Influences on the Size and Scope of Networks for Social Service Delivery

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ABSTRACT

Local social service agencies throughout the world have begun encouraging or requiring social service providers to form community-based networks for the delivery of publicly funded social services. Little is known, however, about the nature of the resulting networks. In this article we develop a model of organizational, programmatic, and community influences on the size and scope of interorganizational networks for social service delivery. We then apply this theoretical framework to an empirical study of service delivery networks in the Family Preservation Program in Los Angeles County. Our findings suggest that the availability of potential partners in the community, the scope of required services, and the ethnic homogeneity of the client population are key determinants of network size. We develop the implications of the results for theories of partnership formation and for more effective management of network formation processes.

We have entered a new era of governance in which public organizations increasingly devolve the implementation of public policies to cross-sectoral collaborations—networks, alliances, or partnerships among public, secular and faith-based nonprofits, and for-profit organizations. This alternative to the direct provision of publicly financed goods and services has received considerable attention in the literature (e.g., Heinrich, Hill, and Lynn 2004). While much of this work has focused on encouraging collaboration and its associated benefits (e.g., Bardach 1998; Huxham and Vangen 2000), others are addressing the challenges of these governance arrangements (e.g., Kettl 2002; Provan and Milward 1995). What are the implications for democratic accountability? More precisely, how can government ensure accountability in network arrangements where responsibility is shared? Even more fundamentally, are these new governance arrangements effective?

At the local level, community-based networks of social service providers have become a popular means for the delivery of publicly funded health and human services...
The public funding agencies are seeking to access the advantages of private-sector efficiency, decentralized service delivery, and in some instances, provider competition. These arrangements are expected to yield the benefits of increased efficiency and innovation, local adaptation, increased flexibility, and enhanced community ties.

The networks, which consist of distinct organizations that develop relationships with each other to more effectively meet client needs, can be formed directly by the public agency, or that agency can contract with a lead organization, which is in turn expected to create a voluntary, community-based network. The former strategy involves high transaction costs for the public agency as it must identify, negotiate, monitor, and manage the multiple partnerships involved in a network. Therefore, many localities have turned to the latter strategy. They develop a single contracting relationship with a lead organization and then encourage or mandate the creation of a community-based network of service providers. Such lead-organization networks can be viewed as a hybrid of two commonly discussed network forms: mandated network arrangements and self-organizing networks (Alexander 1995; Provan and Milward 2001).

This lead-organization model, however, creates its own set of problems for the funding public agency. In order to reap the expected benefits, the service delivery networks must be “consequential” (Graddy and Ferris 2006)—that is, they must involve a meaningful exchange of resources and some degree of joint decision making among the partners. Such “strong” networks allow decentralized and integrated service delivery and its associated client benefits, and they develop and strengthen partner ties, with the associated community capacity-building benefits. The lead organization, however, may prefer a weak network arrangement, in which it retains all the funding and limits partnerships to referral relationships. In an effort to encourage the creation of effective networks, many public agencies have mandated network development plans as part of their Request for Proposal (RFP) process. These plans, however, may not be fully implemented after the contract is awarded. Monitoring costs make it difficult for many local public agencies to effectively evaluate the nature of the resulting network.

Indeed, this is but one element of the broad challenges faced by public managers in their efforts to create and manage network arrangements (Agranoff and McGuire 2001). A better understanding of the factors that affect the formation of networks is important to addressing these challenges. Under what circumstances is the lead-organization model effective in encouraging network collaboration? What motivates a lead organization to create consequential networks? We seek to help answer these questions by exploring the determinants of the size and scope of community-based networks to deliver social services. We focus on these network characteristics because of their importance to the goals of public funding agencies. Larger and broader networks are necessary for the achievement of enhanced access through decentralized service delivery, for integrated services delivery, and for increased community problem-solving capacity. Bigger networks by definition create more linkages among community-based organizations and thus increase the capacity of these organizations to address community needs. Of course, larger networks generate more coordination and control requirements for lead organizations, so we explicitly consider the role of these transactions costs.

We begin by developing a model of organizational, programmatic, and community influences on network formation. Then, we apply this theoretical framework to an empirical study of network arrangements used in the delivery of family preservation services in Los Angeles County.
We are concerned here with the formation of community-based service delivery networks in a context in which there is explicit encouragement or a requirement by the funding agency for network development. As noted earlier, such requirements have become common in the current governance environment, which explicitly promotes public-private partnerships for public service delivery. Therefore, we seek to identify the factors that affect the responsiveness of service delivery organizations to such incentives and thus identify the determinants of the size and scope of the resulting networks.

We assume that organizations will voluntarily form alliances when such relationships meet their strategic needs. For example, resource-based theories (e.g., Dyer and Singh 1998) suggest that organizations will establish alliances when one organization has resources or capabilities beneficial to, but not possessed by, another organization (for example, technological expertise). Market conditions can also prompt the formation of alliances. For example, partnerships may be formed to respond to the challenges of competitors (for instance, when nonprofits form alliances to more effectively compete with a for-profit provider) or to those of organized labor (as in alliances to enhance bargaining power). On the other hand, social network models (e.g., Gulati 1999) introduce an organization’s relationships with other organizations as facilitating or constraining an organization’s internal and external capacity to join an alliance.

