

Understanding Collaboration Among Nonprofit Organizations: Combining Resource Dependency, Institutional, and Network Perspectives

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Existing research stops short of explaining why nonprofit organizations develop certain forms of collaborations instead of others. In this article, the authors combine resource dependency, institutional, and network theories to examine the factors that influence the likelihood that nonprofit organizations develop formal types of collaborative activities vis-à-vis informal types. Based on the survey data of 95 urban charitable organizations, the study has found that an organization is more likely to increase the degree of formality of its collaborative activities when it is older, has a larger budget size, receives government funding but relies on fewer government funding streams, has more board linkages with other nonprofit organizations, and is not operating in the education and research or social service industry.

Keywords: forms of nonprofit collaboration; resource sufficiency; institutional factors; network effect

In recent years, nonprofit organizations are increasingly forming alliances, partnerships, and collaborations both within and across sectors to achieve important public purposes. Concurrently, a growing number of studies are addressing issues involved in forming and maintaining nonprofit collaboration (Abramson & Rosenthal, 1995; Alter & Hage, 1993; Austin, 2000a, 2000b; Connor, Taras-Kadel, & Vinokur-Kaplan, 1999; Milne, Iyer, &

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Note: The financial assistance of the College of Public Programs at Arizona State University to the first author is gratefully acknowledged. An earlier version of this article was presented at the 2004 Annual Meetings of the Academy of Management in New Orleans. The authors wish to thank Will Brown, Randy Virden, and the three anonymous reviewers of this journal for their helpful comments. All of the usual caveats apply.

Nonprofit and Voluntary Sector Quarterly, vol. 34, no. 3, September 2005 340-361
DOI: 10.1177/0899764005275411
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Gooding-Williams, 1996; O'Regan & Oster, 2000; Saidel & Harlan, 1998). The existing scholarship in this field, however, tends to overlook the differences between within-sector and cross-sector collaborations (Anheier & Seibel, 1990; Milne et al., 1996) and stays short of generalizing the unique features of collaborations within the nonprofit sector (Murray, 1998). Scholars have shown that the divergence of nonprofit organizations and their counterparts in the public and business sectors in their distinctive mechanisms of interorganizational and interpersonal coordination (Anheier & Seibel, 1990) may affect the outcome of alliances among nonprofit organizations vis-à-vis either nonprofit-business or nonprofit-government alliances (Milne et al., 1996).

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Another limitation associated with the emerging literature focusing on nonprofit collaboration (Alter & Hage, 1993; Arsenault, 1998; D'Aunno & Zuckerman, 1987; Foster & Meinhard, 2002; Galaskiewicz & Shatin, 1981; Gray, 1989; Mulroy & Shay, 1997; Provan & Milward, 1995) lies with the theoretical frameworks that guide the majority of the scholarly work. The two theories that have so far received the most attention from researchers investigating collaboration are resource dependence (Pfeffer & Salancik, 1978) and transaction cost theory (Williamson, 1975, 1985, 1991). The former proposes that a collaborative strategy is the result of organizational efforts to manage external dependencies and uncertainties in their resource environment, whereas the latter emphasizes collaboration as a mechanism to reduce transaction costs and thereby maximize economic or psychological benefits (Foster & Meinhard, 2002; Sharfman, Gray, & Yan, 1991). Despite their explanatory power, these theoretical perspectives have been criticized for their insufficient attention to those constraints on strategic choice that are embedded in an organization's institutional environment (Galaskiewicz, 1985; Oliver, 1990), its structural context (Baum & Dutton, 1996; Galaskiewicz, 1985), as well as other contextual and organizational process factors (Cigler, 1999). Such oversight becomes even more problematic in the nonprofit collaboration context because, as research has shown, a considerable number of interorganizational relations are mandated by law, and that cooperation among certain types of nonprofit organizations (e.g., human service organizations) is often explained primarily by these mandates (Bailey & Koney, 1996; Galaskiewicz, 1985).

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In response to the above two limitations, our study draws on Galaskiewicz and Bielefeld's (1998) argument and extends it to the context of nonprofit collaboration. In a recent study on organizational change, Galaskiewicz and Bielefeld (1998) questioned the overemphasis on production functions and efficiency concerns in existing studies and suggested the complementarity of resource dependence, institutional, and network theories in explaining the growth and decline of nonprofit organizations. Following their lead, we combine resource dependency, institutional, and network perspectives to explore one important issue regarding collaboration among nonprofit organizations: What are the factors associated with the extent of formality of the collaborative

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DV = formality of the collaborative activities among nonprofit organizations

Research question!

activities among nonprofit organizations? In other words, why do some nonprofit organizations develop more formal types of collaborative activities that involve some sort of strategic restructuring whereas others collaborate only informally? Based on the survey data of 95 urban charitable organizations, we have found that an organization is more likely to develop formalized collaborations when it is older, has larger budget size, receives government funding but relies on fewer government funding streams, has more board linkages with other nonprofit organizations, and is not operating in the education and research or social service industry.

