

BRIEF REPORT

Assessing the Effectiveness of Collaborative Interorganizational Networks Through Client Communication

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A hallmark of today's civil society sector is the prevalence of collaborative interorganizational networks. The purpose of this study is to investigate how collaborative interorganizational network structures affect interactions within client networks, and how this in turn impacts assessments of collaborative interorganizational network effectiveness. In particular, we focus on recommendations as key indicators of collaborative interorganizational network effectiveness in relation to client networks. We identify client networks of phantom populations as an important but unexamined aspect of collaborative interorganizational network effectiveness that warrants further research. We present an empirical investigation of a collaborative interorganizational network of social service agencies working to address the problem of homelessness in Boulder County, Colorado (USA). Findings indicate that organizations with a greater number of connections with other organizations generate more recommendations within client networks. Our study demonstrates a relationship between the degree of connections within a collaborative interorganizational network structure and the recommendations generated with a phantom population.

Keywords: Clients; Collaboration; Communication; Networks

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A hallmark of today's civil society sector is the prevalence of collaborative interorganizational networks (CINs), widely recognized as an important organizing strategy to address complex social issues beyond the capacity of any single organization or sector of society (Cooper & Shumate, 2012; Provan, Fish, & Sydow, 2007). A key issue for CINs is assessing their overall effectiveness. Although there is no consensus on a single measure of CIN effectiveness, there is growing recognition that network-level assessment is an important way to understand whether or not CINs are making a tangible difference in their problem domains (Koschmann, Kuhn, & Pfarrer, 2012). However, previous research on network-level assessment has not given adequate attention to one key aspect of CINs: client perceptions and evaluations of network effectiveness. It is not sufficient for CINs to merely achieve certain structural properties, attain various resources, and develop memoranda of understanding about service delivery coordination—they must also have a tangible impact on the lives of the clients they serve in ways that clients recognize as valuable and substantive. These “client networks” affect how people perceive, access, and utilize the services and resources provided by CINs and thus should be studied in order to develop a better understanding of overall CIN effectiveness. Accordingly, the purpose of this study is to explore how CIN structures affect communication within client networks and how this in turn impacts assessments of CIN effectiveness. We identify client networks of “phantom populations” as an important but unexamined aspect of CIN effectiveness that warrants further research, and we focus on *recommendations* as a key indicator of CIN effectiveness in relation to client networks.

Client Networks and Phantom Populations

Clients are the disadvantaged populations that CINs form to serve and usually are not part of CINs per se but are spoken for by the member organizations who serve them. Beech and Huxham (2003) refer to these as “phantom actors” because they are placed in a social category by similarity of their circumstances but are not organized into self-conscious groups or constituencies that represent themselves. Following this logic, we identify client networks of “phantom populations” as a necessary consideration for assessing the overall effectiveness of CINs. These groups lack conventional means of representation, voice, and participation that characterize CIN member organizations. Yet they do possess one attribute that can be critical for CIN effectiveness: the ability to communicate with others about CIN services.

Most research on civil society networks focuses on the structural characteristics of the network and the communication among network members (e.g., Doerfel, 1999; Doerfel & Taylor, 2004; Taylor & Doerfel, 2003). Additionally, existing empirical studies remain organization-centric in their understanding of client outcomes—client outcomes are still understood as a function of organizational characteristics (e.g., Chen & Graddy, 2010; Tchouakeu, Maitland, Tapia, & Kvasny, 2013). Yet clients are not isolated individuals who access network agencies independently; they also interact with each other and thus constitute their own networks of influence that

impact CIN effectiveness. We suggest that *recommendations* within client networks of phantom populations are a key indicator of CIN effectiveness. Recommendations are interactions that provides crucial insight into how clients perceive, utilize, and understand CINs and thus are important indicators to assess CIN effectiveness. This study investigates the relationship between CIN network structure and communication within client networks of phantom populations and whether certain network structures encourage more positive recommendations within client networks of phantom populations:

- H1: *Organizations with a greater number of connections with other organizations generate more recommendations within the phantom population.*
- H2: *Organizations with a greater betweenness centrality generate more recommendations within the phantom population.*
- H3: *Organizations with a greater closeness centrality within the network generate more recommendations within the phantom population.*

Methods

To test these hypotheses, we turn to an empirical investigation of a CIN working to address the problem of homelessness in Boulder County, Colorado, using the network assessment framework developed by Provan and Milward (2001).

Data Collection and Analysis

The second author utilized a survey-based methodology to measure homeless service providers' network structure and the recommendations of the homeless population. Homeless individuals ($n = 51$) were asked to identify organizations that they recommended to others and how many times they had recommended that organization in the past month. Altogether they identified 39 organizations/agencies they associated with homeless services. Respondents indicated that they recommended 28 of these organizations to other homeless individuals, though only 14 organizations or agencies were recommended by multiple respondents. Homeless participants were surveyed at several locations to reduce systematic error due to proximity to a certain service.