We integrate these theoretical perspectives into a network formation model in which the willingness of an organization to form network partnerships is increased by the expected benefits to the organization and the presence of external incentives to form networks, but constrained by the organization’s internal collaborative capacity and that of its potential partners. More precisely, in the context of social service delivery the primary benefits of partnerships involve obtaining service delivery resources (funding, expertise, access to clients) and compliance with external incentives to form alliances (funding agency expectations, citizen service needs, legal mandates). However, partnerships are costly to develop and maintain. The ability of an organization to achieve net benefits from these relationships depends on its own collaborative capacity (staff resources, organizational experience with alliances) and the capacity of potential partners (their number, alliance history, and perceived reputation). We now develop our model of the willingness of an organization to form network partnerships as a function of organizational, programmatic, and environmental factors.

**Organizational Factors**

The willingness and ability of a social service organization to form consequential network partnerships depend on its internal organizational capacity. We propose three major indicators of that capacity: organizational size, resource dependency, and collaborative experience.

*Organizational Size.* Large organizations, with their greater financial and human resources, are presumably better able to absorb the costs of developing and sustaining partnerships. These transactions costs are considerable and include the administration and coordination of the partnership function, partner search costs, and the costs associated with negotiating and monitoring the terms of the contract. Therefore, we expect large organizations to have sufficient budgets and staff to support the development of effective
networks. Some empirical support for this hypothesis is provided by Foster and Meinhard (2002), who found that small organizations were less likely to engage in formal interorganizational activities.

Small organizations, however, may have greater need to form partnerships, as they are more likely to lack requisite resources to meet contractual requirements. Large organizations, in contrast, are more likely to have the internal capacity to deliver required services and thus have less need for external collaboration. If an organization is able to provide most of their clients’ services internally, it has less incentive to form partnerships.

Thus, size is associated with differences in both the ability and the need to form partnerships. These effects may offset each other, obscuring the role of organizational size in this relationship. In an effort to capture both, we hypothesize a nonlinear relationship:

\[ H_1 \text{ There is a u-shaped relationship between organizational size and the likelihood of network partnerships. Large social service organizations have greater capacity to develop and manage network partnerships. Small organizations have greater need.} \]

**Resource Dependency.** Resource dependency refers to the extent to which an organization is dependent on resources from a single source for survival and goal achievement (Alter and Hage 1993). Such dependency on external resources has long been recognized as affecting an organization’s strategic decisions (Aldrich 1976), including its willingness to form partnerships (Oliver 1990).

Resource interdependency is a commonly observed characteristic of the relationship between government funders and private social service providers. Public organizations depend on social service organizations for their service delivery capacity, and providers depend on public organizations for clients and revenues. This relationship, however, is asymmetric; nonprofit providers, in particular, are more likely to be dependent on one or a few public organizations for most of their funding. Research reveals that executives in public and nonprofit organizations are fully aware of this interdependence (Saidel 1991). Many nonprofits operate as small community-based organizations, relying almost completely on government service contracts for survival.

The requirements of a funding agency are likely to be more compelling if most of an organization’s budget derives from that agency. Moreover, nonprofits have been found to respond to government contracting requirements by adopting more corporate-like board governance and sophisticated accounting systems and by modifying organizational goals to align with public funding opportunities (Stone 1996; Wolch 1990). Therefore,

\[ H_2 \text{ The more dependent the organization is on a funding agency, the more likely it is to comply with that agency’s requirement to form network partnerships.} \]

**Network Experience.** Finally, an agency’s collaborative experiences will influence its willingness and ability to form consequential network partnerships. Social capital is generated by repeated interactions in a social network. The interorganizational trust that emerges from repeated interactions obligates partners to behave loyally (Das and Teng 2001). Thus, organizations should be more willing to form future partnerships with those with whom they have prior working relationships (Gulati 1995; Ring and Van De Ven 1994). In addition, with network experience, an organization builds expertise in the effective formation and management of networks. This expertise reduces the associated transaction costs and thus increases the willingness of an organization to form more partnerships. Thus,
The more collaborative experience a social service organization has, the more likely it is to form network partnerships.

**Programmatic Needs**

Complex organizational tasks may also encourage the formation of network partnerships. Individual organizations are constrained by technological, political, and cognitive limits in the face of complex, multifaceted problems. Establishing strategic alliances with other organizations may afford access to complementary skills, new technologies, or new markets and thus the ability to provide a wider range of products and services (Dyer and Singh 1998). We suggest two programmatic needs that are likely to motivate social service agencies to increase their network partnerships: many different required services and client diversity.

**Required Services.** Clients in social services usually have multiple problems, and few organizations can serve them all. Organizations are constrained by their in-house resources, expertise, and culture in the types of services they can provide to clients, as well as the different methods by which they can provide these services. Thus, social service organizations often need to refer clients that they themselves cannot serve to other organizations (Provan 1984). When the types of services required by a contract exceed the capacity of an organization, it will seek partnerships. Therefore, we hypothesize:

\[ H_4 \text{ The more types of services required for contract delivery, the more likely the organization is to form consequential partnerships.} \]

**Client Diversity.** When organizations face problems for which they have no adequate solution, they are more open to cooperative solutions (Weiss 1987). Therefore, if social service agencies are not able to meet the needs of their clients, they will form partnerships to provide them.