This study extends research on nonprofit collaboration on two major dimensions. First, it is among the first attempts to develop a systemic understanding of why nonprofit organizations develop certain forms of collaborations instead of others. Although an emerging body of literature has focused on collaborations among nonprofit organizations, most efforts to date have either discussed collaboration in general terms or considered a specific form of collaboration (e.g., mergers and acquisitions) in an isolated manner. By categorizing and comparing collaborative activities based on their levels of formality, this study provides interesting insight into the prevalence of a spectrum of collaborative activities among nonprofit organizations as well as the contextual circumstances under which nonprofit organizations increase the degree of formality of their collaborative activities. Second, in light of the unique features of the interorganizational relationship within the nonprofit sector, we build on the resource dependence perspective, which dominates the existing theoretical explanations on preconditions of nonprofit collaboration, and combine it with institutional and network theories to achieve a better understanding of the factors associated with the choice of collaboration forms by nonprofit organizations.

The article is organized into five sections. We begin with a typology of collaboration forms found among nonprofit organizations. We then discuss the environmental and contextual factors associated with organizational choice of collaboration forms. The third and fourth sections describe the methodology and present survey findings, respectively. We conclude the article with a discussion about the contributions and limitations of the study.

总结结论

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结构

TYPOLOGY OF COLLABORATION FORMS

literature

According to Gray (1989), *collaboration* is a “process through which parties who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their own limited visions of what is possible” (p. 5). Based on her and other scholars’ (Linden, 2002) definition, we define *nonprofit collaboration* as what occurs when different nonprofit organizations work together to address problems through joint effort,

resources, and decision making and share ownership of the final product or service.

Collaborations may take various forms. A number of scholars have attempted to identify different forms of nonprofit collaboration based on degrees or levels of collaboration intensity (Arsenault, 1998; Murray, 1998; Zajac & D'Aunno, 1993). Murray (1998), for instance, argued that the degree of interdependence between the parties (or conversely, the degree of autonomy; Zajac & D'Aunno, 1993) is the key to understanding the difference in forms of collaboration: At one end of the continuum in interdependence is the simple one-time transaction in which one organization exchanges something with the other; at the other end is the full legal merger of the two organizations. Murray further identified five different forms of collaboration, ranging from sharing of information, through joint delivery of programs, to full partnerships and mergers. In a similar vein, Zajac and D'Aunno (1993) classified interorganizational relationships in the health care industry on a continuum representing varying degrees of autonomy and resource commitment. Hospital associations, alliances, joint programs, joint ventures, contract management, leases, and mergers and acquisitions are arrayed in a descending order of autonomy. Kohm, La Piana, and Gowdy (2000) suggest that **nonprofit organizations work together in three ways**: In order of decreasing autonomy and increasing formality, they range from collaboration (information sharing, program coordination, and joint planning), through alliances (administrative consolidation and joint programming), to integrations (management service organization [MSO], parent subsidiary, joint venture, and merger). Alliances and integrations are further consolidated into one larger category of more permanent and formalized collaboration, referred to as strategic restructuring.

For the purpose of this study, **we draw on the work of these scholars and identify eight different forms of collaborative activities based on their levels of formality**, including information sharing, referral of clients, sharing of office spaces, joint program, MSO, parent subsidiary, joint venture, and merger. **We further collapse these forms into two major categories: informal collaboration** (information sharing, referral of clients, sharing of office spaces, and MSO) and **formal collaboration** (joint program, parent subsidiary, joint venture, and merger). In collaborative activities in the informal collaboration category, organizations do not make an ongoing commitment to the partnership, and decision-making power over key management functions remains with the individual organizations. By contrast, in collaborative activities in the formal collaboration category, participating organizations establish an ongoing relationship through shared, transferred, or combined services, resources, or programs (Kohm et al., 2000). It should be noted that we conceptualize MSO here as a form of informal collaboration. Although MSO is categorized by some scholars as integration, a form of more permanent, formalized collaboration (Kohm et al., 2000), we argue that because of the largely episodic or sporadic

nature of such interactions, MSO activities often lack an ongoing commitment and shared, transferred, or combined services, resources, and programs; even if such relationships are long standing, they are often of a subscription (e.g., the nonprofit attending workshops coordinated by the MSO) or subcontracting nature (e.g., the nonprofit engaging the MSO in a contract to perform accounting services, undertake a capital campaign, etc.), with the nonprofit organization managing the contract, maintaining autonomy over the direction of such services, and exercising will over the contracted service and its relationship to overall agency activities and vision.¹

If nonprofit organizations can work with each other in a variety of ways, why then might they choose one form of collaboration instead of another (Zuckerman & D'Aunno, 1990)? More specifically, why do some nonprofit organizations develop more formal types of collaborative activities that involve some sort of strategic restructuring whereas others collaborate only informally? These questions became increasingly important in the past decade for at least two major reasons: First, as the general philosophy of collaboration becomes widely accepted in the nonprofit sector, such informal types of collaborative activities as information sharing and client referral (often more broadly grouped as case management activities) are now popular among nonprofit organizations (Snaveley & Tracy, 2000). By contrast, more intensive collaborations are still relatively rare. Therefore, it would be of interest to both nonprofit scholars and practitioners to learn more about the factors that are associated with the choice of formalized collaborations. Second, more nonprofits have begun to consider formalized collaboration in response to the changing resource and institutional environments in the past decade, yet most nonprofit leaders and funders have very limited knowledge of strategic restructuring (Connolly & York, 2002).

