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PARTNERSHIP DEVELOPMENT AMONG MENTAL HEALTH ORGANIZATIONS

by

Alicia C. Bungler

A dissertation presented to the Graduate School of Arts and Sciences of Washington
University in partial fulfillment of the requirements for the degree of Doctor of
Philosophy

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ABSTRACT

Partnership Development Among Mental Health Organizations

by

Alicia C. Bungler

Doctor of Philosophy in Social Work

George Warren Brown School of Social Work

Washington University in St. Louis, 2010

Professor David F. Gillespie, Chairperson

Mental health organizations can play a key role in enhancing youths' access to care by working together to bridge gaps in service delivery systems. This dissertation study examines partnerships among a network of children's behavioral health organizations. The specific aims are to (1) describe and understand the network of partnerships among members of the Children's Services Coalition, (2) assess the capacity of the system to provide coordinated service delivery, and (3) test how patterns of organizational characteristics influence conditions that facilitate and inhibit partnerships among the Children's Service Coalition organizations.

This dissertation is a predominantly quantitative cross-sectional network study of 36 children's mental health organizations in St. Louis County that are members of the newly formed Children's Services Coalition. Network data on relationships and archival data from IRS 990 forms were collected and used to explain how organizational characteristics might lead certain organizations to partner, but create conditions that simultaneously facilitate and hinder the degree to which organizations partner.

Overall, the key findings describe partnership behavior at the network, small-group, and dyadic-level. First, children's behavioral health organizations in the CSC

maintain a complex set of partnerships, which are expected to grow as new opportunities emerge. Second, although partnerships are very common, the larger network may not be well coordinated as evidenced by the few systematic partnership patterns uncovered using descriptive network analysis techniques including sub-group analysis and blockmodeling. However there is potential for coordination at the sub-group level among small groups of similar organizations. Finally, at the dyadic-level, results of a path analysis demonstrate how similar competing organizations depend on one another for resources and benefit from their collaboration, which drives partnerships.

Results suggest that organizational interests drive partnership development in this network, and bring together competing organizations that provide similar resources potentially as a strategy for managing competition, or creating efficiencies. This trend runs counter to system reform goals for bridging organizations with complementary services to facilitate access to quality care.

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Chapter 1 - Specific Aims

The fragmentation of today's children's behavioral health system is one of the biggest challenges in mental health care (U.S. Department of Health and Human Services, 2003). Seldom can one organization meet all service needs for children and adolescents with mental illness. However, the lack of systematic and meaningful interactions among organizations creates structural gaps (Gillespie & Murty, 1994; Tausig, 1987) and those who reach out for help often fall through the cracks (U.S. Department of Health and Human Services, 1999). Consequently, children's mental health needs go unmet.

Since the 1980s and 1990s, children's behavioral health providers have been encouraged to coordinate their services consistent with the principles of the Child and Adolescent Service System Program's (CASSP) "systems of care" that integrates services for children across seven service sectors: mental health, social, educational, health, vocational, recreational, and operational services (Stroul & Friedman, 1986). Organizations can play a key role in closing system gaps by developing partnerships (Agranoff, 1991; Dill & Rochefort, 1989) however, evidence of the impact of organizational partnerships on client mental health outcomes is mixed. Evaluations of system reforms specifically designed to change the system structure by building partnerships among children's organizations have failed to demonstrate any impact of the enhanced linkages in the system on children's mental health outcomes (Bickman, Summerfelt, & Bryant, 1996). Yet in other naturalistic research, systems with voluntary strong partnerships among small groups or cliques of organizations experienced better client outcomes (Provan & Sebastian, 1998; Provan & Milward, 1995). Clearly, there is

potential for partnerships to impact children's behavioral health care however, it is unclear whether broad initiatives to build partnerships across an entire system or among targeted subgroups of organizations is effective for addressing fragmentation.

The key to understanding how to help regional systems close service gaps is examining how and why organizations develop partnerships with one another in the face of realities like competition and conflict. While organizations partner to access needed resources to address service needs, they also partner out of self-interest, anticipating benefits (e.g. productivity), and avoiding conflict (Ring & Van de Ven, 1994). The need for a partnership, perceived benefits, and conflict, (or the conditions of the partnership) determine whether organizations will partner and the extent of their interactions. The characteristics of a set of partners, such as service complementarity, financial performance, or competition, and trustworthiness can both reinforce and counteract the partnership conditions. For example, organizations that work with other similar organizations are at risk for conflict that could arise from competition however, if conflicts are managed, working with a similar organization might yield benefits or added value such as enhanced efficiency. Therefore, characteristics of partnering organizations that might facilitate partnerships by enhancing the perceived needs and benefits of working together may simultaneously increase conflict as well, limiting their ability to work together. This process has not been examined in mental health services limiting our broader understanding of how, when, and why mental health systems change and impact service delivery.

Understanding partnership development, specifically how two organizations balance their unique needs and benefits of partnerships with conflict to sustain their

partnership has potential to explain why system gaps form or close, thus informing administrative and policy strategies for addressing fragmentation and unmet children's behavioral health service needs. This dissertation study examines voluntary partnership development among a regional network of children's behavioral health organizations (the Children's Service Coalition). The specific aims are to:

Aim 1 – Describe and explore the network of partnerships among members of the Children's Service Coalition.

Aim 2 - Assess the system's capacity to provide coordinated service delivery.

Aim 3 – Examine partnership development by testing how patterns of organizational characteristics influence conditions that facilitate and inhibit partnerships among the Children's Service Coalition organizations.

This study draws on network data on the relationships among 36 children's behavioral health organizations that belong to the newly formed Children's Service Coalition (CSC) in St Louis County, archival data from IRS 990 forms and CSC documents. Finally key informant interviews provide information about the historical context of the CSC, motivations for participating in the coalition, and the role of the coalition in the development of new partnerships among children's mental health organizations.

Chapter 2 - Background and Significance

2.1 Children's Mental Health System Fragmentation and Unmet Service Needs

In America, about 20% of children experience a diagnosable mental illness in any given year (Costello et al., 1996; Shaffer et al., 1996). However, only 20% of children with mental illness receive consistent treatment (Kataoka, Zhang, & Wells, 2002).

Providing mental health care to children and adolescents is far from simple; their complex service needs span beyond the boundary of a single clinical mental health care provider and includes multiple service delivery systems and organizations. A continuum of clinical mental health care services (crisis care, residential treatment, and outpatient services), substance abuse treatment, health care, and education are critical for supporting children with serious mental illness in the community.

Families of children face a confusing maze of services with multiple points of entry, and many do not know where to turn first (U.S. Department of Health and Human Services, 1999). Once youth enter the service delivery system, the fragmentation of the system, or lack of systematic and meaningful patterns of linkages among service providers (Tausig, 1987) creates additional barriers to accessing help. Accordingly, fragmentation has been cited as one of the most pressing challenges in mental health care by the President's New Freedom Commission on Mental Health (USDHHS, 2003). Organizations can play a key role in enhancing client access to care by developing partnerships, and working together to create a seamless and comprehensive system of mental health care consistent with the inter-agency collaborative principles of the Child and Adolescent Support Service Program (CASSP) (Stroul & Friedman, 1986).

Children's behavioral health service providers in St. Louis County serve as an example of a network of organizations that have recognized the potential impact of their collaborative efforts on system improvements consistent with CASSP principles. This study examines partnerships within a regional network of children's behavioral health service providers in St. Louis County Missouri that have recently organized themselves as the Children's Services Coalition (CSC). The CSC is dedicated to collaborative system level improvements and this group serves as the platform for understanding the structure of a regional children's behavioral health service delivery system, the factors that have contributed to the development of current partnerships among the member organizations, and what this means for the potential for coordination in the region.

2.2 What Is Fragmentation and Why Are Partnerships Important in Children's Mental Health?

Consistent with CASSP System of Care principles, a well coordinated children's mental health service delivery system consists of a continuum of mental health services (that range in service intensity and across sectors) that are connected in such a way that clients flow continuously through the network to needed services. While all organizations do not necessarily need to be connected to every other agency, all organizations should be connected to the larger system (as opposed to operating in isolation) so that clients can access services. Furthermore, organizations should be connected to other types of mental health and social service organizations so clients are able to access a comprehensive set of services (Stroul & Friedman, 1986). When the types and functions of services are split into distinct programs or organizations with no relationship or connections, services become fragmented (Roemer, Kramer, & Frink, 1975). Fragmentation is the absence of those expected or needed patterns of interactions

among organizations or sectors of organizations in a service delivery system (Gillespie & Murty, 1994). Fragmentation or “cracks” in the system prevent clients from reaching the services they need because of missing services, absent or distant pathways between critical services, or pathways characterized as highly conflicting (Gillespie & Murty, 1994; Tausig, 1987). The cracks in a system indicate what services are not coordinated.

Service pathways are created through repeated interactions between organizations. A wide range of terms have been used to describe how organizations interact such as coordination, collaboration, cooperation and integration that all fall under the general category of inter-organizational relationships (IORs). Inter-organizational relationships (IORs) are interactions between two or more organizations (Whetten, 1981) that, when repeated over time, create the structure of the system. In this study, the term “partnership” refers to the agreement between organizations to link their services and operations in some way. Partnerships among human service organizations take many forms and serve three main functions in human service delivery systems.

2.2.1 Functions of Partnerships in Mental Health.

Partnerships have three distinct functions in human service delivery systems: planning, administration, and service delivery (Bolland & Wilson, 1994a). Planning partnerships often take the form of coalitions and councils intended to build community capacity to address needs (Impink, 2004; Penner, 1995). Administrative partnerships are institutional agreements to build organizational capacity by sharing funding, space, or specialized staff (SAMHSA, 2002; Shortell, Gillies, Anderson, Erickson, & Mitchell, 2000; Van de Ven & Walker, 1984). Service delivery partnerships are provider-level interactions involving client referrals and information exchange (Provan & Sebastian, 1998). This study will specifically examine administrative and service delivery

relationships known to organizational leaders as evidence suggests that these types of relationships have been linked to improved client outcomes (Provan & Sebastian, 1998). However, as will be explained in Chapter 3, Section 2, the organizations in this study are all participants in a community coalition and therefore have a planning relationship with one another.

Administrative and service delivery relationships represent organizational agreements to partner (rather than individual agreements among clinicians) and offer an opportunity to understand organizational factors such as need, benefits and conflict.

2.2.2 Importance of Partnerships in Mental Health

Efforts to coordinate children's mental health service delivery systems have been evaluated in major demonstrations such as the Fort Bragg study. Similar approaches to enhancing coordination in adult mental health systems were evaluated in Program on Chronic Mental Illness (PCMI), the Access to Community Care and Effective Services (ACCESS). The findings across both children's and adult mental health system reforms tell a consistent story: partnership development changes systems but makes little difference for client mental health outcomes (Bickman, Noser, & Summerfelt, 1999; Lambert & Guthrie, 1996; Lehman, Postrado, Roth, McNary, & Goldman, 1994; Rosenheck et al., 2002).

However, these demonstrations focused primarily on relationships across the entire network of organizations. Other research suggests cliques that are strongly connected by both service delivery and administrative partnerships produce improved mental health outcomes, instead of overall system integration (Provan & Milward, 1995; Provan & Sebastian, 1998). Building service delivery and administrative partnerships among small groups of organizations may be more effective for addressing fragmentation

than large scale integration efforts. Therefore, this study will look at relationships among dyads of organizations in addition to the larger network structure, because they are the building block of small groups and whole networks (Whetten, 1981).

2.2.3 Prevalence of Partnerships among Mental Health Organizations

Relationships among mental health organizations are very common. Among adult service networks, the ACCESS Evaluation team reported that nearly half of the organizations in their demonstration sites had ties with one another and this trend held true for the St Louis region (Morrissey, Calloway, Johnsen, & Ullman, 1997a). In reports of children's service systems, the percentage of organizations connected to at least one other agency in the network increased to 93% (Morrissey, Johnsen, & Calloway, 1997) suggesting that children's service organizations are very likely to partner, potentially more so than their adult-serving counterparts, creating more dense networks. Therefore, children's mental health systems are ideal settings for examining partnerships.

Mental health organizations may have many partners and multiple types of relationships. For example, Provan and Milward (1995) found that adult-serving organizations had an average of 14 and 18 different types of service delivery and administrative relationships with eight to ten partners. Service delivery relationships tend to be more common than administrative relationships. Similarly, Johnson, Morrissey and Calloway (1996) found a greater proportion of children's organizations linked through service delivery relationships than funding or administrative relationships (Johnsen & Morrissey, 1996). These findings suggest that children's service organizations are very likely to partner, potentially more so than their adult-serving counterparts, creating more dense networks.

With a heavy emphasis on coordination among youth serving providers through the CASSP over the past 20 years, children's mental health organizations may manage a higher number of partners and a greater diversity of partnerships to help meet youths' service needs. Thus, children's service organizational leaders might have a more complex set of external relationships to manage than adult service organizations. However, just because the organizations are well connected does not necessarily imply that pathways between organizations that connect youth to critical services are present, or that those pathways are not problematic.

Therefore, a first step for assessing coordination and fragmentation in a network is the systematic identification of these partnerships. The first aim of this study is to describe and understand the network of partnerships among members of the Children's Service Coalition. The CSC was formed in early 2009 after a group of organizations that provide children's behavioral health services in St. Louis County, Missouri successfully organized to pass a tax levy for additional funding for children's services. These organizations represent a continuum of services that fall within the behavioral health service sector ranging from prevention to residential care. While these organizations have a history of working together, the group has organized themselves to promote further collaboration to meet the service needs of youth in St. Louis County. A description of the network can help the coalition establish a baseline assessment of coordination in their network, and identify gaps in their system that they can monitor over time to determine if they are making progress toward their goals.

Once partnerships are identified, the patterns of interactions among organizations can be further examined to determine the degree to which member organizations are

coordinating with one another. The second aim of this study is to assess capacity of the system to provide coordinated service delivery.

Tausig (1987) argues that the extent to which services are coordinated cannot be directly assessed by measuring organizational interactions. Coordination is a process whereby organizations align themselves with one another to pool resources, sequence activities, and/or adjust in response to one another (Thompson, 1967). While services cannot be coordinated if organizations do not interact, their interactions do not necessarily imply that organizations have aligned themselves in systematic and meaningful ways consistent with the definition of coordination. However the absence of key relationships in the network provides insight into what services are not coordinated. Therefore, the definitions of mental health system components outlined by the U.S. Department of Health and Human Services (1999) and service delivery system “cracks” outlined by Tausig (1987) and Gillespie and Murty (1994) was used to guide the assessment: a coordinated children’s mental health system should be (1) comprised of organizations that provide a variety of service types such as specialty mental health, general medical, human service, and voluntary supports (USDHHS, 1999). In addition, (2) organizations that provide the same types of services should be regularly equivalent (connected to the network in similar ways), (3) clusters of organizations that provide the same types of services should be directly or indirectly linked (not isolated or in the periphery of the network) to clusters of organizations that provide different (complementary) services and (4) partnerships among service organizations that provide complementary services should be characterized by low levels of conflict (Gillespie & Murty, 1994; Tausig, 1987). Once the capacity for coordination has been assessed and

gaps identified, the next step is to understand how organizations develop partnerships to bridge the gaps.

2.3 Closing the Gaps of a Fragmented System: How do Children's Mental Health Organizations Develop Partnerships?

Organizations can help close the gaps in fragmented systems and enhance systems' capacity for delivering coordinated services by developing partnerships. However, working with another organization can be risky. Even though they are working toward a common mission of serving youth with mental health needs, non-profit mental health organizations are independent economic entities and like all organizations, try to maintain their autonomy. Partnerships, or close working relationships with other organizations create dependence and chip away at an organization's autonomy. However, there are several conditions under which organizations would or would not consider sacrificing some of their independence and work closely with a partner.

First, organizations partner because they need one another in order to achieve their goals (Pfeffer & Salancik, 1978). Organizations may need their partners' resources to continue to operate, or need their service expertise to help improve outcomes for their clients – thus, organizations may have interdependent goals and depend on one another to operate and/or serve clients. Need for one another's resources can help foster and reinforce partnerships.

Second, while organizations may partner because they need to, they may also work together because they want to: organizations may perceive that they could gain more by working together than by working independently (Williamson, 1979; Williamson, 1981). In these situations, the perceived benefits may outweigh the disadvantages associated with losing autonomy. Benefits of working together might

include resource gains (funding or contracts, space) that help organizations run more efficiently, or they might help improve services delivered to clients by expanding the scope of available services or improving quality.

Third, organizations may choose not to partner in the presence of conflict (Gillespie, Colignon, Banerjee, Murty, & Rogge, 1993). Frequent and severe disagreements over the allocation of resources, appropriate treatment modalities for clients, or could create conditions under which organizations cannot partner. Even when the need or the perceived benefits are high, conflict that cannot be resolved can potentially undermine a partnership.

However, the need, benefits, and conflict that characterize partnerships are determined by the type of partner chosen. The combination of certain types of organizations may create different partnership conditions. For example, the financial performance of two partnering organizations may make a difference in the way that organizations depend on one another or benefit from their partnership. Two organizations that have good financial performance may not need one another's resources, but together create economies of scale that promote efficiency within the organizations and larger system. Likewise, two organizations with poor financial performance, that perhaps are running deficits may not experience the same type of benefits from working together as high performing organizations, but have a greater need for their partner in order to survive and continue serving clients.

The specific type of resource can make a difference as well. For example, organizations that provide different yet complementary services may need one another to help mutual clients improve their outcomes and perceive a benefit from working together

because they can link different types of services without having to develop new programs (creating efficiency, and improving access to care). At the same time, different service approaches might spur conflict among clinicians and administrators which, if unresolved, could outweigh any benefits or need, eventually undermining the partnership.

On the other hand, choosing a partner that is similar and competes for the same types of resources could also be beneficial for organizations. By pooling similar resources together, competing organizations may be more efficient, or more powerful as a team and therefore, continue to work together. However, if one of the partners acts opportunistically (taking advantage of the other), there is potential for conflict to arise, undermining the relationship.

Given the risks involved, trustworthiness is an important characteristic of a partner. A partnership between two organizations that trust one another to not behave opportunistically may reduce conflict, and enhance the benefits of working together. Conversely, a partnership between two organizations where the trust is low might lead to greater conflict that cancels out any benefit of or need to work together. Overall, developing partnerships reflects a consideration of the complex interactions of many different conditions that are influenced by the way partners are matched.

2.3.1 Partnership Development Framework

The complex interaction of these organizational characteristics on partnership conditions drives the partnership development process however, exactly how and why mental health organizations develop and sustain their partnerships is relatively unexamined. Mental health services researchers have examined partnership development by assessing the association between antecedent factors (such as perceived partnership

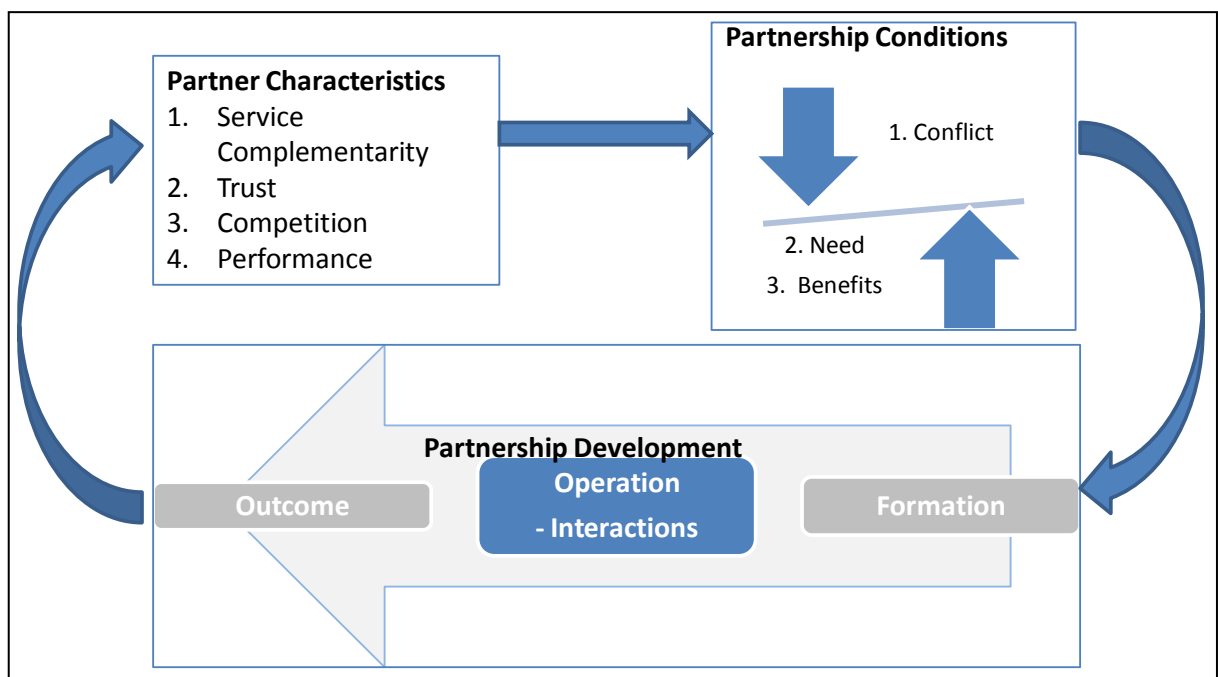
need, benefits and conflict as described above), organizational characteristics (e.g. Bolland and Wilson, 1994) or environmental factors (Provan, Sebastian, & Milward, 1996) and the presence or absence of a partnership. While these associational designs were helpful for identifying factors related to partnerships among organizations, we still know little about the partnership development process, or exactly how organizations develop the partnerships necessary to close the gaps of a fragmented system. Although the demonstration projects evaluated whether partnerships developed over time, they do not focus on the specific causal mechanisms of partnership development either (Hohmann, 1999).

Filling this knowledge gap has potential to help organizational leaders manage their partnerships and address cracks in the mental health service delivery system. Drawing from process frameworks offered by Das and Teng (2002) and Ring and Van de Ven (1994) in organizational behavior and management, the framework posited in this study marries the organizational characteristics and partnership conditions that influence partnerships with the partnership development process. Consistent with theories of inter-organizational relationships, the framework explains partnerships at the dyadic-level.

There are three components of this framework (Figure 1). First, characteristics of partnering organizations (competition, trustworthiness, service complementarity, and financial performance of the organizations) influence partnership conditions such as the need, benefits, and conflict. Second, the balance of partnership need, benefits, and conflict influence the development of partnerships that consists of three stages: 1) formation, which includes negotiation of the partnership terms and commitment, 2) operations where organizations carry out the terms of the partnership through their

interactions, and 3) outcomes, or whether the partnership is maintained, changed, or dissolved (Ring & Van de Ven, 1994). However, as the partners interact, they change in response to their partners (Das & Teng, 2002). The third component involves feedback processes where development affects the organizational characteristics and partnership conditions, thus either reinforcing or weakening the development process.

Figure 2.1. Conceptual Model of Partnership Development

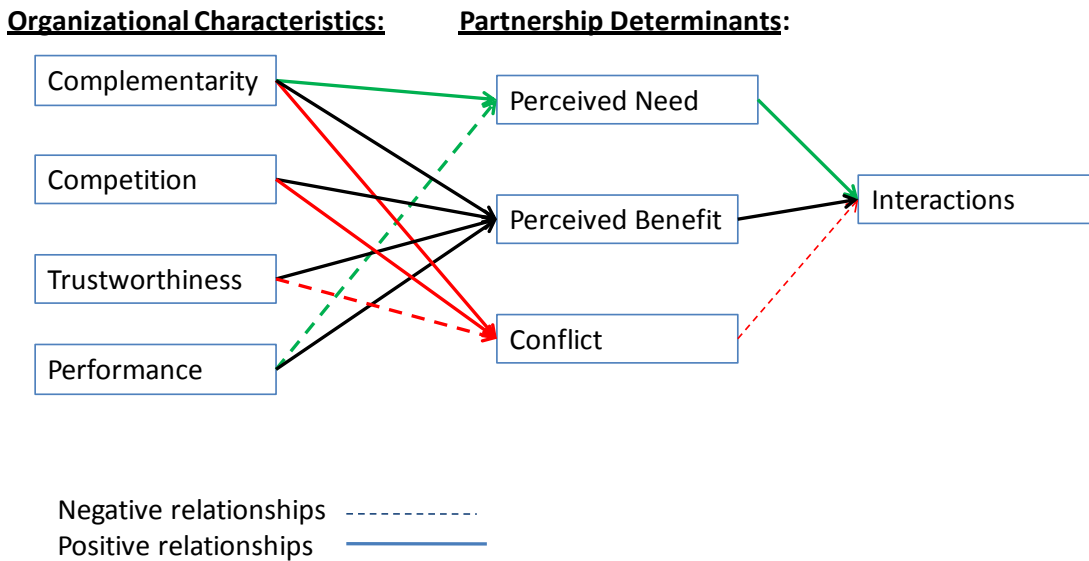


Therefore, partnership development is a complex process that has not been examined as such in mental health. This study will focus on the first two components of this process and the third aim of this study is to test a series of hypotheses to examine how patterns of organizational characteristics influence the perceived need for, benefits of, and conflict between organizations, and partnerships among the children’s mental health organizations.

The hypothesized relationships to be tested are contained in Figure 2.2. The overall model hypothesizes that perceived partnership need, benefits and conflict mediate the relationship between organizational characteristics and the degree to which organizations partner. The green lines demonstrate how financial performance decreases, but complementarity increases the level of perceived need which also positively relates to the degree to which organizations partner. The black lines denote how financial performance, service complementarity, trustworthiness, and competition drive partnerships by enhancing the perceived benefits. Finally the red lines illustrate how domain similarity and service mix can limit partnerships by increasing conflict, but trustworthiness has potential to counteract those negative influences by decreasing conflict among organizations.

Of particular interest is the complexity that arises when the characteristics of partnering organizations that contribute to partnership development (by enhancing the perceived need or benefits of working together) can also lead to conflict, which may undermine existing partnerships or prevent them from ever forming. Investigating how organizations balance the drivers and drawbacks is important for understanding the reasons why certain organizational pairs are able to develop and sustain partnerships and others are not.

Figure 2.2. Hypothesized Relationships



The rest of this chapter explains the hypothesized model by reviewing the theoretical and empirical evidence. First, three direct determinants or partnership conditions are described in section 2.4: the need for the partnership, perceived benefits, and conflict. These three conditions shape the degree to which organizations interact through the exchange of resources. Second, the organizational characteristics hypothesized to influence the partnership conditions are presented in section 2.5: service complementarity, competition, financial performance, and trustworthiness.

2.4 Why Do Mental Health Organizations Partner? Partnership Conditions

2.4.1 Need: Organizations Partner to Access Needed Resources

According to resource theory perspectives, organizations partner voluntarily to access resources that are important for organizational survival or growth. In mental health organizations, these resources include funding, service expertise, space, or other organizational resources (which characterize administrative partnerships) and clients

(which characterize service delivery relationships) (Levine & White, 1961; Pfeffer & Salancik, 1978; Reid & Zald, 1965).

Individual organizations may be unified by a common goal (e.g. provide comprehensive services) that they cannot achieve independently (Lundin, 2007; Zapka et al., 1992). From a resource dependence perspective, populations with highly complex service needs, such as persons with mental illness, place service demands on organizations that may exceed their capacity and cannot be addressed within the context of one organization creating a need for a partnership (Jang & Feiock, 2007; Provan & Milward, 1991). Therefore, agencies that serve persons with mental illness often depend on the resources from other organizations to promote recovery and well-being creating a partnership need. The strong need for another organization's resources or supports may drive interactions among mental health organizations.

2.4.2 Benefits and Conflict: Organizations Partner to Maximize Benefits and Minimize Negative Effects

According to transaction cost economics (TCE), efficiency is the primary driver of new IORs (Oliver, 1990; Reitan, 1998; Williamson, 1979; Williamson, 1981). TCE explains two types of organizational decisions related to IORs: 1) the decision to interact with another organization in the marketplace for products/services versus develop the product/service internally and 2) decisions regarding the structure or terms of the partnership. The former will be explicitly investigated in this study.

Often, developing a new program or service capacity is costly and time-consuming therefore organizations may want to work together. Expanding organizational capacity to provide a new service requires dedicated resources that may be in short-supply especially for non-profit organizations. By partnering, organizations may benefit

by expanding their access to programs and services for clients (Selden, Sowa, & Sandfort, 2006; Sowa, 2008; Takahashi & Smutny, 2001; Zapka et al., 1992), funding (Zapka et al., 1992), and improving client-level mental health outcomes (Provan & Milward, 1995; Provan & Sebastian, 1998). Therefore, perceived partnership benefits drive interactions between mental health organizations. However, when the costs outweigh the perceived benefits, organizations may choose not to partner or dissolve their partnership. Particularly for human service organizations, costs or negative effects of partnerships are related to conflict that arises due to conflicting treatment philosophies (Gillespie, Colignon, Banerjee, Murty, & Rogge, 1993; Ryan, Tracy, Rebeck, Biegel, & Johnsen, 2003) and opportunistic behavior (using partnerships to gain power and control). Therefore, conflict is likely to reduce interactions between mental health organizations that partner (Impink, 2004; Ryan, Tracy, Rebeck, Biegel, & Johnsen, 2003).

2.5 What Mental Health Organizational Characteristics Influence the Determinants of Partnerships?

Four organizational characteristics have been associated with partnerships among mental health organizations: service complementarity, competition, trustworthiness and financial performance. However these characteristics can both help and hinder partnerships. It is hypothesized that organizational characteristics do not directly impact the interactions among organizations. Rather, organizational characteristics influence the perceived need and benefits that drive partnerships, as well as conflict which limits partnerships.

2.5.1 Service Complementarity Influences Partnership Need, Benefits and Conflict

Based on resource dependence theory, organizations with different but complementary capabilities or services, may become dependent on one another. Two

organizations that provide unique services but share the same goal (e.g. improving the mental health outcome for a client they both serve) depend on the unique services provided by one another to improve the mental health status of their client.

Organizations with different, yet complementary capabilities (or services in the case of children's mental health organizations) are likely to partner because they rely on one another's resources creating dependence (perceived need for the partnership) (Harrison, Hitt, Hoskisson, & Ireland, 2001). The first hypothesis that will be tested is:

Hypothesis 1: Service complementarity increases the perceived need for a partnership which increases the degree to which organizations partner.

However, human service organizations have also considered the complementarity of services as a benefit of the partnership because they are able to expand the scope of behavioral health services they can provide to their clients (Selden, Sowa, & Sandfort, 2006; Sowa, 2008b; Takahashi & Smutny, 2001; Zapka et al., 1992). Thus, organizations look for compatible "win/win" situations where both partners benefit (Wohlstetter, Smith, & Malloy, 2005).

On the other hand, ideological differences (Gillespie et al., 1993), and resistance to changing philosophies and approaches (Ryan et al., 2001) can create conflict. The diversity of the services offered between the two organizations may increase conflict (Das & Teng, 2002). Thus, consistent with transaction cost economics, organizational differences in services (complementarity) can increase both the perceived benefits and the conflict between partners, which can facilitate and undermine partnerships – a potential contradictory effect. Complementarity may only facilitate partnerships under

minimal levels of conflict, but contribute to dissolution when high. Therefore, the second and third hypotheses that will be tested are:

Hypothesis 2: Service complementarity increases the degree to which organizations partner by increasing the perceived benefits of a partnership.

Hypothesis 3: Service complementarity increases conflict, and decreases the degree to which organizations partner.

For children's mental health organizations that provide complementary services and are highly dependent on one another, strategies for working across disciplines or treatment approaches may be particularly important for sustaining the partnership.

2.5.2 Organizations That Compete With One Another Partner to Increase Benefits, but May Increase Conflict.

Similar organizations operating within the same sector, like children's behavioral health organizations compete with one another for similar resources such as funding, client referrals, and professional staff consistent with population ecology theory (Aldrich & Pfeffer, 1976). However, organizations that are highly competitive with one another are also likely to develop relationships as a way of adapting to competition. When looking for resources (clients, funding, services), organizations may select partners that appear similar to themselves. Organizations that share a primary service domain (or population) are likely to work together, forming cliques or small components of larger service delivery systems (Bolland & Wilson, 1994; Ivery, 2007; Rivard & Morrissey, 2003; Wickizer et al., 1993). Children's behavioral health organizations may differ in that they provide different levels of care (inpatient versus crisis intervention, or psychiatric care versus substance abuse treatment) however are similar in that they provide care to the same population. An organization may target their services to the same client population or serve the exact same clients served by a partnering organization.

Therefore, both organizations can pool their resources to benefit their clients and achieve their mission or goals. The fourth hypothesis to be tested is:

Hypothesis 4: Competition between two organizations (for funding, client referrals, and professional staff) increases the perceived benefit of a partnership, increasing the degree to which organizations partner.

Pooling similar resources advances a mutual goal that one organization might not achieve alone (Ivery, 2007), but it also raises potential for conflict because agencies compete with one another for resources (Das & Teng, 2002). Children's mental health organizations with similar client domains may partner to enhance benefits, but experience conflict at the same time. Thus, the fifth hypothesis is:

Hypothesis 5: Competition between two organizations increases conflict, decreasing the degree to which organizations partner.

Therefore, partnerships among competitors may create conditions that simultaneously facilitate and undermine interactions. If in fact, partnerships between competitive organizations are characterized as beneficial but with high conflict, conflict resolution strategies may be particularly important for helping children's mental health organizations that serve similar clients and families sustain their partnerships and prevent further cracks in the system.

2.5.3 Organizations Partner with Trustworthy Organizations to Enhance Benefits and Reduce Conflict

Trust (that organizations will not take advantage of their partner) is critical for partnerships because it can balance negative effects such as risk of opportunism or conflict (Alter & Hage, 1993; Coleman, 1988). Trust has been emphasized as a critical driver of partnerships by both transaction cost economists (Williamson, 1981) and other economic sociologists (Granovetter, 1985). Without trust, organizations may be hesitant

to align their services and operations. Trust may lead to lower levels of conflict that might arise from opportunistic behavior, and potentially enhance the benefits of partnerships. The sixth and seventh hypotheses that will be tested are:

Hypothesis 6: When partners perceive one another as trustworthy, the perceived partnership benefits are enhanced, increasing the degree to which organizations partner.