An important feature of client service needs is the heterogeneity of preferences for social services that derive from ethnic diversity. Ethnic diversity leads to language and cultural differences in service needs. Clients prefer providers who speak their language and understand their unique cultural preferences. It is easier for an organization to meet such needs in homogeneous communities. If, for example, most residents of a community are Vietnamese Americans, then it is relatively easy for a social service organization to provide language capability in two languages—Vietnamese and English—and to ensure responsiveness to the unique needs of that population. It is much more difficult in ethnically heterogeneous communities, where there might be demand for multiple languages and cultural expertise. Some organizations may specialize in service provision to specific populations. Thus, as the ethnic diversity of a community increases, we would expect networks of providers to form to meet these diverse needs. However, this same diversity of perspectives across partner organizations increases the transaction costs of contractual relationships (Ferris and Graddy 1991). Network outputs will be more complex and harder to manage. These counteracting effects may cancel each other. We hypothesize, however, that the need to form partnerships in order to be responsive to client needs will dominate. Therefore:

\[ H_5 \text{ Service providers with more heterogeneous clients are more likely to form network partnerships for social service delivery.} \]
Environmental Characteristics

Social service agencies also face supply-side constraints on their ability to form networks. Gulati (1995) argues that an organization’s external capacity to join an alliance is constrained by that organization’s social network. So, even if organizations are willing to comply with a funding requirement to form a provider network, they are constrained by the availability of potential partners. Research on local government contracting has consistently demonstrated that the location of a municipality in a metropolitan area, with its greater availability of providers, increases the probability of contracted service delivery (Brown and Potoski 2003; Clingermayer and Feiock 1997; Ferris and Graddy 1991; Nelson 1997). Therefore, we expect organizations to form more network partnerships when they operate in environments with more potential partners.

\[ H_6 \text{ Social service providers operating in environments with more potential partners are more likely to form network partnerships.} \]

To summarize, our model of the size and scope of networks for social service delivery is presented in figure 1.

DATA

We now apply our model to an empirical exploration of the determinants of social service delivery networks. We begin with a discussion of the study population and the data. Then, we analyze the data, beginning with a descriptive discussion of the nature of the networks, followed by a multivariate analysis of their size and scope.

Study Population

We explore our model of network formation in the context of family preservation services provided in Los Angeles County. With growing foster-care caseloads and increasing federal and state foster-care costs, many governments have turned to family preservation programs. These intensive, time-limited, home-based services to families in crisis are
designed to improve family functioning when children are at imminent risk of being placed in foster care and thus to prevent that placement. In 1991 California state legislation (AB546 and AB776) allowed counties to use part of their child welfare funding for programs that limit the unnecessary placement of children in out-of-home care. In 1992 the Los Angeles County Department of Children and Family Services (DCFS) established the Family Preservation Program. In 1993 Congress passed the Federal Family Preservation and Family Support Program, which appropriated nearly $1 billion in monies that counties nationwide could access over a five-year period. In May 1995 the Los Angeles County Board of Supervisors approved the Five-Year Plan for Family Preservation and Support in Los Angeles County. This family preservation program is the largest of its kind in the United States (County of Los Angeles 2001).

Los Angeles County has a population of 10 million people living in about ninety incorporated cities and numerous additional neighborhoods, many of which are multi-ethnic communities. Children and family-related social services are both substantial and diverse. The Family Preservation Program is based on collaboration between the community and public and private human services providers. DCFS created thirty-eight Community Family Preservation Networks (CFPN) in defined geographic areas throughout the county. For each area, DCFS contracts family preservation services to a lead agency through a Request for Proposal (RFP) process. The organization that receives the contract is asked to partner with other service providers to deliver a broad range of services to children and families. The lead organization centrally manages the flow of funding and clients received from DCFS, and it coordinates service delivery with the partners. Within a network, partnering organizations only formally interact with their lead agency; therefore, we do not explore links between/among other network actors. The general structure of the resulting network is described in figure 2.

Although DCFS requires lead organizations to collaborate, it does not specify how and with whom they should partner. Thus, there is considerable variation in the size and scope of the resulting networks. This diversity makes Los Angeles County’s Family Preservation Program an interesting context within which to explore network formation.

Data Collection

The Los Angeles County Department of Children and Family Services provided us with access to relevant official documents on the Family Preservation Program, including the RFP and resulting lead agency contracts. They also identified key informants in the department and in each Community Family Preservation Network and endorsed our study with these contacts.

We developed an original survey instrument to collect data on CFPN lead agencies and their network partners. The fifteen-page survey included sections on the lead agency, the network structure, the partner organizations, and network management. The survey data were supplemented with information from the written contracts.