Although there is not an extensive literature concerning the choice of collaboration forms by nonprofit organizations, a few studies are along this line (Arsenault, 1998; Foster & Meinhard, 2002; Kohm et al., 2000; Zinn, Proenca, & Rosko, 1997). For instance, in a study of 645 nonprofit organizations in Canada, Foster and Meinhard (2002) proposed that the extent of formal collaborative activity is a function of internal organizational characteristics, environmental pressures, and organizational attitudes. They found that organizational factors, such as size and type (feminist or not), were related to the extent of formal collaborative activity. Yet the strength of these factors as predictors was moderated by the intervening perception of the impact of environmental changes.

In light of the continuum of hospital interorganizational relationships as developed by Zajac and D'Aunno (1993), Zinn et al. (1997) analyzed the association between organizational and environmental characteristics and the likelihood that nonprofit hospitals will enter into one of two forms of interorganizational collaborations on the opposite ends of the autonomy continuum: hospital alliance membership or contract management. Their

findings indicate that hospitals with greater resources and more favorable payer mix are more likely to join alliances and that hospitals operating in less favorable environments are more likely to be contract managed.

Other studies tended to focus on more permanent and formalized forms of collaborations and further examined the conditions under which different subtypes of formal collaborations are developed by nonprofit organizations (Arsenault, 1998; Kohm et al., 2000). In a survey of nonprofit social services and cultural organizations in the United States, Kohm et al. (2000) examined the relationship between the primary strategic restructuring types and three categories of variables: organizational characteristics, restructuring characteristics, and restructuring experiences. Arsenault (1998) presented a detailed guide to understanding four major options of strategic restructuring, including joint ventures and partnerships, MSO, parent corporations, and mergers. She discussed the pros and cons of each option as well as the optimal conditions for each option.

Given the increasing proliferation of collaboration among nonprofit organizations, the importance of understanding the factors that may cause organizations to participate in certain forms of collaboration rather than others cannot be overstated. In the next section, we combine resource dependency, institutional, and network theories to explore the environmental and contextual factors associated with an organization's choice of collaboration forms.

ENVIRONMENTAL AND CONTEXTUAL FACTORS ASSOCIATED WITH CHOICE OF COLLABORATION FORMS

In this section, we posit that the likelihood of developing formal types of collaborations, as opposed to informal types of collaborations, is associated with the following environmental and contextual factors: resource sufficiency, institutional factors (e.g., legal influences and industry differences), and network effect (e.g., board linkages).

RESOURCE SUFFICIENCY

Most studies on nonprofit collaboration take a resource dependency perspective (Provan, 1984; Zinn et al., 1997; Zuckerman & D'Aunno, 1990). Based on this perspective, collaborative relationships will be formed as a managerial response to turbulent conditions in an organization's resource environment (Pfeffer & Salancik, 1978). Collaborations help acquire critical resources and reduce uncertainty, yet these relationships are not without costs. Arguably, the greatest cost of developing collaborative activities is loss of operating autonomy (Provan, 1984). Formal types of collaborations allow stronger control of critical resources, yet these relationships are almost always accompanied by a greater loss of autonomy and thus involve relatively higher costs in terms of managerial autonomy (Zuckerman & D'Aunno, 1990).

**Forge a collaboration
Pros vs Cons**

A key challenge for an individual organization in choosing among different collaboration forms, therefore, is to keep the dynamic balance between managing resource dependence and sustaining organizational autonomy (Gray & Wood, 1991, p. 7). Given their greater resource scarcity, smaller organizations might be more inclined to give up their autonomy and develop formal types of collaborative activities to gain better access to critical resources. Empirical findings lend some support to this argument. In a study of nonprofit mergers, acquisitions, and consolidations, Singer and Yankey (1991) found that financial stability, particularly among smaller organizations, emerged as a primary incentive for this most formal type of collaboration, with almost half of the participants indicating that the decision to enter in merger negotiations was based on their organization's inability to compete because of its small size (Singer & Yankey, 1991). In sum, the resource dependency theory suggests that organizations with greater resource scarcity, as indicated by their smaller organizational size, might be more inclined to collaborate formally; conversely, organizations with greater resource sufficiency, as indicated by their larger annual budget size, might be less inclined to collaborate formally.

Hypothesis 1. An organization with greater resource scarcity (or smaller resource sufficiency) is more likely to develop formal types of collaborative activities.

INSTITUTIONAL FACTORS

According to institutional theory, an organization's life chances are significantly improved by organizational demonstrations of conformity to the norms and social expectations of the institutional environment (Meyer & Rowan, 1977; Meyer & Scott, 1992). An organization often establishes linkages or exchanges with other organizations to meet necessary legal or regulatory requirements. Mandates from higher authorities (e.g., government agencies, legislation, industry, or professional regulatory bodies) may provide the impetus for collaborative relationships that otherwise might not have occurred voluntarily (Oliver, 1990). Luoma and Goodstein (1999) have provided important insight into our understanding of institutional influences on organizational decision making. Specifically, they examined the institutional effects on three levels: the society level (legal influences), industry level (industry regulation), and organizational level (organizational size). Although we acknowledge the importance of all three levels of institutional effects, this study nonetheless focuses on the institutional effects on the society and industry levels.