Hypothesis 7: When partners perceive one another as trustworthy, conflict is reduced, increasing the degree to which organizations partner.

Trust is hypothesized to drive partnership development and is a critical variable to examine. The absence of trust (or low levels) may help explain why organizations do not partner and fragmentation in the system. However, trust is often developed over time through organizations' previous working relationships (Rivard & Morrissey, 2003) therefore it is likely that conflict between partners over time reduces trust suggesting that the relationships posited in Hypothesis 7 are time dependent.

2.5.4 Organizations' Financial Performance Influences the Need for a Partnership and Benefits

High performing organizations are desirable partners because they have resources (Das & Teng, 2002). These resources often translate to status, influence, and professionalism. Human service organizations are likely to partner with organizations that have resources to increase their own legitimacy (Ebaugh, Chafetz, & Pipes, 2007; Rivard & Morrissey, 2003; Sowa, 2008). Children's mental health organizational partners may perceive that they experience more benefits from their partnership when their partner is a high-performing organization. If, as transaction cost economist posit, efficiency drives partnership development, then benefits like enhanced legitimacy or access to an abundance of resources that are offered by a high performing partner should drive interactions among organizations. The eighth hypothesis is:

Hypothesis 8: Organizational financial performance increases the perceived partnership benefits, and the degree to which organizations partner.

Organizations use partnerships with strong agencies to appear as successful as their partners and become stronger performers themselves (Arya & Lin, 2007).

Consistent with resource dependence theories, weak organizations may have a greater need for a partnership, whereas high performing organizations that have the resources, and reputation to achieve their mission may not perceive a high need for a partnership.

The ninth and final hypothesis that will be tested is:

Hypothesis 9: Organizational financial performance decreases the perceived need for a partnership, and decreases the degree to which organizations partner.

Thus, organizational financial performance may both facilitate and undermine partnerships among children's service organizations. Support for Hypothesis 8 would provide evidence of efficiency as a driver of partnership development among mental health organizations where as support for Hypothesis 9 would suggest need and dependence as the primary driver. Understanding what types of partners create the conditions that are likely to facilitate partnerships can help organizational leaders as they choose partners and address gaps in the children's mental health system.

2.5.5 Gaps in our Knowledge of Mental Health Organizational Characteristics & Partnership Conditions

Most empirical research on organizational characteristics and partnerships has been conducted with allied service organizations like health service organizations (i.e. Provan, Nakama, Veazie, Teufel-Shone, & Huddleston, 2003; Takahashi & Smutny, 2001) although a number of studies have focused on children's service organizations including children's behavioral health (i.e. Rivard & Morrisey, 2003). However, the relationships between the characteristics of partners and partnership conditions have not

been explored together in mental health. This study addresses that knowledge gap and can help explain why children's mental health organizations develop partnerships, how their interactions influence the structure of the system, and its capacity for delivering coordinated services thus helping to explain how micro-level phenomenon influence the macro structure.

2.6 How Do Partnerships Impact Organizations, Partnership Conditions, and Future Interactions among Children's Mental Health Organizations?

Partnership evolution scholars assert that the interactions among organizations influence organizational characteristics, which determine the partnership conditions and subsequent interaction patterns (Das & Teng, 2002; Ring & Van de Ven, 1994). Thus, there is a feedback loop representing a dynamic process.

The literature suggests trust is developed by working together, indicating the importance of time and prior relationships. Over time, organizations that work together learn about the trustworthiness of one another. In the general human services literature, previous successful interactions opened the door for subsequent partnerships among human service agencies (Provan et al., 2003; Rivard & Morrisey, 2003; Wohlstetter et al., 2005). On the other hand, unsuccessful interactions may inhibit future partnerships suggesting that organizations learn about their partner's trustworthiness during their interactions, denoted by the feedback loop in the model. Das and Teng (2002) hypothesize that in stable relationships, previous interactions inform organizations' perceptions of their partners' trustworthiness, subsequently enforcing the benefits and minimizing conflicts that drive subsequent interactions. This complex feedback process is neither articulated nor examined among mental health organizations and rarely studied in strategic management literature with a few exceptions (Doz, 1996; Van de Ven &

Walker, 1984). The aims proposed in this dissertation will help launch a future exploration of the dynamics of how networks emerge, as partnerships influence the organizations in the network, the partnership conditions (specifically benefits and conflict), and interactions between children's mental health organizations over time.

Chapter 3 - Research Design and Methods

This project is a predominantly quantitative cross-sectional network study of relationships among children's mental health organizations that belong to the newly formed Children's Service Coalition (CSC). Both the whole network and the dyadic ties among the organizations serve as the units of analysis. Quantitative data were collected using a network survey and archival data sources. In addition, key informant interviews were conducted to explore contextual influences that might affect the hypotheses tested.

At the network level, where we know less about the way that micro-behaviors impact the emergence of the macro-structure, the qualitative and descriptive quantitative network data were used to explore the environmental context, the history of the CSC and the current network (Aims 1 and 2). At the dyadic level, the quantitative data were used to confirm the relationships among organizational characteristics, partnership conditions, and the degree to which organizations partner (Aim 3). One of the strengths of this approach is the ability to both test and build theory at multiple levels to understand complex phenomenon (Teddlie & Takashori, 2009).

This chapter first describes the exploratory qualitative methods used to learn about the CSC and the service delivery system. The second section presents the population of children's behavioral health organizations examined in this study including recruitment and data collection procedures. Third, measures are described including the development and pilot test of the network survey instrument, and definition and measurement of each variable. Finally, data analysis procedures are outlined including data management, descriptive network analysis procedures that describe the whole network consistent with Aims 1 and 2, and multivariate analyses for testing the mediating effects hypothesized in Aim 3.

3.1 Key Informant Interviews: Learning about the Context of the CSC

The purpose of the qualitative interviews was to gather contextual information about the history of the CSC, prior working relationships or the history of collaboration among the organizations in the CSC (which could influence levels of trust), inform data interpretation, and tailor recommendations to the CSC as they work toward their goal building collaboration across the network. In general, the qualitative data were used to complement or elaborate on the quantitative data (Rossman & Wilson, 1994).

3.1.1 Key Informant Sample

The informal interviews were conducted with nine key informants including key leadership (Chair, Treasurer, both chairs of the Advocacy Committee and the Liaison to the Children's Services Fund, – all are executive directors or administrators of member organizations), and four staff from the St. Louis County Children's Services Board,. Sampling for the key informant interviews was purposive. Key players in the CSC network and children's behavioral health system who were most informed and familiar with the CSC, and service delivery system were purposefully selected because they are likely to be the most informed about the CSC and its intended role in the service delivery system (Teddlie & Tashakkori, 2009). For these reasons, the executive committee members of the CSC and the staff of the Children's Services Fund were selected.

3.1.2 General Interview Guide

Interviews followed a general interview guide where four topics were determined ahead of time, but the exact wording of the questions and follow-up probes were decided during the interview (Teddlie & Takashori, 2009). The topics discussed were: motivations for the formation of and involvement in the CSC, 2) motivations for pursuing further collaboration among the CSC organizations, 3) the familiarity of the key informant's organization with the other organizations in the network, and 4) the types of

services that are expected to be connected (Appendix A). This approach allowed for more informal conversational interviews where additional related questions could emerge. For example, other topics included competition, plans for new partnerships, perceived power dynamics, expectations for how the CSC and the network will change after the Children's Services Fund awards the first year of funding, and sustainability of the coalition.

Interviews took place at the tail end of quantitative data collection and at the start of the quantitative data analysis. Therefore, particularly in the later interviews, interview respondents were also asked to for their opinions on preliminary findings, and why certain patterns occurred in the data. This data collection strategy was selected to ensure that basic information was covered (such as the history of the CSC) while at the same time hearing participants describe their own viewpoints and highlight key issues they believe are most relevant to partnerships and the regional service delivery system.

3.1.3 Analysis

Interviews were analyzed using an inductive approach, where themes emerge from the data. First, audio recordings were transcribed and the narratives were grouped into general topical categories that addressed the broad topics and questions in the interview guide such as "history," "motivation for joining the coalition," "familiarity" and "coordination ideals." From there, data were also grouped into other (not mutually exclusive) topical areas like "trust," "competition," etc.

The data were intended to elaborate on the patterns in the quantitative data and understand the context of the CSC so the next step was to examine the narratives for content related to CSC history to inform Aim 1. Next, the narratives were examined following univariate, bivariate, and multivariate analysis for Aim 3 for examples and

details that illustrated, contrasted, or offered additional explanation of the quantitative results. Relevant findings and examples are integrated into the findings reported in Chapter 4.

3.2 Population

This study examines the population of children’s behavioral health service organizations that serve youth in St. Louis County and participated in the Putting Kids First Initiative. Data were collected from 32 organizations, or 88.9% of CSC members that provide direct client services. A total of 45 organizations that participated in the CSC/Putting Kids First Initiative were initially offered the opportunity to participate representing 40 organizations who were current paid members, and five organizations being recruited for membership by the CSC. Four member organizations serve as capacity building or advocacy organizations and do not provide direct client services. Because this study focuses on partnerships based on both client referrals and administrative ties, organizations that do not provide direct services were not included in these analyses. Therefore the network boundary includes a total of 36 member organizations with a total of 630 dyads $[(36*35)/2]$ (Wasserman & Faust, 1994).

All organizations are nonprofits (formally registered with the IRS as a 501(c)3 that provide mental health services in St. Louis County in Missouri. “Children’s mental health services” is defined broadly to include crisis intervention, school and home-based prevention programs, temporary shelter, outpatient psychiatric and substance abuse treatment, individual, group and family counseling, services for pregnant teens, and respite care (see Appendix B – List of Services).

3.2.1 Recruitment

To build buy-in for the study, the PI communicated with CSC leadership in the months leading up to data collection, attended CSC meetings to present preliminary study ideas as an invited guest, distributed study information sheets to CSC organizations, discussed the study informally with executive directors, and provided periodic updates to CSC and Children's Service Fund leadership.

In October 2009, the executive directors (or the most senior managers) of all 45 organizations were emailed a link to an online survey at SurveyMonkey.com that they volunteered to complete on behalf of their organization or give to the manager or staff person most capable of responding to the survey. Given the length and complexity of the survey, organizations were also offered the opportunity to complete the survey in hard-copy. Executive directors who did not respond within two weeks of the initial contact were sent reminder emails, and follow-up phone calls every other week. Data collection proceeded until March 2010. The four organizations that are paid members but for which there are no data, either declined to participate (n=1) or never responded to participation requests (n=3).

3.2.2 Data Collection

Quantitative data were collected in two ways. First, most of the quantitative data were collected via a network survey (administered either online, with a paper copy sent through the mail, or over the phone) using adaptations of standardized measures of partnerships. The responses from each agency (a focal agency) about the other 36 organizations in the network were matched with the responses about the focal agency from the other organizations in a case-by-case matrix to present information about the relationship between each potential pair of organizations.

Second, quantitative data on two partner fit characteristics (financial performance, and service complementarity) were derived from archival data available through IRS 990 forms and the most recent version of the CSC's Needs Assessment. Completed IRS 990 forms were downloaded from Guidestar.org and annual revenue for reporting years 2004, 2005, and 2006¹ were extracted for each organization. Results of a needs assessment conducted with children's services organizations in St. Louis County in January 2010 by the St. Louis County Children's Services Fund were used to gather information about the types of services provided by the member organizations.

3.3 Quantitative Measures

3.3.1 Instrument Overview

Respondents were asked to report on their interactions with the other organizations in the network using a roster format (Wasserman & Faust, 1994). Four items assessed the degree to which the responding organization has an administrative (involved the exchange of funding or staff) or service delivery (involving the exchange of client referrals or case conferencing) relationship. Second, participants responded to a set of items designed to assess the three partnership determinants (perceived benefits, need and conflict), two partner fit characteristics (trustworthiness and competition). Finally, organizations reported on the duration of their working relationship with the other agencies, and the number of full and part-time staff.

These items were drawn from several standardized measures and indicators of partnerships from Van de Ven and Ferry's (Van de Ven & Ferry, 1980) Organizational Assessment - also catalogued in Morrissey, Hall, & Lindsey (Morrissey, Hall, & Lindsey, 1982). However, several items were developed to specifically measure the constructs in

¹Annual revenue serves as a proxy for organizational financial performance. Given the economic instability that occurred in 2007, these three reporting years were selected and averaged to help ensure the measure reflected a relatively stable assessment of organizational revenue/financial performance.

the model. Unless otherwise noted, 11 point phrase completion scales were used as the response scales for all survey items and are contained in Appendix B. Phrase completion scales respond to the limitations of traditional Likert scales (multi-dimensionality, ordinality, and the difficulty of assigning consistent meaning of the scale values across subjects) (Anderson et al., 1983). All measures represent categorical variables, but the 11 point response scale approximates a continuous scale.

3.3.2 Pilot Testing and Instrument Development.

The instrument was piloted twice. The first pilot test was conducted with colleagues of the PI who were asked to take the survey, report time estimates, and provide feedback on the wording of the questions. This pre-pilot helped identify problematic questions (lack of clarity, multiple meanings). Questions were refined and the second pilot test was conducted with executive directors or program directors in a network of 15 HIV/AIDS service organizations in NJ. The purpose of this second pilot was to refine the questions and response scales. Pilot participants were asked to estimate the approximate length of the instrument and comment on the clarity of the items, directions, ease of answering, and structure of the survey. Based on their responses and feedback, instructions and questions were further revised.

3.3.3 Variables and measures

Each of the variables in the conceptual model are defined below and the final measures used are described. It is important to note that the survey items assess each organization's perception of the other agencies in the network thus representing one half or one side of the dyadic relationship examined in the study. Because the dyad is the unit of analysis, responses from each agency about the other organizations were matched with the responses from their partners, summed and/or calculated consistent with the

directions for the measures. For example, Agency A's responses about Agency B were added to Agency B's responses about Agency A (unless otherwise specified). Measures for each variable are described below and further detail related to items, response scales, calculations, and data transformations are contained in Appendix C.

Partnerships (Dependent Variable)

The presence of a relationship is conceptualized in terms of resource transactions between organizations and will be measured using four items from Van de Ven and Ferry's (1980) Resource Flows scale which also serves as the **partnerships** measure. This measure assesses the extent an organization sent resources to their partner in the past six months. Four different service delivery and administrative resources are assessed by the resources exchanged: 1) money; 2) use of staff; 3) client referrals, and 4) physical equipment/space. The original scale also measures the exchange of consultation/technical assistance; public visibility, goodwill or prestige; and attainment of goals or mandates. These three types of resources will not be included because consultation/technical assistance is extremely similar to sharing staff and their expertise, and both the attainment of public visibility and organizational goals can be considered benefits of partnerships, rather than resources that are exchanged. Additionally, the original measure also assesses the extent to which an organization receives resources however, preliminary feedback on the instrument indicated that participants may have difficulty estimating how much of another organization's resources they receive. Therefore, only sent resources were directly measured – the resources each organization receives will be inferred based on the partners' response. Similar measures have been used in previous mental health services research (Morrissey, Calloway, Johnsen, & Ullman, 1997b). Ties based on each of the four types of resources will be the basis for

Aim 1, while a response to a service delivery related resource (client referrals) AND an administrative related resource (money, staff, or physical space) will constitute a partnership in Aim 2. The aggregate total score of all four types of resources will be examined in Aim 3.

Partnership Conditions (Mediating Variables)

The **need for the partnership** or the extent that organizations need one another to achieve their goals will be assessed using one scaled item in Van de Ven and Ferry's Resource Dependence scale. This scaled item assessed executive director's perception of how much their organization needs the resources from their partner. To address skewness, this variable was transformed by adding a constant and taking the square root.

Partnership benefits, the extent to which organizations perceive their partnerships yield benefits or are effective, will be assessed using three items developed specifically for this study. Scaled items will assess the extent to which partnerships benefit three dimensions of health service delivery: 1) enhancing efficiency, 2) client access to services, and 3) quality of care ($\alpha=.95$). The efficiency item focuses on benefits for organizational functioning, while the access and quality items focus on benefits to clients.

The degree of **conflict**, or discord between organizations was measured using two items that will assess two dimensions of conflict: frequency and severity ($\alpha=.93$)

Organizational Characteristics (Independent Variables)

In this study, **complementarity** of services is the number of distinct service types across both partner organizations. This information was gathered from the January 2010 Needs Assessment conducted by the newly established Children's Services Fund in St. Louis County (St. Louis County Children's Service Fund, 2010). County staff conducted

a brief online survey to the members of the Putting Kids First Initiative where agencies reported types of services provided using the service categories and definitions for ten types of services fundable under Missouri State Statute RSMO 210.860: crisis intervention, school and home-based prevention programs, temporary shelter, outpatient psychiatric and substance abuse treatment, individual, group and family counseling, services for pregnant teens, residential care services and respite care (Appendix A). In situations where there was missing data for the organizations in the needs assessment, services were categorized based on publically available organizational materials including program brochures, websites, and 990 forms listed on Guidestar.org. The number of services each organization provides was compiled for both organizations in the dyad and totaled, and a proportion was calculated that reflects the number of unique service programs given the total number of service programs offered across both partners:

$$\# \text{ of Unique Services Offered between A \& B } \div (\text{A's \# of Service Programs} + \text{B's \# of Service Programs})$$

Scores can range from 0.5 to 1.0 where the higher the score, the greater the complementarity of services. For example, if Organization A provides prevention services and Organization B also provides prevention services, together they offer two service programs, but only on unique service type, and their complementarity score is 0.5 [$1/(1+1) = 0.5$]. Likewise if Organization C provides outpatient psychiatric services and Organization B offers prevention and substance abuse treatment services, together the pair offers a total of three programs, all of which are unique, therefore this dyad's score is 1.0 [$(1+2)/(1+2) = 1.0$].

Since larger organizations may be more capable of providing many different services (there are greater numbers of staff allowing for differentiation of tasks and

functions), **size** was used as a control. Two open-ended items in the survey assessed the number of (1) full- and (2) part-time employees which were summed². This variable yielded a skewed distribution and values were modified using a square root transformation.

Competition, the degree to which partner organizations have overlapping markets (and thus compete for similar resources) was measured using three items drawn from Van de Ven and Ferry's (1980) five-item domain similarity measure that assess the extent that each organization perceives that it draws similar resources from the environment as each of its partners. Funding sources, client populations, services, program goals, and professional staff are assessed in the original scale along a five point Likert response scale but had low reliability ($\alpha=.31$). Given the low reliability of this scale, only three items (funding, client populations, and professional staff) were used. Client populations represent a production input, or the raw materials that are transformed by the organization where as funding and professional staff are both considered maintenance inputs (Hasenfeld, 1983). On the other hand, program goals and services represent a different category of concepts: services are considered throughputs (Katz & Kahn, 1978) and program goals are related to the outputs of the organization. Cutting down the scale to include only those items which measure conceptually similar constructs in addition to the conversion of items to phrase completion scales improved the reliability ($\alpha=.66$). The reliability of the three measures is higher than using items for just funding and clients ($\alpha=.55$), funding and staff ($\alpha=.582$) or staff and clients ($\alpha=.55$). The distribution of

² For those organizations that did not respond to the survey or this item, this data was extracted from IRS 990s, however breakdowns by full- and part-time status were not available for all organizations so the number of full-time equivalents could not be calculated for each dyad with confidence.

competition scores was highly skewed therefore transformed by adding a constant and taking the square root.

Trustworthiness was measured using one item from the inter-organizational trust scale (Zaheer, McEvily, & Perrone, 1998). The original scale assesses cognitive, behavioral, and emotional components of trust such as fairness, faith in their partner, and evenhanded negotiations with good reliability ($\alpha=.77$). Four of these items may not have been valid for non-profit organizations as the questions assessed behavior related to product-specification, profiting, and negotiations. Therefore, only one item was retained (originally worded as “Supplier X is trustworthy”). The **duration**, or number of years that two organizations have been working together could influence the perceived trustworthiness of a partner. Therefore duration was measured with a single ordinal item which was dichotomized (prior working relationship or no prior working relationship) in analysis.

Organizational **financial performance** was measured in terms of the three year average of the total net gains or losses of both partner organizations found in the IRS 990 forms. Net gains or losses were derived from the difference of total revenues and expenses. Higher performing organizations will yield a net gain over time, while more poorly performing organizations run deficits. To smooth out yearly fluctuations due to grant, contract, or reimbursement regularities, and a three year average (2004-2007) of revenues and expenses were used. To account for differences in the size of annual revenue among the organizations, these figures were normalized by taking the proportion of the net gain/loss to the total average annual revenue. Given the impact of the recession on non-profit organizations, the three reporting years immediately prior to the first full

year of the recession (2008) were selected. The proportion of net gains or losses were summed across the dyad which yielded a skewed distribution. A constant was added (to make all values positive) and squared twice.

3.4 Quantitative Analysis

3.4.1 Data Management

First, survey data were downloaded from SurveyMonkey.com, restructured (from wide to long) and merged with data from IRS 990 forms. Second, the data for each organization were entered into MS Access using a pre-formatted relational database (using the World Trade dataset as a template; available on the Pajek website) where one table contained the list of organizations and pertinent characteristics (service categories) that served as the list of vertices and partition data used in the network analysis. A separate table was created for each directed relationship in the network, or the arcs in the network. Data reports were exported and read into Pajek version 1.26 and imported into UCINET version 6.278 network analysis software (for analyses related to Aims 1 and 2, and bivariate correlations related to Aim 3). The database table of directed relationships (arcs) was also imported into SPSS where data were merged to create a dataset of dyads, calculate composite variables, transform variables as appropriate and conduct basic univariate analyses. From SPSS, the data set was saved as a comma separated file for use in Mplus, and saved as a STATA data file for analyses related to Aim 3.

3.4.2 Missing Data

Among the 36 organizations, there are a total of 630 potential ties $[(36*35)/2]$ (Wasserman & Faust, 1994). With the responses from the 32 organizations, there are bidirectional data (data from both partners) on the interactions among 496 dyadic relationships (79%), at least unidirectional data (data from at least one partner) on 624 dyadic relationships (99%), and no data on six relationships (1%). While the potential for

imputation of network data has been discussed (Huisman, 2009), it has been noted that there are no substantial benefits of advanced imputing methods over simply adopting the partner's rating of the tie (reconstruction). Therefore, for dyads where there was a missing response, the partner's rating was applied to the dyad.

3.4.3 Descriptive Network Analysis (Aim 1)

Network Visualization

The survey collected detailed values for both directions of the partnership (A to B, and B to A). To understand resource pathways through the network, the network was treated as a directed network or asymmetrical matrix. Using Pajek (de Nooy, Mrvar, & Batagelj, 2005) and UCINET (Borgatti, Everett, & Freeman, 2002), network analysis software packages, the network was first drawn and described in terms of the density (proportion of the network that is connected) and centrality (degree, closeness, and betweenness).

3.4.4 Blockmodeling and Subgroup Analysis (Aim 2)

To assess the network's capacity for delivering coordinated services, two network reduction techniques were used: blockmodeling and subgroup analyses.

Regular Equivalence

Blockmodeling was used to identify cracks or fragmentation in the network. Blockmodels reduce the network down to groups of organizations with common relationship patterns (Knoke & Yang, 2007). Thus, this approach is appropriate for examining the relationships among clusters of organizations (de Nooy, Mrvar, Batagelj, 2005).

To determine whether organizations that provide the same services are regularly equivalent and occupy the same position in the network, actor attributes, specifically the type of services provided by the organizations will be used to interpret the blockmodel.

The network was partitioned – organizations were categorized by core service type. Using this partition, the organizations were re-ordered in the matrix, or permuted to cluster organizations of the same class together. If the network is coordinated, organizations that provide the same services should be regrouped together indicating that they are connected to other types of organizations in a similar way. Standards for regular equivalence instead of strict structural equivalence were used for the blockmodel. Structurally equivalent clusters of organizations would indicate that each organization in a cluster is connected to the exact same organizations which is not necessary to ensure coordination in the system. The standards for regular equivalence (each organization in a cluster is connected to other organizations in the same cluster) are more relaxed and still appropriate (Wasserman & Faust, 1994).

Sub-group Analysis

Third, to identify the presence of strong subgroups of organizations with multiplex ties a series of subgroup analyses were conducted. To assess the reachability of critical services, n -cliques and n -clans were examined. N -cliques are a subgroup of organizations that are all connected by a minimum of n links and are useful for identifying group of organizations that are closely connected. N -clans identify the most cohesive n -cliques.

Identification of Conflict

Finally, to identify conflict (which would indicate a “crack”) the network of multiplex ties and the network of ties characterized by conflict were visualized in UCINET. Specifically, patterns of conflict were visually inspected to identify what types of services and organizations tend to experience conflict. In addition, patterns of existing

multiplex ties that are characterized by conflict were also assessed to identify relationships that may be at risk of dissolution due to conflict.

3.4.5 Path Analysis (Aim 3)

Data Exploration

Responses were aggregated by dyad using SPSS (see Appendix B for additional detail related to the calculation of dyadic measures). Therefore, the value for each variable is unique to the dyad. Using SPSS, each variable was described using measures of central tendency and dispersion, checked for normality and transformed as necessary.

Bivariate relationships among the data were assessed using the quadratic assignment procedure (QAP) in the UCINET software package, a non-parametric test that accounts for the autocorrelation inherent in network data. Correlations determined the relationship between organizational interactions, the three partnership conditions and the four partner fit characteristics hypothesized by the model. Network data violate the independence assumptions of linear models, and the error terms for each variable are likely to be related to one another (Martin, 1999). Data is clustered by reporting organization (ego) as well as the organization about which reports are made (alter). Therefore typical linear analyses are not appropriate because the data are interdependent and the standard errors are inaccurate potentially leading to Type I errors.

QAP generates p-values and errors that account for this autocorrelation. QAP correlations are a two step process. First, the correlation between two matrices is assessed yielding a Pearson's correlation coefficient. Next, one of the matrices is reshuffled multiple times (5000 iterations) and values are reassigned within the rows and columns generating a sample of matrices. Each of the matrices in the new sample is correlated with the non-shuffled matrix yielding a sample of correlation coefficients. The

original coefficient is compared to this new sample, yielding a p-value and/or errors (Krackhardt, 1988; Simpson, 2001) .

The QAP has been extended to multiple regression (MRQAP) which has been used to test hypotheses with dyadic data (Carley & Krackhardt, 1996; Hsu & Tzeng, 2010). Coefficients (either correlation coefficients or betas) are based on OLS, however significance tests are based on QAP permutations. QAP tests have been shown to outperform OLS significance tests (where dummy codes are created for each of the 37 organizations and included in the model, or least squares with dummy variables, LSDV) (Krackhardt, 1990; Mizruchi, 1993) which has been used in some of the previous research on inter-organizational networks (Boje & Whetten, 1981). QAP correlations for this study were computed by creating separate network matrices for each variable and using the QAP function in UCINET.

Hypothesis Testing

Following data exploration, the hypothesized theoretical relationships among the degree to which organizations partner, partnership conditions (need, benefit and conflict), and partner fit characteristics for Aim 3 (outlined in Figure 2) were tested with a path analysis in Mplus using a negative binomial distribution for the dependent variable (interactions). Path analysis is an appropriate method because there are strong theoretically-grounded hypotheses about the mediating effects of the partnership conditions, and the data are continuous observed values (Iacobucci, 2008). To test for mediation effects, each partnership condition was regressed on the partner fit characteristics (the independent variables), and the interactions (dependent variables) were regressed on the partnership conditions (mediating variables) simultaneously.

Estimation of Standard Errors. Standard errors were estimated using maximum likelihood. As noted previously, dyadic data collected for a network are by nature, interdependent therefore potentially biasing the standard errors. While QAP is a generally accepted procedure (available in both UCINET and STATA) for estimating errors and p-values for this type of data, at present it is only available for testing bivariate or multivariate hypotheses with single correlation or regression models. At present, there is no known command for extending QAP to path analysis or other simultaneous tests of multiple regression models.

Previous research using path analysis to test hypotheses among dyadic data is sparse (Mulford, Rogers, & Whetten, 1982) and this previous literature does not account for the autocorrelation among the data. To preserve the level of analysis, hypotheses were tested using path analysis with dyadic data. Knowing the potential bias in the standard errors and p-values, alternative estimation approaches including permutation tests and jackknife approaches in STATA were also used and compared to the results and standard errors of the path analysis using maximum likelihood estimation.

Model Fit. Model fit was assessed using the Bayesian Information Criterion (BIC) in Mplus. The dependent variable in the model (interactions) was expected to be overdispersed (with the majority of cases having zero or few interactions and a minority having a higher interactions score). A negative binomial distribution was fit to the model however, traditional model fit statistics that are tied to the mean of the distribution are neither relevant nor available. While maximum likelihood estimation is robust enough to handle the non-normal distribution, typical model fit statistics (χ -square, RMSEA, CFI, etc.) are not generated in Mplus. The BIC is a predictive fit index that is used to select a

model (from a group of models based on the same data) that has a greater chance of being replicated, therefore values simplicity and penalizes for complexity (Kline, 2005). No set cut off points exist to definitely determine whether there is good model fit, but when compared with the alternative models, offers a measure to compare the fit of the models.

Observations Used. Hypotheses were tested using 366 dyads with full and complete data by listwise deletion (58% of all potential dyads). The purpose of the analysis is to understand how organizational characteristics influence the conditions perceived by executive directors that facilitate or prevent partnerships at one point in time of the partnership development process. Thus, these hypotheses can only be tested with dyads where partners are aware of one another and have enough knowledge about their partner to form an opinion about the perceived conditions of the actual or potential partnership, suggesting that their interactions or non-interactions are informed choices. Organizations that do not presently have, never have, or are not in negotiations to have a partnership most likely are not aware of the actual or potential benefits of working together, and therefore explains why they do not work together. On the other hand, organizations that are currently working together, have worked together in the past, or are considering working together in the future could theoretically assess the benefits of a partnership. Therefore, dyads were dropped where both partners noted “No Relationship” when asked about the perceived benefits³ of working together (one of the hypothesized partnership conditions) because they are the least likely to provide useful

³ Other criteria were considered for determining the cases to be included in analysis specifically, the duration of partnerships and whether dyads had a previous working history. If cases were selected based on whether they had a previous working history new partnerships or those currently in development would be excluded from analysis (which characterizes a sizeable proportion of the dyads). If cases were selected based on whether dyads had any interactions with one another (partnerships) dyads where organizations are familiar with one another (perhaps through their work on the CSC, or a former partnership) but do not exchange resources would be excluded from analysis potentially biasing results.

information for testing the model. After dropping the “No Relationship” dyads, there are 376 remaining dyads. Of these, 10 dyads had missing data for either perceived trustworthiness or need and were also dropped leaving 366 dyads with complete data.

Generally, 20 observations per estimated parameter yield sufficient power for conducting structural equation models. The initial model included 12 hypothesized parameters ($12 \times 20 = 240$) therefore the sample of 366 dyads allows for a reasonable level of confidence that relationships that exist in the data will be detected in the analysis.

Chapter 4 – Results

In Section 4.1, data are presented that address the first aim of this study: describe and understand the network of partnerships among members of the Children’s Service Coalition. In Section 4.2, data are presented that address the second aim of this study: assess the system’s capacity to provide coordinated service delivery. Finally, Section 4.3 presents the results for the third aim of this study: examine partnership development by testing how patterns of organizational characteristics influence conditions that facilitate and inhibit partnerships among the Children’s Service Coalition organizations.

4.1 The Children’s Services Coalition and Their Partnerships (Aim 1)

In this section, the Children’s Services Coalition (CSC) and the partnerships among its members are described. First, the history of the CSC is presented. Next, the composition of the network is described in terms of the financial performance, size, and service expertise of its members. Third, service delivery and administrative partnerships are identified.

4.1.1 History and Context of the CSC

The Children’s Services Coalition (CSC) was formed in early 2009 after a group of over 40 organizations that provide children’s behavioral health services to youth in St. Louis County, Missouri successfully organized to pass a county sales tax levy for additional funding for children’s services (Putting Kids First Initiative or Amendment 1) which will generate \$40 million in new funds for children’s services in St. Louis County. Since the successful passage of the ballot initiative in November 2008, the organizations , formed the CSC, a membership organization for children and youth behavioral and social service organizations in St. Louis County.

The CSC's purpose is to provide feedback to county leaders about children's services and allocation of the set-aside funds, identify service gaps, share information and best practices, advocate for children and families, and facilitate collaboration:

So, the goal of the coalition is the goal of collaboration, helping people access services, and help to look at unmet needs, or underserved needs.

The CSC does not have a formal relationship with the Children's Services Fund or Board, the new county government-based office and board of directors responsible for administering these funds. However, the group does plan to advocate for service priorities to this new board and envisions a system of care for youth where comprehensive and coordinated services are available regardless of where youth enter the system. Several executives recognized the collective power of the CSC for advancing system improvements:

But, there's also the idea of the collective voice. It's one thing if you write a letter about an unmet need as an executive director of an agency. It's another thing if you write a letter to the editor about an unmet need as the president of a coalition of fifty agencies. So, there's a great potential there, a much larger voice.

While members may report that they joined the coalition out of their concern about improving the St. Louis County system, nearly all of the administrators interviewed noted that many organizations may be motivated to participate out of organizational self-interest:

"Now, some people, I think, wanted to continue because they thought they'd have an impact on the board." "I know some agencies, it's really all about the funding for their agency, although I don't think that that's 100% everybody's motivation."

The group considered formal incorporation following the ballot initiative, but reconsidered because incorporating as a 501(c)3 introduced the possibility of new competition:

“You don’t want to be a 501-C3 because then you’d actually be in competition with your members. That would be a really poor strategy to go for.”

Additional competition was perceived as undesirable because it would mean fewer available funds, donors, board members and other resources available for the rest of the organizations. Also, even if an incorporated CSC did not intend to pursue funding from the same sources as its members, plans could change in the future representing a threat. Thus developing the CSC as a formal organization ran contrary to the economic interests of the individual organizations.