In the Family Preservation Program, each service contract with a lead agency covers one of the thirty-eight geographic areas. Three lead agencies manage two contracts each as single networks; therefore, there are thirty-five lead agency networks in the program.2

1 Details of the survey development are provided in appendix. The survey instrument is available upon request.
2 The DCFS allows an organization to bid on more than one service contract. As a result, DCFS granted multiple contracts to five lead agencies. Three of these agencies chose to manage their multiple contracts as single CFPNs.
Our survey was mailed to the executive director or the family preservation program manager in each of these thirty-five lead agencies. The response rate was 77 percent; twenty-seven completed the survey. All the responding lead agencies except one are nonprofit social service providers (the exception is a public agency). Three agencies have religious affiliations. The nonresponders include seven nonprofits and one public agency. None of the nonresponders had religious affiliations. Only public entities or nonprofit social service organizations classified as tax-exempt under the IRC 501(c)3 were eligible to bid for the lead agency contract. Therefore, none of the lead agencies are for-profit organizations.

To explore differences between responders and nonresponders, we collected information from other sources on the nonresponding agencies. Table 1 reports descriptive statistics on total agency budget, family preservation funding, the number of family preservation cases, and the number of network partners for both groups. The only statistically significant difference in the two groups is in the number of network partners.³ Nonresponding agencies had smaller networks than responding agencies.

³ To test for differences in the two groups we used the nonparametric Mann-Whitney U test, due to the small sample size and our inability to assume a normally distributed population. The differences between responders and nonresponders in total agency budget, family preservation funding, and the number of family preservation cases were not statistically significant.
MODEL ANALYSIS

Network Characteristics

Our analysis of the size and scope of service delivery networks is based on the twenty-seven responding agencies. Twenty-six formed partnerships to deliver up to eleven different family preservation services. As expected, we found considerable diversity in network size and scope. The number of network partners ranged from zero to ten and with a mean and median of five. There are 139 partner organizations in the networks. Among them, 10 percent (14) are public organizations, 79 percent (110) are secular nonprofit organizations, 2 percent (3) are faith-based organizations, and 9 percent (12) are for-profit organizations.

The number of services provided by each network ranged from three to eleven with a mean of seven and median of eight. Family preservation services are categorized by DCFS as either core or supplemental. Core services include in-home counseling, parenting training, substitute adult role modeling/mentoring, teaching and demonstration homemaking, child-focused activities, and child follow-up. Supplemental services include mental health treatment, transportation, housing assistance, substance abuse testing and treatment, and employment and job training. One would expect successful respondents to RFPs to have competency in most of the core family preservation services. The diversity of supplemental services, however, should offer ample opportunity for subcontracting to network partners. To explore this, we analyzed the lead agency provision choices by types of services. Our data include 254 service delivery observations. We consider three provision choices—delivery by the lead agency alone, joint service delivery by the lead agency and one or more partners, and complete subcontracting of service delivery to one or more network partners. The results are presented in table 2. The chi-square test reveals a statistically significant relationship ($\chi^2 = 23.04$, significance level = .000) between provision method and whether the services are core or supplemental. As expected, lead agencies are more likely to contract out the provision of supplemental services—39 percent versus 14 percent of core services.

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4 One CFPN lead agency is not involved in any partnership.
The analysis also reveals that a relatively large number of services are delivered via
the network rather than solely by the lead agency. Almost 70 percent are either solely
contracted or jointly delivered. The dominant service delivery method is joint delivery by
lead agencies and one or more partners. However, the nature of the joint delivery is not
revealed. Does this category signify mostly referrals or is there true coproduction and joint
decision making? We will return to this issue in our multivariate analysis.

In any case, these data suggest a relatively rich network structure—with 139 partners
drawn from the nonprofit, public, and business sectors working with lead agencies in twenty-
seven networks to deliver eleven family preservation services. The very important role of the
nonprofit sector is also highlighted here. Thirty-three of the thirty-five family preservation
networks are headed by a nonprofit organization. In our sample, 81 percent of the partners
were also nonprofits. Thus, the public sector is relying on private providers for the vast
majority of service delivery of these services. It is important to note that many of these family
preservation services are intangible, and thus their outputs are difficult to measure—such
services have traditionally been provided by the public sector (Ferris and Graddy 1986).

### Motivations for Network Formation

We begin our analysis of our model with the motivations offered by the lead agencies
themselves for network formation. We asked lead agencies several questions about why
they chose each of their network partners. Table 3 summarizes their answers. The motives
are organized by factors identified in our model. We also explicitly asked how important
the DCFS mandate for collaboration was for the formation of partnerships. We report the
aggregate averages (across partners for each lead agency, then averaged across all lead
agencies) on a scale from 1 (not at all important) to 7 (very important) in the decision to
form a partnership. We also report the number of lead agencies who scored a factor as
either a 7 or a 1 across all its partners, as indicators of extreme responses and as a measure
of variability.
These results suggest that lead agencies are driven by both organizational and programmatic needs. Lead agencies are clearly seeking to build their collaborative relationships—to enhance their own reputation but also to develop a base for recurring partnerships. Institutional theory suggests that strategic alliances can originate from an organization’s motives to improve its reputation, image, or prestige or to achieve congruence with prevailing norms in its institutional environment (DiMaggio and Powell 1983). The importance that respondents attached to developing linkages for future collaboration and enhancing reputation by working with a strong partner may reflect their inclination to offer “socially acceptable” answers. In the current procollaboration environment, organizations may view compliance with these norms to be necessary for legitimacy and survival.

