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Networks and  
Organizational Growth:  
A Study of Community  
Based Nonprofits

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The paper examined the effects of nonprofit organizations' network ties over time on growth. Donative nonprofits, which relied heavily on contributions and volunteers, grew at a faster rate if they had high status, more ties to urban elites, and greater interorganizational network centrality. In contrast, commercial nonprofits, which depended on fees and/or sales and employees, grew at faster rates if they had fewer ties to other nonprofits and local elites. Also, as nonprofits became more dependent on fees and/or sales, they moved to the periphery of the interorganizational resource exchange network. The findings contribute to the social capital literature by suggesting that networks are more beneficial to organizations that depend on donations and gifts than on earned income. ●

Nonprofits and, specifically, public charities have increased significantly over the past thirty years. In the international arena, non-governmental organizations do combat with multinational corporations and governments over the environment, workplace practices, and human rights and provide aid in times of crisis and disaster. At the local level, churches are thriving and provide spiritual renewal and social services to the faithful and their communities. There are also community based public charities that provide a range of services, including healthcare, cultural activities, performances, crime prevention, employment training, education (at all levels), scientific research, recreation, youth development, and human services such as nursing homes, day care, and homeless shelters. Along with government and business, community based nonprofit organizations maintain and enhance the quality of life in neighborhoods and cities.

Like many organizations, a key strategic decision for public charities is how much to engage other organizations and actors around them. Community based public charities have a long history of interorganizational cooperation going back to the 1930s (Rogers and Mulford, 1982), and local urban elites have long had a presence on the boards and in the affairs of community based nonprofits (Zald, 1970; Baltzell, 1979). Organizations needed funding, facilities, clients (referrals), and personnel, and network ties were convenient conduits through which resources flowed to the organization. As government came to be an important funder in the 1960s and 1970s, interorganizational relations persisted but became more coordinated and rational (Rogers and Mulford, 1982). Since the 1970s, the focus has shifted more toward consumer choice and, by the mid-1980s, there was considerable pressure on these nonprofits to be more "business-like," which meant collecting bills on time, keeping better records, marketing their services, and relying more on fees, sales, and other forms of earned income. A new institutional logic of market competition replaced the old logic of professional control and federal regulations (Ruef and Scott, 1998). As might be expected, between the 1970s and the late 1990s, a large variety of nonprofits became more dependent on commercial revenues and employees (Salamon, 2002). The question is whether ties to local urban elites and other nonprofits have as much utility for commercial nonprofits as they do for donative nonprofits, which rely on gifts, grants, and volun-

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teers and, if not, whether commercial nonprofits reduce their network ties over time, as suggested by Backman and Smith (2000).

Besides being direct conduits for resources, networks benefit donatives because they generate status hierarchies. That is, an organization's status is a function of with whom it associates. Networks work for donative nonprofits because they signal the social status of actors, and status is key to convincing donors to invest in nonprofits. It is a selective incentive that draws donors to nonprofits in a context in which donors themselves cannot derive any direct benefit (Fremont-Smith, 2004: 250–252). If nonprofit organizations want to procure financial and labor inputs through donations, social incentives such as status are as important as material incentives. Coffee mugs, alumni magazines, preferred seating at football games, and invitations to gala events can elicit donations, to be sure. Yet these inducements are not as effective if the radio station, college, or art museum does not have some intrinsic value. It is people's interest in being identified with something worthwhile—and others who support it—that drives their gifts of time and money. If donative nonprofits can deliver on status, support will be forthcoming, and that support is likely to influence performance.

The literature on the for-profit sector shows that network ties are important for business enterprises, which suggests that they should also benefit commercial nonprofits. Networks help organizations to procure information on competitors (Ingram and Roberts, 2000), inform stakeholders about the organization (Stuart, Hoang, and Hybels, 1999), provide access to new technologies and facilitate learning (Powell, Koput, and Smith-Doerr, 1996), and enable strategic actors to play competitors off one another (Burt, 1992). Yet it remains unclear if the status generated by networks produces benefits for commercial nonprofits. It may yield returns only in environments in which there is considerable uncertainty (Podolny, 1994; Stuart, Hoang, and Hybels, 1999) and/or little competition—conditions shared by nonprofits reliant on foundations, small businesses reliant on banks, and start-ups reliant on venture capitalists.

Organizations that are more prominent in interorganizational networks or that have more ties to local urban elites are likely to enhance their status in the community over time, but status is likely to benefit donative more than commercial nonprofits, which depend on fees, sales, and paid employees. In fact, networks may have a negative effect on the performance of commercial nonprofits. Because the status generated by these networks does not yield benefits to commercial nonprofits, the cost of maintaining these ties could hurt their performance. Thus commercial nonprofits that have more ties to local urban elites and prominent nonprofits may grow more slowly over time than commercial nonprofits that do not have these ties. Finally, if networks help donative nonprofits and harm commercial nonprofits, then nonprofits that become more donative over time should strengthen their ties to prominent elites and other nonprofits and become more central in the network, while those becoming more commercial should pare their ties to local actors and become more

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peripheral in community networks. We studied a panel of 156 public charities in the Minneapolis–St. Paul metropolitan area, tracking organizational growth over a fourteen-year period (1980 to 1994), to test these ideas.

### **NETWORKS AND ORGANIZATIONAL GROWTH**

#### **The Growth of Nonprofit Organizations**

Our goal was to understand the growth and decline of community based nonprofit organizations, particularly public charities. Nonprofit organizations are distinct because (1) no one owns the right to share in any profit or surplus, (2) they have a tax-exempt purpose, and (3) they are exempt from corporate income tax (Weisbrod, 1988). In 1998, there were approximately 1,627,000 nonprofit organizations in the United States (Weitzman et al., 2002: 5). Essentially there are three types of nonprofits: charitable organizations, social welfare organizations, and clubs. To qualify as charitable, the organization must be organized and operated exclusively for religious, charitable, scientific, literary, or educational purposes, testing for public safety, or to foster national or international amateur sports competition or for the prevention of cruelty to children or animals (Weitzman et al., 2002: 7). Many activities are subsumed under "charitable," including "relief for the poor, the distressed, or the underprivileged; advancement of religion; advancement of education or science; erection or maintenance of public buildings, monuments, or works; lessening the burdens of government; lessening of neighborhood tensions, elimination of prejudice and discrimination; defense of human and civil rights secured by law; and combating community deterioration and juvenile delinquency" (Internal Revenue Service, 2003: 1).

The charitable organization must also serve a public, not a private purpose, which distinguishes it from clubs. That donors can deduct contributions to charitable nonprofits from their taxable income is tied directly to the organizations' public-regarding character (Simon, 1987). Charitable organizations have limits on their political activities (e.g., lobbying), which distinguishes them from social welfare nonprofits. There are two types of charitable nonprofits: public charities and foundations. In general, public charities provide services and are supported by more than one private donor; private foundations provide funding, usually drawing on the assets of an estate or contributions from a single business corporation. Many, but not all, colleges, hospitals, museums, orchestras, social service agencies, legal aid societies, boys or girls clubs, YMCA and YWCAs, amateur athletic leagues or clubs, neighborhood watch groups, churches, disaster relief organizations, think-tanks, and the like have public charity status. In 1998, the IRS identified 733,790 charitable organizations in the U.S. (Weitzman et al., 2002: 6), but many churches were not included in this total because they are not required to file for tax-exempt status with the IRS.

Mission, rather than economic self-interest, is the dominant factor in explaining growth in public charities. James (1983: 351) argued that in light of the mission, the leadership decides on goals, and these goals affect the choice of activities. The nonprofit needs enough revenues to cover the vari-

able costs associated with these mission-related activities (including labor costs), as well as recurring fixed expenses such as building maintenance and administration. In contrast to a for-profit, in which there is an incentive to reduce costs for the sake of profits, nonprofit leadership has a weaker financial incentive to economize and will increase revenues to match increases in costs. Not surprisingly, some allege that nonprofits are less efficient than for-profits (see Weisbrod, 1988, for a discussion). James (1983) argued that the nonprofit strategy is to collect as much money as it expects to spend, with a little left over for unforeseen emergencies or future expenditures, which nonprofit managers label "reserves." Thus the only limits on growth are the leadership's commitment or imagination and the availability of external support. In this respect, James argued, nonprofits maximize consumption and thus are more like households than firms.

Research supports James's analysis. Rothschild-Whitt (1979), Baum and Oliver (1996), Bordt (1997), and Smith (1997) showed that charities are driven by members' idealism. Steinberg (1993) reviewed the economic literature and suggested several objective functions for nonprofits, such as maximizing budgets, inputs, and social welfare, that were unrelated to profits. Organizational research has shown that nonprofits are driven by resource enhancement (Pfeffer and Leong, 1977; Provan, Beyer, and Kruytbosch, 1980; Chang and Tuckman, 1990; Alexander, 1996; Kraatz and Zajac, 1996). All this work is consistent with the argument that public charities are motivated to expand their activities to better achieve the mission of the organization.

Public charities' revenue options are somewhat restricted. They often support their mission-related activities—both the production of collective and subsidized private goods—from donations from those who believe in the mission of the organization. Donations can be in the form of labor, products, cash, or other liquid assets and can come from individuals, corporations, foundations, federated funds, or other corporate entities. Weisbrod (1988, 1998) called organizations that rely mostly on donations "charitable" nonprofits. Following Hansmann (1986), we call them donative nonprofits. Their mission determines their needs, and they will solicit and recruit in the donor community until they have enough money and volunteers to achieve their goals. Donors trust that the organization will use their resources to further their stated purpose, because the nondistribution constraint prohibits the leadership from appropriating donations for private gain (James, 1983).

The role of donors in the sector is a major issue. For example, there is considerable debate about the importance of elites (wealthy families, corporate managers, successful entrepreneurs, and well-respected professionals) in setting the agenda for the sector. Galaskiewicz (1985), Daniels (1988), Ostrander (1995), and Ostrower (1995) described the influence that wealthy people, corporate managers, and their spouses exercised over the nonprofit sectors in Minneapolis–St. Paul, Pacific City, Boston, and New York throughout the 1980s and 1990s. They served on boards, raised funds,

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and contributed to nonprofit organizations. Many were also on the boards of foundations, federated donors, and local corporations that were making contributions locally (Galaskiewicz, 1985). Nevertheless, Hodgkinson (2002) showed that giving has become more democratized in the United States with the technology available for mass market fund-raising, (e.g., 9/11 giving). Coupled with efforts to increase volunteering among the young, giving and volunteering are no longer the exclusive domain of the rich and famous. Yet Schervish and Havens (2001) showed that significant contributions still come from the wealthiest Americans, and what elites do sets the agenda for the masses.

Managers, however, are often unable to raise the money to cover their fixed and variable costs, and thus nonprofits will develop profit-making strategies to supplement donations (James, 1983: 352). Although charities cannot raise equity through the sale of stock, they can benefit from tax-exempt bonds and borrow money (Bowman, 2002). Charities can also have endowments and earn interest on investments, but these strategies require "money in the bank." Often they will engage in activities that generate a significant revenue stream but that are relatively low cost to them. The profits earned from these activities will be used to pay for the service provided and subsidize other services that cannot pay for themselves. The advantage is that they free nonprofits from courting donors and thus help economize on transaction costs (Froelich, 1999). These commercial revenues may be directly related to the mission (e.g., tuition for colleges), marginally related (e.g., royalties from patents), or unrelated (e.g., parking fees at football games), and donors often encourage and subsidize such entrepreneurial initiatives (e.g., sponsorship of museum exhibits that generate fees) (Alexander, 1996).

Government funding can be in the form of grants, contracts, or vouchers. Some transfers have very few restrictions and minimal monitoring, and control is transferred to the charity (e.g., National Science Foundation grants to universities). Others are contracts for services, and there are extensive controls on cost and quality. At times, governments give vouchers to certain categories of consumers, and they use the vouchers where they want (e.g., scholarships, Medicare). While governments provide all three types of funding, vouchers or consumer-side subsidies are growing in importance (Salamon, 2002; Minow, 2002). Thus support that had been a grant or contract comes to the organization now in the form of program service revenue.

Whatever the funding sources, the growth of charities is driven by leaders' commitment to the mission of the organization and not by the private accumulation of wealth. After the leaders decide what they need to achieve their goal, they go to the donor community to find those who are similarly committed to their mission. Trust is a crucial element in fund-raising and recruiting volunteers. If one cannot readily access resources from donors, then charities will engage in profit-making activities to help subsidize their mission-related activities. Customers can be private individuals who pay for the services themselves or beneficiaries who use vouchers and

other types of consumer-side subsidies. Thus two different logics drive the acquisition of resources among charities: a donative logic in which nonprofits depend on donations and grants, which is based on relationships, a shared sense of mission, and trust, and a commercial logic in which nonprofits depend on fees and earned income, which is based on price, quality, and consumer choice. While some nonprofits are predominantly donative or commercial, many are hybrids, reliant on both types of support and caught up in both logics (Albert and Whetten, 1985).

### **Effects of Networks**

Organizations have a number of recurring non-pecuniary transactions across their boundaries that link them to other organizations and to stakeholders in the larger organizational field (Powell, 1990). Ties can be horizontal, for example, conversations among managers of competing firms (Ingram and Roberts, 2000), resource sharing between research staff in different organizations (Bouty, 2000), referrals among human service agencies (Provan and Milward, 1995), interlocking directorates within industries (Burt, 1992), or vertical, such as friendships between sales people and purchasing agents (Macaulay, 1963), long-term ties between manufacturers and jobbers (Uzzi, 1997), and patronage between donors and donees (Galaskiewicz, 1985). Many of these ties become "embedded" and evolve into multiplex relationships (Uzzi, 1997). Researchers have found a direct positive effect of network ties on performance (e.g., Podolny, 1993; Powell, Koput, and Smith-Doerr, 1996; Stuart, Hoang, and Hybels, 1999; Baum, Calabrese, and Silverman, 2000) and survival (Singh, Tucker, and Meinhard, 1991; Baum and Oliver, 1991, 1996). Others have found that networks and/or network position have a positive effect on political influence (Laumann and Knoke, 1987; Fernandez and Gould, 1994), strategic alliance formation (Gulati, 1995; Gulati and Gargiulo, 1999), learning (e.g., Haunschild and Miner, 1997; Davis and Greve, 1997; Haunschild and Beckman, 1998; Kraatz, 1998; Kale, Singh, and Perlmutter, 2000; Anand and Khanna, 2000), and innovation (Hagedoorn and Schakenraad, 1992; Ahuja, 2000; Ruef, 2002), which can all improve performance (see Podolny and Page, 1998, for a summary of this literature).

One reason that networks are so effective is that they can provide access to information that can help organizations overcome environmental uncertainty and gain control over their environment (Burt, 1983). This information may be technical or it may be about the larger field, industry, or community environment, which can help managers formulate strategy more rationally and plan more effectively. More recently, strategy researchers have shown how networks enable firms to access new and unique information that gives rise to new product development and innovation (Smith-Doerr and Powell, 2005). This kind of information transfer results from conversations among scientists in different organizations (Bouty, 2000) and job-switching (Saxenian, 1994).

Another reason is that networks can facilitate the transfer of capital, customers, facilities, and other material resources across organizational boundaries. Capital can be in the form

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of loans, investments, donations, and subsidies. Human services agencies create ties among themselves to facilitate the flow of clients and patients (Provan and Milward, 1995; Provan, Isett, and Milward, 2004). Ingram and Roberts (2000) found that in the hotel industry, ties are used to refer customers when overbooking occurs. Linkages also facilitate the exchange of staff, facilities, and supplies. For example, Uzzi (1997) found that manufacturers gave machinery to their jobbers, and Bouty (2000) found that scientists in research and development laboratories frequently gave product samples and/or measurements to their friends in other labs.

While networks can be used to access information and material resources, it is not clear how this happens. Lin (2001) discussed the process of mobilizing the resources embedded in one's networks. To be successful, actor *i* must be able to get *j* to transfer control of some resource *k* to him or her, e.g., information on a new technology, or to use his or her resources on *i*'s behalf, e.g., change zoning laws. The methods that *i* employs at the dyadic level can vary, e.g., offer incentives such as friendship, evoke moral obligation, use coercion, or simply ask *j* "for a favor." Researchers have only begun to examine network mobilization. Inkpen and Tsang (2005) described how shared understandings, norms, trust, and memories are important in knowledge transfers through interorganizational ties. Ring and Van de Ven (1992) argued that unless people stay in boundary-spanning roles for an extended time, to ensure institutional memory of favors given and received, it is difficult for interorganizational relationships to develop and yield benefits.

One's structural position in a network can also generate incentives such as status that can be used to procure resources from network partners and the broader environment. Actor *j* is more willing to give actor *i* information or donate or lend money, labor power, and facilities to actor *i* if he or she thinks *i* does quality work, provides important services, and is successful in procuring resources. Thus one reason why network ties result in the transfer of information and resources across organizational boundaries is that networks help to create this status or reputation. For example, if actor *i* associates with actors in the environment who themselves are thought of as high status, the latter's prominence "rubs off" on actor *i* and enhances his or her reputation among third parties. Strategy research on biotechnology firms (Stuart, Hoang, and Hybels, 1999) and the semiconductor industry (Stuart, 2000) have shown that organizations gain credibility or legitimacy if they are linked to actors who are themselves prominent (see also Han, 1994). Status, in turn, can be used as an incentive to mobilize resources and enhance performance (Podolny, 1993; Benjamin and Podolny, 1999). Ecological research has shown that network ties to high-status actors or status symbols increased organizational births and reduced the chance of death among day care centers (Baum and Oliver, 1992, 1996; Baum and Singh, 1994a) and voluntary associations (Singh, Tucker, and Meinhard, 1991; Singh, House, and Tucker, 1986). In hard-to-evaluate situations, it is easier to look at organization *j*'s network part-



ners and ascertain  $j$ 's value using the status of these partners than evaluate potential returns objectively (Podolny, 1994).

While networks can be beneficial, they do not always enhance performance. For example, Pennings (1980), Burt (1983), and Richardson (1987) found little effect of board interlocks on performance. Mizuchi (1996) noted that interlocking often occurs when a company's profits are at its lowest levels. Uzzi (1996, 1997, 1999) found that a mix of embedded and arm's-length ties between manufacturers and suppliers and between lenders and borrowers was more effective than all strong ties or all weak ties. Others have found that network effects are contingent on the level of competition and uncertainty (Brass et al., 2004). In crowded niches, networks are less important in explaining performance (Podolny and Stuart, 1995; Podolny, Stuart, and Hannan, 1996; Burt, 1997; Stuart, 1998). Also research has found that the more information available, the weaker the network effect (Podolny, 1994; Stuart, Hoang, and Hybels, 1999; Stuart, 2000).