On the society level, an organization is less likely to resist institutional pressures that constrain its action when the organization is heavily dependent on the source of these pressures (Oliver, 1990). The government is not only the largest funder for many nonprofit organizations, but it is also the most

important institutional actor with its laws and legal mandates. The development of government incentives for nonprofit collaboration as a means to cut costs, reduce duplication of efforts, and integrate services apparently is on the rise (Sharfman et al., 1991). To obtain **government funds**, applicants must demonstrate their commitment to sharing organizational resources or formal coordination of services with other service providers and are often required to file joint grant applications (Provan, 1984; Snaveley & Tracy, 2000). Although program mandates associated with government grants do not necessarily require formalized collaborations, **they may encourage more formal types** of collaborative activities on the part of grant recipients. It is thus reasonable to expect that an organization that receives government funding is more likely to develop formal types of collaboration than an organization that receives no government funding.

The pressure from government funding agencies toward formalized collaboration, however, might be offset by the existence of **multiple government funding sources**. The current government practice in general, and government grants in particular, remain compartmentalized. Although the compartmentalization of government grants might be necessary for public accountability reasons, it might hinder nonprofit organizations from building up more intensive, organization-boundary-spanning collaborations. This is particularly true when a nonprofit receives several separate public grants and is responsible for meeting the distinct documentary requirements of those grant programs because it is even more difficult to break down organization boundaries through interorganizational budgeting, accounting, and evaluation (Snaveley & Tracy, 2000).

In sum, there appears to be **two competing influences from reliance on government funding**: first, the pressure toward formalized collaboration is likely to increase as an organization receives government funding; second, the deterrent from funding requirements actually increases with the diversity of government funding streams. Based on these arguments, we therefore suggest that organizations that are characterized by the existence of a lower diversity of government funding streams are more likely to develop formal types of collaborative activities than those that are characterized either by the absence of any government funding stream or by the existence of a higher diversity of government funding streams.² Accordingly, we predict the following:

Hypothesis 2. The likelihood of developing formal types of collaborative activities is curvilinearly (taking an inverted U shape) related to the number of an organization's government funding sources.

The important societal effects of the **legal and normative environment** are reinforced at the industry level of institutional influence. For instance, studies suggest that in organizations such as hospitals and universities, power lies primarily with a large group of employees trained as professionals. During

their training, professionals are socialized to believe that their work should not be changed by anyone other than their own professional bodies. This makes it difficult for them to enter into partnerships with those from other occupational groups, especially if they are from other organizations (Murray, 1998). Although these studies provide some evidence that health and education and research industries might differ from other industries in the likelihood of collaboration, it is not clear if the same thing holds true for formalized collaboration. Consistent with the institutional theory, we thus propose to test the broader question of whether there are systematic differences across industries regarding the likelihood of formalized collaboration rather than limit the hypotheses to two industries previously found to differ, namely health and education and research industries.

Hypothesis 3. The likelihood of developing formal types of collaborative activities is associated with an organization's industry of operation.

NETWORK EFFECT

This dimension emphasizes the social aspects of cooperation. As Granovetter (1985) notes, organizations are embedded in a wide variety of networks that both constrain their actions and provide them with opportunities to achieve their goals. These networks create opportunities for cooperation by deepening awareness, trust, and commitment among parties within the relationship (Larson, 1992). Building on Granovetter's notion of embeddedness, recent research suggests that organizations address the potential hazards associated with building alliances by relying on information provided through existing interorganizational networks (Gulati, 1998) and particularly through board linkages (Gulati & Westphal, 1999). There is scant of nonprofit research that directly examines the association between board linkages and collaborative practice, yet the effects of board linkages on other organizational practices seem to exist. For instance, Galaskiewicz and Rauschenbach (1988) found that nonprofit arts organizations increased corporate contributions they received when more corporate executives were on their boards. They argued that nonprofits used these board linkages to gain access to company foundations and contributions committees. Following this line of logic and extending it to the context of formalized collaboration, we expect that board linkages with other nonprofit organizations help an organization gain access to more nonprofit organizations that may become potential partners for a higher degree of collaboration, thus eventually leading to more formal types of collaborative activities.

Hypothesis 4. The more linkages an organization has with other nonprofits through its board, the more likely it will develop formal types of collaborative activities.

OTHER ORGANIZATIONAL FACTORS

Although this study is primarily focused on resource dependency, institutional, and network factors associated with the choice of collaboration forms by nonprofit organizations, it is important to control for other factors found by past research to be relevant in understanding collaborative behavior. The age of an organization, for instance, has been directly linked to the formation of its collaborative relationships. Younger organizations may find it more difficult and challenging to enter into a collaborative relationship with another organization because they have many competing priorities that draw on their resources as they seek to establish themselves. Moreover, they may lack the same depth of networks and connections as older organizations, a condition that facilitates collaborative relationships (Foster & Meinhard, 2002). Extending this argument to the context of formalized collaboration, we therefore expect that the likelihood of developing formalized collaborative relationship increases with the age of an organization.

Hypothesis 5. An older organization is more likely to develop formal types of collaborative activities.