However, the role of programmatic needs is at least as strong. Capacity needs for these sample agencies have more to do with scope than size. There is little support for the simple inability of a lead agency to handle the caseload as a driver of network formation. Rather, these organizations seek service expertise they do not possess. For example, they may not have in-house expertise in specialized services like job training or mental health, and thus they seek partners to provide the full range of services their clients need. This is consistent with the findings of our service provision analysis. There are also indicators that specific client needs—geographic access, cultural or linguistic expertise—are also important, though to a lesser extent than service expertise. These programmatic findings are consistent with the expectations of the strategic alliance literature. Organizations seek relationships that offer direct strategic benefits.

### Table 3

Reasons Lead Agencies Provided for Forming Partnerships

<table>
<thead>
<tr>
<th>Mean Scale 1–7</th>
<th>Number with 1.0 average</th>
<th>Number with 7.0 average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Factors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Department of Children and Family Services mandate</td>
<td>3.78</td>
<td>3</td>
</tr>
<tr>
<td>Successful past collaboration</td>
<td>4.06</td>
<td>2</td>
</tr>
<tr>
<td>To build a relationship for future interaction</td>
<td>5.13</td>
<td>1</td>
</tr>
<tr>
<td>To enhance reputation by working with a strong partner</td>
<td>5.29</td>
<td>0</td>
</tr>
<tr>
<td>Programmatic Needs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cannot handle caseload</td>
<td>2.32</td>
<td>11</td>
</tr>
<tr>
<td>Need specific service expertise</td>
<td>5.56</td>
<td>0</td>
</tr>
<tr>
<td>To obtain full geographic coverage</td>
<td>4.26</td>
<td>7</td>
</tr>
<tr>
<td>Partner has better community knowledge or client access</td>
<td>4.16</td>
<td>6</td>
</tr>
<tr>
<td>To meet cultural and linguistic needs of clients</td>
<td>4.02</td>
<td>6</td>
</tr>
<tr>
<td>Environmental Factors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Could not find other alternative service providers</td>
<td>3.42</td>
<td>5</td>
</tr>
</tbody>
</table>
Multivariate Analysis

We turn now to a multivariate analysis of our model, as we consider the relative role of organizational, programmatic, and environmental factors in the size and scope of service delivery networks. First, we specify measures of the dependent and independent variables.

**Dependent Variables.** To explore the determinants of network partnerships, we consider two dependent variable measures—the number of organizations in the network and the amount of subcontracting by the lead agency.

The number of network partners is obviously an important indicator of network size, as it indicates the number of organizations that are involved in some aspect of the service delivery. It has, however, additional importance. New governance proponents have increasingly articulated a secondary goal for the contracting process—strengthening the infrastructure of community-based organizations (Austin 2003). Expanding a community’s social capital requires increasing connections among the organizations in the community, and participation in service delivery networks directly contributes to this end. More specifically, DCFS expects that each lead agency will engage other service providers in support of its community capacity-building efforts.

The number of partners, however, tells only part of the story. In our interviews with DCFS staff, we were told that some lead agencies listed many network partners in their proposal but then did not collaborate with them after the contract was awarded. One tangible indicator of consequential collaboration is a subcontracting relationship. Therefore, we also analyze the proportion of total Family Preservation Program funding that a lead agency subcontracted to its network partners (that is, the amount subcontracted to all partners / total family preservation funding). A higher proportion presumably indicates partnerships that are more consequential.

**Organizational Factors.** Our model specifies three organizational variables: organization size, resource dependency, and collaborative experience. Organizational size can be measured in several ways. For our purposes the most relevant are those related to the capacity of the organization to provide client services internally and/or manage partnership relationships (financial and human resources). Therefore, we consider two different, but related, measures of organizational size: total budget and total staff. Recall that we hypothesized a nonlinear u-shaped relationship between size and network partnerships—with both large and small organizations being associated with more partnerships. To capture this form, we use a quadratic specification of our size variables. If the hypothesized u-shaped relationship is supported in the data, we will observe a negative relationship with the size measure and a positive relationship with its squared term.

To measure the degree of resource dependency, we consider the proportion of the lead agency’s total budget that is represented by its Family Preservation Program funding. The higher this proportion, the more likely the lead agency is to comply with the funding agency’s directive for more network partnerships. Finally, we measure a lead agency’s prior experience with network participation as the number of previous social service networks in which a lead agency has participated. We expect a positive relationship between the number of previous network relationships and current network formation.

**Programmatic Factors.** Our model specified two programmatic factors: required services and client diversity. Required services are measured as the number of different
types of family preservation services a lead agency is required to offer. The more services an agency is required to provide, the greater is its expected need for partnerships.