The short history of the CSC highlights the tension between the desire to cooperate to improve the system and the economic interests of the organizations. Participation with the CSC (a planning relationship) may be perceived as a “win-win” situation for the member organizations and youth in the County: their cooperation could advance system-level improvements that will benefit children and youth, while advancing individual organizational self-interests for funding. However, as this study will examine, how organizations balance these two interests to develop service delivery and administrative partnerships may be more complex.

As of January 2010, there were 40 paid members. Of these, four do not provide direct services to clients⁴ therefore were excluded from analysis this study focuses on partnerships among organizations that serve youth with mental health issues. The

⁴ These four organizations excluded focus on some combination of capacity building and advocacy.

remaining 36 organizations range in size, revenue, financial performance, and services provided. The composition of the network is described below.

4.11 The Member Organizations of the CSC
Organizational Size, Revenue and Financial Performance

The 36 member organizations that provide direct services generate over \$230 million in annual revenue (based on 2004-2007 reports) and employ over 6000 full and part-time employees⁵. Yearly revenue for individual organizations ranged from \$35,123 to \$39 million with a median of \$3,340,805 reflecting a broad range in organizational size. The majority (n=22, 58%) of organizations are small (under \$5 million), while only a few (n=3, 8%) are very large with over \$15 million in annual revenue. Prior to the major economic shift in 2007, the median annual financial performance was a 4% net surplus although organizations ranged from a 49% surplus (for a newly established organization) to a 6% deficit. These organizations employ anywhere between three and 730 full and part time employees (median=110), although most (59%) have staffs of 200 or fewer (Table 4.1).

Table 4.1. Annual Revenue and Staff Size of CSC Member Organizations (N=36)

Annual (in millions)	F	%	Revenue		Staff Size		
			Mean	Median	Sum	Range	Mean
Under \$2	12	33.33%	\$ 893,290.97	\$ 870,125	269	3-64	22.42
\$2-\$5	9	25.00%	\$ 3,037,529.93	\$ 3,122,344	946	50-200	105.11
\$5-\$10	8	22.22%	\$ 6,738,770.88	\$ 6,712,180	1546	100-300	193.25
\$10-\$15	4	11.11%	\$ 12,119,080.33	\$ 12,161,713	1460	200-500	365
\$15-\$30	1	2.78%	\$ 21,299,413.33	--	638	--	--
Over \$30	2	5.56%	\$ 34,560,746.43	--	1155	425-730	577.5

⁵ Breakdowns by full- or part-time employment status were not reported or available for all organizations. However, for those that did report this data, an average of 36% of their total staff were part-time. Therefore it is estimated that the workforce is comprised of approximately 4000 full-time and 2000 part-time employees (or 5000 full-time equivalents).

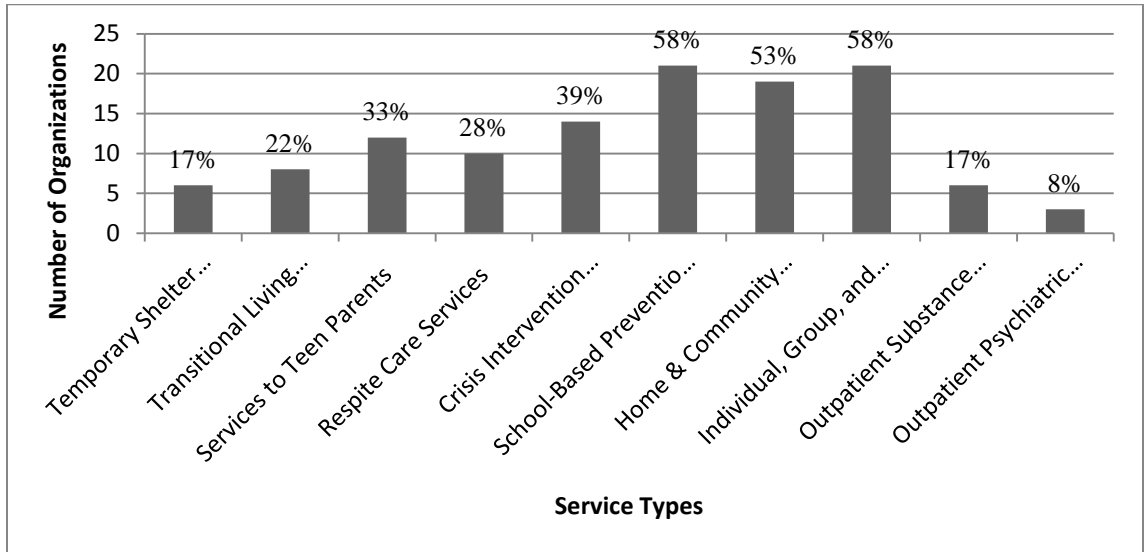
Services and Expertise

As reported in the Children's Services Fund's Needs Assessment (2010), the CSC members offer a range of services to youth in the region including prevention programming, crisis intervention, emergency shelter, counseling and therapy, substance abuse treatment, psychiatric care, and residential services (Appendix A). On average, organizations provide three different types of fundable services⁶, but this ranges from one to nine suggesting that the network is comprised of a mix of niche and multi-service organizations. The most frequently provided services include school-based prevention services (n=21, 57%), individual, group and family counseling (n=21, 57%), and home and community-based interventions (n=19, 53%). A smaller number of organizations provide outpatient psychiatric care (n=3, 8%), substance abuse treatment (n=6, 17%), temporary shelter services (n=6, 17%) and transitional living services (n=8, 22%) (Figure 4.1). Having a limited number of organizations that provide these services may impact the capacity of the system to coordinate around these services:

"There's a gap because there are no service providers ... It's just – there's no outpatient substance abuse for adolescents and for outpatient psychiatry, there's hardly any providers. So that's – it's not because maybe they don't want to collaborate; it's just there's no one to refer to."

⁶ These are the ten service categories that can be funded by the new tax fund as described in Missouri state statutes RMSO 67.1775 and 210.861. Note that these service categories do not include long-term residential care, inpatient services, or transportation.

Figure 4.1. Types of Fundable Services Provided by CSC Member Organizations



Although organizations may address a variety of behavioral health service needs for youth, they may be well known in the community for their expertise in a particular service area. Organizations were categorized into mutually exclusive groups by their core services which were ascertained based on the service/program that accounted for greatest proportion of program expenses according to the most recently available IRS 990 on Guidestar. When information was sparse, or the youth behavioral health service programs were situated within the context of large multi-service organizations, other information sources were reviewed such as the St. Louis County Needs Assessment, and the organizational website to determine the appropriate category. These categories are used to describe the network throughout this chapter.

Nearly all of the member organizations are either residential (39%) or behavioral health-specific organizations (39%) (Table 4.2). A large percentage of the members (31%) are residential behavioral health organizations (an additional 9% are residential organizations that specialize in treating youth with developmental disabilities).

Behavioral-health specific organizations include mental health treatment providers, (organizations that specialize in the treatment of mental health service needs with psychological/psychiatric care) (11%), counseling organizations, or organizations that specialize in counseling, or other emotionally supportive services for youth (17%), and crisis organizations that specialize in crisis intervention and hotlines (6%). A very small percentage of member organizations (5%) specialize in substance abuse treatment or prevention. The remaining 18% of organizations represent a heterogeneous mix of organizations specializing in variety of school-based prevention, or population-specific services.

Table 4.2. CSC Member Organizations Categorized by Core Service Expertise (N=36)

Core Service Expertise	N	%
Behavioral Health	14	38.89%
<i>Mental health treatment</i> – mental health care through psychological or psychiatric treatment	4	11.11%
<i>Counseling</i> – counseling or therapy for a variety of issues	6	16.67%
<i>Crisis</i> – Hotlines, crisis/emergency intervention	2	5.56%
<i>Substance Abuse Prevention</i>	1	2.78%
<i>Substance Abuse Treatment</i>	1	2.78%
Residential Treatment/Respite Care	14	38.89%
<i>Residential/Respite</i> – youth treatment or services provided in a residential setting	11	30.56%
<i>Residential/Respite for Youth with Developmental Disabilities</i>	3	8.33%
Pregnant Teens	3	8.33%
<i>Medical Care</i> – pre and post-natal medical care	1	2.78%
<i>Service Coordination</i> – service and administrative coordination	1	2.78%
<i>Shelter</i> – emergency shelter	1	2.78%
Education	3	8.33%
<i>School</i> – education for youth with special needs	1	2.78%
<i>School-based Prevention</i> – violence or abuse prevention programs delivered in schools	2	5.56%
Other	2	5.56%
<i>Foster parent recruiting</i>	1	2.78%
<i>Youth Development</i> – positive youth development programming	1	2.78%

4.1.2 Partnerships among CSC Member Organizations

To understand the structure of these networks the partnerships or ties among the 36 agencies are summarized. The resulting networks are drawn and described.

Partnerships Based on Any Type of Resource Exchanges

Among the network of 36 member organizations, all (100%) are involved in some type of partnership involving the exchange of funds, space, staff expertise or client referrals (partnerships based on each type of resource are described below).

Respondents reported the percentage of their agency's client referrals sent to and administrative resources (budget or funding, space, and staff) shared with each of the other organizations in the CSC along an 11 point phrase-completion scale where higher scores denoted greater proportions of their resources exchanged and thus stronger interactions. In general, organizations partner (exchange resources) with an average of 16 other agencies in the network and this number ranges from four to 29. Organizations reported a total of 378 ties (184 one-way ties, and 97 reciprocated ties) out of a potential 1260 potential ties in the network ($36 \times 35 = 1260$) resulting in a moderately connected network where 29% of all potential ties are present (density=.292).

The resource scores were summed and added to the resource score reported by their partner to derive a partnership score for each dyad. This composite score serves as the dependent variable for analyses related to Aim 3 that are presented later in this chapter. On average, about 6.3%⁷ of combined organizational resources are exchanged between organizational pairs (mean score 1.13, median= 0 , SD=1.89), however scores ranged from zero to 13 (or none to 65% of available resources), suggesting variability

⁷ Each point on the response scale represents 10% of the organization's resources. When scores are summed at the dyadic level the score represents the total proportion of both organizations' resources (200% of the resources available). Thus the score divided by two and multiplied by 10 provides a rough estimate of the proportion of available resources that are exchanged.

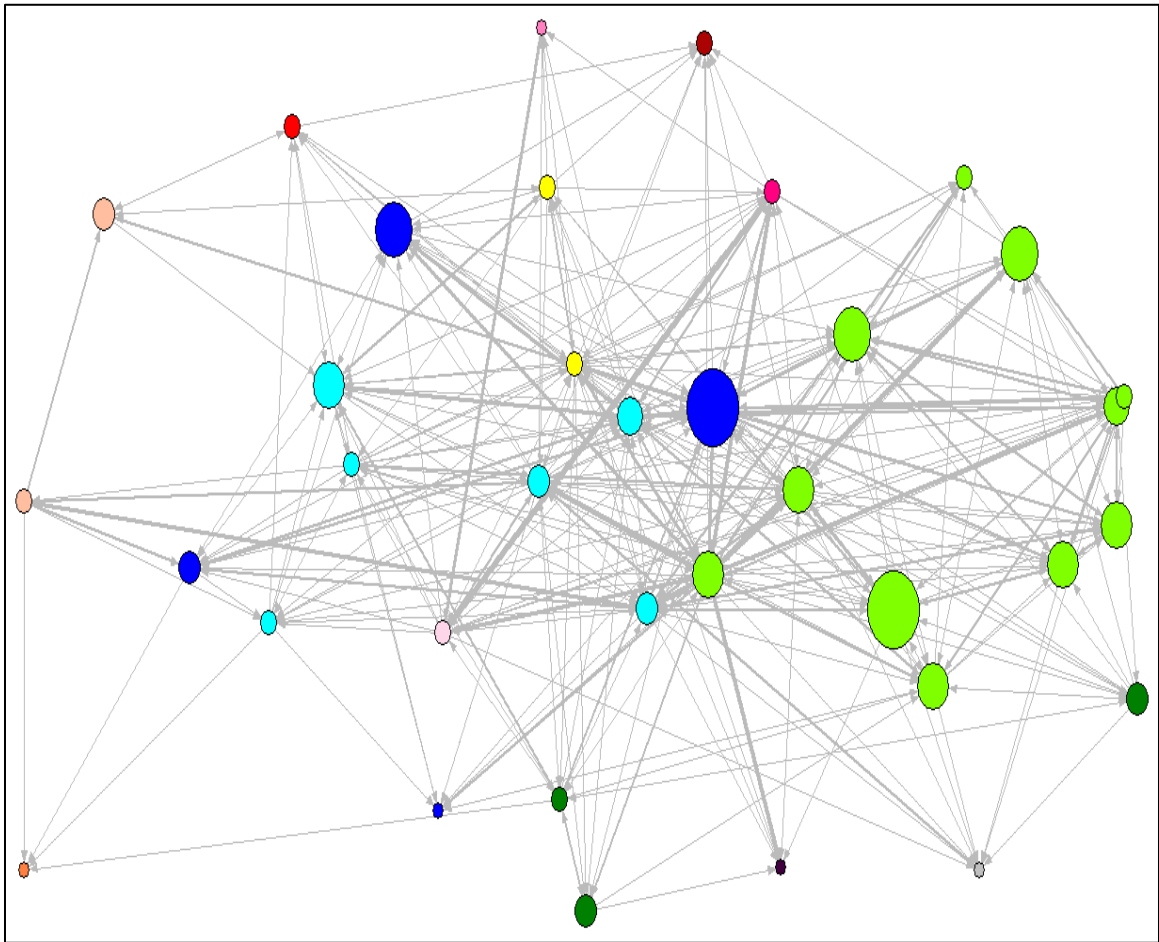
across dyads and verify that most dyads (n=348) do not exchange resources. In general, the majority of dyads that do share resources (and thus have partnerships), share in small amounts, and stronger partnerships characterized by greater amounts of resource exchanges are rarer in this network.

Partnerships were visualized in a network map (Figure 4.2). In these maps, the nodes represent organizations, and are color-coded according to core service expertise. The size of the nodes represents the number of service categories where the larger the node, the greater the number of services provided by the organization (distinguishes multi-service from niche organizations). The lines between nodes represent reported relationships where the width of the line denotes the strength of the relationship based on amount of resources exchanged (greater amounts of resources are indicated with a thicker line). The arrowhead indicates the direction of the reported relationship. The nodes are placed on the graph based on their geodesic distance (using spring embedding) to the other nodes, where organizations that work closely (directly or indirectly) are placed closer to one another.

The network is comprised of one component, with no isolates. Based on the network map generated, the densest partnership patterns link residential/respite, mental health treatment, counseling, and crisis service providers. However there are no direct connections among the residential service providers and school-based providers – rather those referrals occur with counseling service organizations. This pattern may indicate that the system is working as a continuum: residential care is usually the most intense treatment setting that is utilized after less-restrictive treatment settings are ruled out so these providers may not need to be linked to prevention providers. When prevention

programs identify an at-risk youth, their connections with counseling or mental health treatment providers to be linked with prevention programs in the event that at-risk youth are identified

Figure 4.2. Partnerships among CSC Organizations by Core Service (n=36)



Legend	
Behavioral Health	Pregnancy-Related
■ Mental Health Treatment	■ Pregnancy – Care
■ Counseling	■ Pregnancy – Coordination
■ Crisis	■ Pregnancy – Shelter
■ Substance Abuse Treatment	Schools
■ Substance Abuse Prevention	■ Education
Residential/Respite	■ School-Based Prevention
■ Residential/Shelter Services	Other
■ Residential – Dev. Dis.	■ Foster Parent Recruiting
	■ Youth Development

The partnership score was a composite of four different types of resources exchanged. However, partnerships based on the exchange of both client referrals and some type of administrative resource (or multiplex ties) are the focus in this assessment of potential for coordination among the CSC member organizations in Aim 2 as these are the types of relationships that have been linked with improved client outcomes (Provan & Sebastian, 1998). Next, the client referral, administrative resource, and combined multiplex networks are presented and described. Further details about the networks based on each type of resource are included in Appendix D.

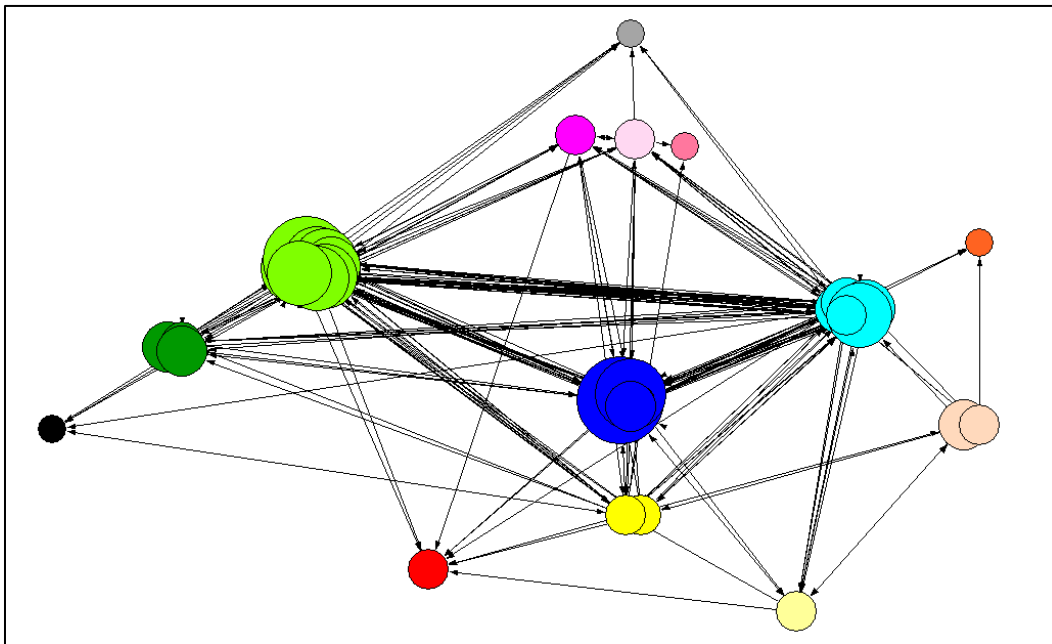
Partnerships Based on Client Referrals

All CSC organizations included in this analysis are involved in the exchange of client referrals. On average, organizations refer to 13 of the 36 other agencies and this number ranges from one to 28 (for those organizations that reported client referrals). Among their agency partners, organizations maintain an average of 17 out of a potential 35 referral-based relationships (where they either receive and/or send referrals): organizations send client referrals to anywhere between zero and 28 organizations, and receive resources from two to 18 organizations.

At the network level, CSC members reported 312 referral-based ties (168 one-way ties, and 72 reciprocated ties) out of a potential 1260 ties across the network. These ties result in a moderately connected network where 25% of all potential referral-based ties are present (density=.248) (Figure 4.3). The network is comprised of one component therefore all organizations are linked to the client referral network in some way. Ties are concentrated among the residential, counseling and mental health treatment service providers.

At the dyadic level, an average of .676 or about 3.38% of the total client referrals are exchanged (mdn=0, SD=1.313), although scores ranged from zero to 11. Among partnerships based on client referrals (where client referral scores are greater than zero), most are based on smaller amounts of client referrals, where few partnerships involve referrals of the majority of the case load

Figure 4.3. Client Referrals among CSC Organizations by Core Service Expertise



Legend	
Behavioral Health	Pregnancy-Related
■ Mental Health Treatment	■ Pregnancy – Care
■ Counseling	■ Pregnancy – Coordination
■ Crisis	■ Pregnancy – Shelter
■ Substance Abuse Treatment	Schools
■ Substance Abuse Prevention	■ Education
Residential/Respite	■ School-Based Prevention
■ Residential/Shelter Services	Other
■ Residential – Dev. Dis.	■ Foster Parent Recruiting
	■ Youth Development

Partnerships Based on the Exchange of Administrative Resources

Whereas client referrals indicate partnerships critical for direct service delivery, exchanges of administrative resources (funding, staff, and space) indicate partnerships

that support organizational or program operations. CSC organizations reported on relationships based on each type and are detailed below.

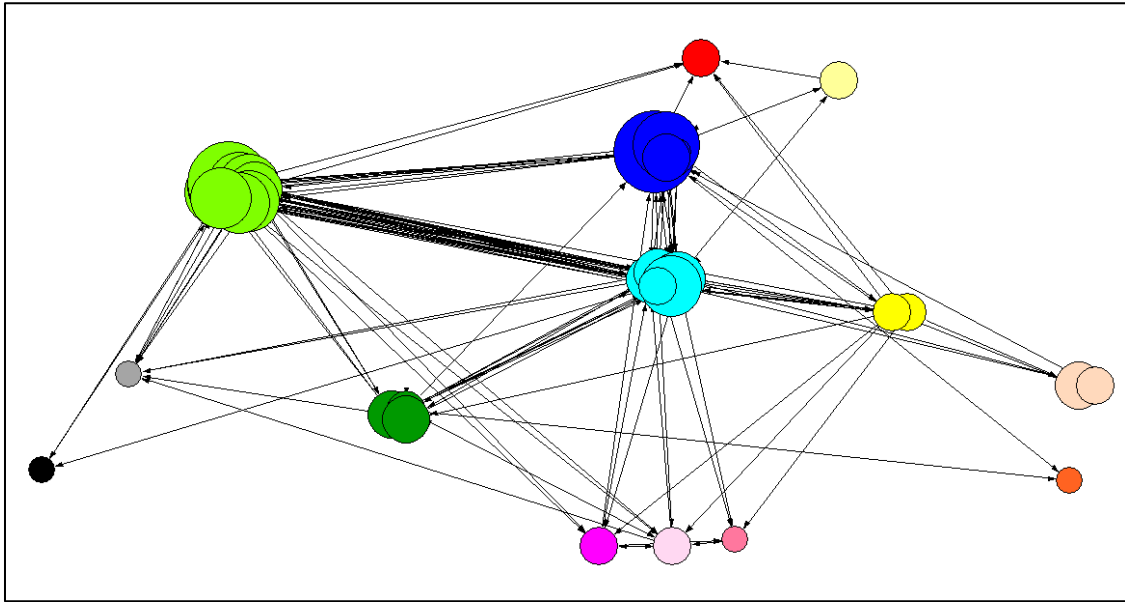
All 36 (100%) organizations are involved in an administrative relationship with at least one other organization. Organizations maintain an average of nine unique administrative relationships, but the number ranges from two to 20.

There are 207 administrative ties (117 one way ties and 45 reciprocated ties) representing 16% of all possible links (density = .164) (Figure 4.4). The network is comprised of one component with no isolates. Similar to the client referral network, there are a dense pattern of ties among residential, clinical treatment and counseling agencies in the CSC, with looser patterns connecting the other types of organizations.

At the dyadic level, the average score for amount of all three types administrative resources shared (funding, staff and space) was .449 (median= 0, SD=.994) or about 2.2% of the dyad's total administrative resources. These scores ranged from zero to nine.

Staff expertise (via staff consults) was the most commonly shared administrative resource (100% of organizations, 22% of dyads, $M=.314$, $mdn= 0$, $SD=.703$), followed by funding (64% of organizations, 7% of dyads, $M=.073$, $mdn=0$, $SD=.32$). Space (which may take the form of shared office space or co-located services) was rarely shared within the network (47% of organizations, 2% of dyads, $M=.046$, $mdn = 0$, $SD=.410$) (See Appendix D for further detail). Data affirm that most dyads do not share administrative resources and when they do, small amounts are exchanged.

Figure 4.4. Administrative Ties among CSC Member Organizations (n=36)



Legend			
Behavioral Health	Pregnancy-Related		
Blue	Mental Health Treatment	Light Red	Pregnancy – Care
Cyan	Counseling	Red	Pregnancy – Coordination
Yellow	Crisis	Pink	Pregnancy – Shelter
Dark Red	Substance Abuse Treatment	Schools	
Red	Substance Abuse Prevention	Yellow	Education
Light Green	Residential/Respite	Light Yellow	School-Based Prevention
Green	Residential – Shelter Services	Other	
Dark Green	Residential – Dev. Dis.	Grey	Foster Parent Recruiting
		Black	Youth Development

Partnerships Based on Multiplex Client Referral & Administrative Ties

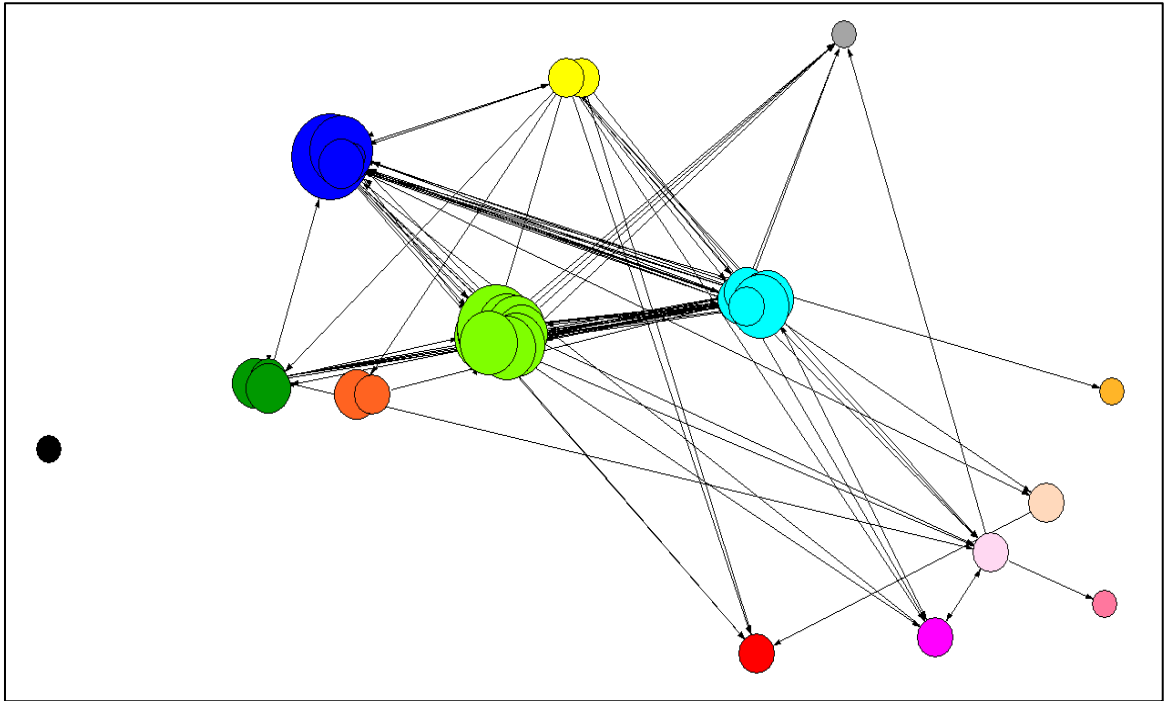
In terms of partnerships based on both client referrals and some type of administrative ties, 35 CSC member organizations (97%) maintain a multiplex tie. Organizations maintain multiplex relationships with an average of six other organizations, but this number ranges from zero to 17. Among their agency partners, organizations maintain an average of eight multiplex ties (where they either send or receive resources): organizations send both administrative resources and client referrals

to a range of zero to 14 organizations, and receive these resources from zero to 12 organizations.

CSC organizations reported 144 ties based on both client referrals and shared administrative resources (87 one-way ties and 27 reciprocated ties) which represent 11% of all potential ties (density=.112). The network based on multiplex ties is comprised of two components: one isolate, and one connected component with two organizations that are pendants, and thus only weakly connected to the network via one tie (Figure 4.5). Again, the densest patterns of strong multiplex ties occur among residential, clinical treatment and counseling organizations (in green, dark blue and light blue respectively). The organizations providing pregnancy-related services (in pink) are also strongly connected to one another.

At the dyadic level, the average score for all resources exchanged in multiplex partnerships is .592 (SD=1.5) or about 3% of their total combined client referrals and administrative resources. Scores ranged from zero to 13.

Figure 4.5. Multiplex Ties among CSC Member Organizations



Behavioral Health		Pregnancy-Related	
	Mental Health Treatment		Pregnancy – Care
	Counseling		Pregnancy – Coordination
	Crisis		Pregnancy – Shelter
	Substance Abuse Treatment	Schools	
	Substance Abuse Prevention		Education
Residential/Respite			School-Based Prevention
	Residential/Shelter Services	Other	
	Residential – Dev. Dis.		Foster Parent Recruiting
			Youth Development

Duration

Organizations were asked to indicate the duration of their previous working relationship with each of the other organizations. In situations where there was disagreement between the partners regarding the duration of the working relationship, the more conservative value was selected for analysis.

Nearly two thirds (65.5%) of all organizational pairs (dyads) have no previous relationship. Of the 34% of current or previous partnerships, nearly 12% (or 4% of the sample) have just begun working together in the last year, and an additional 20% (or 6%

of the sample) have been working together between one and three years suggesting that the majority of partnership activity within the network is new, and that most of these organizations do not have an extensive working history with one another.

The newness of working together as a collective was discussed in the key informant interviews. Stakeholders who are external to the CSC remarked:

“Just the CSC as whole, I don’t see as collaborative yet; I see them more of a network.”

Executive directors of member organizations mentioned that participation in the CSC is an opportunity for professional networking, learning about other agencies, and scoping out potential collaborations:

“I didn’t know a lot about these other places. Yeah, I knew their names. I’d run across their execs at United Way meetings and stuff. But I’d really gotten to know a lot more about them and vice versa. That’s been good. That’s been very, very good.”

As suggested in the interviews, the Putting Kids First Initiative and the CSC seem to be facilitating opportunities to develop new partnerships. New partnership activity is verified by the quantitative data. Among organizational pairs that reported ties based on resource exchanges (client referrals, funds, staff, or space), more than a third have no previous working history and an additional 13% have been working together for less than five years suggesting that although partnerships exist, many are very new or in the early stages of development.

Key informants noted the economy as a catalyst for new collaboration and that non-profits have faced increasing pressure to collaborate over the past several years:

“Because at one point they were all competing for the same dollars. Now as that shrank, they were left with very small pools of pockets of money, and realizing that the kids really, really were at risk. And that

their ability to perform even as individual silos was so compromised that they were going to have to do something. Pain is a motivator.”

“And, just the economic environment, in general, has been, I think, shrinking to non-profit resources. So, it’s advantageous sometimes to collaborate ... if you’re having difficulty making your budget, so collaboration would be a way of getting new funding.”

Thus, new partnering activity may be driven by the need to pool resources in difficult economic conditions combined with the new networking opportunities offered through the CSC.

On the other hand, there are also a substantial number of dyads that have a very long working history: 10.2% of all potential pairs and 19% of all pairs with confirmed ties have been working with one another for ten years or more (Table 4.3). Due to the high proportion of dyads with no previous working relationship, and the sparse distribution of dyads across the remaining categories, this variable was dichotomized in subsequent analyses.

Table 4.3. Duration of Previous Working Relationships among Dyads

	Frequency	% of Total	Frequency (of dyads with ties)	% of Dyads with Ties
N	630	100	281	100
No previous relationship	406	65.06%	103	36.65%
Previous or current Relationship	218	34.60%	178	63.35%
Less than 1 year	26	4.17%	17	2.72%
1-3 years	40	6.41%	32	5.13%
3-5 years	37	5.93%	32	5.13%
5-7 years	36	5.77%	33	5.29%
7-9 years	11	1.76%	9	1.44%
10 years or more	68	10.90%	55	8.81%
Missing	6	1%	0	0

4.1.3 Summary of Results – Aim 1

By examining the context and composition of the CSC member organizations and their partnerships with another, several insights can be drawn. First, the CSC is a result of the collective action of over 40 organizations that serve youth in St. Louis County. The group achieved their goal of passing the Putting Kids First Initiative but has continued to work together. Although organizations state that their membership and participation is motivated by their vision of improving the children’s mental health system, most executives note that their membership serves organizational interests as well. Therefore, membership in this coalition is driven by commitment to the system and economic self-interests, highlighting the need for collaborative opportunities that satisfy both goals.

Second, the network is comprised by a mix of niche and generalist organizations that provide multiple types of services to youth in St. Louis County. Most organizations are small, bringing in under \$5 million in annual revenue. Organizations that specialize in youth mental health (psychiatric, clinical treatment and counseling) and residential care services dominate the network. However, most organizations provide multiple types of fundable services especially school-based prevention services, counseling, and home and community-based intervention services.

Overall, these organizations are only beginning to establish themselves as a collaborative group. Some organizations have been coordinating for years but the majority of relationships are brand new or yet to be established. Among those who are partnering, client referrals are the most common resources exchanged. Administrative ties are also very common, with all 36 organizations reporting an administrative partnership with at least one other organization, but these resources are not exchanged as

frequently as client referrals. The densest patterns of ties occur among the residential, clinical treatment and counseling organizations and other types of organizations do not appear to be as integrated into the network. The Putting Kids First Initiative, ongoing CSC meetings, and current economic environment may be facilitating the development of new partnerships within the region and this network is primed for change.

4.2 The Potential for Coordination & Fragmentation among CSC Organizations (Aim 2)

“I think it probably is fragmented now ... We don’t have those established relationships.”

“It felt really very fragmented. And, it felt very competitive among the organizations.”

Some CSC stakeholders perceived the local children’s behavioral health system as fragmented. Based on the reported multiplex service delivery and administrative relationships among CSC organizations, the potential for coordination, and cracks in the system were assessed. First, potential for coordination was assessed by a) examining whether similar organizations have similar relationships with the rest of the network, and b) sub-group analysis. Second, cracks in the system were identified and assessed using hierarchical clustering and blockmodeling. Third, conflict was examined.

4.2.1 Equivalence: Do Similar Organizations Have Similar Relationships?

In a coordinated network, organizations that provide similar services are expected to have similar partnership patterns to ensure that clients have access to the same constellation of services regardless of which organization they are served by. To determine if similar organizational types were connected to the network in similar ways, or hold similar positions, hierarchical clustering and blockmodeling was used to assess regular equivalence, (which relaxes the assumptions of structural equivalence that similar organizations have the exact same ties with the same organizations). The focus of these

analyses is the patterns of multiplex ties among organizations (deNooy, Mrvar, & Batagelj, 2005).

