomes), 2 is moderate (between 4 and 6), and 3 indicates high agreement (between 1 and 3). Thus, in networks where all respondents select the same one to three outcomes as most important, they are measured to be in high agreement regarding their network activity.

Analysis

To determine whether sector-based differences in resource contributions and perceptions of mission alignment existed (Hypotheses 1 and 2), one-way ANOVA tests were performed. The third hypothesis, which examines the effects of resource and mission diversity on outcome identification and outcome agreement, was addressed using a variety of model specifications. For outcome identification, ordinary least squares (OLS) regression was used. To account for the heteroskedasticity of the network data, we used robust standard errors. In addition, classic OLS models encounter difficulties when the dependent variable (DV) is measured as a proportion and when data are non-normally distributed (Papke & Wooldridge, 1996). To account for this, we ran a fractional logit, which is an appropriate analytic technique to address the aforementioned limitations (Papke, 2005). Both models produced comparable findings, which suggest that our results are robust across alternative specifications. For ease of interpretation,

Table 2. Descriptive Statistics.

Variable	n	M	SD	Minimum	Maximum
Network size	177	21.0	27.65	3	279
Standardized network size (z score)	177	0.00	1.00	−0.65	9.48
Density	177	0.59	0.29	0.05	1
Centralization	177	0.39	0.23	0	1
Breadth	177	1.90	0.66	1	3
Resource contributions	177	0.45	0.19	0	1
Mission alignment	177	3.23	0.58	1	4
DV1: Outcome identification	126	0.59	0.20	0.08	0.97
DV2: Outcome agreement	177	1.95	0.84	1	3

Note. DV = dependent variable.

however, we present the findings of the OLS model. For outcome agreement, which is measured on a discrete scale from 1 to 3, an ordered logit model was run. Below, we present our findings from these models.

Findings

Descriptive Results

Networks included in this analysis ranged in size from a minimum of three organizations to a maximum of 279 ($M = 21$; $SD = 27.65$). Approximately 27% of organizations had low breadth ($n = 48$), 55% had moderate breadth ($n = 98$), and 18% had high breadth ($n = 31$). Of the potential resources available, calculated as the total number of resource types multiplied by the number of network members, divided by the total number of resources actually reported as being provided, 12% of networks contributed only a quarter of possible resources ($n = 21$), while 55% reported contributing up to half of the possible resources ($n = 97$), and 33% of networks ($n = 59$) contributed at least 50% of the potential resources. On the scale of 1 to 4, 7% of networks ($n = 12$) had mission alignment between 1 and 2, 17% ($n = 30$) had a score between 2 and 3, and 76% ($n = 135$) had scores ranked at 3 or higher. The mean density and centralization scores were 0.59 ($SD = 0.29$) and 0.39 ($SD = 0.23$), respectively, which indicate that, on average, networks were moderately cohesive and loosely centralized. For outcome identification, 51 networks (roughly 29%) did not include any comparable outcomes to those in the PARTNER survey, and were therefore excluded from the analysis. Descriptive statistics are summarized in Table 2.

Inferential Results

Inferential statistics were used to test all three hypotheses. For Hypothesis 1, the results of the one-way ANOVAs indicated that significant differences in resource contributions existed for in-kind resources, volunteers, data, information/feedback,
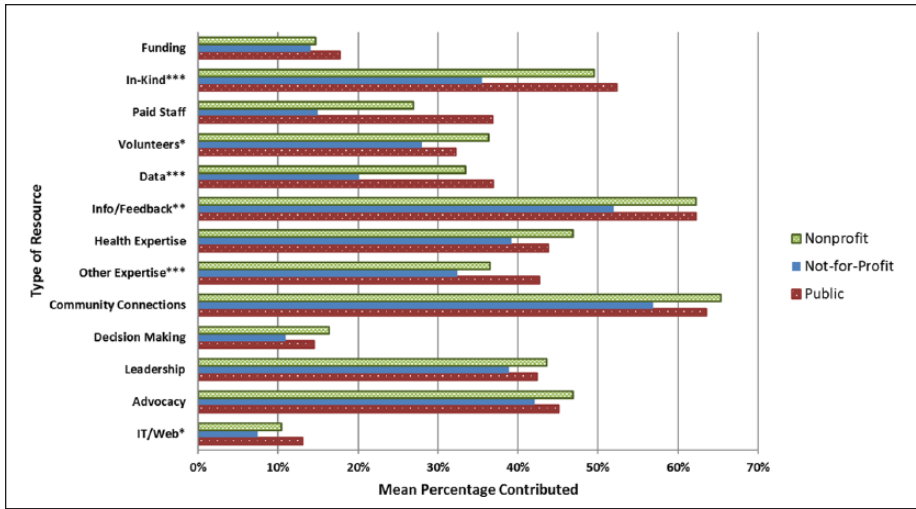
Figure 2. Resource contributions by sector.
Note. Results of one-way ANOVAs with *F* tests for significance.
*p < .10. **p < .50. ***p < .0001.