METHODOLOGY

SAMPLE AND DATA COLLECTION

As part of a larger study, this study examines the hypotheses through the survey data collected on 376 randomly sampled Los Angeles-based nonprofit organizations with 501(3) tax exemption status. A survey instrument was constructed and mailed to the executive directors of each of the sampled organizations. Survey questions asked for respondents' reports of the types of collaborative activities and collected information on various environmental and contextual factors associated with the choice of nonprofit collaboration forms.

DEPENDENT VARIABLE

The dependent variable, forms of collaboration (collaboration), is defined as a binary variable; an organization that participates in any of the formal types of collaborative activities (i.e., joint program, parent subsidiary, joint venture, and merger) is assigned the value of 1; an organization that only participates in the informal types of collaborative activities (i.e., information sharing, referral of clients, sharing of office spaces, and MSO) is assigned the value of 0.

INDEPENDENT VARIABLES

Resource sufficiency (resource). This variable examines an organization's sufficiency level of financial resources. It is defined as a continuous variable and is measured as the natural log of an organization's reported annual budget for 2001.

Diversity of government funding streams (diversity). This variable examines the diversity of government funding streams. It is defined as a categorical variable and takes on one of three values: 0, indicating the absence of any government funding stream; 1, indicating the existence of one or two government funding streams; and 3, indicating the existence of three or more government funding streams.

Social and legal services industry (social). This variable examines the effect of operating in the social and legal services industry. It is defined as a binary variable and takes on two values: 1, indicating that an organization operates in the social and legal services industry; otherwise 0.

Education and research industry (education). This variable examines the effect of operating in the education and research industry. It is defined as a binary variable and takes on two values: 1, indicating that an organization operates in the education and research industry; otherwise, 0.

Health services industry (health). This variable examines the effect of operating in the health services industry. It is defined as a binary variable and takes on two values: 1, indicating that an organization operates in the health services industry; otherwise, 0.

Arts and culture industry (arts). This variable examines the effect of operating in the arts and culture industry. It is defined as a binary variable and takes on two values: 1, indicating that an organization operates in the arts and culture industry; otherwise, 0.

Board linkages (boardlink). This variable examines the extent to which an organization has developed linkages with other nonprofit organizations through its board of directors. It is defined as a continuous variable and is measured by the actual numbers of board members who serve on the boards or top management teams of other nonprofit organizations.

Organizational age (age). This variable is considered here as a control variable. It is defined as a continuous variable and is measured as the natural log of the difference between 2001 and the year when a given organization was founded.

Board size (boardsize). This variable is considered as another control variable. It is defined as a continuous variable and is measured by the natural log of the

total number of people serving on the board of directors of a given organization.

RESULTS

DATA DESCRIPTION

Survey questionnaires were sent out in January 2002 to the randomly sampled nonprofit organizations with 501(c)3 tax exemption status in the city of Los Angeles. As of May 2002, a total of 97 survey questionnaires were completed and returned, with a response rate of 25.80% (97 out of 376). Among the 97 returned questionnaires, 2 were determined as incomplete, leaving 95 questionnaires qualified for data analysis.

This fairly **low response rate**, although common in organizational surveys, is likely to produce biased samples. Therefore, it is important to check if the sampled data differ from the national data in potentially nontrivial ways. According to the distribution of the 95 responding organizations by their industry of operation, the largest group is social and legal services, with more than 27% of the respondents taking this form; health organizations, as the next largest type, compose 20% of the respondents; and the third and fourth largest types are education and research organizations and arts and culture organizations, with nearly 17% and 12% of reporting organizations falling into these two categories, respectively. The distribution of the samples is consistent with that of the most recent national data, which report that most common categories of reporting public charities are human services (35%), education (16%), health (15%); and arts, culture, and humanities (11%) (Weitzman & Jalandoni, 2002). It appears that to some extent, social and legal services are underrepresented, whereas health organizations are overrepresented, in the sample data. There are several possible explanations for the differences. First, the sample data were collected on a population of 1,976 public charities in the city of Los Angeles, an urban setting that might cause differences in the characteristics of organizations as compared to the national data. Another reason might lie in the size of the sample. Given this rather small sample size, the addition of a few organizations in any particular category would significantly change the percentage of organizations in that category.

Table 1 provides the means and standard deviations of all the variables.

One section of the survey listed eight different forms of collaborative activities that can be grouped into two major categories: formal collaboration that involves certain types of strategic restructuring and informal collaboration that involves no strategic restructuring. Survey respondents were asked to check every applicable item on the list. Table 2 presents the distribution of all these collaborative activities across major industries of operation.

As shown in Table 2, informal types of collaborative activities are much more prevalent among reporting organizations than are formal types. Overall,

**Descriptive
analysis**

Table 1: Descriptive Statistics

<i>Variable</i>	<i>Observation</i>	<i>M</i>	<i>SD</i>	<i>Minimum</i>	<i>Maximum</i>
Collaboration	95	0.62	0.49	0	1
Age	95	2.91	0.98	0.69	4.98
Resource	95	13.28	1.97	7.60	18.90
Diversity	95	1.03	0.80	0	2
Social	95	0.27	0.44	0	1
Education	95	0.17	0.37	0	1
Health	95	0.20	0.40	0	1
Arts	95	0.12	0.32	0	1
Boardlink	95	1.26	2.49	0	16
Boardsize	95	2.45	0.60	1.39	4.65

Note: All of the variables, excluding boardsize, appear in the final model.