Client diversity is more difficult to measure. We focus on ethnicity as an indicator of heterogeneous needs. In Los Angeles County there are multiple ethnic groups, and there is substantial variation in the presence of different groups across neighborhoods. To reduce client heterogeneity to a single measure, we constructed a Herfindahl-Hirschman Index (HHI),\(^5\)

\[
HHI = \sum_{i=1}^{n} s_i^2
\]

where \(s\) denotes the share of each of six categories of ethnicity—African American, Asian/Pacific Islander, Caucasian, Latino, Multiethnic, and Other—in the client population covered by each network. As the value of the index increases, client ethnicity is more homogeneous, with an index value of one denoting that one ethnic group represents 100 percent of the client population. Low values of the index indicate ethnic heterogeneity in the client population. Therefore, we expect an inverse relationship with network partnerships. Lead agencies with heterogeneous client populations are more likely to form partnerships to meet diverse client service needs.

**Environmental Factors.** Our model identified one environmental factor—the availability of potential partners. This supply-side factor is expected to have a positive impact on the formation of network partnerships—the greater the number of potential partners in the community, the more partnerships we expect to form. We measure this variable using the lead agency’s self-reported number of potential partners. Since the same respondent is reporting the number of potential partners and the number of actual partners, a bias toward correlation may be introduced. We cannot assess whether this is the case. Nevertheless, we believe that the lead agency’s subjective estimation of the number of available partners is likely to influence the size and scope of the resulting network.

Table 4 summarizes these operational definitions of the dependent and independent variables. Our empirical model, with the hypothesized direction of the relationships denoted in parentheses, is:

Network Size/Scope

\[= f[\text{Total Budget } (+), \text{Budget Squared } (-), \text{Total Staff } (+), \text{Staff Squared } (-), \text{Resource Dependency } (+), \text{Network Experience } (+), \text{Required Services } (+), \text{Client Diversity Index } (-), \text{Potential Partners } (+)]\]

**Model Estimation**

Our unit of analysis is the network; thus, we have twenty-seven observations. The descriptive statistics associated with the variables are presented in table 5.

We estimated both dependent variables using multivariate regression analysis. Due to our limited number of observations, we considered the different measures of organization

\(^5\) This index is usually used as a measure of firm concentration in an industry, where \(s\) represents the market share of each firm in the industry.
size in separate regressions. Model 1 uses total agency budget as the size measure; model 2 uses total number of staff as the size measure; and model 3 uses both measures (but not their squared terms). In model 3 we expect the two measures to capture for the two separate influences of size.

Table 4
Variable Definitions

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<thead>
<tr>
<th>Measures</th>
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<tr>
<td>Dependent Variables</td>
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<tr>
<td>Network Size</td>
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<tr>
<td>Subcontracting Share</td>
</tr>
<tr>
<td>Independent Variables</td>
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<td>Organizational Factors</td>
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<tr>
<td>Size</td>
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<td>Resource Dependency</td>
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<td>Network Experience</td>
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<td>Programmatic Needs</td>
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<td>Required Services</td>
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<tr>
<td>Client Diversity</td>
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<tr>
<td>Environmental Factors</td>
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<tr>
<td>Availability of Potential Partners</td>
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Table 5
Descriptive Statistics of Dependent and Independent Variables

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<thead>
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<th>N</th>
<th>Mean</th>
<th>SD</th>
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<th>Maximum</th>
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<td>Dependent Variables</td>
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<td>0.73</td>
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<td>Independent Variables</td>
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<td>Organizational Factors</td>
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<td>7,814,637</td>
<td>858,659</td>
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<td>9.48</td>
<td>1.4</td>
<td>6</td>
<td>11</td>
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<tr>
<td>Ethnicity Index</td>
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<td>0.28</td>
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<td>Environmental Factors</td>
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<td>Number of Potential Partners</td>
<td>27</td>
<td>12.7</td>
<td>8</td>
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Network Size. The results of our estimations for network size are presented in Table 6. The model provides a good fit for the data. About 60 percent of the variation in the number of organizations in the network is explained by the model. Only two of the three sets of factors, however, have statistically significant impacts. The results suggest that the most important factor in network formation is the availability of potential partners. This effect is consistent across all three specifications, and it is interesting as it underscores the importance of the environment within which these networks operate. Networks are more likely to form in communities with more service providers—controlling for organizational and programmatic differences. This finding has important policy implications for local public agencies. If a service area has few providers, the funding agency may need to take explicit steps to promote the creation of new providers, especially if community capacity-building is a priority.

Programmatic needs also have statistically significant influences on network formation. As expected, the number of required services has a positive impact on network size. The ethnicity index also has a positive impact on network size. This suggests that lead agencies with more ethnically homogeneous clients form larger networks. This is not the expected effect. This result is, however, consistent with the local government contracting literature, which finds that public agencies are more willing to contract with the private sector when their jurisdictions are ethnically homogeneous. Ferris and Graddy (1991) argue that jurisdictional homogeneity lowers the transaction costs associated with negotiating contracts, and they find that local governments are more likely to contract services in racially homogeneous jurisdictions. Here, too, the implication is that lower transaction costs are associated with larger networks.