First, a blockmodel (specifying regular equivalence) was used to cluster the organizations. Because there are 14 types of core service expertise groups in the network, the organizations were clustered into 14 groups. However, trying to group 36 agencies into 14 clusters yielded uninterpretable results. Ten clusters had only one organization suggesting that a smaller group size is needed to draw inferences about patterns in the network.

Instead, a “bottom-up” approach for clustering was used by calculating dissimilarity scores in Pajek where a zero indicates completely similar patterns, and one indicates completely different patterns for each pair of organizations (univariate descriptive statistics were calculated in UCINET and shown in Table 4.4). The average dissimilarity among organizational pairs is .310 (SD=.141). Using the dissimilarity scores, the network was broken down into clusters of organizations with equivalent positions, or similar patterns of multiplex ties based on two criteria: maximizing (1) similarity and (2) meaningfulness of the categories in terms of organizational types. Therefore dissimilar categories were divided to find the lowest dissimilarity scores without fragmenting the cluster into individual organizations (deNooy, Mrvar, & Batagelj, 2005).

This process yielded six clusters of organizations with dissimilarity scores ranging from .23 to .45, and size ranging from two to 15. These six clusters were refined by using the blockmodeling function in Pajek. The initial six clusters yielded 91 errors⁸. The

⁸ Errors indicate unexpected relationships or unexpected absent relationships (deNooy, Mrvar, & Batagelj, 2005).

refined, or optimized blockmodel improved the cluster composition by regrouping several organizations (n=4) from the original fourth cluster, and reassigning original cluster 2 organizations. Table 4.4 illustrates how organizations were reassigned across clusters. The reordered matrix yielded 55 errors indicating an improvement, yet is still strongly associated with the original groupings (Rajski=.6518).

Table 4.4. Comparison of Original and Optimal Clusters of Structurally Similar Organizations (N=36)

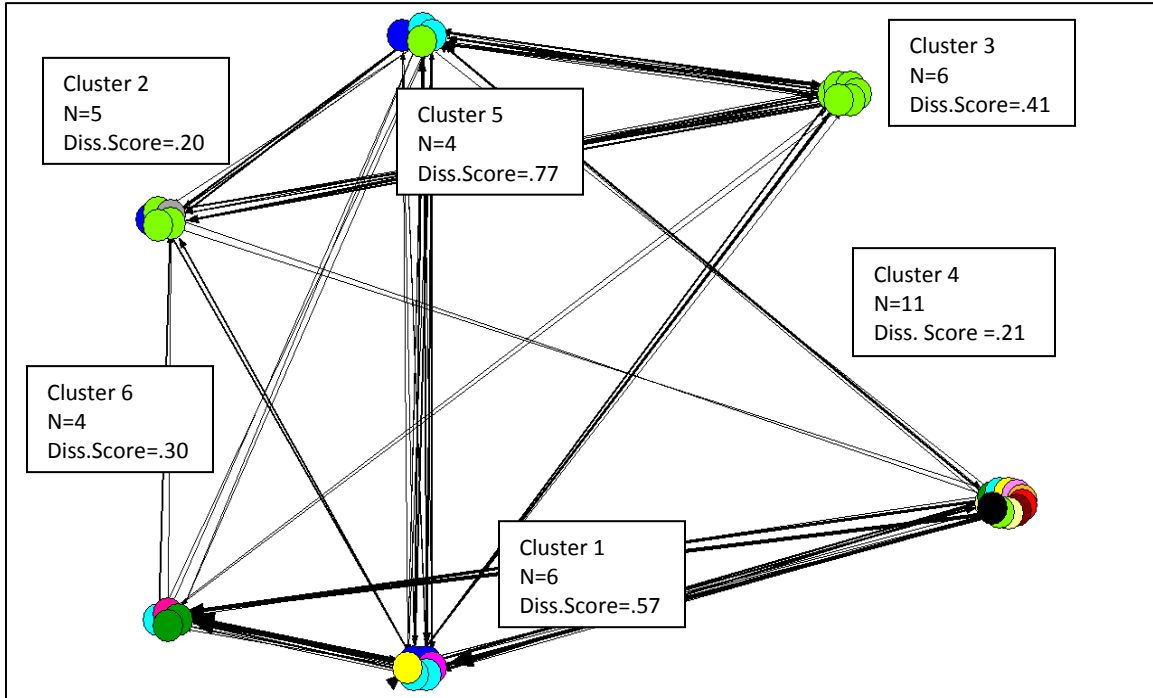
Original Clusters	Dissimilarity Score	N	Optimal Clusters					
			1	2	3	4	5	6
1	.42	5	4	0	0	0	1	0
2	.38	2	1	0	0	0	1	0
3	.45	8	0	2	6	0	0	0
4	.23	15	0	3	0	11	0	1
5	.43	2	0	0	0	0	2	0
6	.31	4	1	0	0	0	0	3
N	--	--	6	5	6	11	4	4
Dissimilarity Score	--	--	.57	.20	.41	.21	.77	.30

Rajski (C1 -> C2): 0.6518

The composition of these clusters with respect to organizational type was heterogeneous. The most homogenous group (Cluster 3) was mainly comprised of residential care providers, however the dissimilarity score was .41 which is higher than the average for the entire matrix suggesting that despite how these organizations cluster and the similarity in terms of core services provided, there are variations in the ways they interact with one another and the rest of the network. For example, some of these organizations have ties with clusters six and one (and are more connected to a variety of organizations), whereas others do not. The most structurally similar clusters (Clusters 2 and 4) were both comprised of a mix of organizations, particularly Cluster 4. However,

these organizations are structurally similar (dissimilarity = .23) in that they are not as tightly connected to the network as the other organizations (Figure 4.6).

Figure 4.6. Clusters of Structurally Similar CSC Organizations Based on Multiplex Ties (N=36)



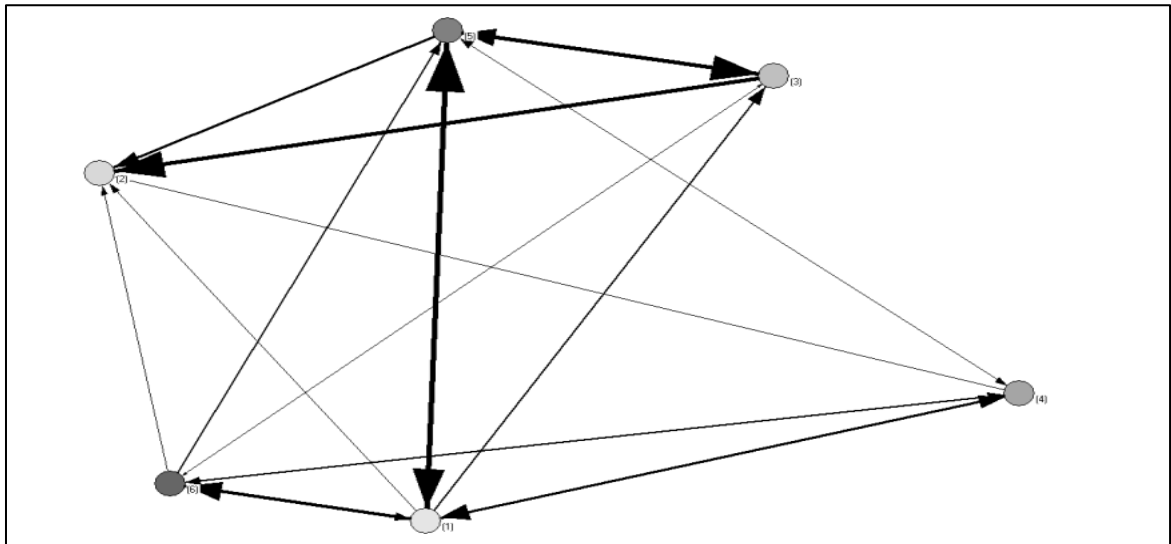
Legend	
Behavioral Health	Pregnancy-Related
■ Mental Health Treatment	■ Pregnancy – Care
■ Counseling	■ Pregnancy – Coordination
■ Crisis	■ Pregnancy – Shelter
■ Substance Abuse Treatment	Schools
■ Substance Abuse Prevention	■ Education
Residential/Respite	■ School-Based Prevention
■ Residential/Shelter Services	Other
■ Residential – Dev. Dis.	■ Foster Parent Recruiting
	■ Youth Development

When the network is condensed, the organizational roles become clearer. Four of the six clusters are directly connected to one another but clusters three and four are not connected indicating that the six residential care providers in cluster three have no strong multiplex relationships with the 11 organizations in cluster four. Cluster four is composed of a heterogeneous mix of organizations including one counseling

organization, and one youth development organization; while organizations may be referring clients to one another, the strong ties and administrative partnerships associated with better client outcomes are absent between these organizations. These findings echo the observations drawn by visualizing the network in Section 4.1.2. By examining their relationship patterns, it becomes clearer that cluster four organizations may play more of a peripheral role in the network, linking core behavioral health service providers with resources or being tapped occasionally to provide or coordinate ancillary support services.

Organizations in clusters one and three serve as major hubs in the network – they have strong reciprocated ties with the organizations in three clusters, and strong one-way ties with the other two (Figure 4.7). These two clusters also partner with the residential care organizations in clusters three and two), cluster two mainly receives resources, and does not share with organizations in other clusters. In other words, these organizations depend on resources from other organizations but other organizations do not necessarily depend on them. The residential organizations in cluster 3 receive and share resources not only with the others clusters, but among themselves as well.

Figure 4.7. Condensed CSC Network by Structurally Similar Organizational Clusters (n=6)



The results of this process suggest that organizations with similar core service expertise do not have similar patterns of strong multiplex relationships, and their interactions with the other CSC member vary. While organizations may have a similar core service, they do not have similar partnership profiles. As a result, the degree to which services are coordinated may vary within the network by organizational type. In a coordinated system, similar organizations would have similar relationship patterns, but this was not observed in the CSC network.

While a “top down” blockmodel is typically used for exploring network structures, building structurally similar clusters based on similarity scores help determines the optimum number of structural clusters based on the data. When a blockmodel was constructed using the random start option, the solution generated was not interpretable: three of the six clusters had isolated organizations, one cluster included two organizations, and the remaining two clusters were very large groups composed of the other 31 organizations which have heterogeneous patterns of connecting to the

network, yielding little meaningful insight into patterns of relationships among these organizations. Therefore, the results from the bottom-up assessment of equivalence were presented.

4.2.2 Sub Group Analyses: What Groups Have the Greatest Potential For Coordination?

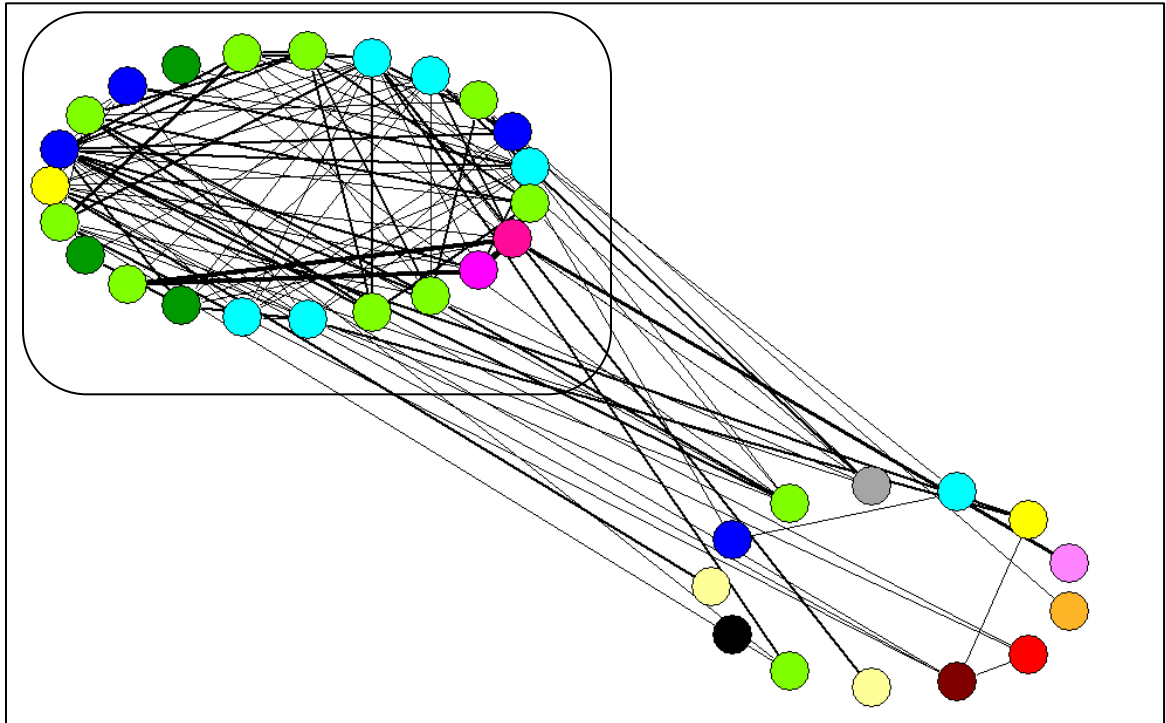
Although the previous findings suggest that similar organizations vary in the way they are connected to the larger network, the presence of many strong multiplex ties signifies the potential for coordination. Whereas the previous analysis examined patterns of partnerships and implications for coordination across the whole network, the following sub group analyses examine patterns of partnerships among smaller groups within the network. Small groups or cliques of organizations that are connected to one another via multiplex ties indicate a strong potential for coordination and improved client outcomes based on previous research (Provan & Sebastian, 1998). A series of cohesive subgroup analyses to break up the network were conducted in Pajek and UCINET to assess for the presence of strongly connected sub-groups of organizations based on their multiplex relationships. Specifically the network was examined using progressively more stringent inclusion criteria beginning with components, then moving to k-cores, n-clans, and cliques.

First, one strong component was identified⁹ (Figure 4.8). This component is only comprised of organizations that specialize in residential care, behavioral health services, and services to pregnant teens, although there are a few of these organizations that are not included suggesting they are not as strongly connected. Notably, the behavioral health

⁹ A strong component is a connected subnetwork where a path (either direct or indirect) connects each organization to one another following the direction of the relationship. A weak component is a connected subnetwork where a path (either direct or indirect) connects each organization to one another, if the direction of the relationship is ignored (deNooy, Mrvar & Batagelj, 2005).

organizations that specialize in substance abuse treatment and prevention are also not included in this strong component suggesting weak coordination. Because these data represent directed networks, weak components were computed as well and none (containing two or more organizations) were identified.

Figure 4.8. Strong Components in the CSC Network (enclosed in box)



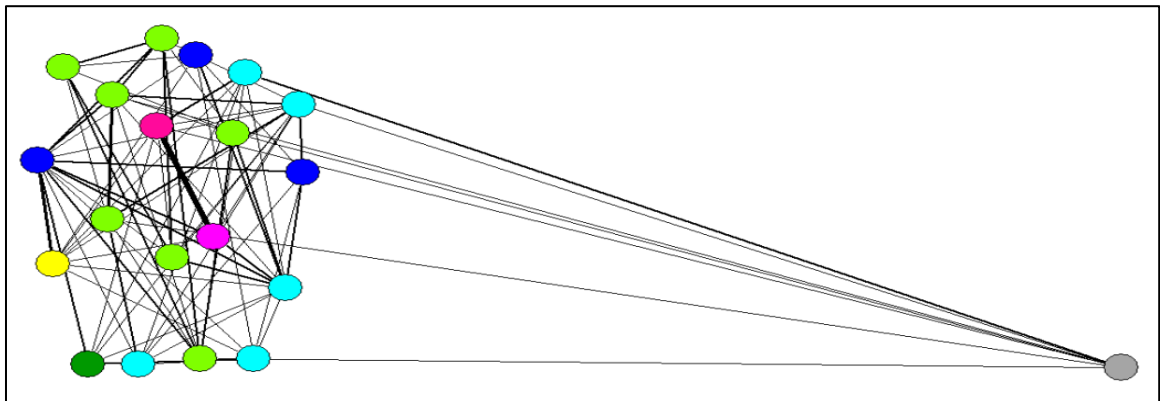
Behavioral Health		Pregnancy-Related	
■	Mental Health Treatment	■	Pregnancy – Care
■	Counseling	■	Pregnancy – Coordination
■	Crisis	■	Pregnancy – Shelter
■	Substance Abuse Treatment	Schools	
■	Substance Abuse Prevention	■	Education
Residential/Respite		■	School-Based Prevention
■	Residential/Shelter Services	Other	
■	Residential – Dev. Dis.	■	Foster Parent Recruiting
		■	Youth Development

Second, this group was broken down into k-cores which group organizations together based on the number (k) of relationships. A large seven core was identified (each organization is connected via seven ties), comprised of 20 organizations, where

26.6% of all potential relationships are reported (density=.266) which is greater than the density of the whole network (11%). This core contains 101 of the 141 total multiplex ties in the CSC network (72%) suggesting that this subgroup of organizations accounts for the majority of coordination in the region (Figure 4.9).

Strong and weak components were repeated for the seven-core subnetwork and one strong component (no weak components) was identified. This component included a mix of organizations including those that specialize in residential, mental health treatment, crisis, and services to pregnant teens and excluded one organization (this organization was a non-respondent therefore missing data most likely contributed to the exclusion of this organization from the final component).

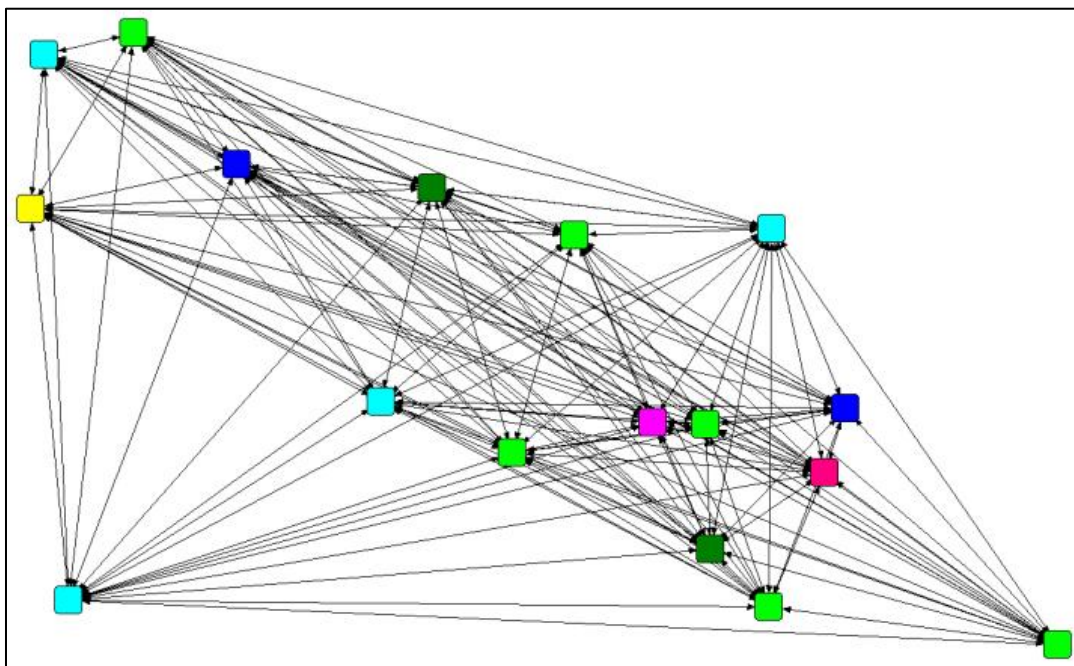
Figure 4.9. Seven-Core Subgroup, and Strong Component of CSC Member Organizations (n=20)



Legend	
Behavioral Health	Pregnancy-Related
■ Mental Health Treatment	■ Pregnancy – Care
■ Counseling	■ Pregnancy – Coordination
■ Crisis	■ Pregnancy – Shelter
■ Substance Abuse Treatment	Schools
■ Substance Abuse Prevention	■ Education
Residential/Respite	■ School-Based Prevention
■ Residential/Shelter Services	Other
■ Residential – Dev. Dis.	■ Foster Parent Recruiting
	■ Youth Development

These components do not break down into additional k-cores so progressively stricter definitions for inclusion in subgroups were imposed to further split the subnetwork. First, the strong component of the seven core was examined for n-clans where inclusion is based on distance (an n number of steps) between the organizations (Hanneman & Riddle, 2005). One large two-clan was identified that included 17 of the 20 organizations in the seven-core, meaning that these 17 organizations are connected to one another within two steps. This sub-group analysis provides further evidence that multiplex ties are concentrated among this group of organizations (Figure 4.10).

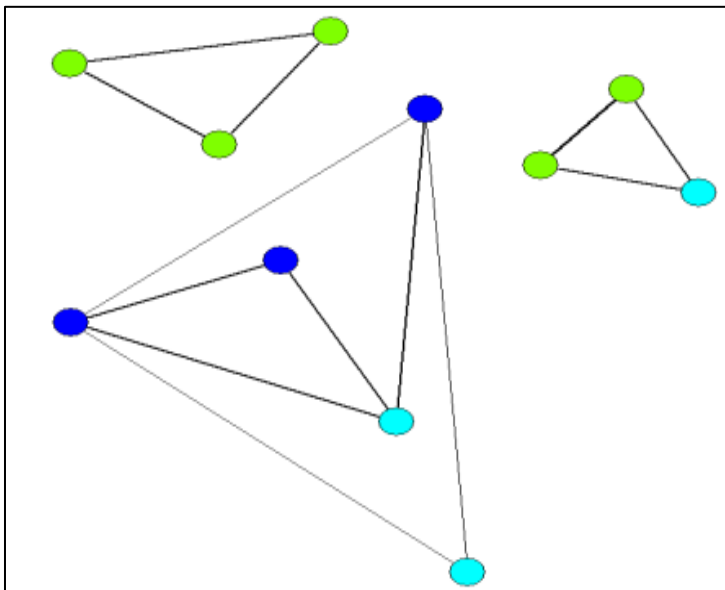
Figure 4.10. Two-Clans within the CSC Network (n=17)



Legend			
Behavioral Health	Pregnancy-Related		
Blue	Mental Health Treatment	Light Red	Pregnancy – Care
Cyan	Counseling	Red	Pregnancy – Coordination
Yellow	Crisis	Pink	Pregnancy – Shelter
Dark Red	Substance Abuse Treatment	Schools	
Red	Substance Abuse Prevention	Yellow	Education
Light Green	Residential/Respite	Light Yellow	School-Based Prevention
Dark Green	Residential/Shelter Services	Other	
	Residential – Dev. Dis.	Grey	Foster Parent Recruiting
		Black	Youth Development

Finally, the strong component the seven-core was next examined for cliques¹⁰ which represent groups of organizations that work directly with one another. Three cliques were identified, involving 11 organizations and 26 (directed) relationships which account for 23% of all potential multiplex relationships among this subnetwork (Figure 4.11). Thus, each of these triads are connected by outgoing AND incoming relationships based on both client referrals and the exchange of administrative resources with each of their partners representing very strong ties.

Figure 4.11. Cliques among CSC Member Organizations (n=11)

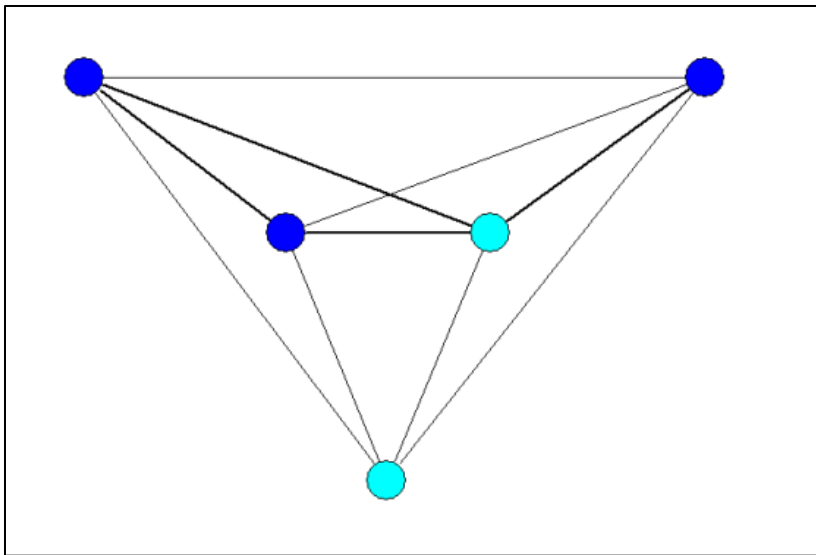


Legend			
Behavioral Health		Pregnancy-Related	
■	Mental Health Treatment	■	Pregnancy – Care
■	Counseling	■	Pregnancy – Coordination
■	Crisis	■	Pregnancy – Shelter
■	Substance Abuse Treatment	Schools	
■	Substance Abuse Prevention	■	Education
Residential/Respite		■	School-Based Prevention
■	Residential/Shelter Services	Other	
■	Residential – Dev. Dis.	■	Foster Parent Recruiting
		■	Youth Development

¹⁰ Cliques are maximally connected subnetworks where each organization is directly connected to every other organization in the subnetwork. The minimum size of a clique is three organizations (deNooy, Mrvar, Batagelj, 2005).

It should be noted that the clique containing five organizations is a well-established collaborative group that has been working together in the region since the early 1990s to provide mental health care to families, thus supporting the validity of this subgroup analysis. If the direction of the multiplex ties is ignored (the network is symmetrized), thus relaxing the standards for clique-identification in a directed network, this small group of five organizations form a maximally connected sub-network where each organization has a multiplex tie with each of the other four partners suggesting that this group is the most coordinated, and shows potential for effective service delivery (Figure 4.12).

Figure 4.12. Maximally Connected Subgroup Based on Undirected Multiplex Ties (n=5).



Legend	
Behavioral Health	Pregnancy-Related
■ Mental Health Treatment	■ Pregnancy – Care
■ Counseling	■ Pregnancy – Coordination
■ Crisis	■ Pregnancy – Shelter
■ Substance Abuse Treatment	Schools
■ Substance Abuse Prevention	■ Education
Residential/Respite	■ School-Based Prevention
■ Residential/Shelter Services	Other
■ Residential – Dev. Dis.	■ Foster Parent Recruiting
	■ Youth Development

During the interviews conducted to learn about the history of the CSC network, several respondents referenced this collaborative group when discussing the formation of the CSC. In fact this group of five organizations was responsible for initiating Putting Kids First and is planning to continue their long standing collaborative partnership within the larger coalition and amidst other small groups of organizations:

“Now the core of agencies still hangs together pretty tight; it’s a bigger group now but ... [we] really have a very solid working relationship. ... So you’ve got the bigger Children’s Services Coalition, which is kind of watching what goes on with this money. And also is actively talking about how we can better collaborate as a larger group. And then you’ve got the smaller group within it that’s just kind of continuing what we’ve always done; not in opposition to the larger coalition but within it. I think there are probably other groupings of agencies that are doing the same thing based on their particular interests. Our interests are clinical largely; some of the other agencies have more of a residential focus or substance abuse focus.”

Although it is challenging to find meaningful partnership and coordination patterns at the network level, by identifying small groups of strongly connected agencies, these results suggest that potential for coordination lies within small groups rather than whole systems.

4.2.3 Fragmentation: Where are the Cracks in the System?

While strong multiplex ties based on client referrals and shared administrative resources are indicators of effective coordinated service delivery, conflict can undermine partnerships. Organizations reported on the frequency and severity of conflict experienced in the past six months with each of the other organizations in the network. Overall, 146 pairs of organizations (23%) reported some conflict. First conflict was examined by core service type (Figure 4.14). Patterns of conflict emerge between organizations that specialize in clinical treatment, counseling, and residential services. Conflict within groups of organizations is not very common except for residential care organizations. Also, one of the organizations that specializes in clinical treatment is

identified as a major hub in the conflict network (encircled in Figure 4.13). The concentration of conflict surrounding this organization may be due to its designated administrative role in the county suggesting that network positions that come with responsibility may increase the possibility of disagreements with other agencies.

Next, multiplex ties characterized by conflict were examined. Of the relationships identified in Figure 4.13, about half have multiplex ties (n=74, 51%). These multiplex relationships characterized by conflict (ties are red in Figure 4.15) account for 32% of the multiplex tie network suggesting that conflict is common among close working relationships and among organizations with greater numbers of multiplex ties: organizations would have to work together in order to experience conflict. The nodes in Figure 4.14 were plotted using Gower scaling algorithms where organizations with more intense relationships (based on both multiplex ties and conflict) are closer to one another. Mental health treatment organizations tend to be clustered close to their counseling partners indicating that they work closely together, but also deal with conflict. The residential care organizations are spread apart from one another in the top portion of the graph, however unlike the other types of organizations, the residential care providers tend to experience conflict among themselves, rather than with other types of organizations.

These trends may be due to different types of conflict: conflict that occurs between different types of organizations may be a result of different treatment philosophies whereas conflict among similar organizations may be related to competition. As will be described in Section 4.3.1, these relationships cannot be confirmed using traditional analyses at the dyadic level, however offer some indication of where discord may impact coordination within the network.

Figure 4.13 Conflict Among CSC Organizations (by Core Service Expertise)

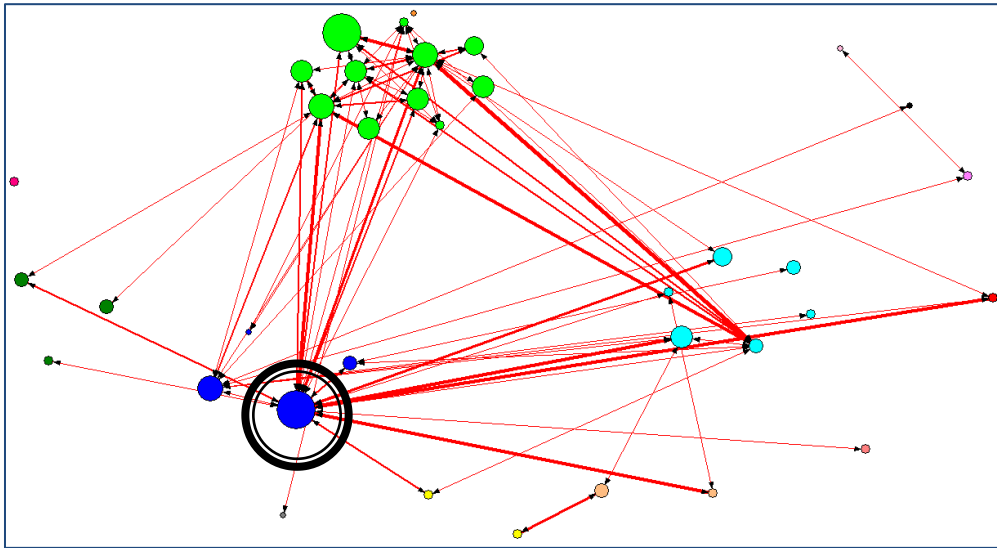
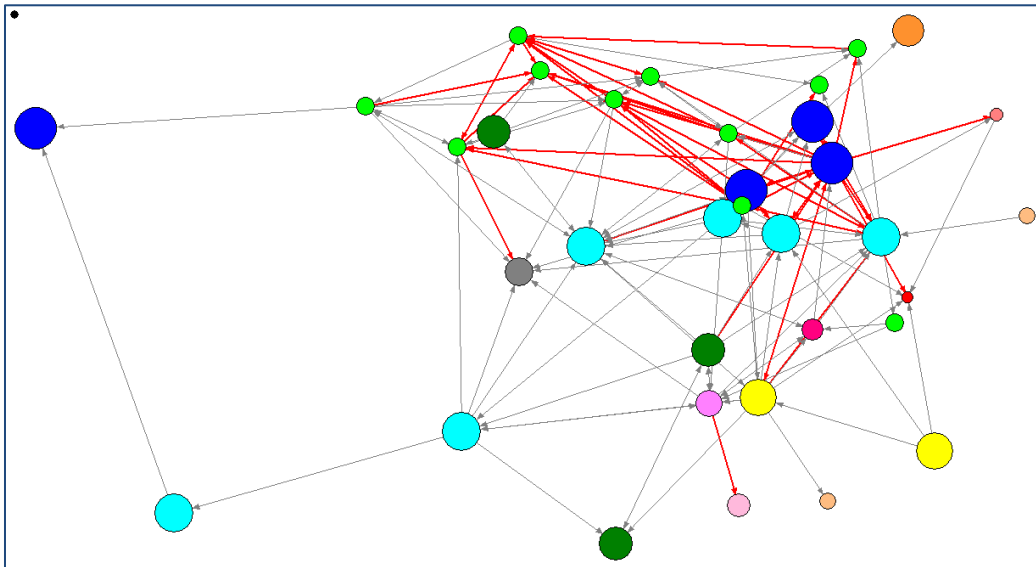


Figure 4.14. Multiplex Ties Characterized by Conflict (in red) using Gower Scaling (n=36)



Legend	
Behavioral Health	Pregnancy-Related
Blue: Mental Health Treatment	Light Red: Pregnancy – Care
Cyan: Counseling	Red: Pregnancy – Coordination
Yellow: Crisis	Pink: Pregnancy – Shelter
Dark Red: Substance Abuse Treatment	Schools
Red: Substance Abuse Prevention	Yellow: Education
Light Green: Residential/Respite	Light Yellow: School-Based Prevention
Dark Green: Residential – Dev. Dis.	Other
	Grey: Foster Parent Recruiting
	Black: Youth Development

4.2.4 Summary of Results - Aim 2

In a coordinated network, organizations that provide similar services are expected to have similar interaction patterns with the rest of the network to ensure that clients have access to the same constellation of services regardless of which organization they are served by. However, in this network, there is variation in the way that organizations are connected to the network suggesting that the larger system is not well-coordinated. Organizations that provide similar services are not integrated into the network in similar ways therefore, clients may have differential access and general service experiences depending on where they enter the system.