169 incidences of informal collaborative activities were reported; by contrast, only 76 incidences of formal collaborative activities were reported. Information sharing is clearly the most popular type of collaborative activity; among the 95 reporting organizations, 80 of them (84%) indicated that they had participated in this type of activity during the 3 years prior to the survey. Referral of clients is the second most popular type of collaborative activity, with 54 out of 95 (57%) reporting organizations having participated in this type of activity. This finding concurs with that of Snaveley and Tracy (2000), which shows that case management activities (e.g., client referral and information sharing) are the most prevalent forms of collaboration among rural nonprofits. Although most formal types of collaborative activities (e.g., merger and joint venture) are not widely practiced among the reporting nonprofits, joint programming is an exception. Among the 95 reporting organizations, 54 (57%) of them indicated that they had participated in joint programs during the 3 years prior to the survey.

LOGISTIC REGRESSION ANALYSIS

In this study, the responses that we are interested in are forms of nonprofit collaboration. The dependent variable is a binary variable taking two values, which makes logistic regression an appropriate method to use. It must be noted here that because our survey data are cross-sectional in nature, the results of the regression analysis that follow should not be simply interpreted as supporting the causal relationship implied in our hypotheses.

Before the logistic regression analysis, a correlation analysis has been conducted to examine the possible correlations between independent variables (multicollinearity). No unusually high correlations have been discovered (please see the appendix for results of the correlation analysis). Table 3

Table 2: Collaborative Activities Across Industries

Activity	Sector- wide	Social and Legal	Health	Education and Research	Arts and Culture	Other
Informal collaboration	169	58	36	23	16	36
Information sharing	80	23	18	12	8	19
Referral of clients	54	23	12	7	3	9
Sharing of office spaces	29	11	5	3	4	6
MSOs	6	1	1	1	1	2
Formal collaboration	76	20	19	11	10	17
Joint program	54	13	12	6	8	16
Parent subsidiary	5	1	2	2	0	0
Joint venture	13	5	3	3	1	1
Merger	4	1	2	0	1	0

Note: MSO = management service organization.

displays the results of the logistic regression models of nonprofit choice of collaboration forms.

The three models shown in the table are nested. That is, we have added additional variables in each new model. The most common method to contrast the fit of nested logistic regressions is the log likelihood ratio test (Knoke & Bohrnstedt, 1994). The test statistic (G^2) that compares the ratio of the likelihoods of two nested models is distributed as a chi-square with degrees of freedom equal to the difference in the number of predictors between the models, which is also equal to the difference in the degree of freedoms of the models. The formula for the test statistic is as follows:

$$G^2 = -2\ln(L0/L1) = (-2\ln L0) - (-2\ln L1) = 2(\ln L1 - \ln L0).$$

Model 1 includes only one control variable, age, and two independent variables testing the effect of resource dependence factors as well as the effect of institutional factors on the society level, namely resource and diversity. As compared to Model 1, Model 2 adds four additional variables testing the effects of institutional factors on the industry level, namely social, education, health, and arts. The addition of these variables significantly improves the model over Model 1 ($G^2 = 10.87$, with degrees of freedom equal to 4). As compared to Model 2, Model 3 adds an additional variable representing network effects in terms of board linkages, namely boardlink, which again significantly improves the model fit over Model 2 ($G^2 = 4.02$, with degrees of freedom equal to 1). Because Model 3 has the highest overall fit, we focus on Model 3 to discuss the results of the hypothesis testing and relevant findings.

The coefficients in Model 3 indicate the effects of each independent variable on being in the category of formal types of collaborative activities relative to being in the category of informal types of collaborative activities, the reference category. A positive and significant logistic coefficient means that controlling

**Table 3: Results of Logistic Regression
Models of Nonprofit Choice of Collaboration Forms**

Dependent Variable	Independent Variable	Model 1		Model 2		Model 3	
		B	SE	B	SE	B	SE
Collaboration	Intercept	-1.55	1.88	-3.58	2.35	-4.79*	2.56
	Age	0.48*	0.25	0.59**	0.26	0.73**	0.29
	Resource	0.09	0.14	0.31*	0.19	0.36*	0.20
	Diversity						
	(0)	-1.12**	0.58	-1.68**	0.69	-1.55**	0.70
	(2)	-0.19	0.60	-0.60	0.68	-0.44	0.68
	Social			-1.68**	0.82	-1.89**	0.87
	Education			-1.61**	0.79	-1.98**	0.86
	Health			-1.09	0.92	-1.51	0.97
	Arts			1.13	0.99	1.31	1.01
	Boardlink					0.29*	0.17
	Log likelihood	-56.73		-51.30		-49.29	
	G ²			10.87		4.02	

Note: Outcome collaboration—informal type of collaborative activities—is set as the comparison group. The variable diversity takes on three values: 0, 1, and 2. Diversity (0) indicates the absence of any government funding stream; diversity (2) indicates the existence of three or more government funding streams; and diversity (1) indicates the existence of one or two government funding streams and is set as the comparison group in conducting the logistic regression analysis.