Table 6
Standardized Ordinary Least Squares (OLS) Regression Coefficients for Network Size (with t-scores in parentheses)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
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<td>Organizational Factors</td>
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<td></td>
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<tr>
<td>Total Agency Budget</td>
<td>0.44 (0.44)</td>
<td>0.34 (1.28)</td>
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<tr>
<td>Square of Total Agency Budget</td>
<td>−0.32 (−0.35)</td>
<td>0.70 (1.11)</td>
<td>−0.31 (−1.35)</td>
</tr>
<tr>
<td>Total Number of Staff</td>
<td>0.70 (1.11)</td>
<td>0.23 (1.18)</td>
<td>0.23 (1.15)</td>
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<tr>
<td>Square of Total Staff</td>
<td>−0.78 (−1.35)</td>
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<tr>
<td>Resource Dependency</td>
<td>0.25 (1.02)</td>
<td>0.23 (1.18)</td>
<td>0.23 (1.15)</td>
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<tr>
<td>Number of Previous Networks</td>
<td>0.10 (0.53)</td>
<td>0.07 (0.43)</td>
<td>0.08 (0.48)</td>
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<tr>
<td>Programmatic Needs</td>
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<tr>
<td>Required Services</td>
<td>0.32 (1.64)</td>
<td>0.31 (1.59)</td>
<td>0.35 (1.91)*</td>
</tr>
<tr>
<td>Ethnicity Index</td>
<td>0.25 (1.31)</td>
<td>0.32 (1.96)*</td>
<td>0.31 (1.89)*</td>
</tr>
<tr>
<td>Environmental Factors</td>
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<tr>
<td>Number of Potential Partners</td>
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<td>0.60 (3.90)***</td>
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<td>Number of Observations</td>
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<td>27</td>
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<td>F (7,19)</td>
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<td>4.0</td>
<td>3.95</td>
</tr>
<tr>
<td>R²</td>
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<td>0.008</td>
<td>0.008</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.39</td>
<td>0.45</td>
<td>0.44</td>
</tr>
</tbody>
</table>

*p < .10; **p < .05; ***p < .01.
costs associated with a commonality of service expectations among providers with ethnically homogeneous clients increase the likelihood of partnerships. For this sample at least, this effect dominates the need to more effectively meet diverse client needs through partnerships.

Finally, none of the organizational variables were statistically significant, though all had the expected signs. The only significant multicollinearity in the data was in the quadratic specifications of size: agency budget and its square and total staff and its square are very highly correlated. This limits our ability to differentiate empirically the size hypotheses. It may take larger or different samples to reveal the role of organizational variables in network formation.

Subcontracting Share. The results of our estimation of subcontracting share are much less satisfying. None of the models passed an $F$ test. For this sample the proportion of the program funding that was subcontracted to network partners was not explained by our model. We also explored two alternative measures of subcontracting—the log-transformation of subcontracting share and the average amount subcontracted per partner. Neither was explained by our model. The problem was not a lack of variability in the dependent variable; the average amount subcontracted to a partner in our sample ranged from $1,345 to $139,368.

Some insights to the subcontracting decision, however, were revealed in our interviews with lead agency executives. Many of the executives acknowledged a desire to maintain autonomy by keeping clients and funding within their organization. They also cited two impediments to subcontracting: insufficient funding and cross-subsidization. With funding that some viewed as insufficient for the required activities, it was difficult for lead agencies to justify paying other organizations. Some managers said more funding would be necessary to encourage more extensive subcontracting. This is consistent with Provan and Milward’s (1995) findings that the level of funding to community-based mental health service networks affected network collaboration. Higher levels of funding for service delivery were associated with more collaborative activities because organizations viewed them as more affordable.

Second, executives noted that agencies can offer services that keep the clients in-house by transferring staff between programs. Cross-subsidization is a well-known practice in nonprofit organizations (James 1983). Nonprofit managers often transfer revenue and staff between activities. Underutilized staff from one program can be assigned to another. This allows managers to provide more services within their own agencies, and obviates the need to refer clients to partners.

These impediments to increasing network subcontracting suggest that many nonprofit social service agencies may be operating in a “survivor mode.” All funding is viewed as needed to keep the organization operational; so, to the extent possible, all services are provided internally.

Finally, the dynamics of competition may inhibit networking and subcontracting. Many social service agencies are competing for the same contracts. They may be concerned that partnerships will lead to unintended knowledge transfers, undermining their comparative advantages. The lead-organization model itself may further inhibit competition, as most lead agencies have been successful in renewing their contracts, some for
several cycles. Thus, just as we find in franchise arrangements, this structure could create long-term contracts that begin to look like monopolies.

CONCLUSION

Few phenomena in public administration have attracted as much attention in such a short period as service delivery partnerships across public and private organizations. In mutually beneficial arrangements, private organizations, usually nonprofits, deliver services funded by the public sector. The public receives the benefits of private-sector efficiency and innovation and of decentralized service delivery. Now, many government funding agencies have sought to move beyond the benefits of simple dyadic contracting relationships and are requiring the development of community-based networks of service providers to achieve the broader benefits of coordinated service delivery and greater community capacity for problem solving.

We considered here a commonly used strategy for network creation—a lead-agency model, where a funding agency contracts with a lead agency that, in turn, is expected to create a community-based network of service providers. We developed a model of determinants of the size and scope of the resulting service delivery network and explored that model with data on family preservation service delivery in Los Angeles County. Our results have interesting theoretical and policy implications.