One reason why networks do not always enhance performance is that the benefits generated by these ties do not offset the costs of maintaining the networks (Smith-Doerr and Powell, 2005). For example, if information is readily available on vendors, what added benefit does lunch with them provide? Ebers and Grandori (1997) identified a number of transaction costs associated with establishing, maintaining, and managing interorganizational relationships, including finding partners, ensuring their trustworthiness, monitoring commitments, sorting out equity issues, and accommodating cultures. Bae and Gargiulo (2004) cautioned that ties with powerful partners can be costly if the more resourceful partner extracts concessions from the weaker partner. Uzzi (1997) warned about opportunity costs when ties are overly embedded (see also Owen-Smith and Powell, 2003). Organizations not only need to build and maintain ties to others, but they need to be concerned about the ties among their ties. Ingram and Roberts (2000) showed that managers linked in friendship with other managers had high yields, but yields were even greater when these friends were friends themselves. In contrast, Burt (1992) argued that the most fruitful networks are rich in structural holes. Thus network players have to be as concerned about the ties among their network partners as about their ties to any one partner. This takes time and attention and can direct scarce resources from more useful purposes.

Networks can also weaken and compromise organizational boundaries. Networks are useful for recruiting new people (Fernandez, Castilla, and Moore, 2000), but employees and members can also use their ties to find new jobs or organizations to join (McPherson, Popielarz, and Drobnic, 1992). Saxenian (1994) showed that networks bring new ideas into firms, but networks also facilitate their outflow. Finally, as the boundaries between organizations dissipate, organizations can lose autonomy. Ties to outside stakeholders can increase stakeholders' commitment to the organization but can also give them greater control. This is especially possible when high-status actors associate with lower-status players. When

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coming onto nonprofit boards, wealthy people and corporate managers often believe that their solutions to organizational problems should prevail. But their solutions often stem from their managerial and class backgrounds (Ostrower, 2002), which can be in conflict with nonprofits' missions (e.g., Barman, 2002; Hall, 1990). If the costs associated with maintaining "good relations" and forfeiting autonomy are not offset by accessing additional resources, networks become a liability. Their costs outweigh their benefits, and the organization's performance will suffer. For some managers, it is smart to invest time in building networks because the benefits are potentially great. For others, as Burt (1992) suggested, it may be wise to prune ties rather than have networks that yield few benefits. These network-management choices have implications for the growth or decline of nonprofits over time.

## **Donative and Commercial Transactions**

Nonprofits are likely to get different returns on their networks, depending on their resource dependencies and the institutional logics associated with them. Similar to James (1983), we view donative transactions as qualitatively different than commercial transactions. The costs associated with each are different, and their role in the organization's overall funding strategy is different. The incentives that each uses to procure needed revenues are also different. Because networks produce status hierarchies, network returns are greater for donative nonprofits. In contrast, because status yields few benefits for commercial nonprofits, networks may be a liability because of the costs of maintaining relations to others.

Institutional logics refer to the material practices and symbolic constructions associated with different institutional orders (Friedland and Alford, 1991). For example, Meyer and Scott (1983) drew the distinction between sectors in which resource allocation is governed by output controls—which they called technical environments—and domains in which resource allocation is governed by process controls—which they labeled institutional environments. The former allegedly typifies the business sector, and the latter is associated with the state and nonprofit sectors, but they can apply to transactions that cut across sectors. For example, commercial transactions that are governed by market exchange and narrow cost-benefit calculi and donative transactions that are affected more by moral sentiments and perspectives on the collective good can be found in all sectors of society and operate according to their own logics.

The hallmark of commercial transactions is that providers procure revenues by competing on the basis of price and quality, selling goods and services that are excludable and rival. Consumers purchase a good or service depending on their preferences and perceived costs and benefits. Employees sell their labor power based on wages and working conditions. Because buyers and sellers exchange something of value based on utility considerations, the meaning and scope of the transaction is limited. There are times when credible market signals are missing or there is information asymmetry, and status and reputation fill in the gaps. Also transactions

between private parties can produce externalities. Still the defining feature of commercial transactions is the rational calculation of individual costs and benefits by the parties in the exchange.

The hallmark of donative transactions is that providers compete for support based on donors' perceived value of the goods or services to the collectivity, the cost to provide these goods and services, and the likelihood that providers will deliver the goods in an effective manner (Hansmann, 1996). Clearly there is a great deal more ambiguity surrounding this type of transaction. Economists focus on the information asymmetry and the potential for providers to cheat on donors (Weisbrod, 1988). Those who donate resources are typically not those who benefit directly from the output, and the former often do not have the means to evaluate either quality or effectiveness. Furthermore, even if donors can evaluate outputs (e.g., improvements on children's test scores), the link between outputs and outcomes (e.g., economic self-sufficiency later in life) is impossible to measure. Under these conditions, Weisbrod (1988) and Hansmann (1996: chap. 12) talked about market failure and the need for either governments or nonprofits to fill the gap. Governments are reliable because they are accountable to public authorities and ultimately the citizenry. Nonprofits are a suitable alternative, because the non-distribution constraint supposedly reduces the incentive to exploit donors.

Public choice scholars focus more on the collective goods problems associated with the provision of goods and services generated through donations. Even if they know what they are getting and/or trust the provider completely, donors themselves will not benefit materially in proportion to their contribution. While this is clear in the case of non-excludable public goods (because of free-riding), it is also an issue when donations generate private goods (e.g., food, clothing, and shelter) that providers distribute to third parties (e.g., Red Cross disaster relief). Olson (1965) noted that organizations often rely on selective incentives, including social status, to overcome these problems. Galaskiewicz (1985) showed how corporate giving in Minneapolis–St. Paul was influenced by the patronage of retired corporate patricians who heaped praise on the company executives who gave to the appropriate causes and excluded others from civic events. Studying firms in the U.K and U.S., Useem (1984) showed how "inner circle" business leaders exerted peer pressure on firms to give to charity and rewarded them with recognition. In her study of wealthy donors to New York's elite nonprofits, Ostrower (1995) found that donors were sensitive to what others thought of their generosity and wanted to be associated with institutions that had reputations for excellence. The causes they supported defined their own social status.

As we noted above, an organization's own status is a function of being tied to actors who are themselves prominent. Others attribute value to an organization because of the company it keeps independent of what it produces, its public relations efforts, or even its generic quality. As a consequence of having network ties to high-status actors, we expect that organizations will be regarded by prominent observers and

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organizational peers as having high esteem or status. In other words, network ties to urban elites and other nonprofits can produce status benefits for nonprofits:

**Hypothesis 1 (H1):** Nonprofit organizations that are used or supported by more urban elites or have cooperative ties to organizations that are prominent in information and resource exchange networks at  $t_1$  will enhance their status in the community by  $t_2$ .

Organizations that enjoy more status should grow at faster rates, but status should yield greater returns to donative than commercial nonprofits. Status can help solve information problems for those who make donations and volunteer time, and it can act as an incentive to entice donors and volunteers to contribute their time and money. If a donative nonprofit does not have status, it has little to offer donors and volunteers in return for their gifts, but status is not likely to help or harm commercial nonprofits. It may yield returns if consumer uncertainty is high, but it is not as relevant an incentive in commercial transactions.

**Hypothesis 2 (H2):** Donative nonprofits that have greater status at  $t_1$  should grow faster between  $t_1$  and  $t_2$  than donative nonprofits that have less status, while status should have little effect on the growth of commercial nonprofits.

If status does not produce benefits for commercial nonprofits, however, then the networks that produce status may be costly for them. The costs associated with building, maintaining, and rejuvenating network ties can divert resources from actions that might better help the organization realize its goals. Networks can also weaken and compromise organizational boundaries and jeopardize their autonomy. Although both donative and commercial nonprofits incur these costs, commercial nonprofits are not deriving the benefits from the status that these networks produce; if so, then networks are a liability for them:

**Hypothesis 3 (H3):** Once we control for status benefits, ties to urban elites and other nonprofits should have little effect on the growth of donative nonprofits, while commercial nonprofits with more ties to elites and other organizations will grow more slowly than those without these ties.

If networks help donative nonprofits and harm commercial nonprofits, then we expect that nonprofits that are more dependent on donations and volunteers will enhance their ties to urban elites and other nonprofits over time, while commercial nonprofits are more likely to sever ties to local actors. If the network ties harm commercial nonprofits, then managers and boards would be motivated to reduce their costs by breaking off ties to urban elites and other organizations. Backman and Smith (2000) argued that as commercialism increases, these community based nonprofits will tend to move to the periphery of community networks.

**Hypothesis 4 (H4):** Nonprofits that become more reliant on donations and/or volunteers between  $t_1$  and  $t_2$  should have more ties to local urban elites and prominent nonprofits by  $t_2$ , while those that become more dependent on fees for service and/or employees

between  $t_1$  and  $t_2$  should have fewer ties to local urban elites and prominent nonprofits by  $t_2$ .

## METHODS

We used the growth and decline in expenditures of community based nonprofit organizations as our performance measure and hierarchical growth curve models to test these hypotheses. At level one, we collected data on organizational expenditures for the years 1980 to 1994. At level two, we gathered data on the characteristics of organizations in 1980 and 1988. The models explained variation in the growth rates of organizations during the first (1980–1988) and second half (1988–1994) of our study period. The purpose of analyzing two periods was to use regressors that were more proximate to the growth we sought to explain, e.g., variables measured in 1980 to explain growth between 1980 and 1988 and variables measured in 1988 to explain growth between 1988 and 1994. Also it gave us two tests of each hypothesis instead of just one.

In 1980, we drew a stratified systematic sample of 326 organizations from a population of 1,601 public charities in the Minneapolis–St. Paul metropolitan area. Our source for the sampling frame was the *Cumulative List of Organizations* published by the Internal Revenue Service, which was current for October 31, 1979. We excluded private and corporate foundations (although community and operating foundations were included) and churches, congregations, assemblies, and any other explicitly religious organizations (although we included organizations that provided charitable services and were affiliated with a church or denomination) from our sampling frame. These organizations are listed in Galaskiewicz and Bielefeld (1998: Appendix A).

In late 1980 and early 1981, we did face-to-face interviews with the chief executive or operating officer of 229 organizations (a 70.2 percent response rate). We interviewed executives from 201 organizations of these organizations in late 1984 and early 1985 and from 174 of these organizations in late 1988 and early 1989. In 1993 and 1994, we returned to the field and interviewed executives in 162 of these organizations. By the end of the study period in early 1995, 156 organizations were in the panel. The attrition rate was 31.9 percent. Galaskiewicz and Bielefeld (1998: 57) described those that left the panel.

**Expenditures.** We operationalized organizational growth using annual operating expenditures as reported by respondents.<sup>1</sup> Respondents almost always referred to audited statements, tax forms, or other written records. During the five interviews with each organization over the 15 years, we collected expenditure data for 1980 through 1988 and 1991 through 1994. Because hierarchical linear growth models do not require complete data on the response variable, missing data were not a problem. Expenditure data were converted into 1994 dollars using the producer price index.

**Status.** We conceptualized status as the prestige or esteem that actors in the environment attributed to an organization as they passed judgment on its value. In this respect, status is

<sup>1</sup> Cameron, Kim, and Whetten (1987) measured enrollments and revenues as well as respondents' perceptions of these changes. Other possible indicators include change in assets, stock prices, number of employees or volunteers, number of customers/clients, debt/equity, profits, and sales (see D'Aveni, 1989; Weitzel and Jonsson, 1989) or the number and types of product lines or activities, divisions or subsidiaries, and work sites. In studying nonprofits, the most logical option is the number of clients/patients/students, but organizations count people served in different ways (e.g., some use duplicated while others use unduplicated counts), and some have no way of counting the number of people served (e.g., collective-goods-producing or public education organizations). Also, clients/patients/students are often not comparable (e.g., theatre attendees and hospital patients). We used expenditures, because almost all organizations had expenditures, and expenditures were highly correlated with these other indicators.

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one dimension of an organization's reputation in an organizational field. We focused on organizational performance/quality, service to the community, and success with funders. Though broad, these criteria have face validity for nonprofit community service organizations. We surveyed two different sets of stakeholders. First, we did face-to-face interviews with 90 and 108 members of urban elites in the Twin Cities metropolitan area in 1981 and 1989, respectively. Our samples included prominent business executives, public officials, prestigious educators, journalists, health care workers, artists, sports and media celebrities, and attorneys in the Twin Cities.<sup>2</sup> We handed respondents the list of panel nonprofits and asked which had achieved outstanding accomplishments in their respective fields and which nonprofits were providing essential services to the community. We combined responses to these questions and tallied the times that an organization was mentioned as either providing essential services or having achieved outstanding accomplishments. For the 156 panel organizations, the mean and standard deviation for this variable in 1981 were 7.43 and 13.24; in 1989, they were 7.47 and 13.78.

Second, we solicited the opinions of nonprofit managers. In 1984 and 1988, we asked organizational respondents, typically the chief executive officer or top administrator, to look over a list of the panel organizations and circle the names of any organization that they felt had adapted particularly well since 1980 to government retrenchments or the recession. We then asked them to underline the organizations that seemed particularly well thought of by corporations and foundations. We combined their responses to these two questions and tallied the number of times that an organization was mentioned as either adapting well to economic conditions or being favored by large institutional donors. For the panel organizations, the mean and standard deviation for this variable in 1984 were 8.84 and 17.77; in 1988, they were 8.23 and 19.08.

The correlations among these four indicators of status were all over .88, so we subsequently did a factor analysis combining measures based on elite members' and managers' responses in each period. The loadings for each variable in the two periods were .970 and .976. We then used factor scores in our analyses.

**Interorganizational network centrality.** In 1984 and 1988, we also asked organizational respondents to indicate which nonprofits in our panel they gave to or received information from about community affairs, technical matters, or political affairs. In this asymmetric matrix, we recorded a "1" if respondent *i*'s organization either gave to or received information from nonprofit *j* on community, technical, or political affairs, and a "0" otherwise. Respondents also indicated which nonprofits in our panel they sent to or received personnel, clients, and facilities or supplies from. We created a second asymmetric matrix in which we recorded a 1 if respondent *i*'s organization either sent to or received these resources from nonprofit *j*, and a 0 otherwise. Finally, respondents identified the nonprofits in which they knew a manager or staff member personally, i.e., on a first-name basis. We

### 2

We used a two-stage method to identify respondents. We first went to Marquis's *Who's Who in America* for 1980–81 (1980) and 1988–89 (1988) and identified all the individuals who lived or worked in the Twin Cities seven-county metro area. We then took these names to two positional leaders in different community sectors (business, education, health, culture, law, government, politics, sports, and religion) and asked them to add names of prominent people in the field whom we missed. The resulting sampling frames included 1,242 and 1,299 business executives, public officials, educators, journalists, health care workers, artists, sports and media celebrities, and attorneys, among others, for 1980–81 and 1988–89, respectively. We drew a 7 percent and an 8 percent stratified systematic sample of names in the two time periods. We had 88.9 percent and 86.1 percent response rates, producing samples of 80 and 93 for the two years. We did in-person interviews in both periods. There were only three people who were on our lists in both years.

then constructed a third asymmetric array for each year. A "1" indicated that respondent *i* knew someone in organization *j*, and a "0" otherwise. We added the three matrices and symmetrized the results (taking the sum of the two values,  $x_{ij}$  and  $x_{ji}$ ), producing a valued matrix of interorganizational ties for each year.<sup>3</sup> The dimensions of the matrices were 201 × 201 in 1984 and 174 × 174 in 1988. Because there were three possible ties in an ordered pair, the range of entries was 0 to 6. On average, organizations had 20.9 ties in 1984 and 17.5 ties in 1988. In 1994, we asked respondents to put a check beside names of panel organizations to which they gave or from which they received personnel, clients, facilities/supplies, technical information, information on community affairs, information on political affairs or any other kind of resource over the last couple of years. The matrix was 162 × 162. We symmetrized the matrix, taking the sum of  $x_{ij}$  and  $x_{ji}$ . The range for each cell was 0 to 2, and the average organization had 8.9 ties in 1994.

We used Bonacich's (1972) measure of network centrality because it best captured the idea of social capital as used in this paper. Ego's centrality was weighted by the centrality of those to which ego was tied. That is, we weighted the ties to alter by alter's ties to others in the network. Operationally, we solved the following equation:

$$\lambda S_i = W_{i1}S_1 + \dots + W_{in}S_n \quad (1)$$

As noted by Bonacich (1972), solving this equation is not difficult, because *W* is a matrix of ties (in our case with values from 0 to 6),  $\lambda$  is an eigenvalue, and *S* is an eigenvector (which is the unknown vector of popularity scores). The solution for the equation is the eigenvector associated with the clique with the largest eigenvalue. The eigenvalues for our three matrices were 44.5 (a ratio of 1.81 over the second largest eigenvalue in 1984), 35.6 (a ratio of 1.55 over the second largest eigenvalue in 1988), and 19.1 (a ratio of 1.77 over the second largest eigenvalue in 1994). Eigenvector centrality scores were computed using the entire network in 1984, 1988, and 1994. We computed standardized scores for each item.

**Ties to urban elites.** In the surveys of local elites mentioned above, we asked respondents which nonprofits they supported personally with donations, volunteer work, consulting, board memberships, etc. In a subsequent question, we asked them which nonprofits they or their families had used in the last couple of years. For each organization, we tallied the number of respondents who said that they supported the organization in some capacity or used its services. The means and standard deviations for support were 1.74 and 5.05 in 1981 and 2.02 and 6.72 in 1989. The means and standard deviations for use were 2.09 and 7.82 in 1981 and 2.99 and 9.04 in 1989. Because these items were highly correlated (.912 in 1980 and .920 in 1988), we used principal components analysis to combine the two items into a single construct and used factor scores as our indicator of the nonprofit's ties to urban elites.

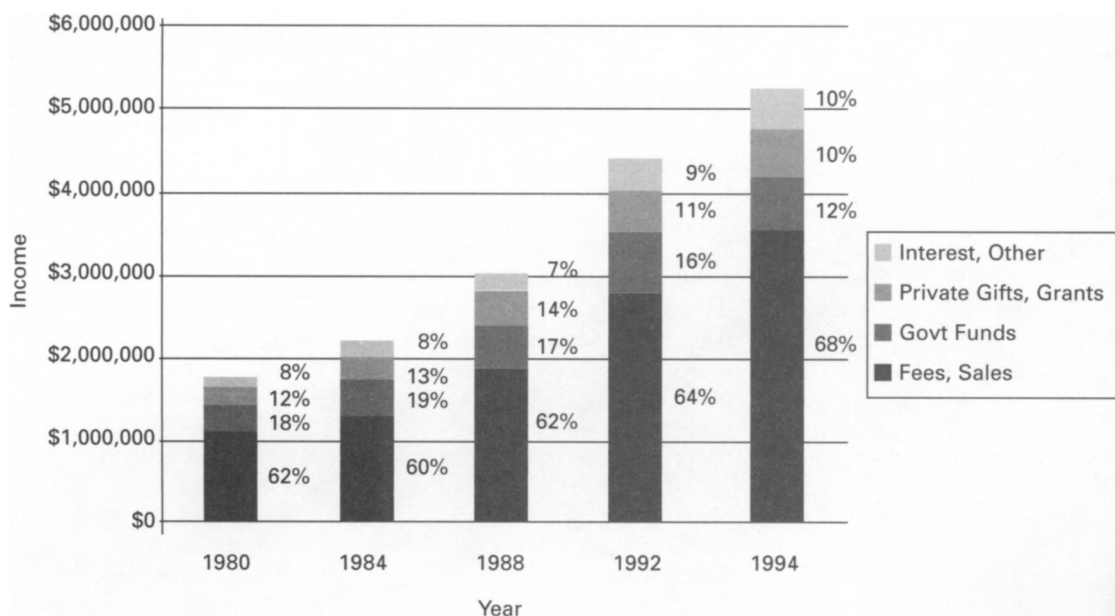
**3** We recorded a tie if only one member of the dyad mentioned a tie because of the size differences between organizations. A more cautious approach would only record ties if both parties acknowledged them, but often it was difficult for managers of large organizations to know about all their interorganizational relations, and getting reports from others helped to correct for this measurement problem.