Further examination demonstrates that a very dense subnetwork that includes residential care, clinical treatment, counseling, crisis response, and services for pregnant teens accounts for the majority of strong partnerships. The subnetwork is durable and it took very stringent criteria to break the network down into further subcomponents. Therefore, if one organization should leave the network, the system would not break down, although the availability of services might be impacted. However it is notable, that ancillary or support services are not included in this mix suggesting that these types of services are not as well-coordinated with core mental health services as desired.

Although the system may not be coordinated, there are small groups of similar organizations that are. Within this subnetwork there are three collaborative groups working together and were identified as having the strongest ties. These groups were comprised of organizations with similar service expertise (clinical treatment/counseling, and residential care) indicating that the greatest potential for well-coordinated services exists within these small groups of similar organizations. Ideally, coordination should occur among organizations with complementary services so that clients are being served

with a comprehensive set of services that are aligned with their needs. The data suggest that these coordination ideals are not being achieved in the network.

Finally, there is potential for cracks to emerge in the system due to conflict. About half of the relationships characterized by conflict have strong multiplex ties. In particular, conflict is most commonly reported among organizations that specialize in clinical treatment, counseling, and residential services, as these organizations have the densest ties with one another. However, the residential care organizations appear to have different patterns of conflict compared to the other types of organization: the residential care organizations tend to experience conflict with one another, as well as other types of organizations, suggesting that the reasons for conflict may be different for partnerships among similar organizations than for partnerships among different types of organizations.

4.3 How Do Organizations Develop Partnerships? The Role and Relationship of Organizational Characteristics, Partnership Conditions and Resource Exchanges

"This is the art of what we do. ... And, that's why it's not easily articulated in procedures, or descriptions. But, you can talk about art. It's not like it's impossible to describe it. It's just it's not easy to describe."

The third aim of this study addresses how organizations develop partnerships, specifically the characteristics of partners, partnership conditions, and the degree to which organizations partner. First, the dyads are described in terms of partnership conditions and the bivariate relationships between these conditions and the degree to which organizations partner. Univariate descriptions of each variable are contained in Appendix D, univariate and bivariate relationships are summarized in Appendix E. Next the characteristics of organizational are presented and the bivariate relationships between organizational characteristics and partnership conditions. Third, multivariate analyses

including results of exploratory regression models and a path analysis testing the hypothesized model are described. Finally, revised models are presented.

4.3.1 Partnership Conditions Within the CSC

Organizations were asked to rate three conditions of their partnerships with each of the other CSC member organizations: need, conflict and perceived benefits. The partnership conditions within the dyads are described and the bivariate relationships between partnership conditions and the degree to which they partner (the dependent variable) are presented below.

Perceived Need

Overall, organizations needed the supports, services and resources of other agencies to achieve their organizational goals:

“But it’s important to me that I have well-funded programs to refer people to. People who call the crisis line, I need to be able to refer them somewhere.”

Within the dyads, some organizations reported needing their partner more than their partner needed them. Asymmetry in the degree to which organizations need one another (where the standard deviation was greater than half of the averaged need scores) was found in 31.1% of the dyads. Therefore to capture an overall measure of need and interdependence, scores were summed across the dyad. While there is general acknowledgement that organizations within a regional system are interdependent, organizations reported low levels of perceived need for other agencies in the network. Out of a possible score of 20, the mean was 1.25 (SD=.24). Original scores (pre-transformation) ranged from zero to 19 suggesting that there are relationships characterized by greater need and dependence than others.

Conflict

The conflict scores partners assigned to one another were averaged to obtain a measure of the conflict present in each dyadic relationship. Overall, partners reported similar levels of conflict as their partners. Asymmetry (where the standard deviation was greater than half of the averaged scores) in conflict reports was found in only 11.6% of dyads. Partnerships within the network are characterized by low levels of conflict (mean=.43, SD=1.50) but there was variation across the dyads as scores ranged from zero to ten. However, the distribution was highly positively skewed and leptokurtic due to the small number of relationships with extremely frequent and/or severe conflict. Due to the rare occurrence of conflict, this variable was dropped from further analyses.

Perceived Benefits

Agencies rated the perceived partnership benefits related to enhanced efficiency, client access to care, and quality for each of the other organizations in the network. Respondents who were unable to answer these questions because they had no relationship or familiarity with the other organization were able to skip these questions. Of the organizations that reported on the perceived benefits of their relationships, scores were averaged across the three types of benefits to create an overall score summed with the partner score to create a measure describing the overall benefits of the dyadic relationship. Dyads in which one of the partners reported “no relationship,” and the other provided a perceived benefits score were included in analysis, and the score indicated by the reporting partner was adopted for the dyad. Of the 630 potential dyads, there were data reported for 376 (60%). Overall, partnerships were perceived as beneficial: out of a possible score of 22, the mean was 11.13 (SD=4.74). Perceived benefits were comparable across the three types of benefits as well. The perceived benefits of a

partnership, particularly if the benefits entail creating efficiencies for organizations, may be important conditions related to the development and maintenance of partnerships.

Partnership Conditions- Bivariate & Multivariate Relationships

Results of matrix correlations using the quadratic assignment procedure (QAP) to control for autocorrelation suggest that partnerships are positively associated with perceived benefit ($r=.367$, $p<.001$) and perceived need ($r=.408$, $p<.001$), and these relationships are moderately strong. Thus as need for partner resources and benefits of partnerships increase, the greater the degree to which organizations partner.

4.3.2 Organizational Characteristics that Influence the Partnership Conditions

Four organizational characteristics were assessed: service complementarity, financial performance, trustworthiness and competition. Archival data were used to derive measures of service complementarity and financial performance while respondents were asked via the network survey to rate trustworthiness and competition for each of the organizations. The characteristics of the dyads, and bivariate relationships with the partnership conditions (mediating variables) are described below.

Complementarity

A service complementarity score was calculated for each of the 630 dyads by dividing the number of unique service categories by the total number of service categories offered. Thus, the score represents the proportion of distinct programs where scores closer to one indicate little to no service overlap or duplication, and scores closer to 0.5 indicate greater overlap or duplication among the services offered. The average complementarity score for all dyads was .815 ($SD=.13$). Within the network, there are 161 (24%) dyads with a complementarity score of one suggesting that nearly a quarter of the potential dyads in the network have potential to pool services with no duplication. However, only 20% ($n=32$) of these potential complementary pairings have a reported

resource tie (or 11% of all reported ties) indicating that many of the reported relationships link together organizations with similar (rather than different) service mixes.

Organizations may perceive a greater need for partners with complementary services and also view a partnership as beneficial for enhancing access, quality and efficiency. As noted by one executive director, pooling complementary services may enhance access to care for clients:

“No one agency can do everything. There’s too much need for one agency to be the only one. Also, each organization has its areas of strength to bring to a partnership. So it makes sense if you want to reach more kids, you want to increase access and you want to play to everybody’s strengths, to put together a little different mix of what everybody’s doing that makes sense.”

Thus it was hypothesized that service complementarity increases (1) the need, and (2) the perceived benefits, thus driving partnerships between organizational partners.

However, while the literature and practitioners may expect complementary services to drive partnerships by enhancing the perceived need and benefits of working together, the quantitative data suggest otherwise. Complementarity among services in a dyadic relationship is negatively related to benefits ($r=-.270$, $p<.001$), and need ($r=-.375$, $p<.001$) thus as the service mix between a pair of organizations becomes more complementary (less duplicative), the perceived benefits and need decrease, deteriorating the facilitative conditions of partnerships which is the opposite direction as hypothesized.

Financial Performance

A three year average of standardized gains and losses was calculated for each organization based on reporting years 2004-2007. For example, an organization with an average three year annual revenue of \$1 million and averaged \$900,000 in overall expenses over three years would have a financial performance score of 0.1 [(\$1million -

\$900,000)/\$ 1million]. Most organizations (n=29) spent less than their revenue, and posted gains. These gains were modest, all but two of the 29 organizations had performance scores or less (or having less than 10% of their revenue left over). Seven organizations posted small losses (less than 5%). Therefore most dyads consisted of organizations that made modest financial gains. The combined standardized¹¹ gains and losses for each organizational pair represents the sum of the average gain or loss across both organizations, or the pooled financial performance in each dyad. For most dyads, the difference in financial performance was small (mean=.09) although since two organizations experienced substantial gains, there are some dyads where this difference is larger so the dyad scores range from 0 to .54 indicating that in some dyads, organizations could potentially gain access to substantial resources. Average financial performance in the dyad was .13 (SD=.15), although pairs ranged from -.10 to .91. Variable transformation produced a new mean of 1.18 (SD=.18).

Financial performance was hypothesized to (1) increase the perceived partnership benefits, and the degree to which organizations partner but also (2) decrease the perceived need for a partnership, and the degree to which organizations partner. Neither of the hypothesized relationships are supported. QAP correlation results indicate that financial performance is not related to perceived benefits ($r=-.121$, $p=.133$) and weakly related to the perceived need for partnerships ($r=-.199$, $p=.029$) suggesting that financial performance does not positively or negatively influence the perceived benefits, but is negatively related to the perceived need.

¹¹ Gains and losses were standardized by taking the proportion of the net gain or loss (difference between the average expense and revenue) to average annual revenue.

Trustworthiness

Next, organizations reported on the trustworthiness of the other organizations in the network. There was a small percentage of dyads (9.2%) where there was a high degree of asymmetry in the degree to which partners trusted one another (in these dyads, the standard deviation of the two scores was more than half the mean). To calculate a trust score for the dyad that accounted for the overall amount of trust in the relationship (even if there was asymmetry), the trustworthiness scores that partners assigned to one another were summed. Average trustworthiness within organizational pairs ranged from zero to 20 with a mean of 9.2 (SD=4.3) indicating that there is a moderately high level of trust among organizational pairs despite the fact that the majority of organizations reported no prior working history with one another. When asked for potential explanations for this observation, an executive director noted that some may have a limited understanding of the risks involved with partnerships, increasingly the likelihood of developing a new relationship:

“It says people don’t understand collaboration, or they wouldn’t be so quick to jump into bed with somebody and share money, and all that kind of stuff. And, I really think that holds up too in everything that I’ve observed, is non-profit organizations are very limited in their understanding in what it really means to collaborate. So, naiveté will always show up by, “Sure! Why not?””

Based on the literature it was hypothesized that when partners perceive one another as trustworthy, the perceived partnership benefits are enhanced, increasing the interactions between partners. As one executive director explained, the relationship between trust and partnership benefits may be closely linked to care quality issues:

“Because if you’re going to partner like that, you have to have some trust that the other party is going to deliver and deliver at the quality – they’ve got to deliver at the same quality level that fits this organization.”

Quantitative data support the hypothesized relationship between trustworthiness and partnership conditions. Based on QAP correlation results, trustworthiness is positively related to perceived partnership benefits ($r=.432$, $p<.001$).

Competition

Organizations reported how much they compete with each of the other agencies for three types of resources: funds, client referrals, and staff. Among one-third of the dyads (33.7%) partners reported asymmetry (where the standard deviation was greater than one half of the mean) in the degree to which they competed with one another. This suggests that among a sizeable proportion of potential partnerships, one partner competes for a greater amount of their resources than the other. This may be related to size, power or reputation in the network. To derive a score that captures the aggregate level of competition in the dyad, overall competition scores (which is the average reported competition for the three resources) were summed.

The maximum scores was ten, but average overall competition scores were 1.55 (SD=2.1) suggesting low levels of competition across the network. Competition among organizational pairs was highest for operational resources, [funding (mean=2.02, SD=3.00) and staff (mean=1.96, SD=2.99)] and lowest for client referrals (mean=.72, SD=1.74). Variable transformation produced a new average for overall competition of 1.20 (SD=.22).

Given the current economic climate and decline in available funding, competition for money is not unexpected. However, competition for staff was also noted as a current problem and one expected to escalate as services are expanded with the new funding available through the St. Louis County Children's Services Fund:

“We don’t have enough staff, and there aren’t enough qualified people out there, licensed, who want to work at night, and so on, and so on. So, everyone is going to be having a problem on these grants that are given. Because, if they’re growing, they’re going to need to add more staff. And, there’s just so many people available...The coalition has talked about that, and has talked about competition for staff, and are we going to be raiding each other’s talents so to speak.”

Among CSC organizations, competition may be greatest for operational resources.

Based on the literature, it was hypothesized that competition between two organizations increases the perceived benefit of a partnership, increasing the degree to which organizations partner. Bivariate analyses support the hypothesized relationships between competition and partnership conditions. Competition was positively associated with the perceived benefit ($r=.283$, $p=.004$) although the strength of this relationship is weak. These results suggest that organizations that compete for similar resources perceive greater benefits from their partnerships, which may increase the degree to which they partner.

4.3.3 Testing the Initial Conceptual Model

To test the hypothesized relationships among organizational characteristics, partnership conditions and interactions, multivariate analyses explored the data in two ways: multiple regressions using the quadratic assignment procedure and path analysis.

MRQAP. Multivariate relationships among the variables were further explored using multiple regression quadratic assignment procedure (MRQAP) in UCINET which is an extension of the bivariate application of QAP. Four multiple regression models using the data in their square matrix format were run. The first model regressed perceived benefits (a mediating variable) on four independent variables (complementarity, competition, financial performance and trust) and a control variable (staff size) (Table 4.5). These variables explained 14% of the variance and only one

variable had direct effects on benefits. Trust positively predicted the perceived benefits ($b=.26, p=.0005$).¹² Complementarity ($b=-2.14, p=.1$) and competition ($b=1.87, p=.06$) were not significant at the $p=.05$ level, but were close. Financial performance and staff size were not significant.

Table 4.5. Quadratic Assignment Procedure Regression Analysis Predicting Benefits

Independent Variable	b
Complementarity	-2.14*
Competition	1.87*
Trust	.26***
Financial performance	.24
Staff Size	.04

$R^2 = .146, \text{Adj } R^2 = .143$
 *** $p < .001$, ** $p < .01$, * $p < .05$
 2000 simulations

The second model regressed need (a mediating variable) on two independent variables (complementarity and financial performance) and one control variable (staff size) (Table 4.6). These variables explained 15% of the variance in need for partner resources supports and services. Complementarity ($b=-.65, p=.0005$) negatively predicted the reported need within dyads therefore, dyads need one another more when their services overlap (are not complementary). Financial performance ($b=-.20, p=.07$) was also negatively related to need, but only significant at the $p=.07$ level. Staff size was not a significant predictor of need.

Table 4.6. Quadratic Assignment Procedure Regression Analysis Predicting Need

Independent Variable	b
Complementarity	-.65***
Financial performance	-.20
Staff Size	.00

$R^2 = .154, \text{Adj } R^2 = .152$
 *** $p < .001$, ** $p < .01$, * $p < .05$
 2000 simulations

¹² Unstandardized regression coefficients are presented in text.

The third model regressed the dependent variable (the degree to which organizations partner) on the three variables hypothesized to have direct effects: duration (control variable) and perceived benefits and need (mediating variables). All three variables significantly predict the degree to which organizations partner, explaining 24% of the variance. The fourth model added the four independent variables to the equation (Table 4.7). The addition of the independent and control variables only contributed marginally to the variance explained (1.3% R^2 change). Four of the five variables were not significant and one (complementarity) was significant only at the $p < .1$ level.

Table 4.7. Quadratic Assignment Procedure Regression Analysis Predicting Interactions Among Dyads

Independent Variable	Model 3 b	Model 4 b
Duration	.54***	.53***
Benefits	.05***	.04***
Need	1.21***	.98***
Complementarity		-.55*
Competition		.11
Trust		.01
Financial performance		-.36
Staff Size		.01
R2	.240	.253
Adj R2	.239	.249

*** $p < .001$, ** $p < .01$, * $p < .05$
2000 simulations

Based on these preliminary analyses, most of the hypothesized paths that will be tested in the complete path model are supported. However, some of the regression coefficients are weak so while there might be a significant relationship in the MRQAP model, the relationship is not strong indicating that other (unmeasured) factors account for the variation in partnerships. The fourth model (assessing the direct effect of all variables on the degree to which organizations interact) suggests that several independent

variables are not related to the degree to which organizations partner even though bivariate analyses demonstrated relationships particularly for competition and trust. While direct relationships between independent and dependent variables are not necessary for establishing mediation effects, given the weak relationship that they have with the mediating variables, these results may signify that the hypothesized independent variables are not critical factors when explaining partnerships, and that the original model is mis-specified. To confirm this, a series of path models were tested.

Path Analysis. Path analysis to simultaneously test the model using all of the originally hypothesized variables and relationships was conducted in Mplus 5.0 using the 366 dyads with complete data. Mplus was used because this program can fit non-normal distributions to the dependent variable including negative-binomial distributions (which was used in this analysis given the overdispersion of the dependent variable, interactions). The original model has nine parameters (all paths). The results of the path analysis testing the hypothesized relationships are explained and displayed below (Figure 4.15). When fitting negative binomial distributions in path analysis, traditional fit statistics based on the mean of the distribution are not relevant, and unavailable in Mplus. Therefore, overall model fit is reported and compared to alternative models using the Bayesian Information Criteria (BIC), which assesses the fit of the model to the data given the number of variables. Thus, complexity is penalized while simplicity is preferred. The BIC for this initial model is 3206.134.

As hypothesized, perceived benefits ($b = .049$, $SE = .014$, $p = .005$), perceived need ($b = 1.547$, $SE = .243$, $p < .0001$), and duration ($b = .501$, $SE = .147$, $p = .001$), which is used as a control, directly impact interactions among organizations. Therefore, dyads where

organizations perceive that working together is beneficial, depend on one another for resources, and have a prior working relationship partner more by exchanging greater amounts of resources.

Three of the four organizational characteristics expected to influence the perceived partnership benefits, and one control variable were significant however not all in the expected direction. As hypothesized and suggested by the preliminary analysis, trust ($b = .438$, $SE = .056$, $p < .0001$) and competition ($b = 2.76$, $SE = 1.164$, $p = .018$) are positively associated with perceived partnership benefits. Service complementarity ($b = -3.382$, $SE = .86$, $p = .086$) was also associated with perceived partnerships but in the opposite direction as hypothesized. Therefore, organizational pairs that have similar services (a lower degree of service complementarity), compete with one another for similar resources, and yet have a greater trust in one another have a greater likelihood of perceiving benefits from working together and partner more. Financial performance ($b = -.768$, $SE = 1.135$, $p = .599$) was not significantly related to perceived partnership benefits however, contrary to MRQAP analyses, staff size ($b = .002$, $SE = .001$, $p = .011$) (which was intended as a control variable) is positively related to perceived benefits. Thus, financial performance of the pair of organizations does not influence perceived benefits, but partnerships with large organizations perceive benefits from working together.

One of the two organizational characteristics expected to influence the need for a partnership were significant, but again, not all in the expected direction. Service complementarity was significantly but negatively related to the perceived need for a partnership ($b = -.682$, $SE = .085$, $p < .001$). In other words, pairs of organizations with highly complementary (not duplicative) services reported needing each other less which

runs contrary to the hypothesis. Neither financial performance ($b = -.116$, $SE = .075$, $p = .124$) nor staff size ($b = -.000$, $SE = .00$, $p = .174$) were related to partnership needs.

Given the potential bias in the standard errors and p-values due to the interdependence of the data, the model was run in STATA using seemingly related regression (SUR)¹³ which allow for standard errors of the equations to correlate, and the jackknife resampling command. Note, STATA does not fit the negative binomial distribution to SUR models when the standard errors are jackknifed. Results from the path model using maximum likelihood estimation, and the SUR model using jackknifed standard errors are presented below (Table 4.8). The findings remained fairly consistent across the two types of analyses except for one path: the relationship between competition and perceived benefits. This path is not significant (and has a negative coefficient) in the results from the jackknifed model yet is significant at the .05 level (with a positive coefficient) in the results from the maximum likelihood model. The bivariate QAP analysis returned a significant positive relationship ($r = .284$, $p = .004$) consistent with the results of the maximum likelihood model.

The discrepancy in coefficients may be due potential model misspecification which is highlighted by the different ways the errors are treated in the two tests. The original model was tested using a traditional path analysis which treats the equations and their errors independently. The jackknifed model was run using a SUR system which allows for the equation error terms to correlate. In particular, the error terms in the equations testing the influence of the independent variables on the two mediators are related. When the errors are allowed to correlate (in SUR), this could yield different solutions in simultaneous tests. These equations solving for the mediating variables may

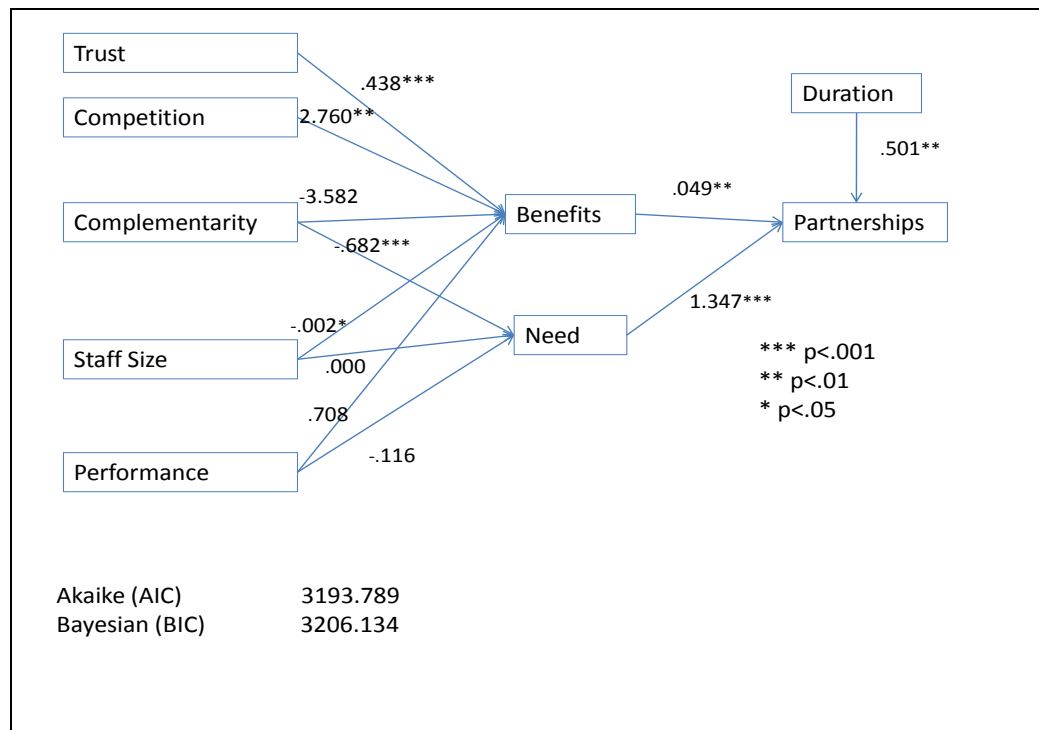
¹³ The jackknife command is not available with the pathreg command (for path analysis) in STATA.

be subject to a high degree of standard error because most of the variables have non-normal distributions (although variable transformations reduce the skew, the distributions still have multiple modes) making it more difficult to fit an efficient multivariate solution, and contributing to higher residuals and standard errors.

Table 4.8. Results from Maximum Likelihood and Jackknife Estimated Models

Path	Maximum Likelihood			Jackknifed		
	b	SE	p	b	SE	p
Benefits → Interactions	.049	.014	.000	.106	.027	.000
Need → Interactions	1.547	.243	.000	2.853	.484	.000
Duration → Interactions	.501	.147	.001	.622	.204	.002
Trust → Benefits	.438	.056	.000	.353	.052	.000
Complementarity → Benefits	-3.582	2.084	.086	-6.765	2.111	.001
**Competition → Benefits	2.760	1.164	.018	-.465	1.132	.682
Financial performance → Benefits	-.708	1.1347	.599	-1.441	1.516	.342
Staff Size → Benefits	.002	.001	.011	.002	.001	.023
Complementarity → Need	-.682	.085	.000	-.682	.086	.000
Financial performance → Need	-.116	.075	.124	-.119	.077	.123
Staff Size → Need	.000	.000	.174	.000	.000	.176

Figure 4.15. Results of Initial Path Model (n=366)



4.3.4 Revised Models

Given the results of the initial path model and the information learned in the key informant interviews, the model was revised and re-tested.

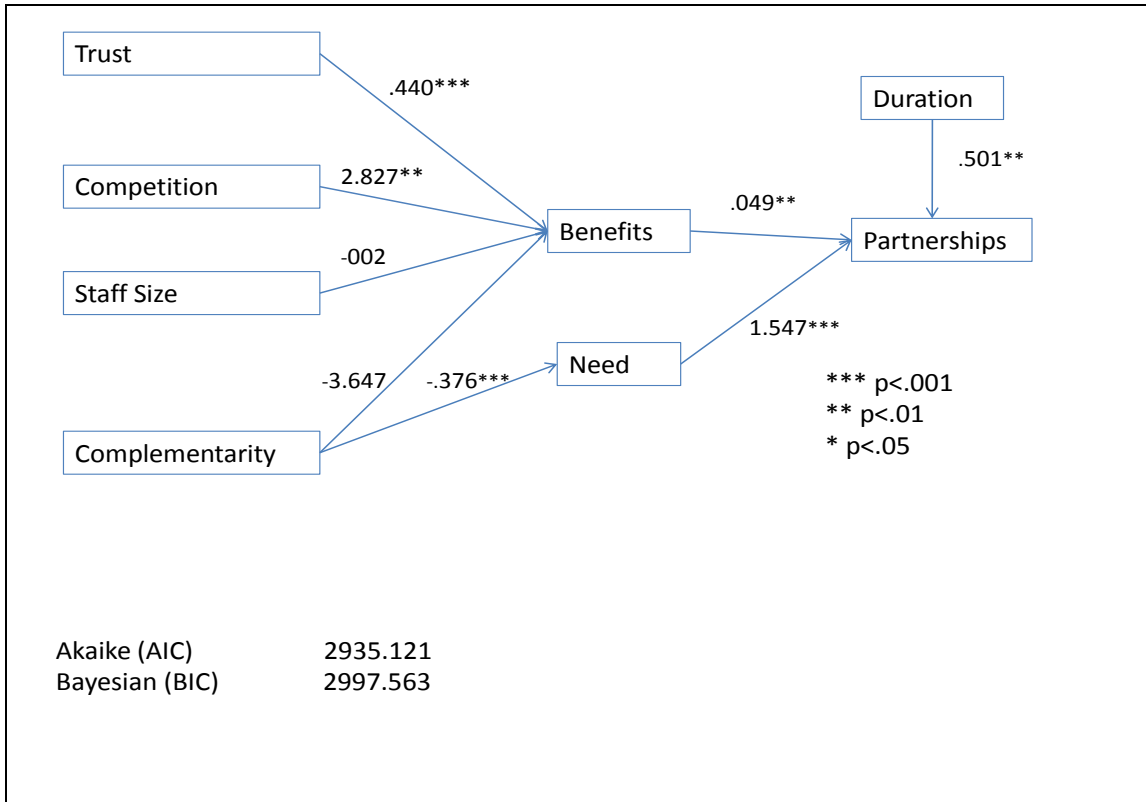
Alternative Model 1

First, the three non-significant paths in the original model were removed. Two of the eliminated paths involved financial performance. Although organizations partner to access resources, it may not be reasonable to expect that agencies have access to their partner's financial gains. The third path (staff size and need) may not have been significant since staff are not frequently shared resources in this network. The model was re-run in Mplus, fitting a negative binomial distribution to the dependent variable and using maximum likelihood estimation (Table 4.9, Figure 4.16). The BIC was 2997.563 which is lower than the BIC in the original model suggesting this alternative model is slightly more likely to be replicated than the original model. The path analysis and SUR returned similar results, however as with the original model, the coefficient and significance of the path between competition and perceived benefits was different.

Table 4.9. Results for Alternative Model 1

Path	<u>Maximum Likelihood</u>			<u>Jackknifed</u>		
	b	SE	p	b	SE	p
Benefits → Interactions	.049	.014	.000	.107	.027	.000
Need → Interactions	1.547	.243	.000	2.78	.485	.000
Duration → Interactions	.501	.147	.001	.620	.204	.003
Trust → Benefits	.440	.056	.000	.356	.051	.000
Complementarity → Benefits	-3.647	2.075	.079	-6.983	2.103	.001
Competition → Benefits	2.827	1.147	.014	-.377	1.11	.734
Staff Size → Benefits	.002	.001	.08	.002	.001	.002
Complementarity → Need	-.376	.043	.000	-.710	.084	.000

Figure 4.16. Alternative Model 1 (Nonsignificant paths removed)



Alternative model 2

A second alternative model was constructed and tested with the data. During the interviews with key informants, the benefits related to enhanced efficiency were highlighted; partnerships may be a strategy for efficient organizational growth. Thus organizations may perceive benefits (to efficiency in particular) from working with another organization that they depend on for resources. For example, one executive director described a partnership that is currently being negotiated with another organization that that would allow her organization to grow without capital expense, and also fulfill a need for her partner who has available space:

“Children in residential placement [are] declining because more kids are going into foster care. So that’s the good news; we’d rather have them in foster care than in an institution. But [our partner] has bricks and mortar that s/he has to support. So this way it’s possible – we’ve, ...

wanted to set up the [center]. For a couple years now I've been looking at that and have – didn't want to build something myself. Well it may be that we could take over some of the space that [our partner] can't fill and go after a grant together to get funding, to pay for a [new] center.

In addition, since the findings appear to suggest that organizations that provide similar services are working together, it extends that the degree to which they compete for similar resources is related to the need for one another's resources. The second alternative model includes two new paths from benefits to need and from competition to need. The BIC of this model is 3101.994 which is smaller than the original model suggesting the respecification is in the right direction.

Eight of the ten paths were significant. Need is associated with perceived benefits ($b=9.682$, $SE=1.108$, $p<.001$) and competition is associated with perceived need ($b=.483$, $SE=.054$, $p<.001$). So dyads where partners compete for similar resources, depend on one another for resources, and perceive a greater benefit from doing so suggesting that need for resources is drives organizations that rely on similar resources to work together.

By adding the relationship between need and benefits, the paths between competition and benefits and complementarity and benefits are no longer significant demonstrating that the types of services organizations provide and the resources they rely on do not directly impact partnership benefits but may have an indirect effect because these two variables continue to significantly predict the need for partner resources. The path between competition and benefits (which was problematic in the original and first alternative model due to discrepant results in the path and SUR analyses) is negative and non-significant providing further evidence that the original model is misspecified, and competition influences partnerships by increasing the need for resources instead of directly enhancing the benefits of working together.

Table 4.10. Results of Alternative Model 2 (new paths are **)

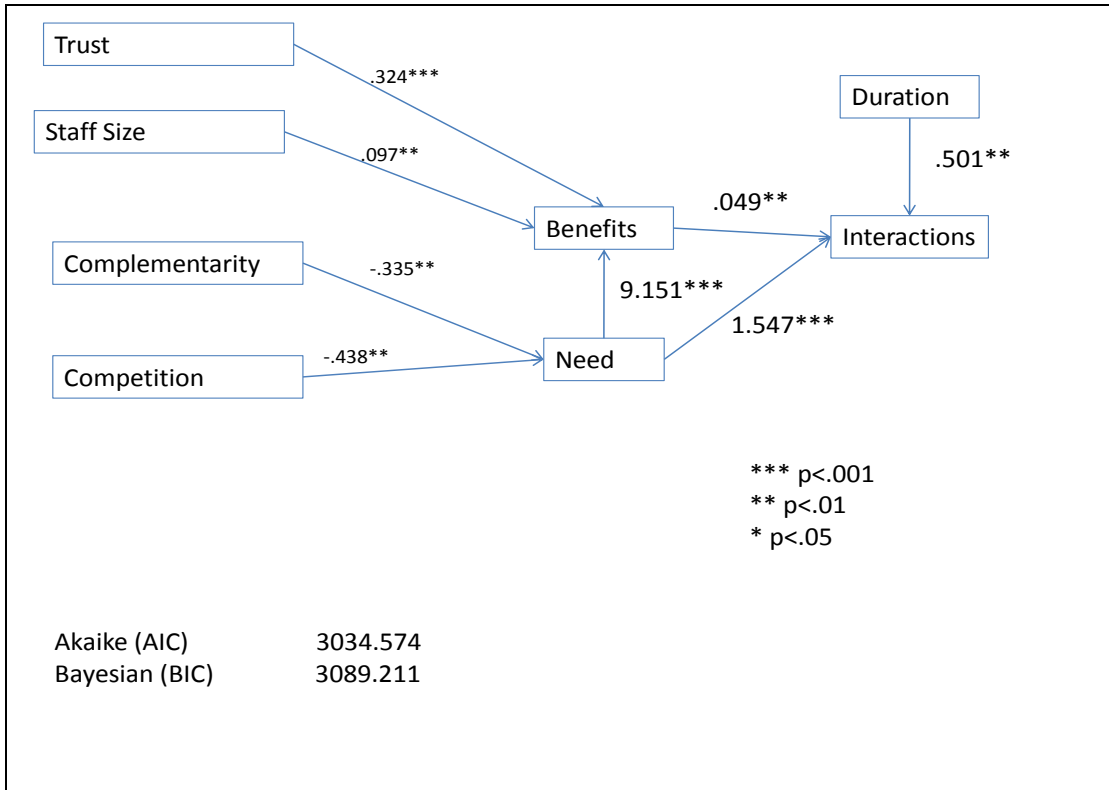
Path	Maximum Likelihood			Jackknifed		
	b	SE	p	b	SE	p
Benefits → Interactions	.049	.014	.000	.106	.026	.000
Need → Interactions	1.547	.243	.000	2.783	.530	.000
Duration → Interactions	.501	.147	.001	.615	.204	.003
**Need → Benefits	9.682	1.108	.000	9.682	1.129	.000
Trust → Benefits	.327	.050	.000	.327	.051	.000
Complementarity → Benefits	-1.248	1.786	.485	-1.245	1.829	.497
Competition → Benefits	-1.467	1.070	.170	-1.467	1.090	.179
Staff Size → Benefits	.002	.001	.001	.002	.001	.001
Complementarity → Need	-.335	.087	.000	-.337	.088	.000
**Competition → Need	.483	.054	.000	.483	.054	.000

Next, the refined model was re-run. The BIC was 3089.211 (again, smaller than the previous models) and all paths were significant (Table 4.11, Figure 4.17).