expertise other than health, and IT/Web resources. With the exception of volunteers, where nonprofit organizations contributed significantly more than their public and for-profit partners (36%, p = .10), differences were attributed to for-profit organizations, which consistently provided fewer resources (determined by Tukey's post hoc test). Ultimately, although only six of 13 resources had statistically significant differences across sectors, there were still noted patterns. Namely, nonprofit organizations provided six types of resources more frequently than public or for-profit organizations, while public organizations provided the other six resources more frequently (information/feedback was evenly split between nonprofits and public agencies). The complete list of resources and mean percentages contributed by sector are displayed in Figure 2.

The second hypothesis investigates sector-based differences in mission alignment, and was also assessed using ANOVA tests. When respondents identified whether mission alignment was important for network success, no significant differences existed across sectors. Approximately 60% of nonprofits responded "yes," compared with 57.4% of public agencies and 54.7% of for-profit organizations. When ranked by other sectors according to support of the network's mission, for-profit organizations received significantly lower scores (F = 159.29, p < .0001). On the scale of 1 to 4, the mean nonprofit score was 3.02, compared with 2.95 for public agencies and 2.38 for for-profit organizations.

For Hypothesis 3, the results of the analyses indicated that resource contributions and mission alignment had varying effects on outcome identification and agreement. The findings for each analysis, with their own dependent variables, are presented separately. Table 3 presents the results where the DV is outcome identification.

Table 3. Results: Outcomes Identified.

DV: Proportion of outcomes identified	OLS
Standardized network size	−0.000 (0.016)
Density	0.085 (0.100)
Centralization	−0.042 (0.100)
Breadth	0.070** (0.026)
Average resources	2.354*** (0.056)
Mission alignment	0.192** (0.058)
Mission × Resources	0.512** (0.156)
Constant	0.468* (0.223)
Observations	126
Adjusted R^2	.368

Note. Robust standard errors in parentheses. DV = dependent variable. OLS = ordinary least squares.
*$p < .10$. **$p < .05$. ***$p < .01$.

The results indicate that, despite being common explanatory variables in network studies, density and centralization did not have a significant association with outcome identification. Similarly, network size was found to have a negligible effect. Increases in breadth and resource contributions were associated with increases in the proportion of outcomes identified by networks ($t = 2.56$ and 4.21, respectively). This finding is not surprising, as we might expect networks with a broad array of both members and types of resources to identify potentially diverse objectives of their network's work.

Similarly, we found mission alignment to be a significant predictor of outcome identification. Our results suggest that as mission alignment increases, so do the number of outcomes identified by network participants ($t = 3.31$, $p < .05$). We then specified an interaction term to capture the joint effects of resource contributions and mission alignment on outcome identification, and found the interaction term to also be a statistically significant predictor. The interaction term indicates that, when taken together, mission alignment and resource contributes affect one another and, in turn, outcome identification strengthens among network members.

The second analysis used an ordered logit to examine the effects of the explanatory variables on outcome agreement. Table 4 presents the findings.

Just as with outcome identification, density, centralization, and network size had virtually no effect on outcome agreement, while mission alignment had a strong, positive association.

Thus, the findings suggest that as perceptions of others' mission adherence increase, so does the likelihood of attaining consensus on the network's main objectives. Whereas resource contributions were found to be positively correlated with outcome identification, in the logit specification this indicator was not a significant predictor and the direction of the relationship reversed (i.e., increases in resource contributions were associated with less outcome agreement). Finally, breadth was again a significant determinant, but this time the association was negative.

Table 4. Results: Outcome Agreement.