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**Donative and commercial nonprofits.** Our measures of nonprofits' inputs were based on income source and the number of employees and volunteers. Commercial-type revenues included program service revenues and net earnings from the sale of unrelated services. We coded Medicaid and Medicare payments as program service revenue. Donative revenues included individual donations, dues, corporate gifts and grants, foundation grants, trusts and bequests, net income from special fund-raising events, and grants from federated fund drives (e.g., United Way). We included dues among donated revenues because nonprofits with the largest dues revenue, e.g., public broadcasting stations, said that these were really individual gifts and instructed us to treat them this way. Public revenues came in the form of grants and contracts from federal, state, county, and local government. Miscellaneous revenues included interest/rents/royalties, net income from the sale of assets, donations from churches and other nonprofits, and miscellaneous income. We converted data on these four revenue streams into 1994 dollars. We computed the proportions of total revenues from each source in 1979–80, 1983–84, 1987–88, 1991–92, and 1993–94. We also summed the numbers of full- and part-time employees and volunteers and computed the proportions of personnel that were volunteer and paid in 1980, 1984, 1988, 1992, and 1994.

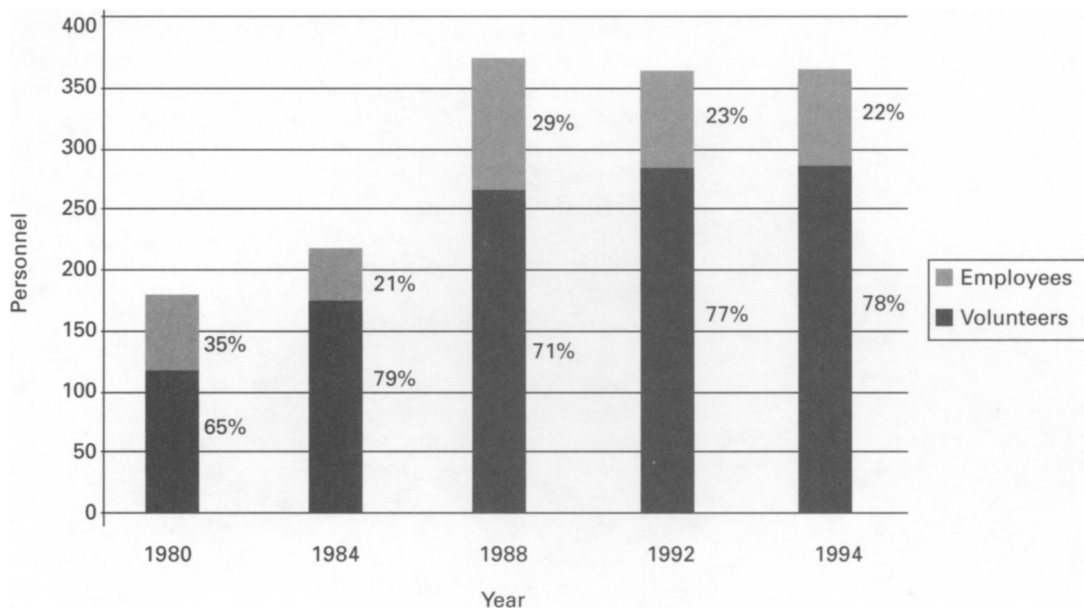
The average amounts and total percentages received from various sources and the numbers and percentages of volunteers and employees for 1980 through 1994 are presented in figures 1 and 2. The percentages of income from interest and other sources have stayed about the same. Governmental grants and contracts and private gifts and grants have increased slightly but have shrunk as a percentage of income. The increase in revenues in our panel was clearly dri-

**Figure 1. Average amounts from various income sources (1994 dollars) and percentages of total income, 1980–1994.**





**Figure 2. Average numbers of volunteers and employees and percentage of total personnel, 1980–1994.**



ven by commercial revenues. Though increases in individual fees were important so also were the sale of unrelated services, private insurance, and voucher-type government support (e.g., Medicaid and Medicare). Salamon (2002: 34) reported that if government vouchers were counted as commercial revenue, income from commercial sources accounted for 67 percent of all public charity income in 1998, which was comparable to our panel (68 percent). Looking at figure 2, we see that organizations have always been heavily dependent on volunteers. Between 1980 and 1988 the number of volunteers increased dramatically and then leveled off after 1988. The number of employees declined between 1980 and 1984, and then there was a sharp increase between 1984 and 1988. Following a slight retrenchment between 1988 and 1992, employees were about 22 percent—and volunteers about 78 percent—of total personnel in 1992 and 1994.

From these data we computed several variables. First, we computed change scores for the percentages of funding that came from private gifts/grants and fees/sales and the percentage of employees/volunteers. We subtracted percentages in 1980 from percentages in 1988 and percentages in 1988 from percentages in 1994. Second, we did principal components analysis using the proportions of revenue from fees and donations and the proportions of personnel that were volunteer and employee. We extracted one factor each for 1980, 1988, and 1994. The loadings for 1980 were  $-.869$  (proportion employees),  $-.460$  (proportion fees),  $.645$  (proportion donations), and  $.807$  (proportion volunteers). The one factor accounted for 50.8 percent of the variance in our data. The loadings for 1988 were  $-.875$  (proportion employees),  $-.580$  (proportion fees),  $.756$  (proportion donations), and  $.822$  (proportion volunteers). The one factor accounted for 58.7 percent of the variance. The loadings for 1994 were  $.866$

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(proportion employees), .654 (proportion fees),  $-.798$  (proportion donations), and  $-.701$  (proportion volunteers). The one factor accounted for 57.6 percent of the variance. We used factor scores for our measures of nonprofit type, multiplying the last set of factor scores by  $-1$  to make them consistent with the other two.

The Pearson correlation table in Appendix A shows some differences between donative and commercial nonprofits. Looking at effects significant at the .05 level, in both 1980 and 1988, donative nonprofits tended to be recreational organizations (sports clubs and leagues), had fewer expenditures, and had a smaller percentage of government funding (grants and contracts). In 1980, they were more peripheral in the interorganizational exchange network, and commercial nonprofits were more central. In 1988, donative nonprofits tended to be older than commercial nonprofits. Also, in 1988, health and welfare organizations tended to be commercial organizations. In 1980, health and welfare organizations were dependent on both commercial and donative sources. This shift made sense because of the increase in private insurance and public vouchers (e.g., Medicaid and Medicare) in the health and welfare sectors in the 1980s.

**Control variables.** We considered organizational age in the course of our effort to identify sample selection bias. We asked respondents in 1980 when their organization was founded and subtracted this from 1980. Given that 32 percent of the cases left the panel, sample selection bias was potentially a problem. To address this, we estimated a logit model in which the response variable was whether or not the organization survived the panel (no = 0; yes = 1), and the variables on the right-hand side included age and eight dummy variables for activities in 1980. The model's chi-square statistic was 28.36 (d.f. = 9) ( $p < .001$ ), and we correctly predicted the states of 71.5 percent of the cases. The only significant predictor was age ( $b = .047$ ;  $p = .002$ ). None of the activity dummies were significant at the .10-level. Because HLM does not have a way to correct for sample selection bias, we created a new variable, *Sample selection*, which assigned a probability of survival to each organization, depending on its age (see Winship and Mare, 1992: 344). The estimate of these probabilities was the proportion of organizations, at a given age, that survived the panel. For example, among organizations one year old in 1980 ( $N = 6$ ), 67 percent survived the panel, and .67 was assigned to these six organizations; among organizations two years old in 1980 ( $N = 13$ ), 31 percent survived, and .31 was assigned to these 13 organizations. From that point, the probability of survival increased with age.

Each year of the panel we asked respondents to rank-order eight service areas in terms of their organization's priorities. Organizational growth may be a function of what organizations do. Activities that were highly valued or in high demand may have attracted more donations, customers, employees, and volunteers. We focused on services that received a ranking of one, but many respondents indicated that two and sometimes three areas were "most important." In these cases, multiple areas were coded. Based on their responses,

we created a dummy variable for each of the service areas identified as most important: health/welfare, educational, cultural, recreational, scientific, housing/urban development, and legal services.

Organizational ecologists have shown that niche density or crowding affects birth and death rates in populations of for-profits and nonprofits alike (Baum and Singh, 1994a, 1994b; Baum and Oliver, 1996). If we adapt density dependency theory to growth and decline, we would expect that nonprofits in sparsely settled niches should flounder because of the lack of legitimacy and experience little growth. Growth would be greater as the number of organizations increased up to a point at which the increased competition would lead to lower growth rates or even decline. Our measure of niche density estimated the number of organizations in a panel organization's activity/funding niche in 1980 and 1988 (see Appendix B).

We also measured environmental uncertainty. Managers who have better information on their stakeholders are more likely to make informed choices and thus experience greater growth. We asked organizational respondents in 1984 and 1988 to identify their major funder type (foundations, individual donors, federated givers, corporations, federal government, state government, county government, city government, members, clients/patients/customers/audience members, and other). We then asked if they had adequate information on their major funder type and how certain they were about the total amount of money they would get from this source in the next year (both on a scale from 1 to 10). We recoded responses to each question—1 to 5 was coded as adequate/certain (0) and 6 to 10 as inadequate/uncertain (1)—and constructed an uncertainty index by summing the responses. This item had missing data in both years. In 1984, we had data on 141 cases; in 1988, we had data on 154 cases. We used mean substitution for both years and included a dummy for the 1984 missing values, but because the dummy was not significant in our models, we removed it from the analysis.

From the data on revenue flows we computed the percentage of funding from government sources in 1980 and 1988. Growth could be a function of increases in government funding. It could also be that government-funded nonprofits, as part of third-party government, may not see networks and status as particularly important for their growth and survival. In describing the health care arena under managed care, Johnsen et al. (1998) found that nonprofits competed against one another for contracts and shied away from collaboration (but see Provan, Isett, and Milward, 2004, who found just the opposite). Instead, organizations will follow a more bureaucratic strategy in which following rules and regulations is a way to establish accountability and reliability (see Grønbjerg, 1993).

In the 1984 and 1988 interviews, we asked if the organization had engaged in any public/community relations campaigns. Organizations can enhance their status through public relations and advertising. They can also stimulate demand for

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their services and growth in donations and sales. We asked if the organization had community relations campaigns directed at the general public, community leaders, non-government funders, the local media, politicians, government agencies, or legislative bodies. These were scored yes and no. We then constructed a public relations index by summing the responses. The reliability coefficients for 1984 and 1988 were .830 and .834, respectively.

The quality of the organization's governing board could also affect the status of an organization and its growth. Organizations with directors who have more organizational skills should be run more responsibly, have higher quality outputs, and fewer problems. We measured the quality of the board by gathering information on occupations of all the boards of directors of our panel organizations. While interviewing organizational respondents, we asked for the names and occupations of all their directors. Here we analyzed the occupations of the 1980 and 1988 boards. We used the National Opinion Research Center prestige scores to code each director's occupation and computed the average occupational prestige score across the occupations for which we had data. For the 13 organizations that did not provide board data in each year, we used mean substitution and computed a dummy variable indicating if there were missing data on a case. Because the dummy was not significant in any of the models, we removed it from our analysis.

The number of personnel could also affect both status and growth. Organizations with more personnel will attract more attention. The mass media, politicians, agency heads, legislators, wealthy individuals, companies, foundations, or the community at large may view larger organizations as more competent or capable, simply because they have more employees/volunteers. Organizations that have more personnel also have a greater capacity to grow. If organizations have more employees and/or volunteers, they can realize economies of scale that enable them to serve more people and increase revenues. Increasing levels of resource concentration in the nonprofit sector suggest that the large do get larger, while the small stay small (Galaskiewicz and Bielefeld, 1998). We tallied the numbers of part-time and full-time employees and volunteers. All the control variables, except for the activity dummies, were centered at their means. The correlations among the variables used in our analysis and descriptive statistics for the 156 surviving organizations are presented in Appendix A.

## ANALYSES AND RESULTS

Table 1 presents results testing hypothesis 1, that organizations with ties to prominent actors in interorganizational networks and ties with urban elites would enhance their status over time. In model 1, the dependent variable is the construct that includes the number of local elites in 1988 that said that the organization had achieved extraordinary accomplishments or provided essential community services and the number of nonprofit managers that said the organization had done well surviving the economic hard times of the early 1980s and was favored by corporations and foundations. The

Table 1

**OLS Regression Analysis Predicting Organizational Status in 1988 (N = 156)\***

| Independent variable  | Model 1                        | Model 2                        | Model 3                        |
|---|--------------------------------|--------------------------------|--------------------------------|
| Organizational status 1980 Ln                                   | .378 <sup>****</sup><br>(.066) | .378 <sup>****</sup><br>(.067) | .382 <sup>****</sup><br>(.067) |
| Ties to urban elite 1980  | .381 <sup>****</sup><br>(.056) | .382 <sup>****</sup><br>(.058) | .375 <sup>****</sup><br>(.059) |
| IO network centrality 1984                                      | .192 <sup>***</sup><br>(.064)  | .191 <sup>***</sup><br>(.067)  | .192 <sup>***</sup><br>(.064)  |
| Donative_commercial inputs 1980                                 | .007<br>(.048)                 | .007<br>(.048)                 | .006<br>(.048)                 |
| IO network centrality 1984 ×<br>Donative_commercial inputs 1980 | —                              | -.003<br>(.058)                | —                              |
| Ties to urban elites 1980 ×<br>Donative_commercial inputs 1980  | —                              | —                              | .015<br>(.041)                 |
| Niche density 1980  | -.012<br>(.022)                | -.012<br>(.022)                | -.012<br>(.022)                |
| Niche density 1980 <sup>2</sup>                                 | .007<br>(.008)                 | .007<br>(.008)                 | .007<br>(.008)                 |
| Board prestige 1980   | .003<br>(.006)                 | .003<br>(.006)                 | .003<br>(.006)                 |
| Environmental uncertainty 1984                                  | .056<br>(.067)                 | .056<br>(.067)                 | .054<br>(.067)                 |
| % Gov't funding 1980  | -.001<br>(.001)                | -.001<br>(.001)                | -.001<br>(.001)                |
| Total personnel 1980  | .000<br>(.000)                 | .000<br>(.000)                 | .000<br>(.000)                 |
| Public relations 1984   | .013<br>(.022)                 | .014<br>(.022)                 | .013<br>(.022)                 |
| Sample selection  | .653 <sup>**</sup><br>(.296)   | .651 <sup>**</sup><br>(.300)   | .660 <sup>**</sup><br>(.298)   |
| Constant  | -.032<br>(.057)                | -.033<br>(.060)                | -.032<br>(.058)                |
| R   | .853 <sup>****</sup>           | .853 <sup>****</sup>           | .854 <sup>****</sup>           |
| R <sup>2</sup>  | .728                           | .728                           | .729                           |
| Adjusted R <sup>2</sup>   | .706                           | .704                           | .704                           |

•  $p < .10$ ; \*\*  $p < .05$ ; \*\*\*  $p < .01$ ; \*\*\*\*  $p < .001$ .

\* The dependent variable is organizational status in 1988. Standard errors are in parentheses.

**4** Because of multicollinearity in our model, we computed the natural logs of the number of elite respondents that said the organization provided essential services or had achieved extraordinary accomplishments for 1980 and the number of nonprofit managers who thought an organization did well in the early 1980s or was favored by institutional donors for 1984. We then did principal components analyses of the logged variables and used the factor scores as our measures of organizational status. The loading on the first factor for 1980–84 was .927.

independent variables included the organization's reputation among local elites and nonprofit managers in 1980–84, our construct measuring ties to urban elites in 1980, the Bonacich centrality measure for interorganizational ties in 1984, our construct measuring organizational form (donative vs. commercial), and several control variables, including our sample selection term.<sup>4</sup> In models 2 and 3, we added interaction terms to test if the effects of network ties on status were contingent on the type of resource transactions—commercial versus donative. The results are straightforward. Having more urban elites use and/or support the organization in 1980 or having interorganizational network ties to prominent organizations in 1984 led to higher status in 1988 net of the organization's status in 1980–84. This pattern held true whether the organization was a donative, commercial, or hybrid nonprofit.

To test hypotheses 2 and 3, we used hierarchical growth curve models. At level one, multiple observations were nested in the same organization. The parameter estimates of the organizations' growth curves became the dependent variables in the level-2 models. Because we estimated growth during two periods (1980 to 1988 and 1988 to 1994), we esti-

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mated a two-piece linear growth model (Raudenbush and Bryk, 2002: 178). The level-1 growth model was

$$Y_{ti} = \pi_{0i} + \pi_{1i}a_{1ti} + \pi_{2i}a_{2ti} + e_{ti} \quad (2)$$

where  $Y_{ti}$  is the expenditures of organization  $i$  at time  $t$ ,  $\pi_{0i}$  is the expected expenditures of organization  $i$  at the midpoint (1988),  $\pi_{1i}$  is the growth rate for period 1,  $a_{1ti}$  is coded  $-8, -7, -6, -5, -4, -3, -2, -1, 0, 0, 0, 0, 0, 0, 0, 0$  and indexes the years for period 1,  $\pi_{2i}$  is the growth rate for period 2,  $a_{2ti}$  is coded  $0, 0, 0, 0, 0, 0, 0, 0, 1, 2, 3, 4, 5, 6$  and indexes the years for period 2, and  $e_{ti}$  is the random, within-organization error term for organization  $i$  at time  $t$ , conditional on that organization's change parameters.

The organizational or level-2 model took the parameter estimates from the level-1 model as the dependent variables and incorporated organizational level variables as regressors. Given three parameter estimates at level-1, the level-2 model had three equations:

$$\pi_{0i} = \beta_{00} + \sum_{q=1,q} \beta_{0q} X_{qi} + r_{0i} \quad (3)$$

$$\pi_{1i} = \beta_{10} + \sum_{q=1,q} \beta_{1q} X_{qi} + r_{1i} \quad (4)$$

$$\pi_{2i} = \beta_{20} + \sum_{q=1,q} \beta_{2q} X_{qi} + r_{2i} \quad (5)$$

where  $\pi_{0i}$ ,  $\pi_{1i}$ , and  $\pi_{2i}$  are the parameter estimates of the intercept and the two growth rates of expenditures;  $X_{qi}$  are  $q$  organizational level regressors;  $\beta_{0q}$ ,  $\beta_{1q}$ , and  $\beta_{2q}$  are the slopes describing the effects of each organizational level regressor on the intercepts and the two growth rates, and  $r_{0i}$ ,  $r_{1i}$ , and  $r_{2i}$  are the random effects or error terms.