Table 4.11. Results of Alternative Model 3

Path	Maximum Likelihood			Jackknifed		
	b	SE	p	b	SE	p
Benefits → Interactions	.049	.014	.000	.106	.026	.000
Need → Interactions	.1.547	.243	.000	2.785	.524	.000
Duration → Interactions	.501	.147	.001	.615	.204	.003
Need → Benefits	9.151	.991	.000	8.824	1.067	.000
Trust → Benefits	.324	.050	.000	.328	.051	.000
Staff Size → Benefits	.097	.028	.000	.002	.001	.002
Complementarity → Need	-.335	.087	.000	-.335	.088	.000
Competition → Need	.483	.054	.000	.484	.054	.000

Figure 4.17. Alternative Model 3



Although model fit is poor, this process provided direction for respecifying the model and identifying variables critical in partnership development. This final model suggests that trust and staff size positively influence the perceived benefits of partnership, which leads to stronger partnerships. Complementarity negatively and competition positively influences the perceived need for partner resources suggesting that organizations that provide similar services, and compete for similar resources have a greater need for one another. This need impacts both the perceived benefits of working together and the degree to which organizations partner.

Based on these data, financial performance appears to make no difference on the need for or benefits of partnering. However, total staff size (originally included as a control variable) predicts perceived benefits; partnerships among large organizations tend

to have higher perceived benefits which influence the degree to which organizations interact.

4.4 Summary of Results – Aim 3

Results of multivariate analyses examining the relationship between organizational characteristics, partnership conditions and the degree to which organizations partner demonstrate that hypothesized conceptual model needs further refinement. As expected, the need for another organization's resources, services and supports as well as perceived benefits of partnerships predict the degree to which organizations partner. However, not all hypothesized relationships between organizational characteristics and partnership conditions were supported.

Notably, competition between organizations that rely on similar resources appears to increase the need for one another, the benefits of partnerships, and the degree to which organizations partner. In addition, complementarity is negatively related to the perceived benefits of a partnership: the less complementary or the more duplication of services across a pair of organization the greater the perceived benefits of partnering, and the stronger the partnership.

These results suggest that the network is dominated by partnerships among competitors, however this trend still only accounts for a small portion of variance explained in the degree to which organizations partner. Therefore, unexplained factors may be contributing to partnership needs and benefits.

Chapter 5 - Discussion

This study examined partnerships within network of children's behavioral health organizations to learn about the system's capacity for coordination and the influence of organizational characteristics and partnership conditions on the degree to which organizations partner with one another. Overall, the key findings describe partnership behavior at the network, small-group, and dyadic levels: (1) children's behavioral health organizations in the CSC maintain a complex set of partnerships, which are expected to grow as new opportunities emerge; (2) although partnerships are very common, the larger network may not be well coordinated as evidenced by the few systematic partnership patterns however there is potential for coordination at the sub-group level among small groups of similar organizations; and (3) at the dyadic-level similar, competing organizations depend on one another for resources and benefit from their collaboration, which drives partnerships. Together, these findings suggesting that organizations may be using their partnerships to create efficiencies and manage competition to enhance their own survival which may run counter to system improvements to link complementary services.

What follows is a discussion of these findings, and the methodological limitations that should be considered when interpreting these results. The chapter concludes with a summary of implications for inter-organizational theory, research and practice.

5.1 Partnerships Among Children's Behavioral Health Organizations

Consistent with previous work describing the prevalence of partnerships among mental health organizations, children's behavioral health agencies maintain a complex set of external relationships (Morrissey, Calloway, 1997; Provan and Milward, 1995). This study confirms that service delivery partnerships (based on client referrals) are the most

prevalent type of tie (Johnson, Morrisey, Calloway, 1996), however all of the organizations in this study also maintain administrative relationships. Therefore this study highlights how children's behavioral health organizations not only link their services via client referrals, but also have aligned their organizational operations demonstrating both service and operational interdependencies.

Overall, the majority of the partnerships reported in this study are new. There are some organizations with long-term working relationships however the majority of organizational pairs report very new relationships with less than a year of working history or none at all. What cannot be determined due to the cross-sectional nature of the data is whether these young partnerships are occurring as a result of the Putting Kids First Initiative or due to a short "life expectancy" of partnerships. On one hand, the initiative provided a forum for organizational leaders to network with one another and explore the potential to work together. In addition, it is anticipated that the Children's Services Fund (CSF) will emphasize collaboration, therefore organizations may be forming new partnerships to enhance their desirability to the CSF and likelihood of receiving funding:

Well, I think, and I could be wrong, and I don't think I'm the only one who thinks this, is that the board, the children's services board, will probably look at collaboration among agencies as a favorable component. And, certainly that's true with any other donors.

Responding to the priorities and values of a funder may be particularly important as our economic conditions, decreasing corporate and private donations, and funding cuts create resource shortages that might be pushing organizations to work together and create efficiencies. On the other hand, we know little about the expected time duration or life course of partnerships. It may be that organizations "date" multiple partners at once and over time, maintain only the partnerships with the most optimal partnership

conditions while dissolving (or just choosing not to pursue) their relationships with less optimal conditions.

5.2 The Potential for Coordination in St. Louis County

Although partnerships are common and likely to develop in the future, there were few definitive partnership patterns across the whole network that emerged from the descriptive network analysis techniques. Ideally, in a coordinated system, organizations that provide similar core services should have similar partnership patterns to ensure that clients have similar service experiences regardless of where they receive care. These expected patterns were not evidenced in the CSC suggesting that care may be fragmented for some youth in the system. Although patterns at the network level did not emerge, there are several small collaborative groups of organizations with strong relationships based on both client referrals and administrative resources.

5.2.1 Small Collaboratives as Network Building Blocks

Strong relationships among cliques or subgroups of organizations have been shown to be associated with improved client outcomes in previous research (Provan & Sebastian, 1995). The groups are comprised of similar organizations rather than groups of organizations that link together different but complementary services. Therefore these partnerships might serve a different purpose than facilitating access to comprehensive services.

These small cohesive groups of organizations that work closely with one another may be the building blocks of the larger network. While the exact influence of subgroups on the collaborative behavior across rest of the network is not tested, interviews with CSC members highlighted the importance of one of the identified subgroups in catalyzing the region's Putting Kids First Initiative. Whether small groups' influence on the

network contributes to a more densely connected network by bringing new partners into the group or serves as a model for other organizations to develop cohesive collaborative groups is unknown. However, this is a fruitful area for future study with implications for understanding network emergence, as well as the relationships between different service delivery system structures and client outcomes.

5.2.2 Facilitating access to Comprehensive Services: Linking Complementary Organizations

The data from the network analysis and path models suggest that partnerships bring organizations together with similar, rather than different service types in this network. Ideally, to expand youth's access to a range of services, partnerships should facilitate the construction of a continuum of care by bringing together organizations with distinctly different services so that no matter where a child or adolescent enters the system he or she should be able to access all needed services. However, organizations with overlapping services appear to be working together as evidenced in other studies of partnerships in human services (Rivard and Morrissey, 2003; Ivery, 2007; Bolland and Wilson, 1994, Wickizer, 1990).

Multi-service organizations that work together are likely to have some overlap in their service offerings. As will be explained in Section 5.4.3, the way complementarity was measured is not nuanced enough to capture variations within service types (for example, residential care for youth with autism spectrum disorders is considered the same as residential care for youth with behavioral health problems and also involved in the child welfare system) so partnerships among similar organizations may be reflecting client referrals to organizations with complementary expertise with a particular population of clients or treatment approach. However, when networks based on

administrative ties are examined, similar trends are observed (similar organizations working together).

From a service delivery standpoint, clients in St. Louis County may not have access to a full range of services, depending on where they enter the system. For youth who enter the system through a multi-service organization that specializes in mental health care, a full range of services may be more immediately accessible (and coordinated) than youth who enter the system from another type of organization that provides supportive or ancillary services. In fact, in a separate study of children and youth mental health and social service organizations in the greater St. Louis region, Polgar and Cabassa (2007) found that key informants from organizations with a greater variety of services provided in-house (as compared to organizations that provided fewer service types) had more positive perceptions of the availability, accessibility and quality of services in the system. Youth who enter the system through these types of organizations may have access to more services since these organizations provide multiple services in-house and have dense ties to other organizations.

The overall service experience and pathways through the system may appear very different for youth who have first contact with the system through a niche or ancillary support organization. For example, school-based prevention programs have some ties with organizations that specialize in counseling and therapy but no direct ties to those specializing in mental health treatment, or substance abuse treatment. So youth who are identified with service needs by providers who work for these specialized, but non-mental health specific organizations may have difficulty gaining access to services. From the perspective of providers at these organizations, the service network may appear more

fragmented (Polgar & Cabassa, 2007). Organizations that provide fewer services presumably must rely on a greater number of organizations in the system (compared to organizations with a wide variety of services) to provide a comprehensive array of services to their clients and therefore may be more familiar with other organizations and services available (or not available, accessible, or quality) in the community through their experience coordinating care for clients.

5.3 Partnership Development

Findings from this study suggest need and perceived benefits of working together drive partnerships. However, it is not clear exactly what organizational characteristics create conditions of benefits and need. Competing organizations that provide similar services, and trust one another seem to partner in this network, however there may be other factors influencing partnership patterns. The role of needs and benefits on interactions are first discussed followed by the organizational characteristics that influence these conditions.

5.3.1 Conditions that Facilitate Partnerships - Need and Benefits

As initially hypothesized, the need for (resources, supports and services) and benefits of partnership (enhanced efficiency, access, and quality care) drive partnerships among organizations. In addition, organizations that partner out of a need for resources or supports also perceive that the partnership is beneficial. Although the amount of resources, services and supports organizations needed from their partners was positively associated with their interactions, the overall level of need was quite low – organizations do not necessarily need other organizations to achieve their mission, but may partner because of the added benefits or value. Thus, perceived benefits and need alone may be sufficient for facilitating partnerships, but those based on need and benefits may stronger.

Need for resources, perhaps to enhance efficiency or help organizations grow in an efficient way appear to be driving partnerships among organizations in the CSC network supporting traditional resource dependence perspectives which as documented in other research (Van de Ven and Walker, 1984). Typically, resource dependence has been used to explain or predict that organizations will partner to access needed resources, particularly needed or distinct service expertise. However, the resources desired in this network may not be related to service delivery. Rather, the need for administrative resources, or those supports for organizational operations may be driving inter-organizational relationships in this network.

While resource dependence perspectives have been emphasized in human services research, the evidence in this study indicate that transaction cost economics is also a relevant theoretical explanation for partnerships among mental health agencies. Particularly under conditions of economic uncertainty, non-profit children's behavioral health organizations may come to depend on the resources of their partners as a way of (1) enhancing the efficiency or facilitating efficient growth of their own operations and services or (2) managing competition. Organizations are under pressure to improve access and quality but especially given the current economic climate must look for the most efficient way to do so: they may not be able to achieve improved access and quality care in an efficient way without looking to the marketplace for a partner, illustrating the classic "make, buy or ally" decision described in TCE. Future research and hypothesis testing is important for identifying points of intersection between resource dependence and TCE. In addition, drawing more from transaction cost economics, which focuses more specifically on the relationship between particular partnership governance

structures and the efficiency that is generated by partnerships, can help move the field forward with greater specificity when describing partnerships and the mechanisms involved in their development.

5.3.2 Finding the Right Partner – Characteristics of Organizational Pairs

Finding the right partner is a key decision for developing partnerships. In this network, organizations that provide similar services, compete and trust one another tend to need and benefit from their partnerships, which increase the degree to which they partner. Financial performance and competition do not appear to influence the conditions that facilitate partnerships, although partnerships between larger organizations may be perceived as beneficial.

Similar Service Mixes

In this network, organizations with similar services tend to partner. Results from the path models suggest that in this network, service complementarity is negatively related to the conditions that facilitate IORs. This runs contrary to expectations in human service delivery systems: organizations with complementary services are expected to work together because by doing so, they pool distinct service types and facilitate access to a greater variety of services. Therefore, they are expected to perceive a greater need and greater benefits with organizations that have different service mixes than their own. However in this network, this does not appear to hold true suggesting that there are other reasons organizations choose to work together (besides complementarity of services).

Need for resources services and supports was moderately related to partnerships, however since complementarity was not, services may not be the desired resource or capability driving inter-organizational partnerships. It cannot be determined definitively from the data what types of resources and supports are needed, however operational

resources (as opposed to raw inputs or service delivery resources) may be the key supports organizations are seeking through their partnerships – responses on individual items related to competition and benefits indicate higher levels of competition for administrative resources like staff and funding (over new client referrals), and higher levels of perceived benefits related to enhancing efficiency (over enhancing access and quality of care) further suggesting that partnership behavior is driven by organizational rather than system interests.

Competition

In this study organizations that compete for similar resources (client referrals, funding and staff) tend to partner. However, competition between partners seems to drive interactions by creating conditions of need and dependence rather than perceived benefits of partnership as originally hypothesized.

While partnerships among competitors may seem counterintuitive, these findings in conjunction with the negative relationship between complementarity and partnership conditions support the argument that partnerships are a strategy for managing competition and funding shortfalls. To reduce competition, similar organizations may work together and agree to partition off the resources in the larger environment:

[Our partnership] was based on common interests ... we knew each other, and it was natural for us to figure out ways to capitalize on that – those interests. What we did is we divided up the area geographically so that one agency was providing services in the south part of the county; another one was in the western part of the county, another one was in the northern part. And we met together all the time to compare information. We had the same services, the same programs; everything was the same but we divided up the area geographically so we made sure we covered it because no one agency could do everything. And each agency had different prior existing relationships in those service areas.

This collaborative was reported to have saved money for the regional government (their collaborative community-based arrangement cost the funder less than centralizing services under the umbrella of the local public agency), while also benefiting the individual organizations. The organizations agree to preserve “turf” divisions which helps manage the threat of competition: they negotiate their competition.

Alternatively, groups of competitors may be forming a more powerful collective advocacy voice. Also, organizations may use their partnerships to learn more about their competitors. Even if this information is not used to gain a competitive advantage, it might be used to help organizations stay on par with their competitor/partner.

In light of the current recession, similar inter-organizational behavior may be expected to continue yielding new collaborative or even mergers. While these types of arrangements may help preserve services by securing funds, creating more efficient organizational operations, there is also the potential for monopolistic effects in the local network, with some collaboratives pooling their capacity, power and influence to outbid other providers for contracts. Other research suggests that alliances among similar organizations help create economies of scale by exploiting partners’ existing competitive advantage (Ireland, Hitt, Vaidyanath, 2002). Long term, this may contribute to consolidation within the sector, the dissolution of some organizations that are unable to compete with the larger, more powerful entities, and may also have implications for quality, costs, and practice innovations that are often a function of competitive market pressures.

However, the influx of new funding from the Children’s Services Fund in St. Louis County may help preserve the current ecology of children’s service providers in the

region although the extent to which it can balance the dwindling federal and private funds is unknown. New financial resources have been linked to new administrative ties (Fried, Johnsen, Starrett, Calloway, & Morrissey, 1998; McGuire, Rosenheck, & Burnette, 2002) but perhaps these funds could be used to incentivize partnerships that link unique rather than similar services.

Trustworthiness

As hypothesized, trustworthiness is an important organizational quality and related to the perceived benefits of working together. Throughout the literature, trust is a key factor in the development of partnerships specifically when organizations negotiate the kind of partnerships characterized by flexible (and riskier) governance structures that allow for mutual adjustment - the very types of partnerships that allow organizations to adjust and adapt to changing or individualized client and community needs. At present there is a moderate amount of trust among the CSC organizations suggesting that these types of partnerships can and do exist.

However, the literature also describes how trust develops over time as organizations become familiar with one another through their interactions (Jones, Hesterly, & Borgatti, 1997). Data suggest that many dyads have a limited working history with one another and as suggested by one key informant, the degree of trust reported (without the experience of working together) may reflect naiveté among this group of organizations related to the inherent risks of partnerships (such as lost autonomy, reputation, conflict, etc.). If this is the case, then additional training and support is important for helping executive directors and other non-profit administrators consider the risks involved when working with a partner, and to structure a potential partnership so that organizational interests are protected.

Financial performance

Financial performance was not related to partnership development. Resource dependence theory posits that organizations find partners with resources therefore good financial performance is a desirable quality of a potential partner. However, pairs of better-performing organizations, or perhaps pairs of organizations where one partner is performing better than the other (thus contributing to better financial performance overall within the dyad) did not report experiencing a high level of benefits or need.

Previous research with children's mental health organizations in the St. Louis region found that positive perceptions of organizational financial performance were associated with inter-organizational relationships (Polgar & Cabassa, 2007). What is unclear is whether administrators' perceptions of financial performance are based on actual financial data, word of mouth reputation, or other sources of information. Executive directors and other administrators that are interested in developing partnerships for their organizations may not have enough (or the right kind of) information or knowledge about their potential partners' financial performance to consciously make a decision to partner based on financial performance.

Staff Size

Although not included in the original model (except as a control variable) staff size predicted perceived benefits. Partnerships between large organizations were perceived as beneficial and thus, organizations partnered more. The number of staff employed by an organization typically serves as an indicator of organizational size and larger organizations typically have the capacity to provide many different types of services. These results are consistent with other research demonstrating that generalist organizations (those that address many different service needs) are likely to partner with

one another (Provan, Sebastian, & Milward, 1996; Wholey & Huonker, 1993) and perceive greater benefits (Arya & Lin, 2007). If large, multiservice organizations account for a large proportion of ties in the network, this raises questions about the role of smaller organization that may be providing specialized or niche services. Their small size may limit their capacity for maintaining as many complex relationships or the rate at which they can expand their capacity (via partnerships) and may end up on the periphery of the network as shown by the descriptive network analysis.

Other Characteristics

Other characteristics not captured in this study may also contribute to variations in partnership patterns. The individual style, vision and leadership orientation of the executive director may influence partnership development, where some leaders may be naturally inclined or trained to consider their organization's position and relationship within the network. Also, since organizational relationships are brokered by individual leaders and their own personal relationships may pave the way for a formal partnership, the tenure of the executive director may play a role. Partnerships among long-time friends who are well-established stable leaders at their organizations may be more likely to endure, and grow more powerful. As noted by one of the interviewees the influence of established leaders is strong, and may even extend to the dynamics of the larger network:

And, it also felt to me like there was, and perhaps even still is, is this 'good old boy' network. So, and I don't say that in a sexist way at all. ... they'd been in their positions for a long period of time So, they were, I think, the power within this community. ... and even when I initially came to a very small table of people that were kind of looking at forming the initiative, there was a lot of like, "Who are you," ... I mean it was palpable to me that I was not an insider of this group.

While long-standing CEO's may not actively prevent other leaders from partnering in the network, their established power may make it difficult for other individuals and organizations to collaborate as intensively within the network.

Potentially related to leadership, organizational status may influence partnership development. Resource based views as well as institutional theories argue that organizations may partner with other high status organizations to appear important, and build their own status and reputation. In the CSC network, the pursuit of a good reputation may be influencing partner selection more than the pursuit of a system of care.

5.3.3 What Have We Learned About Partnership Development?

The type of partner selected may determine the objectives that are achieved through a partnership. However since partnerships are often an adaptive response to changes in the environment, external forces (such as the economy or community needs) may drive the type of partnership objectives developed. For example, if difficult economic conditions have increased competition for scarce resources, threatening organizational survival, organizations may seek a partnership that can help improve access to resources, and reduce competition. Therefore, an organization may choose to partner with a competitor that provides similar services. On the other hand, if new unmet community needs are emerging that require the expansion or addition of services, and organizations want to be at the forefront of meeting those needs, organizations may seek a partnership that helps improve access to service resources, and facilitate access to care for clients. Therefore, an organization may choose a partner that provides complementary services because this type of partnership could help organizations grow efficiently.

At a system level, partnerships that bridge complementary services are desirable for facilitating access to a range of comprehensive services. However, the data in this study demonstrate that partnerships bring similar organizations together (as a strategy for reducing competition) perhaps suggesting that organizations perceive that these types of partnerships generate greater benefits or are needed more than partnerships based on complementarity. Partnerships with similar organizations may serve organizational interests and survival in difficult economic climates more than partnerships with complementary interests. Also partnerships with similar organizations may be more efficient, with fewer transaction costs than partnerships with complementary organizations which might require some time to learn about one another's unique capabilities, find mutual points of interest and negotiate an effective governance structure.

The question that remains is what would it take to make partnerships based on complementarity just as, if not more, beneficial and needed as those with similar organizations? The answer requires additional research on the transaction costs and organizational benefits associated with both types of partnerships, as well as the specific environmental factors that trigger partnership development. This information is instrumental for smart policies that can incentivize collaboration among non-profits that maximize system interests in facilitating access to comprehensive care (via complementary services) while at the same time respecting individual organizational needs for financial survival.

Here is where the newly established St. Louis County Children's Services Fund and other funders may be able to intervene. First of all, the CSF could incentivize

complementary partnerships with financial rewards. Providing monetary incentives (particularly in tough economic climates) along with technical assistance has been shown to help organizations develop new partnerships because they need the funding.

Second, the CSF and other regional funders should be aware of the potential changes in inter-organizational dynamics that occur with the formation, growth or dissolution of collaboratives involving several similar organizations. As suggested anecdotally in the qualitative data, these collaboratives can become extremely powerful over time (powerful enough to organize 40 agencies, collect 60,000 signatures, and pass a \$40 million tax initiative) however their voice may not represent the concerns and needs of all organizations in the region. In addition, there is potential for these strong collaborative to squeeze out other competitors, or force other organizations to form small collaborative groups to compete. Thus, competition may not take place between individual agencies, but rather between groups of agencies. Finally, the dissolution of a partnership or small group could alter the balance of power, and open the market up to new organizations or collaboratives. Therefore, it will be important for the CSF to monitor changes in partnerships and the overall network structure over time.

5.4 Study Limitations

5.4.1 Study Design and the Generalizeability of Findings

There are several recognized limitations of this study. First, the sample is confined to one geographic region limiting the generalizeability, especially the descriptive characteristics related to coordination in Aims 1 and 2. The boundary specified was based on geography and paid membership in a coalition and the findings generated could be applicable to other groups of organizations that are bound by similar

criteria such as other newly formed voluntary networks that grew from grass-roots advocacy movements.

Given the specific nature of the inclusion criteria, the findings may not be applicable to other networks that use other boundary specification criteria – for example, this network excludes organizations that serve youth in St. Louis County but did not choose to become members of the CSC or participate in the Putting Kids First Initiative.

Findings may not be generalizable to other children's mental health regional systems either. For example, the St. Louis region has a sizeable number of providers that specialize in providing residential treatment or services and many of these organizations have similar histories. Since St. Louis was a stop on the orphan train routes in the mid-1850s many charitable (and oftentimes religiously affiliated) groups founded orphanages. Over time, these organizations evolved into modern multi-service organizations that contract with the state child welfare agency to provide residential care (Bunger, 2009). However, the capital infrastructure is expensive to maintain and as community care is emphasized over residential care, the demand for these services is declining leaving these organizations with sprawling campuses and buildings to support which may explain why efficiency seems to be driving partnerships in this network.

In addition, the network-level findings may not be applicable to other types of human service delivery systems (e.g. adult mental health, HIV/AIDS care and treatment) which may differ in terms of the competition for resources and expectations for partnerships. Despite these limitations for generalizing the network-level findings, the results of the dyadic analysis might be applicable to partnerships among non-profit organizations in other service delivery systems.

Third, results of the path model suggest that the original model was misspecified. Although there is support for the relationships between the partnership conditions and the degree to which organizations partner, the four independent variables add little explanatory power in the MRQAP analyses. Furthermore, the independent variables (trust, competition, complementarity and financial performance) were all treated as exogenous variables with no relationships among them. Trust may be influenced by competition ($r=.309$, $p<.001$) however this was not hypothesized or originally tested. Finally, conflict was originally hypothesized to be related to partnership development however could not be tested with the data collected.

Fourth, the cross-sectional quantitative data prohibit inferences about the development process, or fluctuations in the key variables over time. However, there is potential to examine the relationships among some of the constructs of the larger model at one point in time to test whether the hypotheses are supported. The model hypothesizes a time ordered partnership development process: organizational characteristics influence the current partnership conditions (thus act as antecedent factors for partnerships) and these conditions influence the subsequent interactions which is the piece that will be tested in this study. The larger model hypothesizes that the interactions among organizations *now*, influence the *future* characteristics of the organizations, conditions of the partnership, and interactions. A basic cross-sectional test at one point in time is important because if the relationships are supported, there is evidence that the process is operating as hypothesized. In this situation, a future study could address whether and how those key constructs change over time. If the relationships are not

supported, there is evidence that the model is not correct potentially because the constructs are not ordered correctly.

An additional limitation related to time references includes the potential influence of future partnership plans. Findings suggest that many of the partnerships are new, and anecdotally, we know that organizations are planning and negotiating new partnerships. Respondents may have reported a current need or perceived benefit of a partnership, but zero interactions within the past six months because the partnership has not yet been established. Therefore, the statistical relationship between the partnership conditions (need and benefits) and the degree to which organizations partner may have been obscured by those dyads negotiating a partnership at the time the data were collected. Future or planned partnerships were not assessed so these dyads cannot be identified and/or analyzed separately

5.4.2 Response Rate and Bias

Overall, 89% of the 37 organizations responded to the survey and not all responses were complete. While 89% (with missing data) is good response rate for other types of surveys (especially those administered on-line), any missing data in network surveys can substantially affect results and findings. The response rate reflects several months of effort to build buy-in for the study prior to data collection, and intense follow up (including emails and phone calls by the PI, chair of the CSC, other researchers and collateral contacts) during data collection. However, the non-response (especially non-response by the only substance abuse treatment provider in the network) limits the conclusions that can be drawn about the system's capacity for coordination because the ties are underreported.

There is also a possibility that respondents did not provide truthful and accurate responses, particularly to questions related to competition, conflict, and trust because they want their organizations to be perceived in a positive light. Respondents may have inflated the degree to which they work with other organizations, trustworthiness and partnership benefits or down-played conflict and competition so they are perceived as good partners, and as key players in the network.

This potential social desirability bias raises concerns related to the use of survey and other self-report measures in inter-organizational research. If respondents are biased toward reporting low levels of conflict, competition and mistrust, then perhaps self-report measures do not adequately capture these variables. Perhaps organizational leaders might be willing to share their honest perceptions and feelings about other organizations in the network off the record, but so long as this information is used for official purposes (which might ultimately influence the public's perception of the organization and likelihood of getting funding), biased data are a threat to the validity of the research. Non-profit organizations are ultimately accountable to the public therefore it is in their best interest to appear in a positive light – answering truthfully about competition, mistrust and conflict has the potential to damage an organization's reputation or convey the image that the organization is not a team player. These perceptions could influence the likelihood of being selected to work with another agency, or even the chances of obtaining funding.

5.4.3 Measuring Service Complementarity

This study may have been limited by a rather crude measure of service complementarity. The measure used represents a proportion of unique service programs to total service programs offered across a pair of organizations which essentially

represents the degree to which services are duplicative. However, the complementarity of services is a much more nuanced idea than represented in this study. Interviews with key informants highlighted that the notion of service complementarity reflects not only distinct service types, but expertise in serving special populations. What services are deemed complementary may be determined by individual client needs, rather than “objective” external criteria that are universally applied. Regardless, this level of detail is not captured in the measures used in this study. In addition, the measurement is based on a limited list of services that can be funded by the Children’s Services Fund and is not comprehensive. For example, the list does not include residential treatment, foster care, transportation, or housing. Some dyads may have had a higher complementarity score if these services were included.

5.4.4 Other Measurement Limitations

Besides the issues noted above for measuring complementarity, the operationalization and measurement of other constructs may have also imposed limitations in this study. For example, financial performance was measured in terms of a three year average of net gains or losses for the dyad which is a common indicator in organizational research. However, considering the organizational assets (such as endowments, investments, and other assets) may be a better alternative for non-profit financial performance because this is the cushion organizations can rely on in tough economies. Organizational assets may also be the reason why another organization wants to partner (instead of their ability to make money within the last year).

5.4.5 Statistical Analysis

This study was substantially hampered by limited statistical procedures for directly examining mediation effects on dyadic data. Usually, path analysis is used for

testing mediation effects however, traditional techniques were not appropriate for these data. While there are several software packages that have commands for adjusting the analysis, there is no one package that accounts for all the adjustments necessary. First, the dependent variable (interactions among organizations) is not normally distributed and approximates the power law or negative binomial distribution. Therefore, standard procedures that are based on the mean (like estimation of standard errors and model fit) cannot be used. While maximum likelihood estimation is robust enough to handle the non-normal distribution, typical model fit statistics (χ -square, RMSEA, CFI, etc.) are not generated in Mplus. Alternatively, models can be built iteratively (one variable at a time) and other measures such as the Log Likelihood ratio and BIC can be used to determine if model fit improves however this does not provide the same validity as established model fit statistics.

Second, as described in the methods section, the data is inherently interdependent and the error terms could be highly correlated. QAP procedures are not available in MPlus but have been applied to traditional linear analysis in STATA. However STATA is unable to fit the negative binomial distribution of the dependent variable in a path analysis using QAP, and does not produce fit statistics either. Fitting a negative binomial distribution and generating fit statistics can be accomplished in STATA when standard errors are jackknifed. A final alternative is to use the Barron and Kenny method for testing mediation effects at the network level by running ERGMs in R statnet. However the unit of analysis is the network¹⁴, and the questions posed in this study are at the dyadic-level consistent with the theories of inter-organizational relationships. While this

¹⁴ ERGMs test predictors of overall network structure – thus the question that could be answered by the data collected in this study is: does perceived need and benefit predict the structure of the CSC network?

method could account for the interdependence and nature of the dependent variable, it is not a simultaneous test (as in the path analysis) and the unit of analysis is sacrificed leading to potential errors in interpretation (ecological fallacy). Since there was no one clean and direct procedure that preserved the level of analysis, and accommodated the distribution of the dependent variable and inherent interdependence of dyadic data, this model was tested in several ways and the results were compared.

5.5 Next Steps: Implications for Theory, Research and Social Work Practice

Although this study was challenged by multiple methodological and analytical limitations, this research still has potential to contribute to theory of inter-organizational relationships, inform future research, and guide social work practice. The implications for each are discussed below.

5.5.1 Implications for Inter-Organizational Relationship Theory

This study was an attempt to understand partnership development processes by examining the relationships between organizational characteristics, conditions that facilitate or undermine partnerships, and the resulting interactions among organizations. The model tested in this study represents an attempt to establish a mid-level theory, which this field currently lacks. This study drew heavily from resource dependence theory and incorporated elements of transaction cost economics such as trust and the notion of efficiency.

In particular, there are competing theoretical arguments regarding whether dissimilar, non competitive organizations with complementary resources or similar, highly competitive organizations are more likely to partner. Resource exchange, transaction cost economics, and population ecology perspectives all posit that similar organizations are in competition for similar resources and therefore would not partner.

Instead, organizations should be drawn to agencies that are different because they have complementary resources. However, the human services literature indicates that organizations that compete for similar resources frequently create partnerships in the face of competition to advance a common goal. Although some research has examined issues of similarity and dissimilarity there has been nothing (identified) that examines why resource perspectives fail to explain why competitive organizations (like some children's mental health organizations) partner.

The data collected from CSC organizations indicate that organizations partner to access resources supporting resource dependence perspectives verifying the findings of most of the other research on relationships among human service organizations. However, the key question is why organizations need or depend on other organizations' resources. Transaction cost economists argue that organizations partner to create efficiency and the prevalence of partnerships among similar and competing organizations seems to support the idea that TCE approaches are also relevant for explaining partnerships. However, the results show that these factors contribute very little to explaining why certain organizational pairs exchange more resources than others. Clearly, there are other factors that influence the partnership development process that were not included.

In addition to resource dependence and transaction cost economics, population ecology and institutional theory perspectives also offer unique explanations of why organizations partner. In particular, these perspectives explain how different environmental conditions drive organizations to partner. For example, population ecology explains how populations of organizations evolve from a few generalist

organizations, to denser populations of highly specialized or niche organizations that would have to partner in order to respond to client needs for comprehensive services. Institutional theory explains how organizations become increasingly similar in their partnership behavior due to three isomorphic pressures (normative, mimetic, and coercive) and thus partner to maintain their legitimacy as organizations.

The quantitative portion of this study tested partnership development as a singular process divorced from external environmental conditions. However, the qualitative data suggest there may be several different processes organizations engage in to form partnerships that are influenced by environmental conditions. In one of the interviews, an executive director provided two examples of how she developed new partnerships for her organization:

“...when you’re in the coalition and you know that the environment is kind of pushing in that direction [toward collaboration], you’re much more likely to grab hold of a partner there because you’ve gotten to know them... the things that we have thought about partnering on is strictly because we like each other...if you have two executives that really are on the same page, and you also have complimentary services, it’s almost like a no-brainer. And, just another example, this is a little different ...We’re down a therapist ... we didn’t have funding for it. So I thought, well what if we came up with a really interesting [grant] concept where we could target a therapist in a particular high need area in the county, and come up with a plan that would actually involve other partners in that high need area ... I knew nobody ... So, I just picked up the phone [called the school district and a community association] and said, “Hey, would you like services?” And they were like, “Are you kidding me?” (Laughter) And I said, “Would you be willing to partner with us if we get this grant?” And, the social workers at the schools were like totally thrilled that anybody wanted to offer services.”