DV: Outcome agreement	Ordered logit
Standardized network size	−0.152 (0.303)
Density	1.420 (1.150)
Centralization	0.778 (1.181)
Breadth	−1.231*** (0.315)
Average resources	−1.271 (0.958)
Mission alignment	0.640** (0.332)
Observations	177
Pseudo R^2	.136

Note. Standard errors in parentheses. DV = dependent variable.
*$p < .10$. **$p < .05$. ***$p < .01$.

Whereas breadth was associated with a higher proportion of identified outcomes, it was here associated with a decrease in outcome agreement. Again, this is not entirely surprising, as we would expect that organizations with a greater variety of members are less likely to reach consensus on the objectives viewed as most essential to the network's work. When taken together, the findings from these analyses reflect the often challenging nature of managing diverse partners in network settings, a topic to which we now pay greater attention.

Discussion

In the implementation of networks, it has been found that more resources and greater mission congruence lead to better outcomes (Agranoff & McGuire, 1999; Gazley, 2008; Varda & Retrum, 2012). This study's findings indicate that significant differences in resource contributions and perceptions of mission alignment exist across sectors. Compared with public and for-profit organizations, nonprofit organizations were found to bring a greater number and diversity of resources to interorganizational goal-directed networks, as well as being perceived by their public and for-profit partners as having the strongest support of the network's mission.

Previous research indicates the need for these resources in network partnerships (Agranoff & McGuire, 1999; Gazley, 2008), and nonprofits may be a more frequent source of their provision.

Although we forego a detailed discussion of all resources, two are worth mentioning. First, despite not being significantly different, public organizations did report providing funding more frequently than nonprofits. This supports previous claims that networks are often beneficial to nonprofit organizations, who are aided by the public funds contributed to the network's activities (Gazley & Brudney, 2007; Salamon, 1987). Similarly, Salamon (1987) and, more recently, Gazley and Brudney (2007) have found that nonprofit organizations are more likely to contribute specialized expertise that exceeds governmental scope. Our finding that nonprofits provide health

expertise more often than public organizations is consistent with their research, although public organizations did report providing more "expertise other than health" than did nonprofits.

Despite being consistent with extant literature, however, our results indicate that differences across sectors, both in funding and the provision of expertise, are perhaps subtler than previous research would suggest. For example, Saidel (1989) explored the likelihood of interdependency in nonprofit–government relationships and found that these primarily included staff, information, and legitimacy. We see in these data many other types of bidirectional exchange between these two sectors. The changing "political and social dynamics that should be understood as distinct constructs" (Gazley, 2010, p. 73), in this case, reflect both policy change among health and public health types organizations, and the greater instances overall of public–nonprofit partnerships, as well as the need for these agencies to meet shared programmatic goals (Chen & Graddy, 2010).

However, the for-profit's consistent lower reporting of resource contribution across all categories (see Figure 2) highlights an interesting pattern. It is unclear whether this sector overall feels less motivated, or obligated, to contribute to issues related to public health, perhaps seeing this public good as a "public" responsibility? For example, private hospitals are traditionally viewed as resistant to partnering with public health agencies, although the Affordable Care Act has successfully shifted that culture toward more community partnerships between hospitals and other community-based organizations. Similarly, as Gazley and Brudney (2007) demonstrate, organizations in different sectors tend to seek intersectoral partnerships to attain resources they do not have. Our findings could suggest that for-profit agencies may not see the nonprofit and public sectors as mechanisms to attain resources they do not have, and in turn, behave in ways that show fewer resource contributions themselves. Alternatively, these findings could reflect a limitation in the data. Resource contributions were indicated by the respondents as binary (either they contributed or did not). We do not get to understand the value of the contribution. It could potentially mean that for-profits are contributing less often, but their contributions could be of higher value.

However, findings that cross-sector differences exist are expected. What is more interesting is that resource contributions and mission alignment affect outcome achievement. This substantiates the role of resource contribution and mission congruence as a vital element of successful network implementation. Furthermore, it gives credence to the opportunities for interorganizational, cross-sector goal-directed networks, which emphasize mission congruence as their primary feature, to serve as a model type for organizations as they consider engaging in network activities. Although other types of network configurations exist, and some (e.g., service delivery networks) have been demonstrated to be more successful with a specific, centralized structure (Provan & Milward, 1995), only goal-directed networks specifically suggest mission congruence as the reasoning for collaboration.