Using the software HLM 6.0, we first estimated a random-coefficient regression model to check that the variation in the parameter estimates across the 156 organizations was significant, the error terms were normally distributed, and the correlations among the error terms for the intercept and slopes were not extreme. Using raw expenditure data, the error terms for the intercept and two linear effects were highly skewed, so we computed the  $\log(10)$  of expenditures, which corrected the problem. Full maximum likelihood for parameter estimation was used throughout the analysis, enabling us to perform likelihood ratio tests on pairs of nested models (Raudenbush et al., 2000: 80). We also used the robust standard errors to test our hypotheses.

Table 2a presents the results. Model 1 shows that there was significant growth in both periods, and incorporating these parameters significantly improved the model over the intercept-only random effects (or baseline) model. The residual variances for the two growth parameters ( $r_{1i}$  and  $r_{2i}$ ) are .00245 ( $p < .001$ ) and .00681 ( $p < .001$ ) and for the intercept ( $r_{0i}$ ) 1.10951 ( $p < .001$ ), signaling that there is a significant

Table 2a

**The Intercept- and Slopes-as-outcomes Models with Robust Standard Errors (N = 156)\***

|  | Model 1                             | Model 2                            | Model 3                         |
|--|-------------------------------------|------------------------------------|---------------------------------|
| <i>Fixed effects</i>                               |                                     |                                    |                                 |
| Mean log expenditures 1988                         |                                     |                                    |                                 |
| Intercept ( $\beta_{00}$ )                         | 5.233 <sup>****</sup><br>(.085)     | 5.300 <sup>****</sup><br>(.193)    | 5.271 <sup>****</sup><br>(.089) |
| Health_welfare 1980 ( $\beta_{01}$ )               |                                     | .171<br>(.211)                     |                                 |
| Educational 1980 ( $\beta_{02}$ )                  |                                     | -.234<br>(.225)                    |                                 |
| Cultural 1980 ( $\beta_{03}$ )                     |                                     | -.441<br>(.385)                    |                                 |
| Recreational 1980 ( $\beta_{04}$ )                 |                                     | -.889 <sup>****</sup><br>(.226)    | -.870 <sup>****</sup><br>(.152) |
| Scientific 1980 ( $\beta_{05}$ )                   |                                     | -.127<br>(.352)                    |                                 |
| Housing_urban development<br>1980 ( $\beta_{06}$ ) |                                     | .316<br>(.255)                     |                                 |
| Legal services 1980 ( $\beta_{07}$ )               |                                     | 1.199 <sup>***</sup><br>(.337)     | 1.147 <sup>****</sup><br>(.276) |
| Sample selection ( $\beta_{08}$ )                  |                                     | 1.260 <sup>**</sup><br>(1.417)     | .945 <sup>*</sup><br>(.509)     |
| Mean growth rate 1980-88                           |                                     |                                    |                                 |
| Intercept ( $\beta_{10}$ )                         | .028 <sup>****</sup><br>(.005)      | .027 <sup>**</sup><br>(.012)       | .028 <sup>****</sup><br>(.005)  |
| Health_welfare 1980 ( $\beta_{11}$ )               |                                     | .009<br>(.012)                     |                                 |
| Educational 1980 ( $\beta_{12}$ )                  |                                     | -.007<br>(.012)                    |                                 |
| Cultural 1980 ( $\beta_{13}$ )                     |                                     | -.017<br>(.018)                    |                                 |
| Recreational 1980 ( $\beta_{14}$ )                 |                                     | .004<br>(.017)                     |                                 |
| Scientific 1980 ( $\beta_{15}$ )                   |                                     | .007<br>(.013)                     |                                 |
| Housing_urban development<br>1980 ( $\beta_{16}$ ) |                                     | .004<br>(.021)                     |                                 |
| Legal services 1980 ( $\beta_{17}$ )               |                                     | .001<br>(.016)                     |                                 |
| Sample selection 1980 ( $\beta_{18}$ )             |                                     | -.009<br>(.031)                    |                                 |
| Mean growth rate 1988-94                           |                                     |                                    |                                 |
| Intercept ( $\beta_{20}$ )                         | .025 <sup>***</sup><br>(.007)       | .031<br>(.020)                     | .036 <sup>****</sup><br>(.006)  |
| Health_welfare 1988 ( $\beta_{21}$ )               |                                     | .005<br>(.020)                     |                                 |
| Educational 1988 ( $\beta_{22}$ )                  |                                     | -.046 <sup>**</sup><br>(.021)      | -.050 <sup>**</sup><br>(.019)   |
| Cultural 1988 ( $\beta_{23}$ )                     |                                     | -.005<br>(.026)                    |                                 |
| Recreational 1988 ( $\beta_{24}$ )                 |                                     | -.002<br>(.024)                    |                                 |
| Scientific 1988 ( $\beta_{25}$ )                   |                                     | .125 <sup>**</sup><br>(.049)       | .118 <sup>**</sup><br>(.045)    |
| Housing_urban development<br>1988 ( $\beta_{26}$ ) |                                     | .028<br>(.025)                     |                                 |
| Legal services 1988 ( $\beta_{27}$ )               |                                     | .018<br>(.024)                     |                                 |
| Sample selection 1988 ( $\beta_{28}$ )             |                                     | .024<br>(.043)                     |                                 |
| <i>Random effects: Variance component</i>          |                                     |                                    |                                 |
| Log expenditures in 1988 ( $r_{0i}$ )              | 1.10951 <sup>****</sup>             | .98019 <sup>****</sup>             | 1.02891 <sup>****</sup>         |
| Growth rate, 1980-88 ( $r_{1i}$ )                  | .00245 <sup>****</sup>              | .00235 <sup>****</sup>             | .00244 <sup>****</sup>          |
| Growth rate, 1988-94 ( $r_{2i}$ )                  | .00681 <sup>****</sup>              | .00625 <sup>****</sup>             | .00630 <sup>****</sup>          |
| Model comparison test                              | Model 1 vs.<br>baseline             | Model 2 vs.<br>model 1             | Model 3 vs.<br>model 2          |
| Deviance statistic                                 | 984.4<br>(10 parameters)            | 942.95<br>(34 parameters)          | 954.2<br>(15 parameters)        |
| $\Delta$ Deviance                                  | 912.1 <sup>****</sup><br>(d.f. = 7) | 41.46 <sup>**</sup><br>(d.f. = 24) | 11.27<br>(d.f. = 19)            |

\*  $p < .10$ ; \*\*  $p < .05$ ; \*\*\*  $p < .01$ ; \*\*\*\*  $p < .001$ .

\* Standard errors are in parentheses.

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amount of variation across organizations for all three parameters, thus motivating a level-2 analysis. The level-2 analysis began with a model that included dummy variables representing seven organizational service areas and a term to control for sample selection. Model 2 in table 2a shows that the estimated mean log expenditures in 1988 was 5.30 for organizations that mentioned primary activities that were other than the ones included in the model. It also shows that legal services and organizations with a higher probability of surviving the panel (for the most part, older organizations) had greater expenditures, while recreational organizations had less in expenditures.<sup>5</sup> All effects were statistically significant. While the estimated growth rate between 1980 and 1988 was positive and statistically significant, none of the activity variables explained a significant amount of variation in the slopes. That is, all types of organizations grew roughly at the same rates. The estimated growth rate for organizations that had other activities in the 1988–94 period was not statistically significant, but scientific organizations grew more dramatically between 1988 and 1994, while educational organizations grew at a slower rate. The change in the deviance statistic (comparing model 2 with model 1) was statistically significant. Looking at the random effects, there was still significant variation in the intercept and the two growth parameters. Model 2 only explained 11.7 percent of the variation in the intercept  $r_{0i}$ , 4.1 percent of the variation in the period 1 parameter,  $r_{1i}$ , and 8.2 percent of the variation in the period 2 parameter,  $r_{2i}$ .<sup>6</sup> Finally, we eliminated the variables that were not significant at the .05-level in model 2 and reestimated our model. The effects all persisted except that the two growth rate parameters were now statistically significant at the .001-level. Because the difference in the deviance statistics for models 3 and 2 was not statistically significant, we excluded the non-significant variables from our subsequent models.

Model 4 in table 2b included regressors from model 3, the control variables (niche density, niche density squared, board occupational prestige, percent of funding from government sources, environmental uncertainty, total personnel, public/community relations efforts), and the variables of substantive interest (status, dependence on donative vs. commercial inputs, elite use/support of the organization, and interorganizational network centrality). Again we used the construct for status based on the natural logs of our reputational indicators to reduce multicollinearity.

Comparing the deviance statistic for model 4 with that for model 3, there was a significant improvement in fit. Larger organizations in 1988 were in less crowded niches, had more prestigious board members, a greater percentage of funding from government sources, more personnel, more public relations efforts, higher status, greater interorganizational network centrality ( $p < .10$ ), more urban elites using/supporting the organization ( $p < .09$ ), and were heavily reliant on employees and fees/sales (i.e., commercial inputs) in 1980.<sup>7</sup>

Looking at growth rates between 1980 and 1988, organizations, on average, grew, and the growth was statistically significant at the .001 level. Commercial nonprofits grew at faster rates than donatives, and organizations that had ties to

### 5

The interpretation of the parameters is the same as standard regression analysis. The parameter estimate,  $\beta_{07}$ , says that the difference between the mean estimate for the sample, 5.30, and legal organizations was 1.20. The parameter estimate,  $\beta_{08}$ , says that for a unit increase in the probability of surviving the panel, logged expenditures increased by 1.26 units.

### 6

We took the variations in the three random effects in model 1 (see table 2a, column 1) and subtracted the variations in the three random effects in model 2. We then divided the differences by the variations in the original three random effects and multiplied by 100.

### 7

The sizes of the effects were relatively the same if we substituted variables measured in 1988 for those measured in 1980. We did not include both sets of regressors in the same model because of multicollinearity.



Table 2b

**The Intercept- and Slopes-as-outcomes Models with Robust Standard Errors\***

|  | Model 4                         | Model 5                         | Model 6                         | Model 7                         |
|--|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Fixed effects  |                                 |                                 |                                 |                                 |
| Mean log expenditures 1988   |                                 |                                 |                                 |                                 |
| Intercept ( $\beta_{00}$ )   | 5.179 <sup>***</sup><br>(.072)  | 5.183 <sup>****</sup><br>(.071) | 5.194 <sup>****</sup><br>(.073) | 5.179 <sup>****</sup><br>(.072) |
| Recreational 1980<br>( $\beta_{04}$ )  | .154<br>(.180)                  | .158<br>(.179)                  | .151<br>(.179)                  | .150<br>(.179)                  |
| Legal services 1980<br>( $\beta_{07}$ )  | .283<br>(.184)                  | .280<br>(.183)                  | .289<br>(.182)                  | .287<br>(.181)                  |
| Sample selection<br>( $\beta_{08}$ )   | .386<br>(.288)                  | .377<br>(.290)                  | .383<br>(.292)                  | .378<br>(.292)                  |
| Niche density 1980<br>( $\beta_{09}$ )   | -.051 <sup>**</sup><br>(.024)   | -.051 <sup>**</sup><br>(.024)   | -.051 <sup>**</sup><br>(.024)   | -.051 <sup>**</sup><br>(.024)   |
| Niche density 1980 <sup>2</sup><br>( $\beta_{010}$ )                                 | .007<br>(.008)                  | .007<br>(.008)                  | .006<br>(.008)                  | .007<br>(.008)                  |
| Board prestige 1980<br>( $\beta_{011}$ )   | .016 <sup>**</sup><br>(.007)    | .016 <sup>**</sup><br>(.007)    | .015 <sup>**</sup><br>(.007)    | .016 <sup>**</sup><br>(.007)    |
| Environmental uncertainty 1984<br>( $\beta_{012}$ )                                  | -.050<br>(.082)                 | -.051<br>(.081)                 | -.060<br>(.080)                 | -.050<br>(.082)                 |
| % Gov't funding<br>1980 ( $\beta_{013}$ )  | .005 <sup>**</sup><br>(.002)    | .005 <sup>**</sup><br>(.002)    | .005 <sup>**</sup><br>(.002)    | .005 <sup>**</sup><br>(.002)    |
| Total personnel 1980<br>( $\beta_{014}$ )  | .000 <sup>****</sup><br>(.000)  | .000 <sup>****</sup><br>(.000)  | .000 <sup>****</sup><br>(.000)  | .000 <sup>****</sup><br>(.000)  |
| Public relations 1984<br>( $\beta_{015}$ )   | .072 <sup>**</sup><br>(.028)    | .073 <sup>**</sup><br>(.028)    | .070 <sup>**</sup><br>(.028)    | .075 <sup>**</sup><br>(.028)    |
| IO network centrality<br>1984 ( $\beta_{016}$ )                                      | .114 <sup>*</sup><br>(.068)     | .120 <sup>*</sup><br>(.068)     | .130 <sup>*</sup><br>(.072)     | .117 <sup>*</sup><br>(.068)     |
| Ties to urban elite<br>1980 ( $\beta_{017}$ )  | .081 <sup>*</sup><br>(.048)     | .077<br>(.048)                  | .072<br>(.049)                  | .084 <sup>*</sup><br>(.044)     |
| Organizational status<br>1980 Ln ( $\beta_{018}$ )                                   | .262 <sup>***</sup><br>(.072)   | .260 <sup>***</sup><br>(.073)   | .260 <sup>***</sup><br>(.072)   | .259 <sup>***</sup><br>(.072)   |
| Donative_commercial<br>inputs 1980 ( $\beta_{019}$ )                                 | -.474 <sup>****</sup><br>(.052) | -.474 <sup>****</sup><br>(.052) | -.471 <sup>****</sup><br>(.052) | -.473 <sup>****</sup><br>(.052) |
| Donative_commercial inputs 1980 ×<br>Organizational status 1980 Ln ( $\beta_{020}$ ) | —                               | .012<br>(.044)                  | —                               | —                               |
| Donative_commercial inputs 1980 ×<br>IO network centrality 1984 ( $\beta_{021}$ )    | —                               | —                               | .040<br>(.055)                  | —                               |
| Donative_commercial inputs 1980 ×<br>Ties to urban elite 1980 ( $\beta_{022}$ )      | —                               | —                               | —                               | -.012<br>(.026)                 |
| Mean growth rate 1980–88   |                                 |                                 |                                 |                                 |
| Intercept ( $\beta_{10}$ )   | .032 <sup>****</sup><br>(.006)  | .034 <sup>****</sup><br>(.006)  | .036 <sup>****</sup><br>(.007)  | .033 <sup>****</sup><br>(.006)  |
| Niche density 1980<br>( $\beta_{19}$ )   | -.000<br>(.002)                 | -.000<br>(.002)                 | -.000<br>(.002)                 | -.001<br>(.002)                 |
| Niche density 1980 <sup>2</sup><br>( $\beta_{110}$ )                                 | -.001<br>(.001)                 | -.001<br>(.001)                 | -.001 <sup>*</sup><br>(.001)    | -.001<br>(.001)                 |
| Board prestige 1980<br>( $\beta_{111}$ )   | -.000<br>(.001)                 | -.000<br>(.001)                 | -.000<br>(.001)                 | -.000<br>(.001)                 |
| Environmental uncertainty 1984<br>( $\beta_{112}$ )                                  | -.009<br>(.006)                 | -.009<br>(.006)                 | -.011 <sup>**</sup><br>(.006)   | -.010 <sup>*</sup><br>(.006)    |
| % Gov't funding 1980<br>( $\beta_{113}$ )  | -.000<br>(.000)                 | -.000<br>(.000)                 | -.000<br>(.000)                 | -.000<br>(.000)                 |
| Total personnel 1980<br>( $\beta_{114}$ )  | -.000<br>(.000)                 | -.000<br>(.000)                 | -.000<br>(.000)                 | -.000 <sup>*</sup><br>(.000)    |
| Public relations 1984<br>( $\beta_{115}$ )   | -.001<br>(.002)                 | -.001<br>(.002)                 | -.002<br>(.002)                 | -.001<br>(.002)                 |
| IO network centrality<br>1984 ( $\beta_{116}$ )                                      | .008 <sup>*</sup><br>(.005)     | .010 <sup>**</sup><br>(.005)    | .012 <sup>**</sup><br>(.005)    | .009 <sup>*</sup><br>(.005)     |
| Ties to urban elite 1980<br>( $\beta_{117}$ )  | .000<br>(.004)                  | -.001<br>(.004)                 | -.002<br>(.004)                 | -.001<br>(.004)                 |
| Organizational status<br>1980 Ln ( $\beta_{118}$ )                                   | -.001<br>(.007)                 | -.001<br>(.007)                 | -.001<br>(.007)                 | .000<br>(.007)                  |
| Donative_commercial<br>inputs 1980 ( $\beta_{119}$ )                                 | -.007 <sup>*</sup><br>(.004)    | -.007 <sup>*</sup><br>(.004)    | -.006<br>(.004)                 | -.007 <sup>*</sup><br>(.004)    |