In the first example, the partnership was driven by external pressure to collaborate to maintain legitimacy with potential funders. The selection of a suitable partner came first. In this example, a partner was considered suitable if they had a good personal

relationship and complementary services. Exactly how the partnership will be structured (i.e. what resources will be exchanged) is unknown but theoretically, by linking different services together, these partners might perceive greater benefits at least in terms of efficiency, and facilitating access and quality care. Thus, in this type of development process, characteristics like complementarity and trust may driver selection, and the critical partnership condition that drives interactions may be the perceived benefits to clients, and organizational efficiency.

In the second example, the partnership was driven by the convergence of two external conditions: resource deficiencies (staff) and a community need. The idea for how the partnership could be structured came first and the selection of a suitable partner came second. A partner was considered suitable in this example if they addressed a similar community problem, and had a need for their services, and had available resources (space for a therapist). In this type of development process, characteristics like resources, and service domain (which is not explicitly measured in this study, but tapped by the competition measure) drive partner selection, creating a need for one another's services, supports and resources which is the condition driving the exchange of resources.

What is missing from the model are constructs that capture phenomenon in the external organizational environment that might drive partnerships in different ways. Including these constructs in the model might be able to help parse out which external pressures organizations are responding to when they create partnerships, and whether partnership development proceeds differently under different environmental conditions. By doing so, there is potential to learn how different theories of inter-organizational relationships intersect.

5.5.2 Implications for Research

This study is a first step in a larger research agenda examining the emergence and evolution of mental health service delivery networks and policy alternatives for addressing fragmentation, by examining partnership development among dyads, the building blocks of small groups and whole networks. This findings highlight how need and benefits directly affect the degree to which organizations partner, however we know little about what influences these drivers beyond competition. The next steps in this research agenda include exploring needed and beneficial partnerships, specifically the influence of environmental triggers on partner selection, variations in governance structures and efficiencies, leadership styles and orientations on partnership development, the impact of partnership on organizational capacities over time, and the emergence and evolution of the service delivery system over time as a result of these dyadic-level behaviors.

First, new hypotheses need to be tested to understand the specific influence of the institutional environment (role of funders, community needs, resource availability, structures that facilitate opportunities to learn about potential partners, etc.) on the partnership development process. Different environmental influences may trigger the development of partnerships that achieve different goals (efficiency or need fulfillment) in which case, certain organizational characteristics may be more desirable than others. Understanding how the environment shapes partner selection can inform policy-makers decisions about funding (both the amount and partnership incentives that are tied to funding). In addition, this line of research is a starting point for learning about the points of intersection between organizational environmental theories (in particular

organizational ecology and institutional theory) and resource based views such as resource dependence and transaction cost economics.

Second, variations in partnership governance structures should be examined. Based on TCE approaches, real efficiencies and partnership performance are achieved when the governance structure negotiated between two partners can effectively reduce the transaction costs (the costs of working together, such as conflict management, monitoring, etc.). These variations were not measured in this study, but may have influenced the perceived partnership benefits that were reported. Understanding variations in governance is critical because the flexibility and formality of the governance structure influences the degree to which organizations can adjust in response to one another. More flexible structures allow for greater coordination (in line with our ideals for service coordination) but also create greater dependence between organizations as they develop knowledge, skills, and other assets that are specific to their partnership (and cannot be easily transferred or used for other purposes). We know little about the specific nature of the governance structures that mental health organizations negotiate therefore a simple description using TCE concepts and principles as an anchor is a foundation for future research that evaluates the effectiveness of partnerships on efficiency and performance.

A third step in this research agenda is exploring how leadership styles and orientation impact the partnership development process. These individual leadership differences were not captured explicitly in this study but may account for some of the variation in the degree to which organizations partner. Some leaders may have more of a systems-orientation, making them more attune to the organizational environment, and

inclined to consider partnerships. Other leaders may be more internally focused on managing organizational operations. This orientation may be due to differences in personal leadership styles, or it may also be due to the size and structure of the organizations, where larger organizations are able to have one executive officer manage external relations, while another manages internal operations. In addition, personal leadership styles and orientations may shape the way executive directors perceive other organizations: a leader that views all other organizations as competitors, and untrustworthy may be less likely to partner, or only engage in partnerships with a strict governance structure that protects their organization from opportunism. On the other hand, a leader that is likely to easily trust another organization (unless shown otherwise), may be likely to quickly build partnerships, potentially with more informal, riskier governance structures.

Finally, the long-term dynamics of partnerships need to be examined, specifically the impact of partnership on organizational capacity. The hypothesized feedback processes described in Figure 2.1 in Chapter 2 where organizations change and evolve by their partnerships over time raise additional research questions about the impact of partnerships on organizations over time. For example, if partnerships help organizations access needed resources, do organizations gain a competitive edge that improves organizational financial performance and survival? Do the partnership that align complementary services increase the efficiency (and thus financial performance) of organizations, and/or the quality and availability of care? Finally, how do partnerships influence trust, and how long does it take to develop or destroy this trust? The long-term influence of partnerships on organizations has the potential to influence the evolution of

an entire population of organizations, and the way they carry out their missions to serve their communities.

However, as highlighted in the limitations section of this chapter, substantial advancement in statistical analysis is necessary for addressing these questions in a rigorous manner. These limitations have implications for the advancement of research involving dyads, small groups, and other real-world networks that are by nature, highly interdependent. Without statistical procedures that can sufficiently account for interdependent, non-normal data, hypothesis testing at this meso-level of analysis is questionable. At a time when there is greater interest in emergence of collective behavior (starting with small groups and spreading to larger networks) this is a critical area for future development.

5.5.3 Implications for Social Work Practice

The findings of this study have real world implications for the members of the CSC and children's behavioral health organizations in general. As organizational leaders are encouraged by funders to form partnerships and address service fragmentation, there is little guidance offered on how to do so and leaders look for advice about who to partner with, how to structure partnerships, and then maintain them over time while protecting themselves from opportunism. This investigation may help leaders make more informed decisions about partner selection, increasing the chances of sustaining the partnership and facilitating coordination of their services.

First, organizations may consider prioritizing the development of new partnerships that bridge the gap between organizations that provide support, ancillary or specialized services and organizations that provide a continuum of mental health care services (crisis, clinical treatment, therapy, etc.). Such partnerships could be beneficial

for both clients (as these types of partnerships can facilitate access to care) as well as the organizations.

In particular for clients, strong multiplex partnerships may facilitate access to care. Previous research has demonstrated that non-mental health service providers are key for facilitating youth's access to behavioral health services (Bunger, Stiffman, Foster, & Shi, 2009; Stiffman et al., 2000; Stiffman et al., 2001) and that improved outcomes are related to strong ties based on both client referrals and shared administrative resources (Provan & Sebastian, 1998). Therefore partnerships should be targeted at both the administrative level (sharing staff expertise, money or space) as well as the service delivery level to ensure that organizations are invested in working together.

Organizations can also benefit by developing new partnerships with organizations that provide different but complementary services. By building economies of scope, partners can create new competitive advantages that can help them adapt to changing resource environments, and compete with other groups of organizations (Ireland, Hitt, & Vaidyanath, 2002).

Second, structured opportunities to work together (like the Putting Kids First Initiative or the CSC meetings) as a "trial" may help agencies learn about other organizations' leaders, resources, and service expertise. This information is needed to help leaders determine suitability for a new partnership, and also build the supply of readily accessible potential partners should the need or opportunity for a partnership arise in the future.

Finally, at the policy level, encouraging or mandating organizations to partner based on complementary services may be insufficient and the key solution should entail

helping organizations find partners that satisfy both service delivery demands for expanded services and organizational demands for efficiency. Future research in this area includes further definition of partnership efficiency and identification of the characteristics and conditions of efficient partnerships, the effect of partnerships on organizational operations, and client access and outcomes.

5.6 Conclusion

Partnerships have the potential to close system gaps and facilitate access to care. However, organizations develop partnerships to serve their own economic interests (i.e. reduce competition to enhance survival), and the type of partner they select may not actually serve the interests of the larger system. Economic pressures may be driving similar organizations to pool their resources rather than bridge complementary services in a way that facilitates access to comprehensive services and quality care. Therefore, broad initiatives to build partnerships across the system may not have the desired effect on client access to care. Rather, more targeted interventions toward building specific partnerships that link complementary services among small groups are needed.

These interventions must be designed in a way that organizational needs for survival are satisfied. Also to reduce the transaction costs associated with partnerships among different but complementary organizations that do not have a well-established working history with one another, support and assistance for negotiating and monitoring partnerships may be helpful.

Understanding how these partnerships develop is a complex process that is likely influenced by a confluence of conditions and factors. Continued interest and investment in this inquiry is necessary for understanding and addressing fragmentation to ensure that

our public mental health systems are providing the best care in the most efficient manner for children and youth with behavioral health needs.

Appendix A

General Interview Guide

1. Tell me a little about the history of this group. From your perspective, how did the organizations of the Children's Service Coalition come together? How did you and your organization become involved in the CSC?
2. Why do you think that the development of partnerships is one of the goals of the CSC?
3. How familiar are you with the other organizations in the CSC?
4. What linkages do you expect there to be in this network? What services do you think should be connected in your system?

Appendix B

Services Funded by the Children's Service Fund

According to Missouri State Statute RSMO 210.860, the Children's Service Fund can support ten service categories:

1. **Temporary shelter services** for up to 30 days for youth who are homeless, runaway, abused, neglected, or emotionally-disturbed.
2. **Respite care** for youth at risk for abuse or neglect due to family crisis which may include emergency shelter or in-home care.
3. Services to **teen parents** such as parent education, in-home and residential services, and nursing care.
4. Outpatient **substance abuse** treatment and evaluation services.
5. Outpatient **psychiatric** treatment.
6. **Transitional living programs** that provide stable housing, life-skills development services, vocational services, and assistance completing high school.
7. **Crisis intervention** services including hotlines and organized response teams.
8. School based **prevention** services intended to decrease the risks of sexual assault, substance abuse, teen pregnancy, school failure, and suicide.
9. School and home based **family intervention** services intended to maintain children in their homes by preventing or reducing hospitalizations, residential placements, or foster care placements.
10. **Counseling and therapy** for individuals, groups and families.

Appendix C

Variables and Corresponding Measures

Variable	Definition	Type *	Measure/Items/Theoretical Range	Calculation/ Transformation/Distribution
Partnerships	Degree to which resources are exchanged.	DV	<p>4 items adapted from Resource Flow Scale (Van de Ven & Ferry, 1980)</p> <p>During the past 6 months, our organization sent/shared:</p> <ul style="list-style-type: none"> a) 0% of our budget --- 91-100% of our budget. b) No staff expertise (0%) --- Expertise of all of our staff (91-100%) c) 0% of our client referrals --- 91-100% of our client referrals d) 0% of our physical space --- 91-100% of our physical space <p>Theoretical range: 0-40 (org) or 0-80 (dyad)</p>	<p>Responses for all items are summed together and then across the dyad.</p> <p>Transformation: None (fit a negative binomial distribution)</p>
Need	Extent to which organizations need one another	MV	<p>1 items from Resource Dependence Scale (Van de Ven & Ferry, 1980)</p> <p>To achieve our goals, our organization needs from ___: 0% --- 91-100% of their services, resources or supports</p> <p>Theoretical range: 0-10 (or) or 0-20 (dyad)</p>	<p>Summed across the dyad</p> <p>Transformation: $\text{SQRT}(\text{SQRT}(1+\text{Need}))$.</p>
Benefits	Extent of perceived benefits or effectiveness.	MV	<p>3 items assessing perceived impact on efficiency, access and quality.</p> <p>The relationship between our organization and ___:</p> <ul style="list-style-type: none"> a) (-5) Is wasteful for our organization --- (+5) is efficient for our organization. b) (-5) prevents clients from accessing services --- (+5) facilitates client access to services. 	<p>Recorded -5 to +5 rating scale to 0-11; 12 (No relationship) coded to missing.</p> <p>Averaged 3 items together and then Summed across the dyad.</p> <p>Transformation: None</p>

Variable	Definition	Type *	Measure/Items/Theoretical Range	Calculation/ Transformation/Distribution
			<p>c) (-5) detracts from quality care --- (+5) enhances quality care.</p> <p>OR, "No Relationship" Theoretical Range: 1 to 11 (org) or 1 to 22 (dyad)</p>	
Conflict	Extent to which there is discord between partners	MV	<p>2 items assessing frequency and severity</p> <p>a) During the past six months there was significant conflict between our organization and ____: Never (0) --- Constantly (10)</p> <p>b) During the past six months, the conflict between my organization and ____: Was minor (0) --- Was severe (10)</p> <p>Theoretical range: 0-10 (org) or 0-20 (dyad)</p>	<p>Averaged 2 items together and then summed across the dyad</p> <p>Dropped from analysis</p>
Complementarity	Proportion of distinct service types across partners	IV	<p>The number of distinct service types provided by a dyad divided by the total number of services provided.</p> <p>Theoretical Range: 0.5-1.0 (dyad)</p>	<p>Measure calculated at the dyadic level</p> <p>No transformation</p>
Competition	Degree to which partners compete for similar resources.	IV	<p>3 items, from the Domain Similarity Scale (Van de Ven & Ferry, 1980).</p> <p>a) When it comes to funding, our organization competes with ____ For none of our funding (0%) --- For all of our funding (91-100%)</p> <p>b) When it comes to bringing new clients into care, our organization competes with ____: For none of our clients (0%) – For all of our clients (91-100%)</p> <p>c) When it come to recruiting and hiring new staff, our organizations competes with____: For none of our staff (0%) --- For all of our staff (91-100%)</p> <p>Theoretical Range: 0-10 (org) or 0-20 (dyad)</p>	<p>Averaged 3 items together and then summed across the dyad</p> <p>Transformation: SQRT(SQRT(1+Competition))</p>
Trustworthiness	Amount of trust partners place in one another.	IV	<p>1 items, Inter-organizational Trust measure (Zaheer et al., 1998)</p> <p>We perceive ____:</p>	<p>Summed across the dyad</p> <p>No transformation</p>

Variable	Definition	Type *	Measure/Items/Theoretical Range	Calculation/ Transformation/Distribution
			Is not trustworthy at all (0) --- Is completely trustworthy (10) Theoretical range: 0-10 (org) or 0-20 (dyad)	
Financial performance	Proportion of net gains or losses to total revenue (3 year average)	IV	IRS 990s, Line 12 & 18 (reporting years 2004, 2005, 2006) Net gains or loss divided by total revenue	Summed across dyad Transformation = $\text{SQRT}(\text{SQRT}(10(\text{Financial performance} + 1)))$
Size	Number of Staff	CV	2 items, (# of full- and part-time employees)	Summed together and then across the dyad. Transformation: Square root
Duration	Number of years working together	CV	1 item (ordinal scale) Our organization has been working with ____ : 1 – We have no previous working history 2 – Less than 1 year 3 – Between 1 and 3 years 4 – Between 3 and 5 years 5 – Between 5 and 7 years 6 – Between 7 and 9 years 7 – 10 years or more	Minimum score reported

*DV=Dependent Variable, MV=Mediating Variable, IV=Independent Variable, CV=Control Variable

Appendix D

Resource Exchange Networks

	Any Relationship	Multiplex Ties (Service Delivery & Administrative)	Service Delivery Ties (Client Referrals)	Administrative Ties			
				All	Funds/Contracts	Staff	Space
Nodes	36	35	36	36	23	36	17
Ties	378	141	312	207	43	172	17
One-way	184	87	168	117	35	110	7
Reciprocated	97	27	72	45	4	31	5
Density	.292	.112	.248	.164	.034	.137	.014
Centralization							
All-Degree	0.318	0.214	0.343	.250	0.145	0.264	0.035
Betweenness	0.078	0.146	0.115	.127	0.028	0.150	0.002
Closeness	0.433	NC	0.457	.333	NC	0.347	NC
Number of Partners							
Average	15.611	6.333	13.333	9.000	2.167	7.833	0.667
Min	4	0	2	2	0	2	0
Max	29	17	28	20	11	19	3
All Degree*							
Average	31.333	17.167	19.500	12.500	2.333	9.278	1.000
Min	6	0	3	2	0	2	0
Max	114	47	111	34	11	33	5
In-Degree*							
Average ¹	19.694	10.361	11.833	7.861	1.278	5.500	0.806
Min	2	0	2	0	0	0	0
Max	41	27	25	18	5	15	5
Out-Degree*							
Average ¹	19.694	10.361	11.833	7.861	1.278	5.500	0.806
Min	0	0	1	0	0	0	0
Max	114.000	36	111.000	16	10	27	5

*Represents valued ties (amount of resources exchanged)

NC – Centrality measure could not be calculated because of a weakly connected network

¹ Average in and out-degree are equivalent because this is a closed network. All ties that are sent must be received within the network.

Appendix E

Univariate Results

Table D1. Univariate Results – Dyadic Interactions (Dependent Variable)

	All Dyads	Valid Dyads
N	624	376
Min	0	0
Max	13	13.00
Mean	1.14	1.77
SD	1.88	2.08
Skew	2.58	1.97
Kurtosis	8.37	4.83
Missing	6	0

Figure D1a. Dyadic Interactions (All Dyads) (n=624)

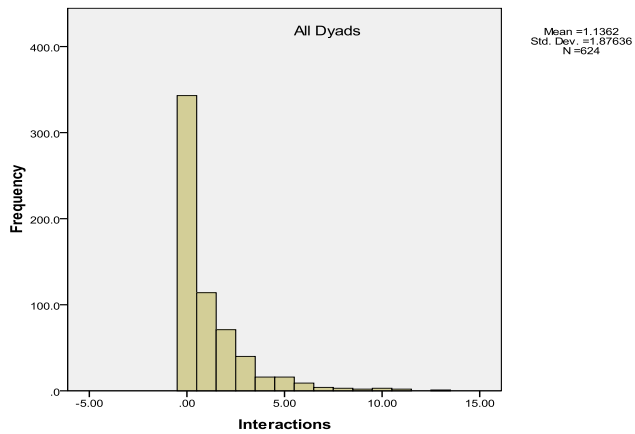


Figure D1b. Dyadic Interactions (Valid Dyads) (n=376)

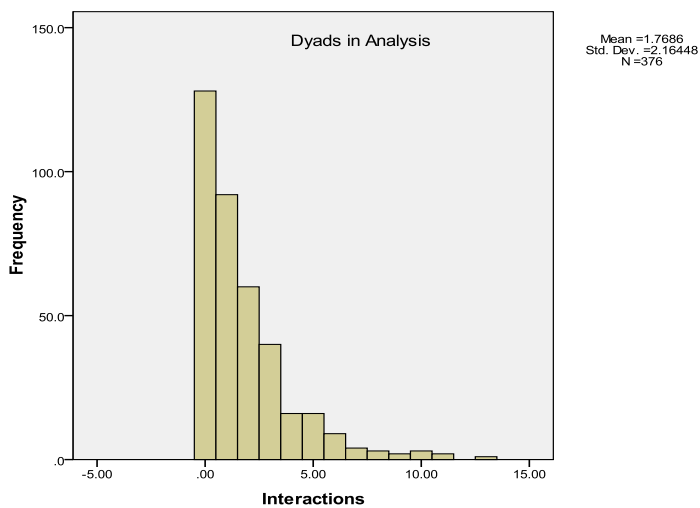


Table D2. Univariate Results – Perceived Benefits (Mediating Variables)

	All Dyads
N	376
Min	2.67
Max	22.00
Mean	11.13
SD	4.74
Skew	.54
Kurtosis	-1.05

Figure D2a. Perceived Benefits (All Valid Dyads)

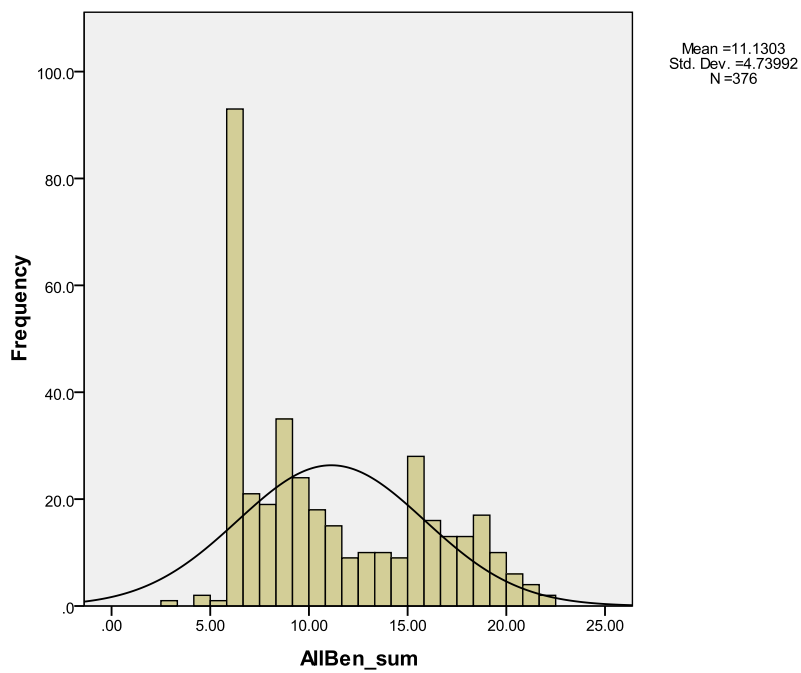


Table D3. Univariate Results – Need (Mediating Variables)

	Pre-Transformation	Post-Transformation	
	All Dyads	All Dyads	Valid Dyads
N	607	607	374
Min	0	1.00	1.00
Max	19.00	2.11	2.11
Mean	1.99	1.25	1.33
SD	2.56	.24	.23
Skew	2.16	.76	.48
Kurtosis	6.31	.87	-.05

Figure D3a. Need – Pre Transformation (All Dyads)

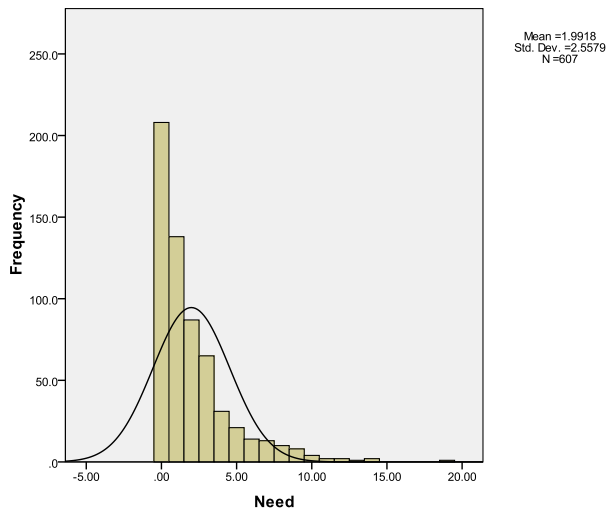


Figure D3b. Need – Post Transformation (All Dyads)

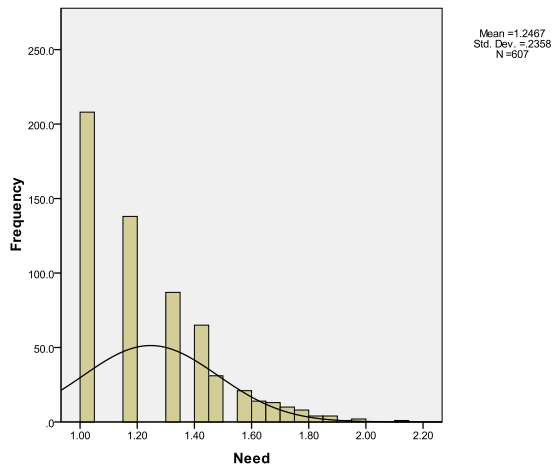


Figure D3c. Need – Post Transformation (Valid Dyads)

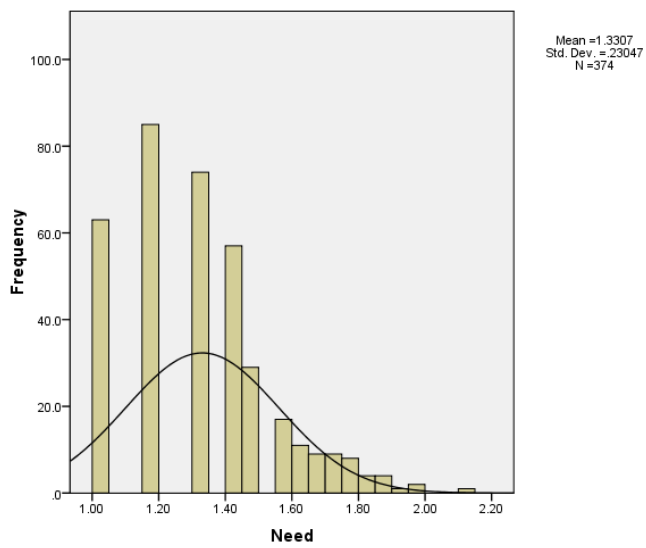


Table D4. Univariate Results – Conflict (Mediating Variables)

	All Dyads	Valid Dyads
N	609	374
Min	0	0
Max	12.00	12.00
Mean	.27	.43
SD	1.20	1.50
Skew	6.49	5.03
Kurtosis	46.50	27.41

Figure D4a. Conflict (All Dyads)

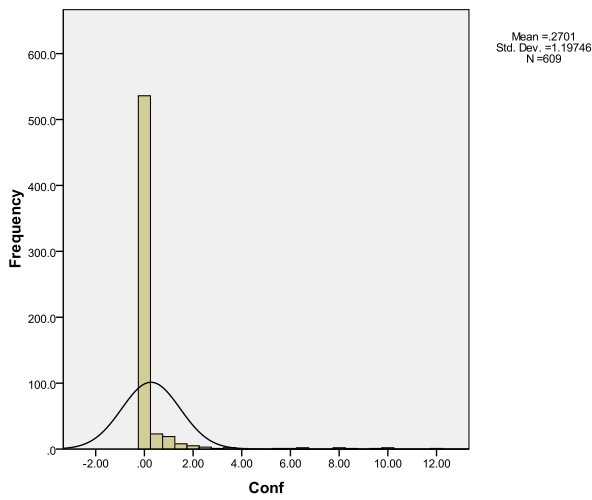


Figure D4b. Conflict (Valid Dyads)

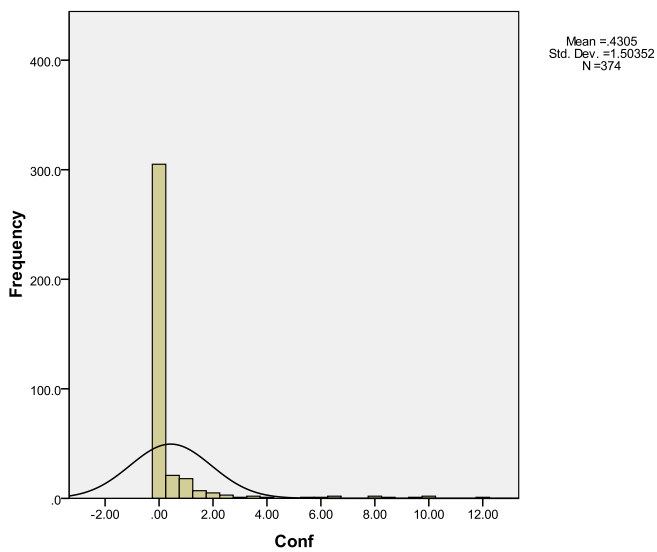


Table D5. Univariate Results – Complementarity (Independent Variable)

	All Dyads	Valid Dyads
N	630	376
Min	.50	.50
Max	1.00	1.00
Mean	.81	.79
SD	.13	.12
Skew	.05	.24
Kurtosis	-.86	-.57

Figure D5a. Complementarity (All Dyads)

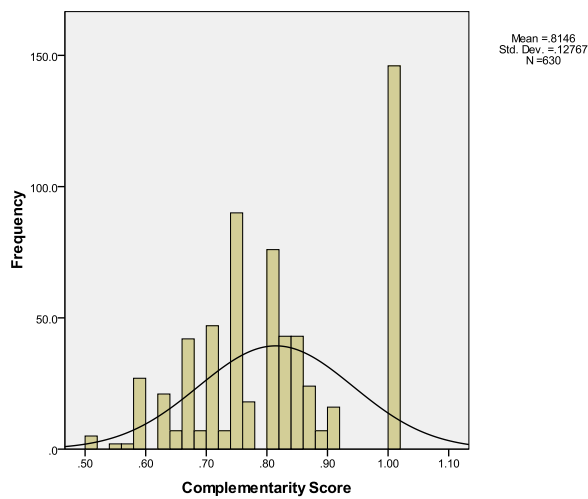


Figure D5b. Complementarity (All Valid Dyads)

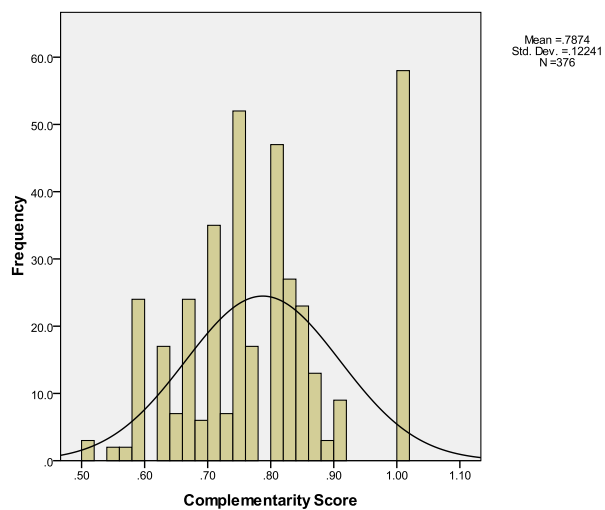


Table D6. Univariate Results – Competition (Independent Variables)

	Pre-Transformation	Post-Transformation	
	All Dyads	All Dyads	Valid Dyads
N	597	597	373
Min	0	1.00	1.00
Max	10.00	1.82	1.82
Mean	1.55	1.20	1.26
SD	2.05	.22	.22
Skew	1.71	.87	.63
Kurtosis	2.74	-.29	-.59

Figure D6a. Competition – Pre Transformation (All Dyads)

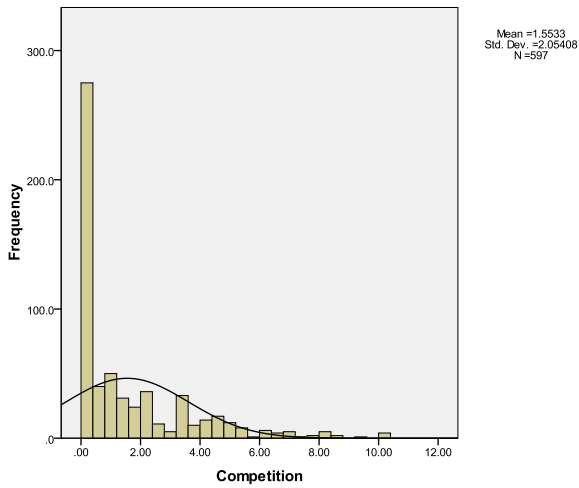


Figure D6b. Competition – Post Transformation (All Dyads)

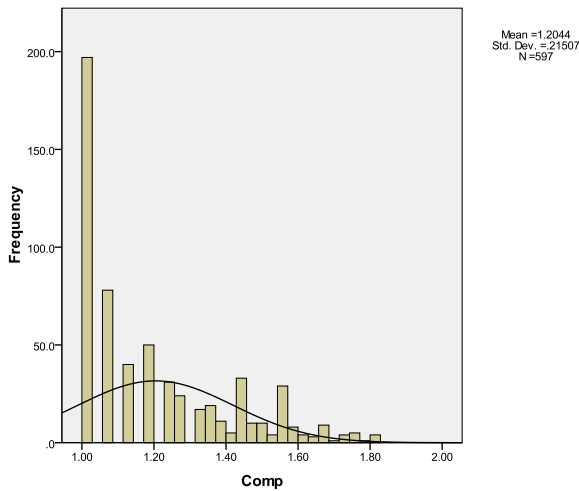


Figure D6c. Competition – Post Transformation (Valid Dyads)

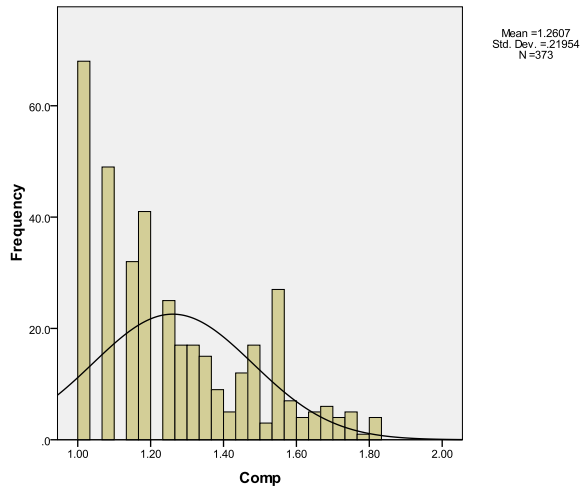


Table D7. Univariate Results - Trust (Independent Variable)

	All Dyads	Valid Dyads
N	570	367
Min	0	0
Max	20.00	20.00
Mean	9.24	10.07
SD	4.26	4.20
Skew	.19	.11
Kurtosis	-.51	-.68

Figure D7a. Trust (All Dyads)

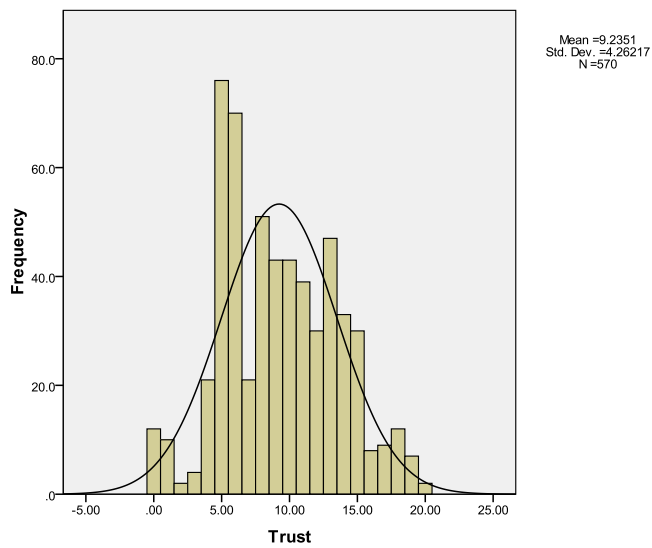


Figure D7b. Trust (Valid Dyads)