Our model proved effective at explaining network size. We find that three programmatic and environmental factors predict the size of service delivery networks. The greater the number of potential partners in a service area, the greater the number of services required in a contract, and the more ethnically homogeneous the client population, the more organizations are included in the service delivery network.

These results provide more support for explanations of partnership formation that rely on transaction cost arguments than those that rely on strategic or functional explanations. Both the importance of available partners and of homogeneous clients are consistent with efforts by lead agencies to reduce the costs of partnerships. Only the role of different types of services is consistent with a strategic need to seek partnerships.

The consistency of our results with those on local government contracting lends additional credibility to this explanation. Both types of partnerships are often required by a higher funding authority. When local governments or nonprofit lead agencies are required to contract or form other types of partnerships, “demand” influences may be irrelevant. Given the requirement, organizations, whether they are public or private, just seek to reduce the costs of developing and maintaining the relationship.

Our model was not successful in explaining subcontracting, and our interviews revealed a reluctance to transfer contract funds to other organizations. This raises questions about the very nature of the networks being created. Can the lead-agency model of network formation generate the consequential networks that funding agencies seek? Do these networks promote joint decision making for more effective service delivery or enhance relationships that increase a community’s capacity for problem solving? Or, are the generated networks largely arrangements of convenience that are unable to yield the expected benefits of cooperation? More research is needed to answer these questions.

It may be that the creation of effective service delivery networks requires more, not less, involvement by the funding public agency. Agencies may need to take a more active
role in their formation and administration. For example, to encourage network formation, DCFS introduced social service agencies to lead agencies that were having difficulty locating partners. Ideally, the funding public agency would monitor the effectiveness of the networks: Has service delivery improved? Are organizational ties in the community being strengthened? Although policy evaluation is difficult in a context of decreasing public budgets, cost-effective approaches should be explored, perhaps via an increased use of new information technologies.

Our results also suggest ways to improve the functioning of the lead-agency approach to network formation. First, we find that lead agencies are affected by service requirements. They form more partnerships when more types of services are required. We also find more contracting of supplemental services. This suggests that contracts should be comprehensive and integrated in their service requirements. RFPs that include a broad range of services are more likely to encourage the formation of consequential networks and, of course, directly encourage more integrated service provision.

It is clear, however, that transaction costs are a limiting factor. Public agencies could reduce them through more specificity of the service delivery process, thus reducing the need for negotiation among network partners. But, that could defeat much of the expected benefit of using private providers. A more productive strategy might be to find ways to increase the number of providers in a service area. For example, some contracts might be allocated solely to new providers. Funding agencies could also expand service areas, as this would presumably increase the set of potential partners. However, this could be counter-productive as larger service areas may reduce some of the advantages of decentralized service delivery. Moreover, such “market” management efforts by the public funding agencies increase their transaction costs, and this outcome raises important questions about whether the net benefits (taking into account both production and transaction costs) associated with community-based service delivery networks exceed those of public delivery.

Finally, the results of this analysis should be considered preliminary. A study population of twenty-seven networks is relatively small. Moreover, our results derive from a single type of services—family preservation—and a single place—Los Angeles County. There may be unique service and place characteristics that limit our ability to generalize these results. Nevertheless, the findings are provocative and provide a point of comparison for future work as we seek a better understanding of how public-private partnerships actually function under the new local governance.

**APPENDIX**

**Survey Development**

The development of the survey instrument proceeded in three stages over eleven months in 2004: (1) document review, individual interviews with program and lead agency staff, and participation in DCFS meetings; (2) development of a draft survey instrument; and (3) pilot testing and finalization of the survey instrument. In the design of the survey instrument, we consulted the “The Los Angeles Nonprofit Human Services Survey” (UCLA 2002),

7 In the next RFPs for family preservation services, DCFS has changed from geographic service areas (GSA) to the larger service planning areas (SPA). It will be interesting to see if networks become larger as a result.
“Survey on Collaboration” (Thomson 2002), and “Interorganizational Network Survey” (Alter and Hage 1993).

The draft survey was sent to DCFS staff and three CFPN lead agencies for comments and identification of questions that were unclear, confusing, or not appropriate. After correcting problems identified in the pilot study, the final survey instrument was fifteen pages in length and designed to be completed in one and a half to two hours.

The final survey was mailed to participants, due to the large amount of detailed information requested. This format allowed respondents to consult with other staff or colleagues for assistance in answering questions when necessary.

The survey instrument included four sections. Section 1 collected information on the organizational characteristics of the CFPN lead agency, including its legal status, total budget, and staff. Section 2 collected basic network-level information, including founding, the number of partners, and the number of potential partners. In Section 3 lead-agency respondents were asked to identify their network partner organizations and provide the amount of program funding each partner received from the lead agency. Section 4 collected information of network governance and management and on perceived collaborative outcomes.

Several steps were taken to ensure a high response rate. The DCFS faxed each agency an advance endorsement of the survey; a presentation was made at a Family Preservation Roundtable Meeting to explain the work and encourage lead agencies to complete the survey; and numerous follow-up phone calls were made to each lead agency. Twenty-seven of the thirty-five (77 percent) lead agencies completed the survey.

REFERENCES