*(Continued on next page)*

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Table 2b (Continued)

|   | Model 4                                    | Model 5                                    | Model 6                                    | Model 7                                    |
|---|--|--|--|--|
| Donative_commercial inputs 1980 × Organizational status 1980 Ln ( $\beta_{120}$ ) | —  | .006*<br>(.003)                            | —  | —  |
| Donative_commercial inputs 1980 × IO network centrality 1984 ( $\beta_{121}$ )    | —  | —  | .011**<br>(.004)                           | —  |
| Donative_commercial inputs 1980 × Ties to urban elite 1980 ( $\beta_{122}$ )      | —  | —  | —  | .004*<br>(.002)                            |
| Mean growth rate 1988–94  |  |  |  |  |
| Intercept ( $\beta_{20}$ )  | .043****<br>(.008)                         | .043****<br>(.008)                         | .044****<br>(.008)                         | .043****<br>(.008)                         |
| Educational 1988 ( $\beta_{22}$ )   | -.046***<br>(.016)                         | -.041***<br>(.015)                         | -.043***<br>(.015)                         | -.045***<br>(.016)                         |
| Scientific 1988 ( $\beta_{25}$ )  | .102***<br>(.035)                          | .114****<br>(.030)                         | .111****<br>(.029)                         | .104***<br>(.036)                          |
| Niche density 1988 ( $\beta_{29}$ )   | -.004**<br>(.002)                          | -.003**<br>(.002)                          | -.003**<br>(.002)                          | -.004**<br>(.002)                          |
| Niche density 1988 <sup>2</sup> ( $\beta_{210}$ )                                 | -.001**<br>(.000)                          | -.001**<br>(.000)                          | -.001**<br>(.000)                          | -.001**<br>(.000)                          |
| Board prestige 1988 ( $\beta_{211}$ )   | -.001<br>(.001)                            | -.001<br>(.001)                            | -.001<br>(.001)                            | -.001<br>(.001)                            |
| Environmental uncertainty 1988 ( $\beta_{212}$ )                                  | -.015<br>(.010)                            | -.013<br>(.010)                            | -.013<br>(.010)                            | -.014<br>(.010)                            |
| % Gov't funding 1988 ( $\beta_{213}$ )  | -.000<br>(.000)                            | -.000<br>(.000)                            | -.000<br>(.000)                            | -.000<br>(.000)                            |
| Total personnel 1988 ( $\beta_{214}$ )  | .000<br>(.000)                             | .000*<br>(.000)                            | .000<br>(.000)                             | .000<br>(.000)                             |
| Public relations 1988 ( $\beta_{215}$ )   | .008***<br>(.003)                          | .009***<br>(.003)                          | .008***<br>(.002)                          | .009***<br>(.003)                          |
| IO network centrality 1988 ( $\beta_{216}$ )                                      | -.009<br>(.008)                            | -.009<br>(.007)                            | -.007<br>(.008)                            | -.010<br>(.008)                            |
| Ties to urban elite 1988 ( $\beta_{217}$ )  | -.008**<br>(.004)                          | -.012**<br>(.005)                          | -.011***<br>(.004)                         | -.014***<br>(.005)                         |
| Organizational status 1988 Ln ( $\beta_{218}$ )                                   | .006<br>(.010)                             | .008<br>(.010)                             | .007<br>(.010)                             | .008<br>(.010)                             |
| Donative_commercial inputs 1988 ( $\beta_{219}$ )                                 | -.009<br>(.006)                            | -.007<br>(.006)                            | -.007<br>(.006)                            | -.008<br>(.006)                            |
| Donative_commercial inputs 1988 × Organizational status 1988 Ln ( $\beta_{220}$ ) | —  | .013**<br>(.006)                           | —  | —  |
| Donative_commercial inputs 1988 × IO network centrality 1988 ( $\beta_{221}$ )    | —  | —  | .010**<br>(.005)                           | —  |
| Donative_commercial inputs 1988 × Ties to urban elite 1988 ( $\beta_{222}$ )      | —  | —  | —  | .012**<br>(.005)                           |
| <i>Random effects: Variance component</i>   |  |  |  |  |
| Log expenditures in 1988 ( $r_{0i}$ )   | .38742****                                 | .38763****                                 | .38713****                                 | .38718****                                 |
| Growth rate, 1980–88 ( $r_{1i}$ )   | .00232****                                 | .00232****                                 | .00228****                                 | .00231****                                 |
| Growth rate, 1988–94 ( $r_{2i}$ )   | .00547****                                 | .00537****                                 | .00545****                                 | .00543****                                 |
| <i>Model comparison tests</i>   |  |  |  |  |
| Deviance  | Model 4 vs. 3<br>764.06<br>(48 parameters) | Model 5 vs. 4<br>757.73<br>(51 parameters) | Model 6 vs. 4<br>757.37<br>(51 parameters) | Model 7 vs. 4<br>760.57<br>(51 parameters) |
| $\Delta$ Deviance (d.f.)  | 190.15****<br>(33)                         | 6.33*<br>(3)                               | 6.69*<br>(3)                               | 3.49<br>(3)                                |

\*  $p < .10$ ; \*\*  $p < .05$ ; \*\*\*  $p < .01$ ; \*\*\*\*  $p < .001$ .

\* Standard errors are in parentheses.

prominent actors in interorganizational networks grew at a faster rate than those that lacked ties, but these effects were significant at only the .10 level. Ties to urban elites had no direct effect on growth.

Looking at growth rates between 1988 and 1994, linear growth was again, on average, positive and significant at the .001 level. Educational organizations grew at a slower rate than average, scientific organizations grew at a faster rate, organizations in dense niches grew at slower rates and those in very dense niches had even lower growth rates, and those with more public relations efforts grew at a faster rate. Organizational network centrality had little effect on growth, and nonprofits that were used or supported by urban elites grew at a significantly slower rate.

Hypothesis 2 proposed that status would be a more important predictor of growth for donative nonprofits than for commercial ones. We computed a product term multiplying the construct for status reputation by the construct for organizations' inputs, i.e., being a donative or commercial nonprofit. Because variables were centered, our results are easier to interpret, and this reduced multicollinearity in our model. The difference in the deviance statistics between models 4 and 5 is significant at the .10-level, and the results seem to support hypothesis 2. In the model explaining growth between 1980 and 1988, the interaction effect is positive and significant at the .08-level; for growth between 1988 and 1994, the effect is positive and significant at the .05-level.

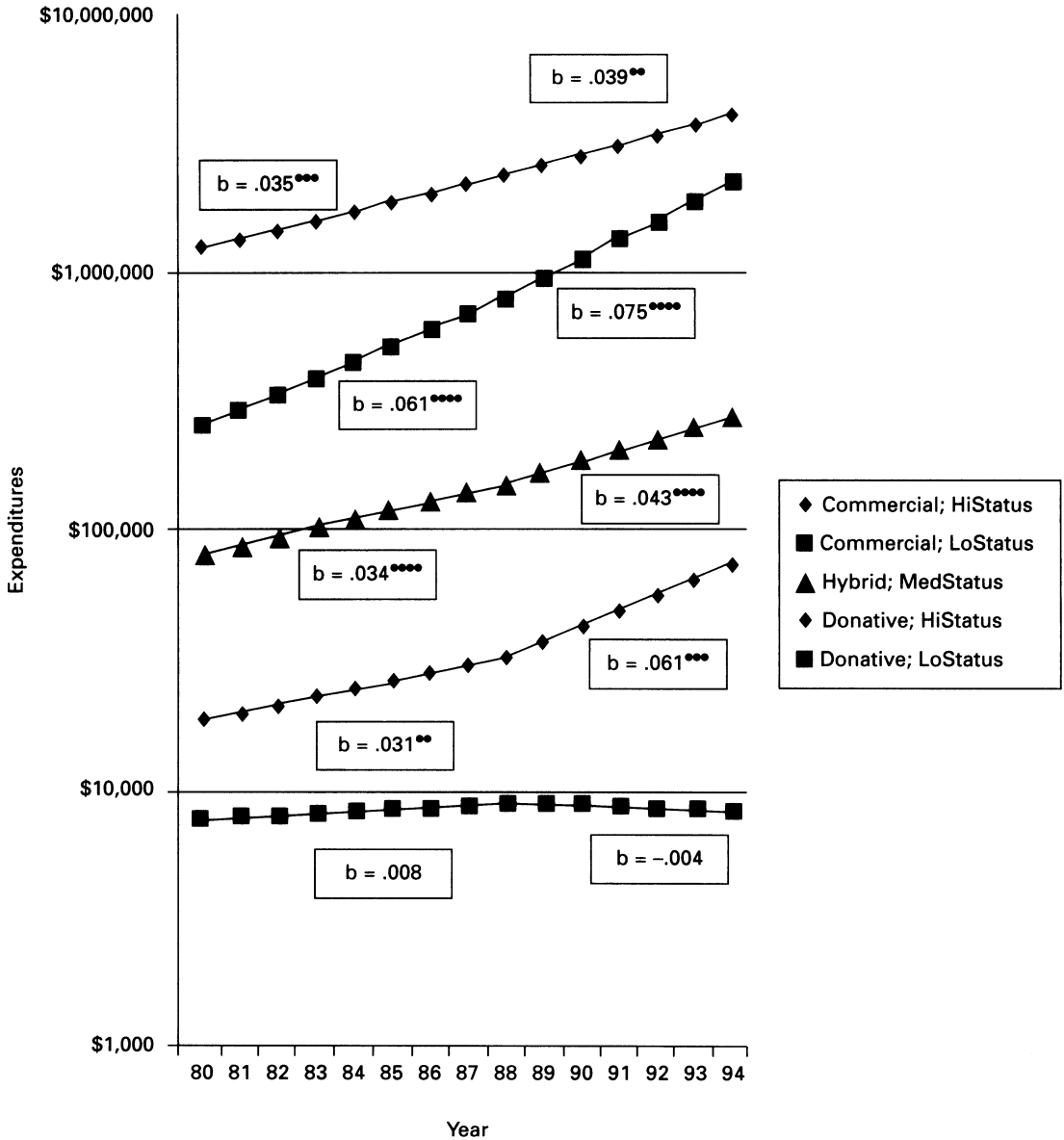
In figure 3, we graphed the growth rates of high- and low-status organizations for both donative and commercial nonprofits.<sup>8</sup> For nonprofits dependent on donations and volunteers, the growth rates of high-status organizations were positive (.031 in 1980–88 and .061 in 1988–94) and significant at the .05 and .01-levels, respectively, while the growth rates of those with low status were flatter (.008 in 1980–88 and –.004 in 1988–94). If we take a ratio of two-to-one as a rough criterion, e.g.,  $.031/.008 = 3.87$ , hypothesis 2 is supported. In the first period, the growth rates of commercial nonprofits with low status are *higher* than those with high status (.061 versus .035), and the effect is stronger in the second period (.075 versus .039), but neither ratio is equal to two-to-one. We thought that status would have no effect on commercial nonprofits' performance, and we found it had a slight negative effect.

Next we tested hypothesis 3, to see if network effects on growth are contingent on the type of nonprofit. We computed product terms multiplying the measure of interorganizational centrality by the constructs for organizations' inputs (donative versus commercial) and multiplying the measure of ties to urban elites by the construct for inputs. Model 6 in table 2b shows that the interaction term, Donative\_commercial inputs  $\times$  Interorganization network centrality, is positive and significant at the .02-level in the first period and at the .04-level in the second period. Comparing model 6 with model 4, there is again improvement in the deviance statistic; the difference is significant at the .10-level. In model 7, the interaction term, Organizational inputs  $\times$  Ties to urban elites, is positive and significant at the .06-level in the first period and the .03-level in the second period, but the change in the deviance statistic, comparing models 7 and 4, is not statistically significant.

**8** The growth rates are the simple slopes predicting the annual increase in expenditures for each period (Aiken and West, 1991). To estimate these coefficients, we fixed the construct for organizational inputs (Donative\_commercial) at two standard deviations above and below the mean and the construct for organizational status at one standard deviation above and below the mean and reestimated the model. Other regressors were already centered at their means.

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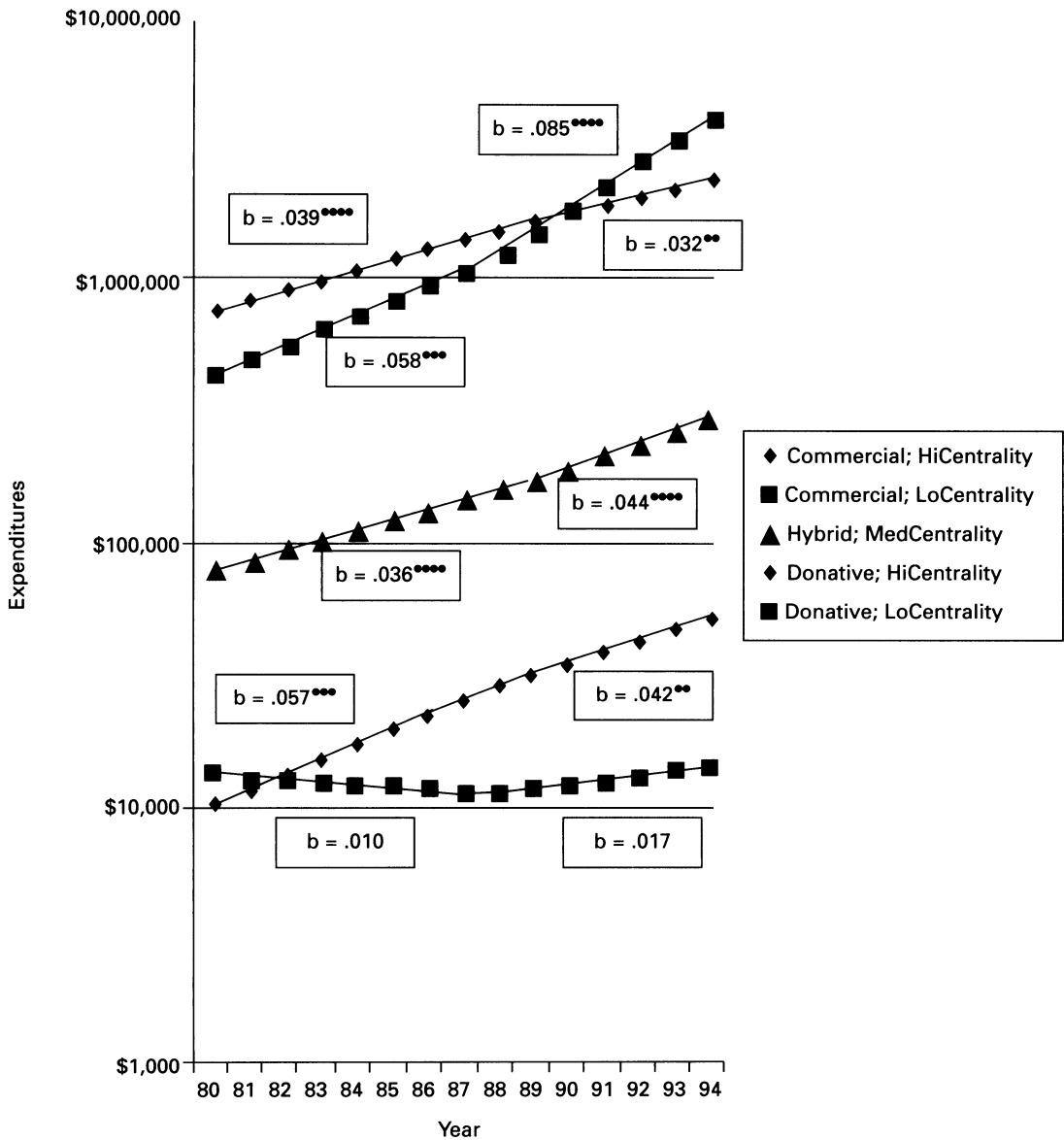
Figure 3. Growth in expenditures (log scale), 1980–94, organizational status (high = +1 s.d.; low = -1 s.d.); donative\_commercial (donative = +2 s.d.; commercial = -2 s.d.).



•  $p < .10$ ; \*\*  $p < .05$ ; \*\*\*  $p < .01$ ; \*\*\*\*  $p < .001$ .

In figure 4, we graphed the growth rates of organizations two standard deviations above and below the mean on the Donative\_commercial construct and one standard deviation above and below the mean on the Interorganizational network centrality measure. For nonprofits that were dependent on donations and volunteers, having network ties to prominent interorganizational partners was critical to growth in both periods. This was not anticipated. We had thought that network effects would be mediated by status gains. Between 1980 and 1988, the estimated growth rate of more central donative nonprofits was .057 ( $p < .001$ ), while that of peripheral donative nonprofits was  $-.010$  (n.s.); between 1988 and 1994, the growth rates of central and peripheral nonprofits

**Figure 4. Growth in expenditures (log scale), 1980–94, IO network centrality (high = +1 s.d.; low = -1 s.d.); donative\_commercial (donative = +2 s.d.; commercial = -2 s.d.).**



\*  $p < .10$ ; \*\*  $p < .05$ ; \*\*\*  $p < .01$ ; \*\*\*\*  $p < .001$ .

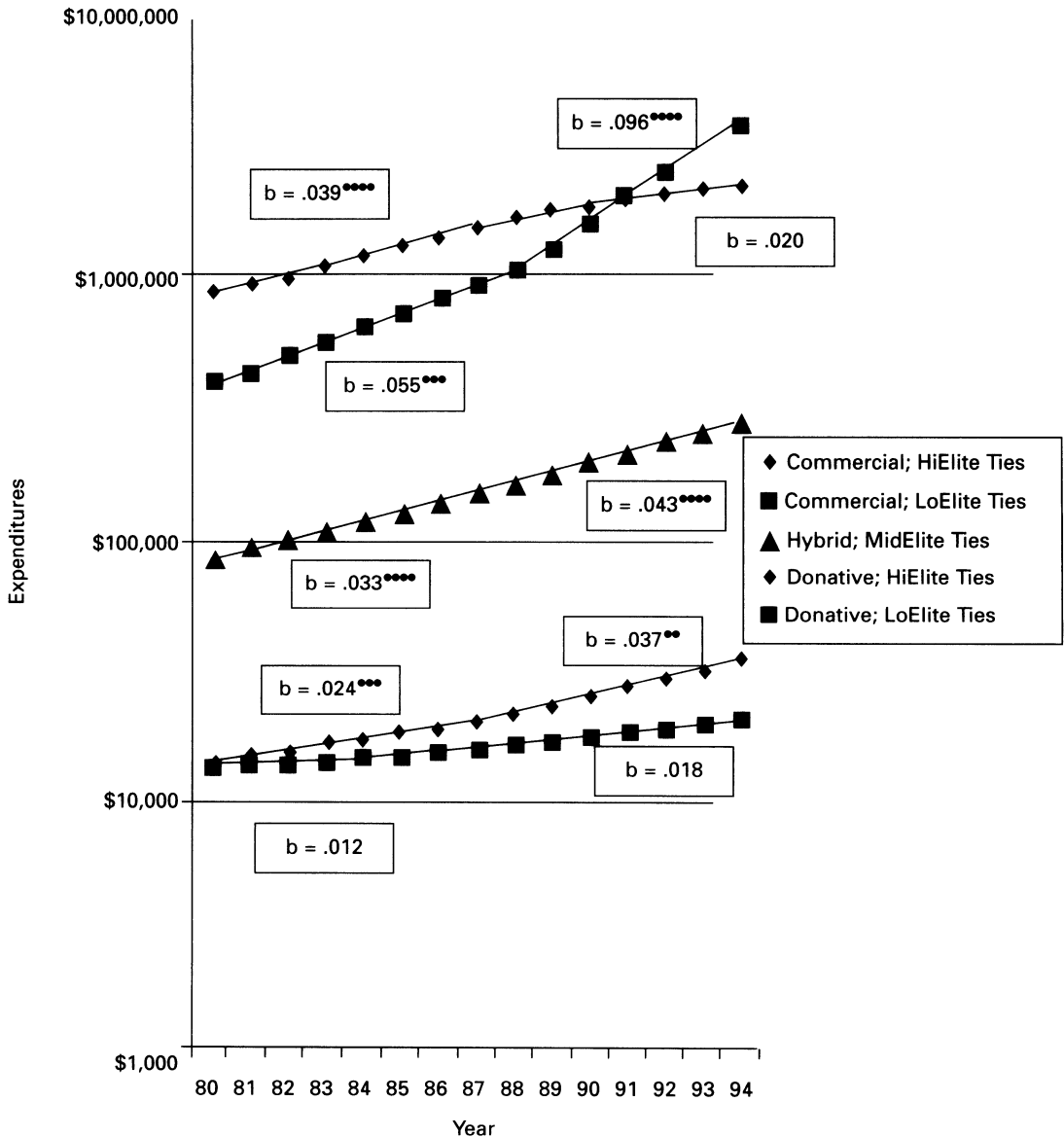
were .042 ( $p < .05$ ) and .017 (n.s.). Clearly the ratios in growth rates in both periods far exceeded two-to-one. The growth rates of commercial nonprofits that were less central in the first period were not much steeper than those more central (.058 versus .039), but in the second period, commercial nonprofits that were more peripheral grew at a much faster rate than those with extensive network ties (.085 versus .032). This partially supports hypothesis 3.