Also of interest is the interaction between mission congruence and resource contribution as they relate to outcomes. In our models, when these variables were considered as an interaction term, the quality of the model was enhanced and we observed

better variance and overall fit. This may suggest that greater mission alignment among partnering organizations influences the amount and quality of resource sharing in the network. Alternatively, this finding may indicate that greater mission alignment leads to greater resource contributions. Given that our data were collected from a cross-sectional sample, we were not able to answer questions about the extent to which an increase in one will affect an increase in another, but we can say with certainty that there is an interaction between these two variables that improves outcomes.

In addition to a contribution to theories about network effectiveness, our findings also have implications for practice. Nonprofit organizations have traditionally not been identified as key players in public sector networks, but rather as support organizations for public and for-profit agencies that have convened and organized networks. However, nonprofits can provide leadership in mission congruence and contribute resources to their network. There is a certain "priority" on mission congruence that nonprofits bring to a network. When the network is a combination of for-profit, non-profit, and government agencies, the competing values and priorities of these network members can make mission-driven actions complicated. The nonprofit sector can play an unapologetic leadership role in keeping the network focused on the mission, in a way that its public and for-profit partners might not. This potential value opens the door for greater inclusion of nonprofit organizations, particularly as valued partners that may engage in leadership activities. Managers today are looking for skills and information on how to engage in network leadership. As we build a greater evidence base around the topic, particularly the role that for-profit agencies play in issues traditionally left to the nonprofit and public sectors, we begin to frame lessons by which the practice community can look for guidance. This study provides a focused yet important piece of knowledge to which network managers/leaders might refer when considering how to engage their cross-sectoral partners.

Limitations

There are some limitations of this study that should be noted, however. The first concerns the convenience sample used for our analyses. Although networks represented in the data set share many similar characteristics, caution should be exercised when generalizing the findings beyond the context of PHNs. Second, because these data are cross-sectional, causal arguments are necessarily limited. The analyses in this article indicate the presence of several strong associations between network characteristics and outcomes, but ideally, longitudinal data should be used to improve causal certainty. Third, the nonprofit organizations included in this study represent a finite number of types. Because the types of nonprofit organizations are necessarily limited to those organizations that frequently engage in PHNs, caution should be exercised when generalizing the results of this study so as not to assert definitive conclusions about the nonprofit sector as a whole. Finally, the data set does not contain information pertaining to context. Resource dependency theory, for example, argues that internal efforts at achieving outcomes are equally determined by exogenous influences (Pfeffer & Salancik, 1978). Although this is an unfortunate limitation of the current data, future

studies should be cognizant of such external influences and the effects they may have on networks' ability to effectively provide services.

Conclusion

Much of what we state throughout this article echoes well-developed insights in the literature on interorganizational networks. However, we explicitly consider the value that nonprofit organizations bring to the network table as well as identifying the challenges of managing programs that involve diverse participants.

We have examined here the challenging nature of diversity in networks, but future research might explore the patterns of exchange in networks to determine whether members work jointly across sector boundaries, or if members stay in relatively homophilous groups (e.g., nonprofits only engage routinely with other nonprofits), and the effects of such patterns on service delivery. Future research may also seek to explore the patterns of association and diversity outside of public health to examine the ways that context affects network dynamics, particularly the ways in which sectors might position themselves within networks when different types of agencies are represented (e.g., state-level agencies, large corporate entities, and not-for-profit foundations.) With these suggestions in mind, we echo the call of McGuire and Agranoff (2011) that the literature needs to better assess the limitations of networks, but we also encourage the development of theoretic and practical recommendations for resolving potential dilemmas, especially as networked delivery does not appear to be dwindling in the foreseeable future.

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Author Biographies

Carrie L. Chapman is a PhD candidate at the School of Public Affairs, University of Colorado Denver. Her research examines governmental service delivery in a contract environment, specifically in the context of child welfare.

Danielle M. Varda is an associate professor at the School of Public Affairs, University of Colorado Denver with a secondary appointment in the Colorado School of Public Health, Department of Health Systems, Management, and Policy. She is co-director of the Nonprofit Concentration, advisor to the dual MPA-MPH degree, and director of the Research Program on Collaborative Governance. She also sits on the AmeriCorps NCCC Federal Advisory Board, and is an alumna of the AmeriCorps NCCC (Class 5 and 6).