* $p < .10$. ** $p < .05$.

for other variables in the equation, the independent variable increases the odds of being in the nonreference category (i.e., the possibility of being in the nonreference category rather than that of being in the reference category). Conversely, a negative significant coefficient implies that the independent variable decreases the odds of being in the nonreference category.

Hypothesis 1 examines the resource dependency factor associated with the likelihood to collaborate formally. It maintains that an organization with greater resource scarcity (or smaller resource sufficiency) is more likely to develop formal types of collaborative activities. Contrary to our prediction, the variable representing resource sufficiency (resource) has a positive significant coefficient in Model 3, indicating that to the extent that it has greater resource sufficiency (as indicated by a larger annual budget), an organization is more likely to develop formal types of collaborative activities. An explanation for this finding is that the risks to their autonomy might be higher for smaller organizations, which could discourage them from developing formalized collaboration with others. Another explanation might be that larger organizations are more appealing partners than small organizations because they have more resources to share with others; because of their size and limited resource base, small organizations have less to share and thus are not attractive alliance partners (Foster & Meinhard, 2002; Mulford & Mulford, 1977). This result also seems compatible to previous empirical findings. Foster and

Meinhard (2002), for example, found that smaller organizations are significantly less likely than either medium or larger organizations to develop more interconnected relationships with other organizations.

Hypothesis 2 examines an institutional factor associated with the likelihood to collaborate formally. It predicts that the likelihood of developing formal types of collaborative activities is curvilinearly (taking an inverted U shape) related to the number of an organization's government funding streams. Our prediction is **partially supported**. The diversity variable takes on one of three values: 0, indicating the absence of any government funding stream; 1, indicating the existence of one or two government funding streams; and 3, indicating the existence of three or more government funding streams. For the purpose of this study, the outcome with the value of 1 is set as the comparison group in conducting logistic regression analysis. The outcome with the value of 0 has a **negative significant coefficient in Model 3, confirming our prediction that an organization characterized by the existence of lower diversity of government funding sources (i.e., the existence of one or two government funding sources) is more likely to develop formal types of collaborative activities than an organization characterized by the absence of any government funding source**. The data, however, provide no support to our prediction that an organization characterized by the existence of lower diversity of government funding sources is also more likely to develop formal types of collaborative activities than an organization characterized by the existence of a higher density of government funding sources (i.e., the existence of three or more government funding sources). **Yet it should be noted that the outcome with the value of 2 has a negative coefficient**, which seems to point to the direction as predicted by our hypothesis. Although our prediction is only partially supported by our results, the possible association between reliance on government funding and the likelihood of formal collaboration deserves further attention, especially when the government has become the single most important financier for more and more nonprofit organizations in the past decade (O'Neill, 2002; Salamon, 1995).

The industry of operation is another institutional factor that could affect formal collaboration. Rather than limiting the hypothesis to a specific industry, **Hypothesis 3 tests the broader question of whether there are systematic differences across industries on the likelihood of formalized collaboration**. Two dummy variables (**social and education**) have negative and significant coefficients in Model 3. This suggests that when a nonprofit organization belongs to the social services or educational and research industry, it is **less likely to develop formal types of collaborations with other organizations**. The other two dummy variables, health and arts, do not have significant coefficients. Because of the meager literature on this subject, it is not clear why organizations operating in these two industries would be less likely to collaborate formally. More research is needed to further explore the factors associated with the likelihood to develop formalized collaborations within each major industry of operation.

Board linkage is a factor associated with the network effects on nonprofit choice of collaboration forms. Hypothesis 4 predicts that the more linkages a nonprofit organization has with other nonprofits through its board, the more likely it will develop formal types of collaborative activities. Consistent with our prediction, the variable representing board linkages (boardlink) has a positive and significant coefficient in Model 3. It should be noted that this positive correlation cannot necessarily be interpreted as supporting our causal hypothesis that board linkages eventually lead to more formal types of collaborative activities. It is possible that formal collaborations themselves lead to greater board linkages; that is, the threat to organizational independence inherent in formal alliances is balanced by organizational efforts to create more formal linkages across boards and management teams.

Moreover, because board linkage is measured here in absolute numbers (i.e., number of board members who are either on the boards or top management teams of other nonprofits), it is possible that larger boards would have a larger number of such board members purely based on their size. To control the possible confounding effect of board size, we originally included board size in conducting logistic regression analysis; it was later removed from the final model, however, because of the lack of significance.

Hypothesis 4 tests the effect of the control variable organizational age (age). It holds that an older organization is more likely to develop formal types of collaborations with other nonprofits. This variable has a positive significant coefficient, suggesting that the age of an organization is positively associated with the likelihood that it will develop formal types of collaborative activities.

CONCLUSION

In this article, we combined resource dependency, institutional, and network theories to explore the factors associated with the likelihood that nonprofit organizations would develop formal types of collaborative activities vis-à-vis informal types. Based on a typology of collaborative activities that indicate the extent to which nonprofit organizations develop formalized collaboration, it presents analyses of survey data on 95 urban charitable organizations to show how an organization's likelihood to collaborate formally is associated with various environmental and contextual factors. The findings suggest that an organization is more likely to increase the degree of formality of its collaborative activities when it is older, has a larger budget size, receives government funding but relies on fewer government funding streams, has more board linkages with other nonprofits, and is not operating in the education and research or social services industry.