In figure 5, we graphed the growth rates of donative and commercial nonprofits that had many and few ties to urban elites. Between 1980 and 1988, the growth rates of donative nonprofits with more ties (elites using/supporting the organization were one standard deviation above the mean) was

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.024, while those with fewer ties (one standard deviation below the mean) was .012. Between 1988 and 1994 the growth rates were .037 and .018, respectively. Both ratios were 2.0 or greater. Again, networks benefit donative nonprofits independent of status. For commercial nonprofits, the pattern is similar to that in figure 4. In the first period, growth rates of commercial nonprofits that had few elite ties were only slightly higher than those with dense network ties (.055 versus .039). In the second period, the pattern became more pronounced. Commercial nonprofits with sparse networks grew at a much faster rate than those with extensive network ties (.096 versus .020). Our findings again partially support hypothesis 3.

**Figure 5. Growth in expenditures (log scale), 1980–94, ties to urban elite (high = +1 s.d.; low = -1 s.d.); donative\_commercial (donative = +2 s.d.; commercial = -2 s.d.).**



•  $p < .10$ ; \*\*  $p < .05$ ; \*\*\*  $p < .01$ ; \*\*\*\*  $p < .001$ .

Finally, we tested hypothesis 4, which argued that nonprofits that become more dependent on donations and volunteers enhance their ties to urban elites and prominent organizations over time, while those becoming more dependent on fees and employees drift to the periphery of local networks. We computed difference scores, subtracting the percent of fees/sales in 1980 and 1988 from the percent of fees/sales in 1988 and 1994, the percent of gifts/grants in 1980 and 1988 from the percent of fees/sales in 1988 and 1994, and the percent of employees in 1980 and 1988 from the percent of employees in 1988 and 1994, respectively. Table 3 shows results only for the differences in the percent of fees/sales across the two periods, because none of the other difference scores were associated with any of our dependent variables.

In model 1, we regressed ties to local urban elites on change in the percent of fees/sales between 1980 and 1988, the percent of fees/sales in 1980, and several control variables, including organizational status, interorganizational network centrality, and an instrumental variable for elite network ties in 1980, and proceeded with two-stage least squares regressions.<sup>9</sup> In models 2 and 3, we regressed the Bonacich centrality scores for interorganizational linkages for 1988 and 1994 on the same set of regressors and created new instrumental variables, replacing the lagged variables, interorganizational network centrality for 1984 and 1988. Change in the percent of fees/sales between 1980 and 1988 had no effect on ties to urban elites in 1988, but those organizations that increased their reliance on fees/sales between 1980 and 1988 and between 1988 and 1992 had smaller network centrality scores in 1988 and 1992, respectively. The first effect was significant at the .09-level, the second at the .03-level. Thus only those organizations that became more dependent on fees/sales moved to the periphery of the interorganizational exchange network, while organizations that became more dependent on gifts/grants did not move to the center of these networks, nor did changes in the percent of employees or volunteers affect network position. Our results therefore only partially support hypothesis 4.

## DISCUSSION

Nonprofit organizations in this panel, on average, grew over time. After adjusting for inflation, average growth rates during both periods were positive, linear, and statistically significant. In a separate analysis, looking at time-varying effects (available upon request), we found that growth rates were unaffected by the metro area's unemployment rates, suicide rates, or a construct that included change in Twin Cities personal income per capita, change in gross state product, Twin Cities crime rates, and Twin Cities divorce rates. If we consider that our analysis looked at logged dollar figures, the change in actual dollar amounts was quite large. This was not a period of decline for Twin Cities' nonprofits, and our results mirror the growth described by Salamon (2002), who found real-dollar revenue growth between 1977 and 1997 among public charities in the United States. In our level-2 analysis, we were somewhat successful in explaining variation in the growth rates using organizational level data. For example, our best fitting model, model 6, explained 65.1 percent of the variation in the intercepts, 6.9 per-

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We created the instrumental variable for elite network ties in 1980 because including ties to the urban elite (1980) and interorganizational network centrality (1984) as lagged variables would increase the likelihood of autocorrelated disturbances. Creating instrumental variables and proceeding with two-stage least squares regression solved this problem (Green, 1997: 800). To create the instrument, we included all the regressors in our main model plus the seven dummies for organizational activities in 1980.

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Table 3

**Two-stage Least Squares Regression Analysis Predicting Ties to Urban Elites in 1988 and IO Network Centrality in 1988 and 1994 (N = 156)\***

| Independent variable                     | Model 1            | Model 2          | Model 3           |
|--|--------------------|------------------|-------------------|
| Organizational status 1980 Ln            | .212**<br>(.088)   | .219<br>(.140)   |                   |
| Ties to urban elite 1980                 | .397***<br>(.132)  | -.043<br>(.062)  |                   |
| IO network centrality 1984               | -.033<br>(.067)    | .593**<br>(.240) |                   |
| % Employees 1980                         | -.001<br>(.001)    | .002<br>(.002)   |                   |
| % Private gifts, grants 1980             | .002<br>(.002)     | -.003<br>(.002)  |                   |
| % Fees/sales 1980                        | .001<br>(.002)     | -.005*<br>(.003) |                   |
| % Fees/sales 1988 –<br>% fees/sales 1980 | -.002<br>(.002)    | -.003*<br>(.002) |                   |
| Niche density 1980                       | .021<br>(.025)     | -.029<br>(.029)  |                   |
| Niche density 1980 <sup>2</sup>          | -.014<br>(.009)    | .011<br>(.010)   |                   |
| Board prestige 1980                      | .007<br>(.006)     | .013*<br>(.007)  |                   |
| Environmental uncertainty 1984           | -.040<br>(.071)    | .025<br>(.073)   |                   |
| % Gov't funding 1980                     | .002<br>(.002)     | -.001<br>(.002)  |                   |
| Total personnel 1980                     | -.000*<br>(.000)   | .000<br>(.000)   |                   |
| Public relations 1984                    | .022<br>(.023)     | .020<br>(.034)   |                   |
| Organizational status 1988 Ln            |                    |                  | .135<br>(.165)    |
| Ties to urban elite 1988                 |                    |                  | .057<br>(.056)    |
| IO network centrality 1988               |                    |                  | .580**<br>(.239)  |
| % Employees 1988                         |                    |                  | .003<br>(.002)    |
| % Private gifts, grants 1988             |                    |                  | .004<br>(.003)    |
| % Fees/sales 1988                        |                    |                  | .002<br>(.003)    |
| % Fees/sales 1994 –<br>% fees/sales 1988 |                    |                  | -.004**<br>(.002) |
| Niche density 1988                       |                    |                  | -.002<br>(.016)   |
| Niche density 1988 <sup>2</sup>          |                    |                  | -.001<br>(.003)   |
| Board prestige 1988                      |                    |                  | .005<br>(.007)    |
| Environmental uncertainty 1988           |                    |                  | -.011<br>(.062)   |
| % Gov't funding 1988                     |                    |                  | .004<br>(.003)    |
| Total personnel 1988                     |                    |                  | .000***<br>(.000) |
| Public relations 1988                    |                    |                  | .047**<br>(.021)  |
| Sample selection                         | .809***<br>(.305)  | .383<br>(.336)   | -.687**<br>(.306) |
| Constant                                 | .588****<br>(.133) | .096<br>(.141)   | -.293<br>(.183)   |
| R  | .666****           | .789****         | .826****          |
| R <sup>2</sup>                           | .443               | .622             | .682              |
| Adjusted R <sup>2</sup>                  | .384               | .582             | .648              |

\* p < .10; \*\* p < .05; \*\*\* p < .01; \*\*\*\* p < .001.

\* Standard errors are in parentheses. The dependent variables are as follows: for model 1, ties to urban elites 1988; for model 2, IO network centrality 1988; and for model 3, IO network centrality 1994.



cent of the variation in the growth rates for 1980–1988, and 20.0 percent of the variation in growth rates for 1984–94. The period between 1980 and 1988 was a problem for us. Thus the models can be improved upon.

In testing our hypotheses, we found that organizations with ties to prominent actors in the interorganizational network and with ties to urban elites had higher status four and eight years later. Donative nonprofits that had better reputations among urban elites and nonprofit managers grew faster over time than those that had poorer reputations. In contrast, among commercial nonprofits, status had a weak negative effect on growth. Thus we found support for both hypotheses 1 and 2.

We also found that social networks affected organizational growth differentially. Donative nonprofits realized strong returns on their elite and interorganizational network ties, even after controlling for status, in both periods. Here we replicated the findings of Galaskiewicz and Bielefeld (1998), who analyzed the same data but used growth in donations and volunteers as the dependent variable. Between 1980 and 1988, among commercial nonprofits, the growth rates of those with and without network centrality were not that different; however, between 1988 and 1994, the average growth rate of those more peripheral in the network was 2.6 times higher.

The effects of status and networks on growth among donative nonprofits were not surprising, although we hypothesized that status would mediate the effect of networks on performance. That interorganizational network ties, ties to urban elites, and status would help donative nonprofits was implicit in Meyer and Scott's (1983) discussion of technical versus institutional environments. Being affiliated with organizations prominent in the network and local elites enhanced reputations for quality and fitness, but they also enabled donative nonprofits, which operate in a more institutional context, to access funding, personnel, and other resources through other informal means, such as moral appeals, asking favors, or social exchange. Networking was not only a status strategy but had multiple benefits for donative nonprofits.

The more important finding is that commercial nonprofits with fewer network ties grew at faster rates than commercial nonprofits with more elite ties and/or interorganizational ties, especially in the period from 1988 to 1994. It was not that having interorganizational networks or ties to the elite hurt commercial nonprofits—commercial nonprofits with social capital grew at rates comparable to the average nonprofit. Rather, growth among commercial nonprofits that were on the periphery of organizational and elite networks was exceptional. This finding contributes to the theoretical work on networks and organizations in two ways. First, we identified another condition under which networks may be a hindrance, and, second, our findings suggest that analysts should focus as much on the costs of networking as the benefits.

To give substantive meaning to our findings, we identified the nonprofits that were one standard deviation below the mean on our Donative\_commercial construct and scored in the 80th percentile on measures of status, interorganizational network centrality, and ties to urban elites. In other words, these commercial

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nonprofits were central in the network of information and resource exchange, used and supported by many of the elite, and seen by the elite and nonprofit managers as important and successful. We identified four organizations. Two were private colleges, one was an agency providing a wide range of human services, and the other was a health care facility. These were major Twin Cities institutions. Their budgets in 1988 ranged from \$8 million to \$33 million (in 1994 dollars), and the percentage increases in their real (not logged) expenditures between 1988 and 1994 were between 22 percent and 64 percent. Thus these organizations were not in decline. Yet their growth rates between 1988 and 1994, using the logged scale, were only between .011 and .035 and thus relatively modest compared with commercial nonprofits that were less well embedded in the community.

At the other extreme, we had an alcohol abuse program that had a much higher growth rate between 1988 and 1994 (.064) but scored below the 20th percentile on the measures of status, interorganizational network centrality, and ties to urban elites in 1988. This organization began in 1974 as a detoxification center in an outlying suburb. By 1980, it continued to be a detoxification center but had started rehabilitation programs and a half-way house for people returning from institutional programs. It had expenditures of about \$200,000 (in 1980 dollars), a \$100 gift from a Twin Cities corporation, and about 80 percent of the revenues came from the county and the rest from program service fees. There were about 20 employees and no volunteers. In 1988, it expanded its catchment area to surrounding counties on the edge of the metropol. Its expenditures grew to about \$700,000 (in 1988 dollars), it had no donations, but county money now accounted for only half of its revenue. Program service revenues grew as a proportion of its income as it collected more fees and private insurance payments. It had now 10 volunteers and 68 employees. In 1994, the mission was the same, but it had added recreation programs, rehabilitated its care facilities, and added transportation services for clients to and from its facility. Its expenditures were \$2.7 million (in 1994 dollars). It still had no donations, and by 1993, county money was just a little over 20 percent of its revenue. In contrast, program service fees (including insurance reimbursements) accounted for about 78 percent of its revenues. It had 107 employees and no volunteers. Looking over its history during this period, the executive director in 1994 was the same as in 1980, and three of the six board members in 1992 were on the board in 1980 (a home health aide, a police chief, and a nurse). It only had one site, and it was at the same address throughout the fifteen-year period. By adding facilities on-site, being in a growing suburban county, and reaching out to other jurisdictions to serve their inebriates, the organization expanded its customer base. Interorganizational ties, links to urban elites, and a reputation among local elites and nonprofit managers were not relevant to this organization's growth.

We also examined change in network positions over time—whether organizations would attenuate ties to other community players as they became more dependent on customers and employees and less reliant on volunteers and donors. Changes

in the percent of funding from gifts/grants and the percent of employees/volunteers had no effect on network position, but organizations that became more dependent on fees/sales moved to the edge of the interorganizational exchange network between 1980 and 1988 (although the effect was marginally significant) and between 1988 and 1994. In terms of performance, in the latter period, commercial nonprofits with fewer ties to the urban elite and prominent organizations significantly outperformed commercial nonprofits with extensive ties.

The organization that experienced the most radical increase in commercial activity between 1988 and 1994 was a neighborhood housing service. In 1988, it received a significant percentage of its revenue from local private and corporate foundations and from government. By 1994, it had increased its revenue from private donors, had much less government money, and had significantly increased its revenue from servicing loans and charging development and maintenance fees. In 1988, its network centrality score was in the 79th percentile, and by 1994, it was at the 60th percentile. It was moving to the edge of the network. Apparently, as it became more dependent on earned income, network ties to other nonprofits were not as useful.

On the one hand, disengaging from community networks after going commercial may reduce unnecessary transaction costs and benefit the organization in the short run. On the other hand, severing ties to other nonprofits may lower the community's capacity to respond to local problems. Wuthnow (1998) argued that public charities are part of community-wide problem-solving networks. Public charities are not just another small business, and networking is part of the nonprofit mission (Pratt, 2001). They bring together different players in the community, including residents, government agencies, foundations, and professionals to solve common problems. In turn, this renews old networks and creates new ones. If nonprofits come to depend solely on fees or sales and become socially isolated, they may be less interested in community affairs, the charitable impulses of philanthropists, and the social policies of the state. There is no need to be interested, because they are self-sufficient. But, as Backman and Smith (2000) argued, communities' capacities to identify and respond to problems may be weakened because the networks are not in place to coordinate a response. What benefits the individual nonprofit in the short run may hurt the community in the long run.

Alternatively, it may be that nonprofits that became more heavily dependent on employees and earned income were ostracized by others in the community. That is, these organizations did not sever ties as part of a strategic effort to reduce costs, but instead they were no longer seen as attractive partners by others. If commercial nonprofits became less attentive to community needs, local philanthropists, and government policies, they had much less in common with other community based nonprofits and nobody may call them anymore. In other words, the move to the periphery of the network could be the result of others distancing themselves from the organization rather than the organization acting in a rational, self-interested manner to reduce networking costs (Westphal and Khanna, 2003).<sup>10</sup>

The public policy implications of our findings need to be acknowledged. If government policies and well-meaning business leaders continue to press nonprofits to rely more on fees and sales, two outcomes are possible. First, there are few incentives to make connections with others in the community, and this can reduce a community's problem-solving capacity. Second, there are questions about nonprofit accountability. Without shareholders or government bureaucracies to discipline their behaviors, and being unaffected by the opinions of local elites and other nonprofit managers, commercial nonprofits are accountable only to themselves. If they were truly private, like privately owned businesses or partnerships, it would not be a concern, but commercial nonprofits are public charities, enjoying the privileges of this legal status. Our concern is that commercial nonprofits are less under the control of their communities and are accountable only to themselves, and one can question whether this furthers the public good.