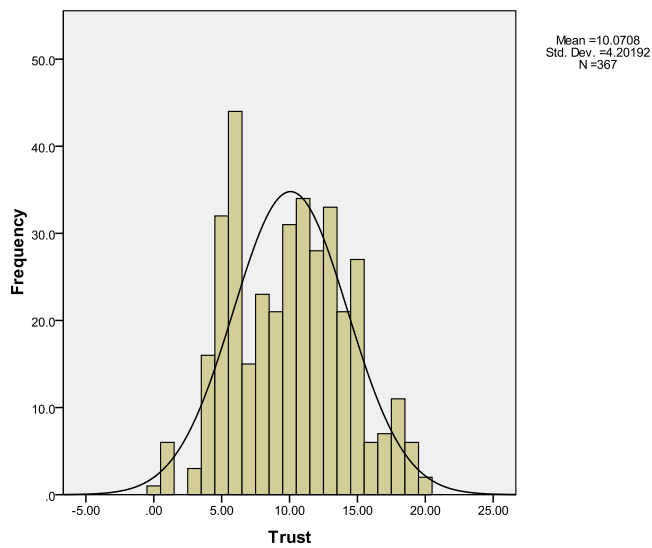


Table D8. Univariate Results – Financial performance (Independent Variable)

	Pre-Transformation	Post-Transformation	
	All Dyads	All Dyads	Valid Dyads
N	630	630	376
Min	-.10	.38	.38
Max	.91	1.78	1.65
Mean	.12	1.18	1.15
SD	.15	.18	.17
Skew	1.87	.45	.32
Kurtosis	3.36	1.32	2.14

Figure D8a. Financial performance – Pre Transformation (All Dyads)

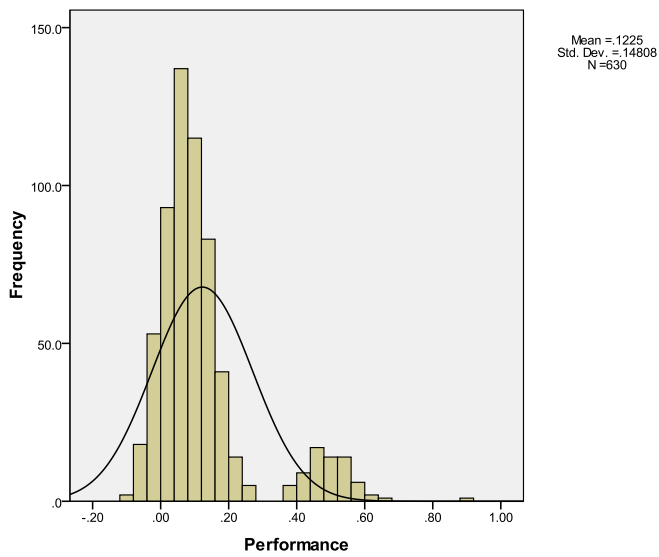


Figure D8b. Financial performance – Post Transformation (All Dyads)

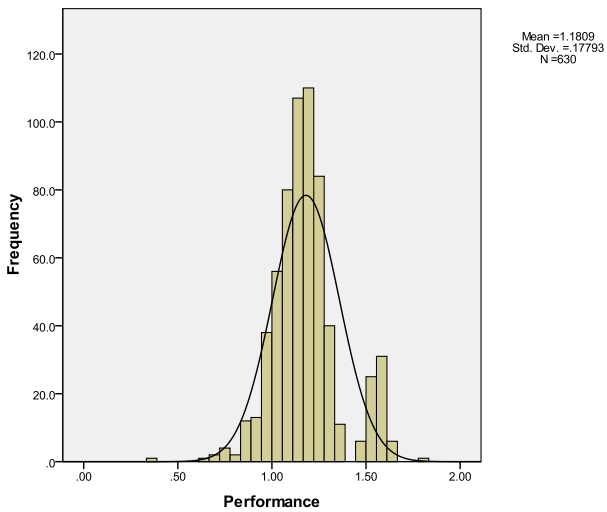


Figure D8c. Financial performance – Post Transformation (Valid Dyads)

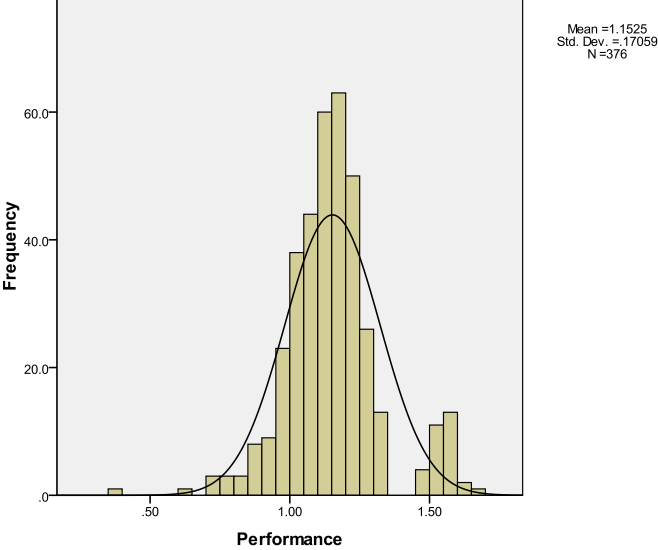


Table D9. Univariate Results – Staff Size (Control Variable)

	Pre-Transformation	Post-Transformation	
	All Dyads	All Dyads	Valid Dyads
N	630	630	376
Min	7.00	2.65	3.61
Max	1368.00	36.99	36.99
Mean	333.89	16.95	17.59
SD	250.26	6.83	7.04
Skew	1.04	.27	.25
Kurtosis	.69	-.55	-.65

Figure D9a. Staff Size – Pre Transformation (All Dyads)

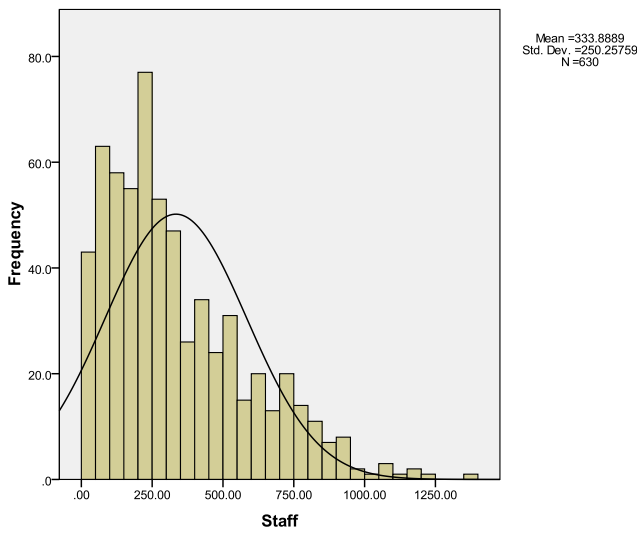


Figure D9b. Staff Size – Post Transformation (All Dyads)

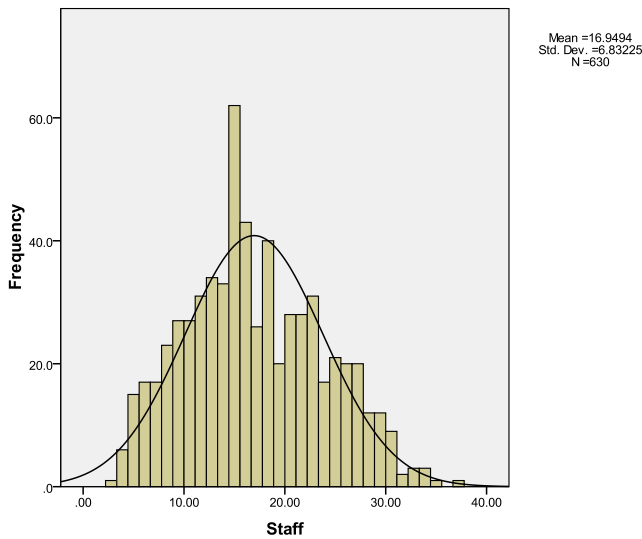


Figure D9c. Staff Size – Post Transformation (Valid Dyads)

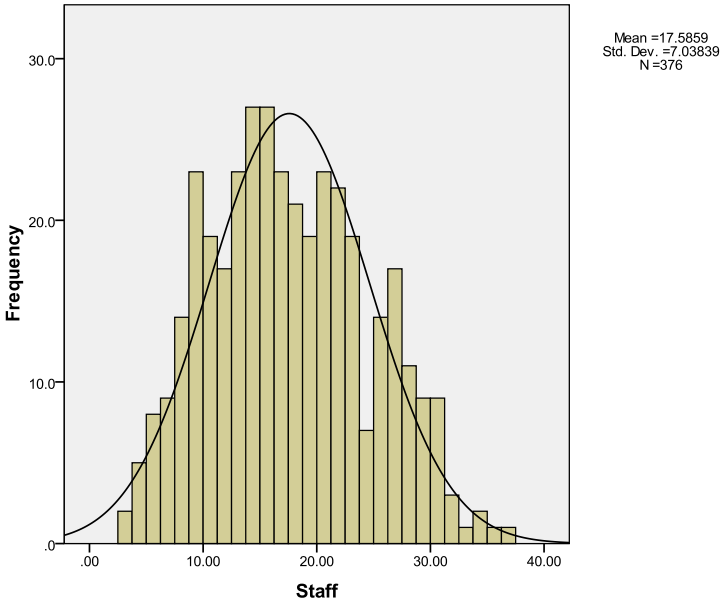


Table D10. Univariate Results – Duration (Control Variable)

	Pre-Transformation		Dichotomized Variable	
	All Dyads (n=624)		All Dyads	Valid Dyads
	Frequency (%)		Frequency (%)	Frequency (%)
No working history	406 (64.4)	No Working History	406 (64.4)	175 (46.5)
Less than one year	26 (4.1)	Working History	218 (34.6)	201 (53.5)
1-3 years	40 (6.3)			
3-5 years	37 (5.9)			
5-7 years	36 (5.7)			
7-9 years	11 (1.7)			
10 or more years	68 (10.8)			

Figure D10a. Duration – Pre Transformation (All Dyads)

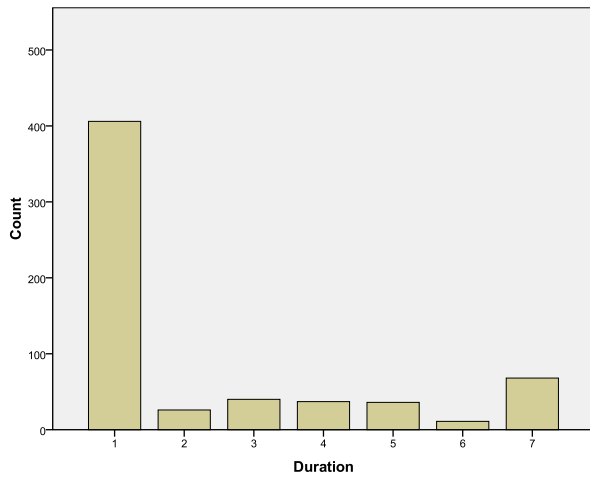


Figure D10b. Duration – Dichotomized (All Dyads)

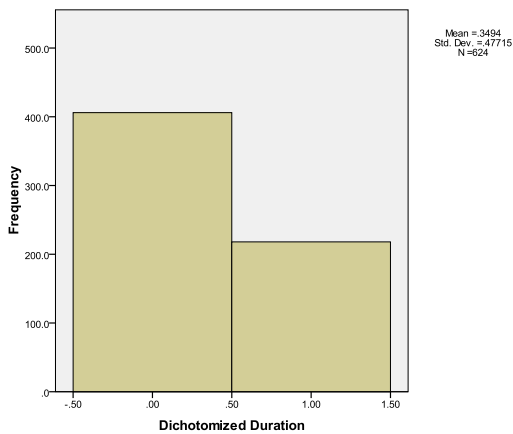
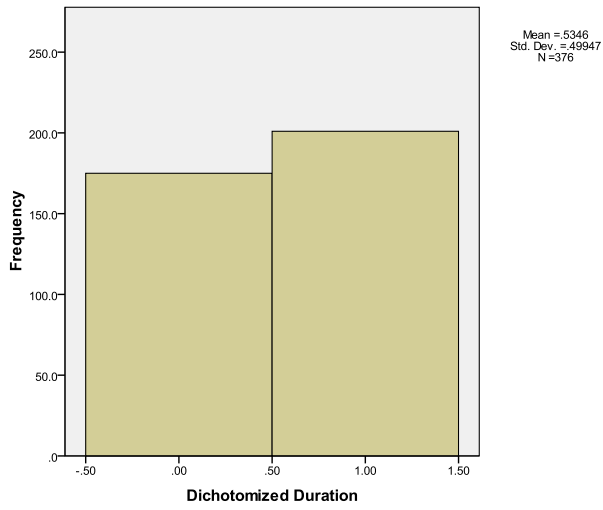


Figure D10c. Duration – Dichotomized (Valid Dyads)



Appendix E

Univariate and Bivariate Results for Interval Variables

Variable	Definition	Univariate Results (transformed)	Bivariate (QAP) Correlation (<i>p</i> -value in parentheses)									
			1	2	3	4	5	6	7	8	9	10
1 Interactions	The degree to which organizations exchange resources (clients, funding, space and staff expertise).	N=624 Mean: 1.14 SD: 1.88 Range: 0-13	---	.408* (.000)	.367* (.000)	.143* (.006)	-.227* (.000)	.271* (.000)	.229* (.000)	-.155 (.012)	.110 (.071)	.391* (.000)
2 Need	Extent to which organizations need one another.	N=607 Mean: 1.25 SD: .24 Range: 1-2.11	--	--	.534* (.000)	.212* (.001)	-.375* (.000)	.564* (.000)	.373* (.000)	-.199 (.034)	.045 (.353)	.424* (.000)
3 Benefits	Extent of perceived benefits of partnership (access, quality & efficiency).	N=376 Mean: 11.13 SD: 4.74 Range: 2.67-22	--	--	--	.097 (.085)	-.270* (.000)	.283* (.001)	.432* (.000)	-.121 (.145)	.116 (.157)	.510* (.000)
4 Conflict (Dropped in analysis)	Extent to which there is discord between partners (frequency and severity).	N=609 Mean: .43 SD: 1.50 Range: 0-12	--	--	--	--	-.134* (.004)	.207* (.003)	-.048 (.243)	-.019 (.424)	.158 (.025)	.195* (.000)
5 Complementarity	Proportion of distinct service types across partners.	N=630 Mean: .81 SD: .13 Range: 0.5-1.0	--	--	--	--	--	-.384* (.000)	-.321* (.000)	.141 (.079)	-.002 (.485)	-.182* (.001)
6 Competition	Degree to which partners compete for similar resources (funding, clients & staff)	N=597 Mean: 1.20 SD: .22 Range: 1-1.82	--	--	--	--	--	--	.309* (.001)	-.216 (.041)	.056 (.345)	.300* (.000)
7 Trustworthiness	Amount of trust partners place in one another.	N=570 Mean: 9.24 SD: 4.26 Range: 0-20	--	--	--	--	--	--	--	-.158 (.113)	-.015 (.448)	.156 (.018)
8 Financial performance	Revenue (3 year average)	N=630 Mean: 1.15 SD: .17	--	--	--	--	--	--	--	--	-.261 (.056)	-.081 (.186)

Variable	Definition	Univariate Results (transformed) Range: .38-1.65	Bivariate (QAP) Correlation (<i>p</i> -value in parentheses)											
			1	2	3	4	5	6	7	8	9	10		
9	Size	Number of full and part-time staff. N=630 Mean: 16.95 SD=6.83 Range=2.65-36.99	--	--	--	--	--	--	--	--	--	--	--	.148 (.058)
10	Duration	Whether there is any prior working history. N=624 No history=64.4% History=34.6%	--	--	--	--	--	--	--	--	--	--	--	--

**p*<.01

References

- Agranoff, R. (1991). Human service integration: Past and present challenges in public administration. *Public Administration Review*, 51(6), 533-542.
- Aldrich, H. E., & Pfeffer, J. (1976). Environments of organizations. *Annual Review of Sociology*, 2, 79-105.
- Alter, C., & Hage, J. (1993). *Organizations Working Together* (p. 352). Newbury Park, CA: Sage Publications.
- Anderson, A., Basilevsky, A., Hum, D., Ross, Wright, Anderson, R. N., et al. (1983). Scaling techniques (pp. 246-269). New York: Academic Press.
- Arya, B., & Lin, Z. (2007). Understanding collaboration outcomes from an extended resource-based view perspective: The roles of organizational characteristics, partner attributes, and network structures. *Journal of Management*, 33(5), 697-723.
- Bickman, L., Noser, K., & Summerfelt, W. T. (1999). Long-term effects of a system of care on children and adolescents. *Journal of Behavioral Health Services and Research*, 26(2), 185-202.
- Bickman, L., Summerfelt, W. T., & Bryant, D. (1996). The quality of services in a children's mental health managed care demonstration. *The Journal of Mental Health Administration*, 23(1), 30-39.
- Boje, D. M., & Whetten, D. A. (1981). Effects of Organizational Strategies and Contextual Constraints on Centrality and Attributions of Influence in Interorganizational Networks. *Administrative Science Quarterly*, 26(3), 378 - 395.
- Bolland, J. M., & Wilson, J. V. (1994). Three faces of integrative coordination: A model of interorganizational relations in community-based health and human services. *Health Services Research*, 29(3), 341-366.
- Borgatti, S. P., Everett, M., & Freeman, L. (2002). *Ucinet for Windows: Software for Social Network Analysis*. Harvard, MA: Analytic Technologies.
- Bunger, A. C. (2009). *Founding Stories: The History of St. Louis Mental Health Service Organizations*. Research Memo - NSF IOP. St. Louis.
- Bunger, A. C., Stiffman, A. R., Foster, K. A., & Shi, P. (2009). Child welfare workers and connectivity and youth's receipt of services. *Advances in Social Work*, 10(1), 1-21.

Carley, K. M., & Krackhardt, D. (1996). Cognitive inconsistencies and non-symmetric friendship. *Social Networks*, 18, 1-27.

Coleman, J. S. (1988). Social capital in the creation of human capital. *The American Journal of Sociology*, 94(Supplement), S95-S120.

Costello, E. J., Angold, A., Burns, B. J., Stangl, D. K., Tweed, D. L., Erkanli, A., et al. (1996). The Great Smoky Mountains Study of Youth. Goals, design, methods, and the prevalence of DSM-III-R disorders. *Archives of General Psychiatry*, 53(12), 1129-1136.

Das, T. K., & Teng, B. (2002). The Dynamics of Alliance Conditions in the Alliance Development Process. *Journal of Management Studies*, 39(5), 725-746.

Dill, A., & Rochefort, D. A. (1989). Coordination, continuity and centralized control: A policy perspective on service strategies for the chronically mentally ill. *Journal of Social Issues*, 45(3), 145-159.

Doz, Y. L. (1996). The evolution of cooperation in strategic alliances: Initial conditions or learning processes? *Strategic Management Journal*, 17(S1), 55-83.

Ebaugh, H. R., Chafetz, J. S., & Pipes, P. F. (2007). Collaborations with faith-based social service coalitions. *Nonprofit Management and Leadership*, 18(2), 175-191.

Fried, B. J., Johnsen, M. C., Starrett, B. E., Calloway, M. O., & Morrissey, J. (1998). An empirical assessment of rural community support networks for individuals with severe mental disorders. *Community Mental Health Journal*, 34(1), 39-56.

Gillespie, D. F., & Murty, S. (1994). Cracks in a postdisaster service delivery network. *American Journal of Community Psychology*, 22(5), 639-660.

Gillespie, D. F., Colignon, R. A., Banerjee, M. M., Murty, S. A., & Rogge, M. (1993). *Partnerships for Community Preparedness*. Boulder: Institute of Behavioral Science, University of Colorado.

Granovetter, M. (1985). Economic Action and Social Structure: The Problem of Embeddedness. *American Journal of Sociology*, 91(3), 481-510. The University of Chicago Press..

Hanneman, R. A., & Riddle, M. (2005). *Introduction to Social Network Methods*. Riverside, CA: University of California, Riverside. Retrieved from <http://faculty.ucr.edu/~hanneman/>.

Harrison, J. S., Hitt, M. A., Hoskisson, R. E., & Ireland, R. (2001). Resource complementarity in business combinations: Extending the logic to organizational alliances. *Journal of Management*, 27, 679-690.

- Hasenfeld, Y. (1983). *Human Service Organizations*. Englewood Cliffs, NJ: Prentice Hall, Inc.
- Hohmann, A. A. (1999). A Contextual Model for Clinical Mental Health Effectiveness Research. *Mental Health Services Research, 1*(2), 83-91..
- Hsu, S., & Tzeng, S. (2010). A dyadic perspective on knowledge exchange. *International Journal of Technology Management, 49*(4), 370-383.
- Huisman, M. (2009). Imputation of missing network data: Some simple procedures. *Journal of Social Structure, 10*(1), 1-29.
- Iacobucci, D. (2008). *Mediation Analysis*. Thousand Oaks, CA: Sage.
- Impink, R. V. (2004). Leadership Dimensions, the Critical Link for the Evolution of Collaboration. *The Social Policy Journal, 3*(2), 39-55.
- Ireland, R. D., Hitt, M. A., & Vaidyanath, D. (2002). Alliance management as a source of competitive advantage. *Journal of Management, 28*(3), 413-446.
- Ivery, J. M. (2007). Organizational ecology: A theoretical framework for examining collaborative partnerships. *Administration in Social Work, 31*(4), 7-19.
- Jang, H. S., & Feiock, R. C. (2007). Public versus private funding of nonprofit organizations. *Public Performance and Management Review, 31*(2), 174-189.
- Johnsen, M. C., & Morrissey, J. P. (1996). Structure and change in child mental health service delivery networks. *Journal of Community Psychology, 24*(3), 275-289.
- Jones, C., Hesterly, W. S., & Borgatti, S. P. (1997). A General Theory of Network Governance: Exchange Conditions and Social Mechanisms. *Academy of Management Review, 22*(4), 911-945.
- Kataoka, S. H., Zhang, L., & Wells, K. B. (2002). Unmet need for mental health care among U.S. children: Variation by ethnicity and insurance status . *American Journal of Psychiatry, 159*(9), 1548-1555.
- Katz, D., & Kahn, R. L. (1978). *The Social Psychology of Organizations* (2 ed.). New York: Wiley.
- Kline, R. B. (2005). *Principles and Practice of Structural Equation Modeling* (2 ed.). New York: The Guilford Press.
- Knoke, D., & Yang, S. (2007). *Social Network Analysis (Quantitative Applications in the Social Sciences)*. Thousand Oaks, CA: Sage Publications, Inc.

Krackhardt, D. (1988). Predicting with networks: Nonparametric multiple regression analysis of dyadic data. *Social Networks*, 10, 359-381.

Krackhardt, D. (1990). Assessing the Political Landscape: Structure, Cognition, and Power in Organizations. *Administrative Science Quarterly*, 35(2), 342 - 369. Lambert, E. W., & Guthrie, P. R. (1996). Clinical outcomes of a children's mental health managed care demonstration. *The Journal of Mental Health Administration*, 23(1), 51-68.

Lehman, A. F., Postrado, L. T., Roth, D., McNary, S. W., & Goldman, H. H. (1994). Continuity of care and client outcomes in the Robert Wood Johnson Foundation Program on Chronic Mental Illness. *The Milbank Quarterly*, 72(1), 105-122.

Levine, S., & White, P. E. (1961). Exchange as a conceptual framework for the study of interorganizational relationships. *Administrative Science Quarterly*, 5(4), 583-601.

Lundin, M. (2007). Explaining cooperation: How resource interdependence, goal congruence, and trust affect joining actions in policy implementation. *Journal of Public Administration Research and Theory*, 17(4), 651-672.

Martin, J. L. (1999). A General Permutation-Based QAP Analysis Approach for Dyadic Data from Multiple Groups. *Connections*, 22(2), 50-60.

McGuire, J., Rosenheck, R. A., & Burnette, C. (2002). Expanding service delivery: Does it improve relationships among agencies service homeless people with mental illness? *Administration and Policy in mental Health*, 29(3), 243-256.

Mizruchi, M. (1993). Cohesion, equivalence, and similarity of behavior: a theoretical and empirical assessment. *Social Networks*, 15(3), 275-307.

Morrissey, J., Calloway, M., Johnsen, M., & Ullman, M. (1997). Service system performance and integration: A baseline profile of the ACCESS demonstration sites. *Psychiatric Services*, 48(3), 374-380.

Morrissey, J., Calloway, M., Johnsen, M., & Ullman, M. (1997). Service system performance and integration: a baseline profile of the ACCESS demonstration sites. Access to Community Care and Effective Services and Supports. *Psychiatric services (Washington, D.C.)*, 48(3), 374-80.

Morrissey, J., Hall, R. H., & Lindsey, M. L. (1982). *Interorganizational Relations: A Sourcebook of Measures for Mental Health Programs*. Washington, DC: National Institute of Mental Health Programs.

Morrissey, J., Johnsen, M., & Calloway, M. (1997). Evaluating performance and change in mental health systems serving children and youth: An interorganizational network approach. *The Journal of Behavioral Health Services and Research*, 24(1), 4-22. Mulford, C. L., Rogers,

D. L., & Whetten, D. A. (1982). Chapter 2: definitions and models (pp. 9-31). Ames, IA: Iowa State University Press.

Oliver, C. (1990). Determinants of Interorganizational Relationships: Integration and Future Directions. *The Academy of Management Review*, 15(2), 241-265. Penner, S. (1995). A study of coalitions among HIV/AIDS service organizations. *Sociological Perspectives*, 38(2), 217-239.

Pfeffer, J., & Salancik, G. (1978). *The external control of organizations: A resource dependence perspective*. New York: Harper and Row.

Polgar, M., & Cabassa, L. J. (2007). Helping young adults with mental health problems: Providers evaluate a regional system of care. *Sociological Viewpoints*, 83, 85-100.

Provan, K. G., & Milward, H. B. (1991). Institutional-level norms and organizational involvement in a service-implementation network. *Journal of Public Administration Research and Theory*, 1(4), 391-417.

Provan, K. G., & Milward, H. B. (1995). A preliminary theory of interorganizational network effectiveness: A comparative study of four community mental health systems. *Administrative Science Quarterly*, 40(1), 1-33.

Provan, K. G., & Sebastian, J. G. (1998). Networks within networks: Service link overlap, organizational cliques, and network effectiveness. *The Academy of Management Journal*, 41(4), 453-463.

Provan, K. G., Sebastian, J. G., & Milward, H. B. (1996). Interorganizational cooperation in community mental health: A resource-based explanation of referrals and case coordination. *Medical Care Research and Review*, 53(1), 94-119.

Raftery, A. E. (1995). Bayesian Model Selection in Social Research. *Sociological Methodology*, 25, 111-163.

Reid, W., & Zald, M. N. (1965). *Interagency coordination in delinquency prevention and control*. New York: John Wiley & Sons.

Reitan, T. C. (1998). Theories of interorganizational relations in the human services. *Social Service Review*, 9, 285-309.

Ring, P. S., & Van de Ven, A. H. (1994). Developmental processes of cooperative interorganizational relationships. *Academy of Management Review*, 19(1), 90-118.

Rivard, J. C., & Morrissey, J. (2003). Factors Associated with Interagency Coordination in a Child Mental Health Service System Demonstration. *Administration and Policy in Mental Health and Mental Health Services Research*, 30(5), 397-415.

Roemer, R., Kramer, C., & Frink, J. E. (1975). *Planning urban health services : From jungle to system*. New York: Springer Publishing Company.

Rosenheck, R. A., Lam, J., Morrissey, J., Calloway, M. O., Stolar, M., Randolph, F., et al. (2002). Service systems integration and outcomes for mentally ill homeless persons in the ACCESS program. *Psychiatric Services*, 53(8), 933-958.

Rossmann, G. B., & Wilson, B. L. (1994). Numbers and words revisited: Being "shamelessly eclectic." *Quality & Quantity*, 28(3), 315-327.

Ryan, S. D., Tracy, E. M., Rebeck, A. C., Biegel, D. E., & Johnsen, J. A. (2003). Critical Themes of Intersystem Collaboration: Moving from a Can We to a How Can We Approach to Service Delivery with Children and Families. *Journal of Family Social Work*, 6(4), 39-60.

SAMHSA. (2002). *Report to Congress on the prevention and treatment of co-occurring substance abuse disorders and mental disorders*.

Selden, S. C., Sowa, J. E., & Sandfort, J. (2006). The Impact of Nonprofit Collaboration in Early Child Care and Education on Management and Program Outcomes. *Public Administration Review*, 66(3), 412-425.

Shaffer, D., Fisher, P., Dulcan, M. K., Daview, M., Piacentini, J., Schwab-Stone, M. E., et al. (1996). The NIMH Diagnostic Interview Schedule for Children Version 2.3 (DISC-2.3): Description, acceptability, prevalence rates, and performance in the MECA study. *Journal of the American Academy of Child & Adolescent Psychiatry*, 35(7), 865-877.

Shortell, S. M., Gillies, R., Anderson, D. A., Erickson, K. M., & Mitchell, J. B. (2000). *Remaking Health Care in America: The Evolution of Organized Delivery Systems* (2 ed.). San Francisco, CA: Jossey-Bass.

Simpson, W. (2001). QAP - The Quadratic Assignment Procedure. In *2001 North American Stata Users Group Meeting*. Boston, MA. Retrieved from <http://www.stata.com/meeting/1nasug/simpson.pdf>.

Sowa, J. E. (2008). The Collaboration Decision in Nonprofit Organizations: Views From the Front Line. *Nonprofit and Voluntary Sector Quarterly*, 38(6), 1003-1025.

St. Louis County Children's Service Fund. (2010). 2010 Needs Assessment: Summary Analysis Report. Clayton, MO. Retrieved from <http://www.keepingkidsfirst.org/LinkClick.aspx?fileticket=uQrwa6MxlNI=&tabid=244&mid=707>.

Stiffman, A. R., Hadley-Ives, E., Dore, P., Polgar, M., Horvath, V. E., Striley, C., et al. (2000). Youths' access to mental health services: The role of providers' training, resource connectivity, and assessment of need. *Mental Health Services Research*, 2(3), 141-154.

Stiffman, A. R., Striley, C., Horvath, V. E., Hadley-Ives, E., Polgar, M., Elze, D., et al. (2001). Organizational context and provider perception as determinants of mental health service use. *The Journal of Behavioral Health Services and Research*, 28(2), 188-204.

Stroul, B. A., & Friedman, R. (1986). A system of care for children and youth with severe emotional disturbances. Washington DC. Retrieved from <http://www.fmhi.usf.edu/institute/pubs/pdf/soc/covermatter.pdf>.

Takahashi, L. M., & Smutny, G. (2001). Collaboration among small, community-based organizations: Strategies and challenges in turbulent environments. *Journal of Planning Education and Research*, 21(2), 141-153.

Tausig, M. (1987). Detecting "Cracks" in Mental Health Service Systems: Application of Network Analytic Techniques. *American Journal of Community Psychology*, 15(3), 337-351.

Teddlie, C., & Tashakkori, A. (2009). *Foundations of Mixed Methods Research: Integrating Quantitative and Qualitative Approaches in the Social and Behavioral Sciences*. Thousand Oaks, CA: Sage Publications, Inc.

Thompson, J. D. (1967). *Organizations in Action: Social Science Bases of Administrative Theory*. New York: McGraw Hill.

U.S. Department of Health and Human Services. (1999). *Mental health: A report of the Surgeon General*. Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health.

U.S. Department of Health and Human Services. (2003). *Achieving the promise: Transforming mental health care in America. President's New Freedom Commission on Mental Health, Final Report*. Rockville, MD.

Van de Ven, A. H., & Ferry, D. (1980). *Measuring and Assessing Organizations*. New York: Wiley Interscience.

Van de Ven, A. H., & Walker, G. (1984). The dynamics of interorganizational coordination. *Administrative Science Quarterly*, 29(4), 598-621.

Wasserman, S., & Faust, K. (1994). *Social Network Analysis: Methods and Applications*. New York: Cambridge University Press.

Whetten, D. A. (1981). Interorganizational relations: A review of the field. *The Journal of Higher Education*, 52(1), 1-28.

Wholey, D. R., & Huonker, J. W. (1993). Effects of generalism and niche overlap on network linkages among youth service agencies. *The Academy of Management Journal*, 36(2), 349-371.

Wickizer, T. M., Von Korff, M., Cheadle, A., Maeser, J., Wagner, E. H., Pearson, D., et al. (1993). Activating communities for health promotion: A process evaluation method. *American Journal of Public Health, 83*(4), 561-567.

Williamson, O. E. (1979). Transaction-cost economics: The governance of contractual relations. *The Journal of Law and Economics, 22*(235-261).

Williamson, O. E. (1981). *The Economics of Organization: The Transaction Cost Approach* (Vol. 87, pp. 548-577). The University of Chicago Press.

Wohlstetter, P., Smith, J., & Malloy, C. L. (2005). Strategic Alliances in Action: Toward a Theory of Evolution. *Policy Studies Journal, 33*(3), 419-442.

Zaheer, A., McEvily, B., & Perrone, V. (1998). Does trust matter? Exploring the effects of interorganizational and interpersonal trust on performance. *Organization Science, 9*(2), 141-159.

Zapka, J. G., Marrocco, G. R., Lewis, B., McCuster, J., Sullivan, J., McCarthy, J., et al. (1992). Inter-organizational responses to AIDS: A case study of the Worcester AIDS Consortium. *Health Education Research, 7*(1), 31-46.

de Nooy, W., Mrvar, A., & Batagelj, V. (2005). *Exploratory Social Network Analysis with Pajek*. New York: Cambridge University Press.