Results

Connections between organizations were entered into a matrix and input into Net-Miner, a social network analysis software. Three network measures were calculated for each organization: degree, closeness centrality, and betweenness centrality. Each organization was also classified according to the type of services it provided. Survey data from homeless participants were entered into a matrix that allowed us to determine how many times on average people recommended a particular organization (or an affiliated agency/program) and how much variability there was in respondents' recommendation frequency. The resulting mean values were used as the

Table 1 Network Measures and Recommendations for Client Network

Network Measures	Recommendation Scores			# People Recommending	
	<i>n</i>	<i>r</i> ²	<i>p</i> value	<i>r</i> ²	<i>p</i> value
In-Degree	20	0.136	0.109	0.206*	0.044*
Out-Degree	9	0.001	0.934	0.469*	0.042*
In-Closeness	18	0.007	0.748	0.028	0.51
Out-Closeness	9	0.031	0.653	0.007	0.826
Node-Betweenness-Centrality	9	0	0.995	0.238	0.183

recommendation scores for each organization. For each organization the recommendation score, the number of people who made recommendations, and the network measures were put into a single table (Table 1). Pearson *r*² values and *p* values were determined based on the null hypothesis that there was no correlation.

Findings demonstrate that both in-degree and out-degree measures have correlations with the number of people recommending a certain organization. Of these two, out-degree is most strongly correlated with the number of people recommended, as it has a higher *r*² value and a lower *p* value. Despite the small sample size, this is a distinct correlation of moderate importance and confirms the first hypothesis. Although the correlation between in-degree and number of people making recommendations was significant, because of the low *r*² value the relationship is weak and therefore less important. Practically speaking, there is an observed relationship between the number of other agencies an organization collaborates with and the number of people in a phantom population that recommend that organization to others. Network measures were also recalculated by removing organizations that did not provide direct services from the network, but the correlations did not change. There is no observed relationship between organizational closeness centrality and recommendations within the client network, or between organizational betweenness centrality and recommendations within the client network. Thus H2 and H3 were not confirmed.

Discussion

The purpose of our study was to explore how CIN network structures affect interactions within client networks and how this in turn impacts assessments of CIN effectiveness. We focused on *recommendations* as key indicators of CIN effectiveness in relation to client networks of phantom populations. H1 was supported: Organizations with more connections to other organizations within the network generated more recommendations within client networks. This phenomenon may occur because certain organizations become hubs within the network that can provide information on where to go to receive services. Thus a second conclusion from our study is that in CINs, organizations

that can provide for immediate needs—or recommend someone who can—are more likely to generate additional recommendations within client networks. Conversely, there was no support for H2 and H3. The betweenness and closeness centrality of an organization had no perceived relationship to the frequency of recommendations or the number of people who recommended the organization to others. Without being able to directly connect a client with what they need, an organization is less likely to be recommended. Our primary empirical contribution is demonstrating a relationship between the degree of connections within a CIN network structure and the recommendations generated with a phantom population. Organizations that refer clients to a larger number of other organizations, that provide for clients' immediate needs, or that recommend other organizations that can provide those needs are more likely to be recommended to others within a phantom population.

Theoretical and Practical Implications

The value of our research is that we both complement and extend existing research on CINs and network-level assessment. Our focus on client networks introduces a new unit of analysis to the study of CIN effectiveness (i.e., client networks), and thus a broader set of assessment measures. The implication is that subsequent research and theorizing about network effectiveness should emphasize some aspect of client networks and how client interactions impact overall network effectiveness. This goes beyond conventional measures of client outcomes or client satisfaction. To fully understand CIN effectiveness, we need to know how their clients relate to the network and affect its capacity to function successfully.

Practically speaking, our research shows service providers that they could serve their clients better if they develop more connections with other organizations. This can create a more robust network that clients perceive as effective and recommend to others in their phantom populations, which in turn could improve the network and its ability to serve more clients. Additionally, our research demonstrates that organizations can increase the likelihood of recommendations within a phantom population if they increase their connections with other organizations. Even with the positive connotations of cooperation and sharing in civil society work, in practice organizations are often reluctant to refer clients to other organizations or take on clients that have been referred by other organizations because of what it can mean for their own operations. But our research shows that these kinds of connections could have a positive impact on the overall effectiveness of the whole network.

It is important to evaluate collaborative interorganizational networks to determine their effectiveness in responding to social problems. This will enable us to develop better policies, learn from past successes and failures, do a better job of allocating limited resources, and advance social change. A key part of network evaluation should involve client networks. Client networks can have tremendous power, especially as they communicate with each other and recommend (or not) various organizations and programs in a network of service providers. Although client networks of phantom

populations are poorly understood and difficult to study, we need to learn more about how communication within client networks can impact the overall effectiveness of CINs. Our research represents an important step in this direction.

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