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## Community Nonprofits

### APPENDIX A: Pearson Correlation Coefficients

| Variable   | Min.    | Max.     | Mean   | S.D.    | 1     | 2     | 3     | 4     | 5     |
|--|---------|----------|--------|---------|-------|-------|-------|-------|-------|
| 1. Health_welfare 1980   | .00     | 1.00     | .44    | .50     |       |       |       |       |       |
| 2. Health_welfare 1988   | .00     | 1.00     | .42    | .50     | .621  |       |       |       |       |
| 3. Educational 1980  | .00     | 1.00     | .28    | .45     | -.436 | -.212 |       |       |       |
| 4. Educational 1988  | .00     | 1.00     | .28    | .45     | -.235 | -.356 | .588  |       |       |
| 5. Cultural 1980   | .00     | 1.00     | .11    | .31     | -.307 | -.296 | -.173 | -.082 |       |
| 6. Cultural 1988   | .00     | 1.00     | .13    | .34     | -.298 | -.324 | -.070 | -.155 | .789  |
| 7. Recreational 1980   | .00     | 1.00     | .08    | .27     | -.205 | -.195 | -.074 | -.074 | -.101 |
| 8. Recreational 1988   | .00     | 1.00     | .07    | .26     | -.242 | -.233 | -.117 | -.117 | -.096 |
| 9. Scientific 1980   | .00     | 1.00     | .03    | .16     | -.061 | .027  | -.012 | .079  | -.057 |
| 10. Scientific 1988  | .00     | 1.00     | .02    | .14     | -.029 | -.118 | .120  | .016  | -.049 |
| 11. Housing_urban development 1980                                     | .00     | 1.00     | .04    | .21     | -.191 | -.120 | -.136 | -.136 | -.076 |
| 12. Housing_urban development 1988                                     | .00     | 1.00     | .06    | .23     | -.107 | -.153 | -.155 | -.155 | -.087 |
| 13. Legal services 1980  | .00     | 1.00     | .03    | .16     | -.061 | .027  | -.012 | -.012 | -.057 |
| 14. Legal services 1988  | .00     | 1.00     | .04    | .19     | .026  | -.101 | .023  | .023  | -.070 |
| 15. Other 1980   | .00     | 1.00     | .06    | .25     | -.230 | -.221 | -.164 | -.048 | -.092 |
| 16. Other 1988   | .00     | 1.00     | .08    | .27     | -.060 | -.195 | -.074 | -.181 | -.101 |
| 17. Niche density 1980   | -2.93   | 5.90     | .25    | 2.18    | -.268 | -.157 | .061  | .045  | .064  |
| 18. Niche density 1988   | -8.32   | 7.22     | .64    | 3.49    | -.161 | -.237 | .143  | .168  | .071  |
| 19. Niche density 1980 squared   | .00     | 34.80    | 4.79   | 6.55    | -.071 | .018  | .454  | .338  | -.231 |
| 20. Niche density 1988 squared   | .00     | 69.00    | 12.49  | 18.11   | .352  | .441  | -.132 | -.136 | -.178 |
| 21. Board prestige 1980  | 23.90   | 81.21    | 57.33  | 7.54    | -.142 | -.068 | .188  | .128  | -.086 |
| 22. Board prestige 1988  | 29.01   | 81.26    | 56.86  | 7.67    | .093  | .073  | .151  | .064  | -.118 |
| 23. Total personnel 1980   | 1.00    | 4351.00  | 182.27 | 530.27  | .001  | .060  | .025  | -.123 | .046  |
| 24. Total personnel 1988   | 1.00    | 11252.00 | 376.93 | 1174.94 | .073  | .078  | -.023 | -.079 | .014  |
| 25. Public relations 1984  | .00     | 7.00     | 2.68   | 2.35    | .076  | .110  | -.084 | -.188 | .206  |
| 26. Public relations 1988  | .00     | 7.00     | 2.88   | 2.40    | -.020 | .027  | -.016 | -.087 | .060  |
| 27. Environmental uncertainty 1984                                     | .00     | 2.00     | .57    | .68     | .083  | -.039 | -.083 | -.035 | .098  |
| 28. Environmental uncertainty 1988                                     | .00     | 2.00     | .66    | .74     | -.001 | -.072 | -.119 | .094  | .039  |
| 29. % Gov't funding 1980   | .00     | 100.00   | 25.61  | 36.66   | .086  | .149  | -.076 | -.120 | .039  |
| 30. % Gov't funding 1988   | .00     | 100.00   | 21.92  | 32.60   | .150  | .212  | -.065 | -.112 | -.117 |
| 31. % Private gifts, grants 1980                                       | .00     | 100.00   | 34.50  | 35.70   | -.051 | -.235 | .024  | .092  | .058  |
| 32. % Private gifts, grants 1988                                       | .00     | 100.00   | 43.30  | 36.20   | -.114 | -.245 | .022  | .015  | .142  |
| 33. % Fees/sales 1980  | .00     | 100.00   | 27.10  | 34.70   | -.081 | .081  | .105  | .091  | -.023 |
| 34. % Fees/sales 1988  | .00     | 100.00   | 25.10  | 33.60   | -.072 | .048  | .054  | .129  | .008  |
| 35. % Employees 1980   | .00     | 99.70    | 37.80  | 38.10   | .158  | .216  | -.089 | -.113 | -.080 |
| 36. % Employees 1988   | .00     | 99.30    | 27.70  | 32.70   | .232  | .313  | -.019 | -.073 | -.152 |
| 37. % Private gifts, grants 1988 –<br>% private gifts, grants 1980     | -84.40  | 94.70    | 8.81   | 30.90   | -.074 | -.014 | -.003 | -.089 | .099  |
| 38. % Private gifts, grants 1994 –<br>% private gifts, grants 1988     | -99.70  | 78.30    | -2.50  | 23.40   | .040  | .056  | -.098 | -.053 | -.049 |
| 39. % Fees/sales 1988 –<br>% fees/sales 1980                           | -94.90  | 93.70    | -1.98  | 29.60   | .014  | -.040 | -.062 | .038  | .036  |
| 40. % Fees/sales 1994 –<br>% fees/sales 1988                           | -100.00 | 97.60    | 5.26   | 29.50   | .057  | .119  | -.002 | -.134 | -.071 |
| 41. Donative_commercial inputs 1980                                    | -1.91   | 1.68     | .00    | 1.00    | -.087 | -.211 | .042  | .055  | .109  |
| 42. Donative_commercial inputs 1988                                    | -2.34   | 1.35     | .00    | 1.00    | -.164 | -.273 | .009  | .022  | .151  |
| 43. Organizational status 1980   | -.55    | 5.15     | .00    | 1.00    | -.008 | .009  | -.073 | -.122 | .261  |
| 44. Organizational status 1988   | -.50    | 4.87     | .00    | 1.00    | .008  | .025  | -.053 | -.111 | .240  |
| 45. Organizational status 1980 Ln                                      | -1.32   | 2.79     | .00    | 1.00    | .054  | .077  | -.096 | -.241 | .180  |
| 46. Organizational status 1988 Ln                                      | -1.14   | 2.77     | .00    | 1.00    | .074  | .109  | -.125 | -.241 | .212  |
| 47. Donative_commercial inputs 1980<br>× Organizational status 1980 Ln | -4.03   | 4.08     | -.08   | 1.00    | -.016 | .071  | -.004 | -.107 | -.055 |
| 48. Donative_commercial inputs 1988<br>× Organizational status 1988 Ln | -3.49   | 3.06     | -.02   | .96     | .067  | .129  | -.079 | -.140 | -.008 |
| 49. Ties to urban elite 1980   | -.31    | 8.09     | .00    | 1.00    | -.153 | -.138 | -.071 | -.082 | .422  |
| 50. Ties to urban elite 1988   | -.32    | 7.62     | .00    | 1.00    | -.166 | -.149 | -.047 | -.085 | .426  |
| 51. Donative_commercial inputs 1980<br>× Ties to urban elites 1980     | -6.86   | 11.84    | .03    | 1.17    | -.016 | .028  | -.009 | -.032 | .039  |
| 52. Donative_commercial inputs 1988<br>× Ties to urban elites 1988     | -2.86   | 7.78     | .04    | .77     | .009  | .080  | -.099 | -.056 | .128  |
| 53. IO network centrality 1984   | -.86    | 4.26     | .00    | .99     | .086  | .058  | -.138 | -.188 | .124  |
| 54. IO network centrality 1988   | -.94    | 5.27     | .00    | .99     | .188  | .238  | -.102 | -.219 | .020  |
| 55. IO network centrality 1994   | -.92    | 3.38     | .00    | 1.00    | .130  | .123  | -.060 | -.151 | .052  |
| 56. Donative_commercial inputs 1980<br>× IO network centrality 1984    | -3.26   | 3.36     | -.17   | .85     | .007  | .038  | .025  | .022  | .026  |
| 57. Donative_commercial inputs 1988<br>× IO network centrality 1988    | -6.60   | 2.50     | -.11   | .92     | .079  | .109  | -.045 | -.094 | -.006 |
| 58. Sample selection term  | .31     | 1.00     | .72    | .16     | -.072 | .038  | .246  | .140  | .087  |



| Variable   | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 7. Recreational 1980   | -.111 |       |       |       |       |       |       |       |       |
| 8. Recreational 1988   | -.106 | .860  |       |       |       |       |       |       |       |
| 9. Scientific 1980   | -.062 | -.047 | -.045 |       |       |       |       |       |       |
| 10. Scientific 1988  | -.054 | -.040 | -.039 | -.023 |       |       |       |       |       |
| 11. Housing_urban development 1980                                     | -.083 | -.063 | -.060 | -.035 | -.030 |       |       |       |       |
| 12. Housing_urban development 1988                                     | -.095 | -.071 | -.068 | -.040 | -.035 | .743  |       |       |       |
| 13. Legal services 1980  | -.062 | .105  | -.045 | -.026 | -.023 | -.035 | -.040 |       |       |
| 14. Legal services 1988  | -.077 | .067  | -.055 | -.032 | -.028 | -.043 | -.049 | .600  |       |
| 15. Other 1980   | -.100 | -.076 | -.072 | -.042 | -.037 | .070  | .160  | -.042 | -.052 |
| 16. Other 1988   | -.111 | -.083 | -.080 | -.047 | -.040 | -.063 | -.071 | -.047 | -.058 |
| 17. Niche density 1980   | .015  | .125  | .109  | .038  | -.034 | -.014 | .028  | .099  | -.027 |
| 18. Niche density 1988   | .009  | -.023 | -.037 | -.049 | -.018 | -.040 | -.012 | .010  | .009  |
| 19. Niche density 1980 squared   | -.193 | -.148 | -.101 | -.115 | -.035 | -.136 | -.124 | -.035 | -.002 |
| 20. Niche density 1988 squared   | -.234 | -.168 | -.169 | .049  | -.087 | -.096 | -.114 | -.096 | -.119 |
| 21. Board prestige 1980  | -.021 | -.126 | -.110 | .097  | .139  | -.074 | -.120 | .165  | .230  |
| 22. Board prestige 1988  | -.098 | -.281 | -.273 | .028  | .150  | -.136 | -.128 | .194  | .319  |
| 23. Total personnel 1980   | .057  | .006  | .030  | -.038 | -.044 | -.066 | -.064 | -.026 | -.039 |
| 24. Total personnel 1988   | .004  | -.046 | .006  | -.039 | -.035 | -.059 | -.040 | -.005 | -.017 |
| 25. Public relations 1984  | .290  | -.176 | -.187 | .022  | -.080 | .082  | .128  | .074  | .155  |
| 26. Public relations 1988  | .139  | -.136 | -.101 | .059  | -.051 | .166  | .162  | .110  | .066  |
| 27. Environmental uncertainty 1984                                     | .015  | -.047 | -.085 | .076  | -.010 | .070  | .016  | -.018 | .027  |
| 28. Environmental uncertainty 1988                                     | -.015 | .121  | .081  | .074  | .001  | .099  | .151  | -.091 | -.089 |
| 29. % Gov't funding 1980   | .037  | -.164 | -.153 | -.003 | -.097 | .070  | .237  | .249  | .139  |
| 30. % Gov't funding 1988   | -.013 | -.158 | -.153 | .012  | -.068 | .155  | .214  | .246  | .225  |
| 31. % Private gifts, grants 1980                                       | .028  | .119  | .100  | .064  | .059  | -.108 | -.145 | -.081 | .067  |
| 32. % Private gifts, grants 1988                                       | .087  | .162  | .145  | .004  | -.015 | -.097 | -.140 | -.083 | -.049 |
| 33. % Fees/sales 1980  | -.040 | .069  | .082  | -.025 | -.063 | -.081 | -.107 | -.125 | -.154 |
| 34. % Fees/sales 1988  | -.022 | -.007 | .016  | .003  | -.063 | -.057 | -.053 | -.114 | -.142 |
| 35. % Employees 1980   | -.028 | -.186 | -.196 | .030  | .072  | -.005 | .040  | .112  | .047  |
| 36. % Employees 1988   | -.106 | -.128 | -.191 | -.033 | .038  | .018  | .015  | .020  | .059  |
| 37. % Private gifts, grants 1988 –<br>% private gifts, grants 1980     | .070  | .051  | .054  | -.069 | -.086 | .011  | .004  | -.003 | -.135 |
| 38. % Private gifts, grants 1994 –<br>% private gifts, grants 1988     | .020  | -.003 | .049  | .125  | .022  | -.011 | .007  | .023  | .072  |
| 39. % Fees/sales 1988 –<br>% fees/sales 1980                           | .022  | -.089 | -.078 | .033  | .003  | .030  | .064  | .018  | .020  |
| 40. % Fees/sales 1994 –<br>% fees/sales 1988                           | -.040 | .034  | -.033 | -.101 | -.003 | .126  | .068  | -.020 | .001  |
| 41. Donative_commercial inputs 1980                                    | .079  | .204  | .201  | -.004 | -.061 | -.037 | -.055 | -.071 | .043  |
| 42. Donative_commercial inputs 1988                                    | .111  | .149  | .181  | .034  | -.049 | -.024 | -.034 | .000  | -.007 |
| 43. Organizational status 1980   | .217  | -.108 | -.083 | -.012 | .017  | -.063 | -.077 | -.002 | .025  |
| 44. Organizational status 1988   | .233  | -.110 | -.085 | -.010 | -.013 | -.072 | -.091 | -.032 | .007  |
| 45. Organizational status 1980 Ln                                      | .123  | -.117 | -.106 | .053  | .123  | -.021 | -.036 | .050  | .105  |
| 46. Organizational status 1988 Ln                                      | .186  | -.139 | -.101 | .035  | .061  | -.045 | -.078 | .042  | .122  |
| 47. Donative_commercial inputs 1980<br>× Organizational status 1980 Ln | -.061 | -.003 | .024  | .048  | -.042 | .035  | .061  | .022  | .046  |
| 48. Donative_commercial inputs 1988<br>× Organizational status 1988 Ln | .006  | -.100 | -.053 | .048  | -.076 | -.019 | -.013 | -.020 | .029  |
| 49. Ties to urban elite 1980   | .377  | -.074 | -.016 | -.006 | -.008 | -.062 | -.069 | -.038 | -.036 |
| 50. Ties to urban elite 1988   | .432  | -.078 | -.014 | -.009 | -.019 | -.062 | -.073 | -.034 | -.044 |
| 51. Donative_commercial inputs 1980<br>× Ties to urban elites 1980     | .041  | -.046 | .011  | .036  | -.012 | -.001 | .005  | .013  | .001  |
| 52. Donative_commercial inputs 1988<br>× Ties to urban elites 1988     | .049  | -.064 | -.018 | .034  | -.026 | -.001 | .001  | -.006 | -.001 |
| 53. IO network centrality 1984   | .136  | -.170 | -.197 | -.057 | .062  | .133  | .089  | .032  | .057  |
| 54. IO network centrality 1988   | .023  | -.159 | -.159 | -.044 | .019  | .003  | -.036 | .084  | .115  |
| 55. IO network centrality 1994   | .065  | -.192 | -.216 | .021  | -.034 | .059  | .027  | .089  | .169  |
| 56. Donative_commercial inputs 1980<br>× IO network centrality 1984    | .006  | -.082 | -.105 | -.013 | -.080 | -.026 | .001  | .067  | .050  |
| 57. Donative_commercial inputs 1988<br>× IO network centrality 1988    | -.007 | -.103 | -.071 | -.028 | -.072 | -.022 | .022  | .003  | .019  |
| 58. Sample selection term  | .050  | .141  | .140  | -.040 | -.024 | -.350 | -.295 | -.100 | -.101 |

**Community Nonprofits**

| Variable   | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 16. Other 1988   | .514  |       |       |       |       |       |       |       |       |
| 17. Niche density 1980   | .034  | -.014 |       |       |       |       |       |       |       |
| 18. Niche density 1988   | .128  | .172  | .003  |       |       |       |       |       |       |
| 19. Niche density 1980 squared   | -.146 | -.085 | .290  | -.050 |       |       |       |       |       |
| 20. Niche density 1988 squared   | -.079 | -.083 | -.278 | -.308 | .033  |       |       |       |       |
| 21. Board prestige 1980  | .030  | .024  | -.006 | .014  | .049  | -.077 |       |       |       |
| 22. Board prestige 1988  | -.025 | .025  | -.071 | .138  | .071  | -.059 | .435  |       |       |
| 23. Total personnel 1980   | -.082 | .053  | .013  | .099  | .014  | .018  | .008  | .006  |       |
| 24. Total personnel 1988   | -.074 | .013  | -.087 | .113  | .010  | .028  | .077  | .041  | .816  |
| 25. Public relations 1984  | -.087 | -.125 | -.054 | -.034 | -.139 | -.154 | -.031 | .180  | .092  |
| 26. Public relations 1988  | .002  | -.015 | -.057 | -.034 | -.077 | -.161 | .048  | .055  | .109  |
| 27. Environmental uncertainty 1984                                     | -.056 | .115  | -.096 | -.033 | -.147 | -.002 | -.130 | -.022 | -.004 |
| 28. Environmental uncertainty 1988                                     | .085  | -.031 | -.104 | -.012 | -.187 | -.034 | -.039 | -.032 | -.215 |
| 29. % Gov't funding 1980   | .003  | -.136 | .147  | .061  | -.192 | -.227 | -.010 | .119  | -.090 |
| 30. % Gov't funding 1988   | -.029 | -.143 | -.003 | -.037 | -.126 | -.290 | .009  | .125  | -.064 |
| 31. % Private gifts, grants 1980                                       | .066  | .188  | -.406 | -.176 | -.068 | .249  | -.034 | -.153 | -.014 |
| 32. % Private gifts, grants 1988                                       | .070  | .235  | -.235 | -.184 | -.179 | .315  | -.077 | -.144 | -.037 |
| 33. % Fees/sales 1980  | -.092 | -.167 | .201  | .181  | .403  | -.019 | .048  | .106  | .149  |
| 34. % Fees/sales 1988  | -.079 | -.168 | .239  | .291  | .366  | .007  | .097  | .076  | .110  |
| 35. % Employees 1980   | .092  | -.064 | .044  | .087  | .044  | -.033 | .159  | .295  | -.030 |
| 36. % Employees 1988   | -.045 | -.110 | -.079 | .242  | .001  | -.021 | .072  | .304  | .040  |
| 37. % Private gifts, grants 1988 –<br>% private gifts, grants 1980     | .005  | .058  | .195  | -.011 | -.131 | .080  | -.051 | .008  | -.027 |
| 38. % Private gifts, grants 1994 –<br>% private gifts, grants 1988     | -.059 | -.011 | -.017 | -.029 | -.072 | -.133 | .055  | -.047 | -.099 |
| 39. % Fees/sales 1988 –<br>% fees/sales 1980                           | .018  | .006  | .035  | .118  | -.058 | .030  | .053  | -.039 | -.050 |
| 40. % Fees/sales 1994 –<br>% fees/sales 1988                           | -.003 | -.054 | -.049 | -.077 | -.105 | -.037 | -.098 | -.049 | .065  |
| 41. Donative_commercial inputs 1980                                    | -.080 | .088  | -.210 | -.223 | -.146 | .088  | -.154 | -.312 | .031  |
| 42. Donative_commercial inputs 1988                                    | .020  | .141  | -.098 | -.306 | -.160 | .116  | -.101 | -.301 | -.043 |
| 43. Organizational status 1980   | -.064 | -.051 | -.001 | -.087 | -.045 | .004  | .096  | .078  | .518  |
| 44. Organizational status 1988   | -.080 | -.060 | -.021 | -.108 | -.046 | -.029 | .102  | .085  | .450  |
| 45. Organizational status 1980 Ln                                      | -.054 | .004  | -.024 | -.143 | -.048 | -.009 | .107  | .120  | .419  |
| 46. Organizational status 1988 Ln                                      | -.069 | -.018 | -.051 | -.194 | -.135 | -.020 | .093  | .126  | .410  |
| 47. Donative_commercial inputs 1980<br>× Organizational status 1980 Ln | .005  | .015  | .102  | -.080 | .061  | .034  | .059  | .055  | -.060 |
| 48. Donative_commercial inputs 1988<br>× Organizational status 1988 Ln | .002  | .034  | .070  | -.080 | .116  | .140  | .010  | .103  | -.128 |
| 49. Ties to urban elite 1980   | .003  | -.001 | .005  | -.014 | -.083 | -.087 | .042  | .048  | .426  |
| 50. Ties to urban elite 1988   | -.032 | -.038 | -.001 | -.034 | -.085 | -.110 | .054  | .062  | .369  |
| 51. Donative_commercial inputs 1980<br>× Ties to urban elites 1980     | -.017 | -.033 | .066  | -.004 | .032  | -.017 | .017  | .076  | .263  |
| 52. Donative_commercial inputs 1988<br>× Ties to urban elites 1988     | .006  | -.037 | .061  | .064  | .010  | -.024 | .007  | .101  | .266  |
| 53. IO network centrality 1984   | .040  | .028  | .034  | -.134 | -.167 | -.076 | .138  | .185  | .284  |
| 54. IO network centrality 1988   | -.027 | .025  | -.021 | -.160 | -.105 | -.053 | .211  | .240  | .256  |
| 55. IO network centrality 1994   | -.070 | .043  | -.076 | -.086 | -.158 | -.051 | .189  | .258  | .320  |
| 56. Donative_commercial inputs 1980<br>× IO network centrality 1984    | -.066 | -.001 | .041  | .057  | .184  | .045  | .023  | .119  | -.048 |
| 57. Donative_commercial inputs 1988<br>× IO network centrality 1988    | -.047 | -.019 | .022  | -.093 | .148  | .179  | .016  | .100  | -.042 |
| 58. Sample selection term  | -.065 | -.008 | .041  | .076  | .034  | -.023 | -.007 | -.139 | .201  |
| Variable   | 24    | 25    | 26    | 27    | 28    | 29    | 30    | 31    | 32    |
| 25. Public relations 1984  | .091  |       |       |       |       |       |       |       |       |
| 26. Public relations 1988  | .078  | .227  |       |       |       |       |       |       |       |
| 27. Environmental uncertainty 1984                                     | .021  | .021  | .160  |       |       |       |       |       |       |
| 28. Environmental uncertainty 1988                                     | -.168 | -.048 | .050  | .161  |       |       |       |       |       |
| 29. % Gov't funding 1980   | -.045 | .373  | .161  | .023  | -.037 |       |       |       |       |
| 30. % Gov't funding 1988   | -.049 | .346  | .329  | .123  | -.007 | .701  |       |       |       |
| 31. % Private gifts, grants 1980                                       | -.029 | -.128 | -.113 | .060  | .000  | -.453 | -.344 |       |       |
| 32. % Private gifts, grants 1988                                       | -.073 | -.186 | -.106 | .014  | .056  | -.399 | -.492 | .631  |       |
| 33. % Fees/sales 1980  | .113  | -.134 | -.108 | -.134 | -.015 | -.367 | -.278 | -.434 | -.289 |
| 34. % Fees/sales 1988  | .145  | -.014 | -.176 | -.116 | -.063 | -.119 | -.330 | -.319 | -.519 |
| 35. % Employees 1980   | .062  | .218  | .218  | .033  | -.053 | .307  | .378  | -.327 | -.386 |
| 36. % Employees 1988   | .008  | .269  | .132  | -.040 | -.135 | .277  | .392  | -.364 | -.480 |
| 37. % Private gifts, grants 1988 –<br>% private gifts, grants 1980     | -.052 | -.069 | .006  | -.054 | .065  | .058  | -.178 | -.419 | .440  |