This study makes significant contributions to the current scholarly literature. First, the meager existing literature has revealed that it remains poorly understood why nonprofit organizations choose to develop certain forms of collaborations but not others. This study represents one of the first attempts to fill this important void by exploring which nonprofits are more likely to develop more formal types of collaborative activities, with an eye toward theories that suggest reasons for those systematic differences. With no intention to deny the key role of nonprofit leaders in forging collaborative partnerships (Goldman & Kahnweiler, 2000), we nevertheless believe that leadership alone is not enough to explain nonprofit collaborations, especially those more formal types of collaborations that require some sort of strategic restructuring. Holding that environmental and contextual factors are critical to a better understanding of the choice of collaboration forms by nonprofit organizations, we have made efforts to contextualize the circumstances under which a nonprofit organization increases the degree of formality of its collaborative activities.

Second and relatedly, we highlight the unique features of collaboration within the nonprofit sector in our efforts to understand the contextual circumstances under which nonprofit organizations choose among different types of collaborative activities, with a particular emphasis on the roles of institutional mandates (Bailey & Koney, 1996; Galaskiewicz, 1985) and interorganizational linkages (Blau & Rabrenovic, 1991). Accordingly, we build on the resource dependence perspective that dominates the existing theoretical explanations on preconditions of nonprofit collaboration and combine it with institutional and network theories in developing our theoretical framework. As Galaskiewicz and Bielefeld (1998) have pointed out,

in explaining almost any organizational phenomenon, researchers agree that it is necessary to examine at the macro level the institutional order (i.e., values, norms, the law, public opinion) and patterns of inequality (i.e., the distribution of authoritative and allocative resources across social locations), and at the micro level informal social structures (i.e., networks), formal structures (i.e., size and age), and agency (i.e., individual preferences and initiatives. (p. viii)

Echoing their argument, our findings have demonstrated the usefulness of different organization theories for studying the various factors associated with the choice of collaboration forms by nonprofit organizations.

Several limitations of this study should be noted. First, although our results suggest the association between various environmental and contextual factors and the formality of nonprofit collaboration forms, the cross-sectional nature of the survey data precludes a causal inference. Another limitation lies

with the database used for sampling and data collection. Because the database is a collection of charitable organizations that file a 990 return with financial information to the Internal Revenue Service, the organizations included in this database tend to be relatively medium- or large-sized organizations, as many small-sized organizations with an annual revenue of less than \$25,000 are not required to file a 990 return. In reality, however, most charitable organizations are very small and do not file 990 returns (Hodgkinson, Weitzman, Toppe, & Noga, 1996). Thus, the findings of this study might not reflect the true picture for the collaborative practices of very small nonprofit organizations. Moreover, all the sampled organizations operate in a typical urban, metropolitan setting; therefore, we have to use caution when generalizing findings and applying them into organizations of different settings (e.g., a suburban or rural area). Rural nonprofit organizations, for instance, experience unique environmental problems that shape the nature of service delivery; these unique characteristics and conditions may create special difficulties for collaboration among rural nonprofits (Snaveley & Tracy, 2000, 2002). Finally, we should be cautious in drawing conclusions as to the differences across industries because differences related to size, age, and types and diversity of government funding may prove to be as significantly diverse within subfields as across sectors. In view of these limitations, future research needs to collect longitudinal data as well as gather information on nonprofit organizations with a significantly larger sample size to examine lagged effects of environmental and contextual factors on nonprofit choice of collaboration forms, as well as to cover the diversity of geographical locations, industries of operation, and revenue sources, among others.

Gray and Wood (1991) identified three issues that are particularly important for additional theorizing about interorganizational collaboration. First, what are preconditions that give rise to collaborative alliances? Second, what is collaboration, and how does it occur? Third, what are the expected outcomes when organizations collaborate? This study falls under the first category. Accordingly, although this study provides an organizational and environmental context for decisions regarding choice of formal types of collaborative activities vis-à-vis informal types, it does not address the processes and consequences of that choice. As formalized collaboration among nonprofits continues to intensify, more systematic research is needed to understand all these important issues associated with nonprofit choice of collaboration forms.

Appendix
Correlation Matrix for Variables in the Model

Variable	1	2	3	4	5	6	7	8	9
1. Collaboration	1.0000								
2. Age	0.2409	1.0000							
3. Resource	0.2234	0.3340	1.0000						
4. Diversity	0.0037	0.0526	0.1573	1.0000					
5. Social	-0.0452	0.0311	0.2098	0.0981	1.0000				
6. Education	-0.1973	-0.0197	-0.1230	-0.1252	-0.2518	1.0000			
7. Health	0.1193	0.2031	0.4552	-0.0526	-0.2907	-0.2165	1.0000		
8. Arts	0.1470	-0.0826	-0.2661	0.1090	-0.2104	-0.1567	-0.1809	1.0000	
9. Boardlink	0.1354	-0.0390	0.0535	-0.1844	-0.0226	0.0588	0.0530	-0.1312	1.0000

Notes

1. This paragraph owes much to one of the three anonymous reviewers of this journal, to whom we are grateful.

2. We are particularly debtful to one of the three anonymous reviewers of this journal for bringing this issue to our attention.

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