| Variable   | 24    | 25    | 26    | 27    | 28    | 29    | 30    | 31    | 32    |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 38. % Private gifts, grants 1994 –<br>% private gifts, grants 1988     | -.029 | -.028 | -.052 | .049  | .056  | .144  | .191  | -.091 | -.353 |
| 39. % Fees/sales 1988 – % fees/sales 1980                              | .031  | .141  | -.073 | .025  | -.054 | .296  | -.047 | .147  | -.249 |
| 40. % Fees/sales 1994 – % fees/sales 1988                              | .000  | .071  | .213  | .033  | -.080 | .043  | .219  | -.061 | .114  |
| 41. Donative_commercial inputs 1980                                    | -.044 | -.113 | -.161 | -.006 | .012  | -.256 | -.300 | .645  | .526  |
| 42. Donative_commercial inputs 1988                                    | -.040 | -.201 | -.043 | .054  | .111  | -.260 | -.308 | .520  | .756  |
| 43. Organizational status 1980   | .483  | .190  | .263  | .087  | -.162 | -.091 | -.070 | .064  | -.016 |
| 44. Organizational status 1988   | .479  | .233  | .260  | .116  | -.181 | -.081 | -.038 | .076  | -.018 |
| 45. Organizational status 1980 Ln                                      | .411  | .217  | .271  | .066  | -.166 | -.053 | -.049 | .046  | -.022 |
| 46. Organizational status 1988 Ln                                      | .430  | .274  | .359  | .121  | -.146 | -.021 | .048  | .040  | -.003 |
| 47. Donative_commercial inputs 1980<br>× Organizational status 1980 Ln | -.141 | .010  | .035  | .019  | -.085 | .179  | .088  | -.058 | -.014 |
| 48. Donative_commercial inputs 1988<br>× Organizational status 1988 Ln | -.150 | -.040 | -.073 | -.026 | -.048 | .072  | .002  | -.029 | -.098 |
| 49. Ties to urban elite 1980   | .365  | .142  | .211  | .148  | -.088 | -.100 | -.091 | .124  | .047  |
| 50. Ties to urban elite 1988   | .332  | .181  | .231  | .146  | -.086 | -.045 | -.045 | .117  | .021  |
| 51. Donative_commercial inputs 1980<br>× Ties to urban elites 1980     | .068  | .091  | .095  | .108  | -.092 | .081  | .096  | .016  | -.004 |
| 52. Donative_commercial inputs 1988<br>× Ties to urban elites 1988     | .156  | .108  | .040  | .130  | -.081 | .057  | .067  | -.006 | -.118 |
| 53. IO network centrality 1984   | .228  | .424  | .265  | .085  | -.102 | .195  | .155  | -.052 | -.081 |
| 54. IO network centrality 1988   | .269  | .366  | .294  | .069  | -.084 | .176  | .245  | -.084 | -.099 |
| 55. IO network centrality 1994   | .387  | .375  | .346  | .157  | -.102 | .243  | .234  | -.079 | -.101 |
| 56. Donative_commercial inputs 1980<br>× IO network centrality 1984    | -.110 | .063  | .049  | .114  | -.046 | .035  | .000  | -.094 | -.056 |
| 57. Donative_commercial inputs 1988<br>× IO network centrality 1988    | .022  | -.014 | -.062 | .071  | -.048 | .090  | -.031 | -.001 | -.117 |
| 58. Sample selection term  | .186  | -.029 | .107  | -.121 | -.024 | -.220 | -.224 | .058  | .065  |
| Variable   | 33    | 34    | 35    | 36    | 37    | 38    | 39    | 40    | 41    |
| 34. % Fees/sales 1988  | .624  |       |       |       |       |       |       |       |       |
| 35. % Employees 1980   | .164  | .188  |       |       |       |       |       |       |       |
| 36. % Employees 1988   | .235  | .252  | .635  |       |       |       |       |       |       |
| 37. % Private gifts, grants 1988 –<br>% private gifts, grants 1980     | .164  | -.238 | -.073 | -.141 |       |       |       |       |       |
| 38. % Private gifts, grants 1994 –<br>% private gifts, grants 1988     | -.039 | .177  | .042  | .100  | -.307 |       |       |       |       |
| 39. % Fees/sales 1988 – % fees/sales 1980                              | -.465 | .401  | .021  | .010  | -.462 | .247  |       |       |       |
| 40. % Fees/sales 1994 – % fees/sales 1988                              | -.032 | -.414 | .079  | .064  | .204  | -.526 | -.432 |       |       |
| 41. Donative_commercial inputs 1980                                    | -.460 | -.358 | -.869 | -.629 | -.131 | -.049 | .134  | -.064 |       |
| 42. Donative_commercial inputs 1988                                    | -.395 | -.580 | -.567 | -.875 | .284  | -.228 | -.193 | .138  | .674  |
| 43. Organizational status 1980   | .059  | .069  | .123  | .064  | -.093 | -.015 | .009  | .029  | -.046 |
| 44. Organizational status 1988   | .030  | .050  | .127  | .063  | -.109 | -.027 | .022  | .033  | -.039 |
| 45. Organizational status 1980 Ln                                      | .065  | .027  | .174  | .077  | -.078 | -.030 | -.045 | .154  | -.080 |
| 46. Organizational status 1988 Ln                                      | .007  | -.058 | .204  | .103  | -.050 | -.032 | -.075 | .157  | -.099 |
| 47. Donative_commercial inputs 1980 ×<br>Organizational status 1980 Ln | -.073 | -.063 | .049  | .038  | .051  | -.034 | .014  | .077  | -.059 |
| 48. Donative_commercial inputs 1988 ×<br>Organizational status 1988 Ln | .027  | .143  | .094  | .044  | -.080 | .006  | .130  | -.054 | -.075 |
| 49. Ties to urban elite 1980   | .000  | .021  | .048  | -.047 | -.088 | -.013 | .025  | .000  | .029  |
| 50. Ties to urban elite 1988   | -.041 | .013  | .043  | -.039 | -.110 | -.012 | .063  | -.022 | .042  |
| 51. Donative_commercial inputs 1980 ×<br>Ties to urban elites 1980     | -.058 | -.054 | -.004 | .017  | -.023 | -.070 | .007  | .082  | .024  |
| 52. Donative_commercial inputs 1988 ×<br>Ties to urban elites 1988     | .024  | .099  | .061  | .105  | -.131 | .006  | .084  | .013  | -.045 |
| 53. IO network centrality 1984   | -.096 | -.041 | .295  | .203  | -.035 | -.002 | .065  | .089  | -.171 |
| 54. IO network centrality 1988   | -.072 | -.085 | .329  | .204  | -.019 | .023  | -.011 | .097  | -.202 |
| 55. IO network centrality 1994   | -.095 | -.026 | .298  | .246  | -.027 | .066  | .081  | -.011 | -.185 |
| 56. Donative_commercial inputs 1980 ×<br>IO network centrality 1984    | .118  | .112  | .042  | .066  | .043  | -.105 | -.011 | -.041 | -.103 |
| 57. Donative_commercial inputs 1988 ×<br>IO network centrality 1988    | .017  | .200  | .124  | .011  | -.135 | .016  | .207  | -.056 | -.089 |
| 58. Sample selection term  | .150  | .094  | -.043 | -.101 | .008  | -.155 | -.069 | .053  | .039  |
| Variable   | 42    | 43    | 44    | 45    | 46    | 47    | 48    | 49    | 50    |
| 43. Organizational status 1980   | -.047 |       |       |       |       |       |       |       |       |
| 44. Organizational status 1988   | -.038 | .914  |       |       |       |       |       |       |       |
| 45. Organizational status 1980 Ln                                      | -.043 | .849  | .765  |       |       |       |       |       |       |
| 46. Organizational status 1988 Ln                                      | -.024 | .798  | .846  | .862  |       |       |       |       |       |

### Community Nonprofits

| Variable   | 42    | 43    | 44    | 45    | 46    | 47    | 48    | 49   | 50   |
|--|-------|-------|-------|-------|-------|-------|-------|------|------|
| 47. Donative_commercial inputs 1980<br>× Organizational status 1980 Ln | -.014 | -.028 | .016  | .019  | .021  |       |       |      |      |
| 48. Donative_commercial inputs 1988 ×<br>Organizational status 1988 Ln | -.111 | -.097 | -.063 | -.046 | -.058 | .681  |       |      |      |
| 49. Ties to urban elite 1980   | .048  | .793  | .710  | .578  | .566  | .105  | .115  |      |      |
| 50. Ties to urban elite 1988   | .042  | .759  | .748  | .542  | .578  | .147  | .123  | .950 |      |
| 51. Donative_commercial inputs 1980 ×<br>Ties to urban elites 1980     | .009  | .177  | .199  | .090  | .101  | .609  | .411  | .321 | .358 |
| 52. Donative_commercial inputs 1988 ×<br>Ties to urban elites 1988     | -.139 | .301  | .254  | .163  | .153  | .507  | .517  | .529 | .474 |
| 53. IO network centrality 1984   | -.130 | .625  | .588  | .629  | .620  | -.055 | -.113 | .374 | .402 |
| 54. IO network centrality 1988   | -.111 | .574  | .639  | .612  | .674  | .028  | -.050 | .317 | .359 |
| 55. IO network centrality 1994   | -.165 | .588  | .625  | .591  | .649  | .059  | -.001 | .371 | .416 |
| 56. Donative_commercial inputs 1980 ×<br>IO network centrality 1984    | -.100 | -.026 | -.024 | -.064 | -.106 | .647  | .551  | .116 | .125 |
| 57. Donative_commercial inputs 1988 ×<br>IO network centrality 1988    | -.110 | -.032 | -.062 | -.009 | -.051 | .434  | .660  | .130 | .119 |
| 58. Sample selection term  | .076  | .140  | .196  | .143  | .168  | -.129 | -.140 | .077 | .098 |
| Variable   | 51    | 52    | 53    | 54    | 55    | 56    | 57    |      |      |
| 52. Donative_commercial inputs 1988 ×<br>Ties to urban elites 1988     | .832  |       |       |       |       |       |       |      |      |
| 53. IO network centrality 1984   | .085  | .117  |       |       |       |       |       |      |      |
| 54. IO network centrality 1988   | .129  | .144  | .782  |       |       |       |       |      |      |
| 55. IO network centrality 1994   | .153  | .196  | .730  | .799  |       |       |       |      |      |
| 56. Donative_commercial inputs 1980 ×<br>IO network centrality 1984    | .471  | .447  | -.197 | -.119 | -.006 |       |       |      |      |
| 57. Donative_commercial inputs 1988 ×<br>IO network centrality 1988    | .242  | .334  | -.129 | -.149 | -.021 | .544  |       |      |      |
| 58. Sample selection term  | -.052 | -.082 | -.007 | .060  | -.032 | -.138 | -.170 |      |      |

### APPENDIX B: Measure of Niche Density

To measure the density or crowding in the niches of 156 surviving organizations, it was necessary to compute niche density scores using data on a cross-section of nonprofits in both 1980 and 1988. This required that we use all 229 organizations in 1980 to measure crowding and that we draw a new random sample of charities for 1988. Our sample in 1988 included 230 charities. Details on the sample are in Galaskiewicz and Bielefeld (1998: chap. 2).

For all the organizations in the 1980 and 1988 samples, we computed the proportions of total income that came from four different sources in 1980,  $r_{ij}$ , where  $i$  is the organization, and  $j$  is the revenue source: commercial, donated, public, and other. Six organizations reported no income in 1980 and three in 1988; two had missing data on income streams in 1980 and ten in 1988. We also computed the proportion of organizational effort invested in the eight service areas for organizations in both the 1980 and 1988 samples. Because organizations often cited more than one activity as "primary," we divided the binary score for each activity (0 = no/1 = yes) by the number of activities cited as primary,  $s_{ik}$ , where  $i$  is the organization, and  $k$  is one of eight activities. Our proportions were based on the number of service areas cited by the organization's respondent as most important. If the respondent said that only education was most important, 100 percent of the nonprofit's effort was devoted to education and 0 percent was allocated to the other seven areas. If the respondent said education and culture, then 50 percent of the nonprofit's effort was devoted to education, 50 percent to culture, and 0 percent to the other six areas.

For each year, we created a four-by-eight table in which the rows were the four funding streams and the columns were the eight service areas (see table B.1 for the 1980 table). We then assigned each of the 229 and 230 organizations in the two samples to one of the 32 cells, excluding organizations that had either no income or missing data on income or no services. This reduced our  $N$  to 217 in 1980 and 216 in 1988. If an organization received all its funding from, say, donations and provided only educational services, then it was assigned to row one, column two. If it received funding from multiple sources and/or engaged in more than one service area, it had to be split proportionately across the respective cells in the table. For example, if it received 90 percent of its funding from commercial income sources

Table B.1

**Cross-tabulation of Revenue Sources and Primary Service Areas with Frequencies (and Residuals), 1980 (N = 229)**

| Funding sources           | Primary Services |                   |                |                |                 |                |                        | Row total       | No activity   |       |
|---------------------------|------------------|-------------------|----------------|----------------|-----------------|----------------|------------------------|-----------------|---------------|-------|
|                           | Health_welfare   | Legal_Educational | Legal_services | Recreational   | Cultural        | Scientific     | Housing_urban_develop. |                 |               | Other |
| Private gifts & grants    | 28.22<br>(-2.93) | 19.98<br>(-2.84)  | .80<br>(-.97)  | 5.94<br>(1.46) | 10.49<br>(1.60) | 4.35<br>(1.39) | 4.38<br>(.30)          | 6.26<br>(2.00)  | 80.4<br>(37%) | 0     |
| Public grants & contracts | 22.28<br>(2.63)  | 11.74<br>(-2.66)  | 3.67<br>(2.56) | .56<br>(-2.27) | 6.93<br>(1.32)  | .60<br>(-1.27) | 2.77<br>(.20)          | 2.18<br>(-.51)  | 50.7<br>(23%) | .5    |
| Fees for service          | 20.56<br>(-2.21) | 22.59<br>(5.90)   | .25<br>(-1.04) | 5.29<br>(2.01) | 5.67<br>(-.83)  | 1.93<br>(-.24) | 1.02<br>(-1.95)        | 1.48<br>(-1.63) | 58.8<br>(27%) | 2.5   |
| Other                     | 13.02<br>(2.52)  | 7.29<br>(-.40)    | .04<br>(-.55)  | .32<br>(-1.20) | .92<br>(-2.08)  | 1.12<br>(.12)  | 2.83<br>(1.46)         | 1.57<br>(.14)   | 27.1<br>(13%) | 1     |
| Total                     | 84.1<br>(39%)    | 61.6<br>(28%)     | 4.8<br>(2%)    | 12.1<br>(6%)   | 24.0<br>(11%)   | 8.0<br>(4%)    | 11.0<br>(5%)           | 11.5<br>(5%)    | 217<br>(100%) |       |
| No income                 | 0                | 1                 | 0              | 1              | 1               | 0              | 1                      | 0               |               | 2     |
| Missing income data       | 0                | 1                 | 0              | 0              | 0               | 0              | 1                      | 0               |               | 0     |

and 10 percent from government sources and engaged in both educational and legal activities, it had to be distributed across four cells in the table in proportion to its involvement in the four niches. More formally,

$$f_{jk} = \sum_{j=1,4} \sum_{k=1,8} (r_{ij} s_{ik}) \tag{B1}$$

where  $f_{jk}$  is the count in cell  $j$  and  $k$ ,  $r_{ij}$  is the proportion of an organization's revenue from row/type  $j$ , and  $s_{ik}$  is the proportion of effort allocated to service  $k$ .

To measure the density or crowding in each of these 32 niches, we treated table B.1 and its 1988 equivalent as a contingency table, estimated a log linear model with main effects only, and computed the residuals. The likelihood ratio chi-square was 25.64 (d.f. = 21;  $p = .221$ ) for 1980 and 38.49 (d.f. = 21;  $p = .011$ ) for 1988. This tells us that row and column marginals could explain the frequencies in the 1980 table but not in the 1988 table, suggesting more crowding in 1988 than in 1980. The simple residual (observed - expected counts),  $p_{jk}$ , was used to measure niche density. Positive residuals signaled crowding; negative residuals signaled sparseness.

Finally, we assigned a density score to each surviving panel organization depending on where it was positioned in our niche space in 1980 and 1988. Because most organizations spanned more than one cell, we computed weighted scores in which the weights were based on the proportion of funding from each source and the services cited as primary. Formally,

$$\text{Niche density}_i = \sum_{j=1,4} \sum_{k=1,8} p_{jk} (r_{ij} s_{ik}) \tag{B2}$$

where Niche density<sub>*i*</sub> is the number of organizations in a panel organization's funding/activity niche,  $p_{jk}$  is the residual for cell  $j,k$  in the niche table,  $r_{ij}$  is the proportion of funding that organization  $i$  received from income source  $j$ , and  $s_{ik}$  is the proportion of  $i$ 's effort invested in service  $k$ .