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A Regression Model Explaining Predisposition to Collaborate

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Working Paper Series

Volume 2001 (2)

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Introduction

In Canada the last two decades of the 20th century have been characterized by government policies that focus on stimulating the economy as a strategy for improving overall quality of life. This hard right turn has made tax cuts a priority over social program expenditures, and private sector efficiencies have been promoted as the most effective response to financial challenges (Jeffrey, 1999; McBride & Shields, 1997; Tester, 1996). Voluntary organizations in Canada have had to adapt to this new environment. Both federal and provincial governments have been withdrawing from direct service provision in several areas of social welfare with the expectation that the voluntary sector will fill any resulting gaps in the social safety net. At the same time, a decrease in government support for the voluntary sector has limited its capacity to respond to an increased demand for its services (Hall & Banting, 2000). In Canada, on average 64% of revenues for voluntary organizations have come from government grants and payments (Hall & Macpherson, 1997). The federal government limited transfer payments for various social programs (Tester, 1996), and as a result, the provinces began a systematic retrenchment of these programs (Torjman, 1996). With such intense dependence on the government, any change in transfer payments is bound to have a noticeable impact on the sector (Rice & Prince, 2000). This paper focuses on interorganizational activities among voluntary organizations as a response to the funding changes being experienced by the sector. Specifically, we develop a model that presents collaborative behaviour as a function of organizational characteristics, environmental pressures and organizational attitudes.

Review of Literature

The impact of environmental uncertainty on organizations has been an important research focus in both the for profit and nonprofit literature (Buchko, 1994; Milliken, 1987). In the nonprofit sector, the uncertainty is fueled by concern about stable funding sources and increased service demands. In essence, more organizations are forced to compete for a smaller pool of money leading to the adoption of strategies to sustain themselves and thus reduce organizational stress (Baum & Singh, 1996). For the last decade the nonprofit literature has been replete with articles documenting cooperation, collaboration and alliances among organizations as a strategic response to environmental, particularly funding, uncertainty (Provan & Milward, 1995; Connor et al., 1999; Rapp & Whitfield, 1999; Mulroy & Shay, 1997).

There are a number of theories that seek to explain the pre-conditions, processes and outcomes of alliances and collaborations, although Gray and Wood (1991) assert that there is no single theory that covers all of these issues in a comprehensive fashion. They point out that resource dependence, microeconomics and strategic management theories are effective in explaining preconditions and outcomes, but are weak in articulating the process; i.e, what happens during the alliance or collaboration. On the other hand, political, institutional economics and negotiated order theories focus on the process without adequate attention to determinants and outcomes of collaborations. That having been said, the two theories that receive the most attention from researchers investigating collaboration are resource dependence (Pfeffer & Salancik, 1978) and transaction cost theory (Williamson, 1975, 1985, 1991).

The first proposes that a collaborative strategy is the result of organizations trying to acquire the necessary resources to continue their existence and in the case of for profit firms develop a sustainable competitive advantage. Resource dependence theory points out the tension between an organization's need to be stable and reduce environmental uncertainty by collaborating with another and the threat to autonomy and independence that occurs when entering into a relationship (Pfeffer & Salancik, 1978; Dickson & Weaver, 1997; Gray & Wood, 1991). The conclusion is that resource scarcity is more likely to support cooperation rather than competition (Aiken & Hage, 1968; Molnar, 1978).

Transaction cost theory suggests that interfirm alliances and cooperation are attractive because they provide an opportunity to reduce transaction costs and thereby maximize economic or psychological benefits. The most important question for an individual organization is how it can achieve efficiency through transactions with others (Williamson, 1975, 1985, 1991; Dickson & Weaver, 1997; Gray & Wood, 1991).

Much of the literature in interorganizational relations has focused on defining the nature of collaborations and distinguishing between levels or degrees of intensity of cooperation (Murray, 1998; Gray, 1989; Wood & Gray, 1991; Coston, 1998, Austin, 2000; Phillips & Graham, 2000). Despite different views about the nature of power in a collaborative relationship (Coston, 1998) and whether service integration be included (O'Looney, 1994), there appears to be general agreement that collaboration has to go beyond sharing information to mutual obligations involving the use of organizational resources or coordination of services (Snaveley & Tracy, 2000).

Collaborations are often discussed as a continuum rather than a single concept. For Austin (2000) collaborations between nonprofits and for profits range from philanthropic to transactional and finally to integrative. Phillips and Graham (2000) structure their collaborative continuum on the basis of level of competition. On the left side, organizations are insular and on the right side, they are merged and in between are relationships that have more or less of a competitive element.

Another aspect of collaborations investigated by researchers is the determinants of relationship formation. Oliver (1990) reviews all the literature on interorganizational relationships and distills her findings into six determinants. The first is necessity. Organizations collaborate because they have to in order to meet legal or regulatory requirements or because scarce resources dictate that they must join forces to survive. This determinant appears closely linked with resource dependence theory. The second is asymmetry. Collaborations are about one organization asserting its power or influence over another organization. Resource dependence theory is also associated with this determinant as the need to assert power may be related to resource scarcity. The third is reciprocity; that is, organizations join together because they have mutually beneficial goals and interests. The fourth reason for pursuing collaborations is to achieve efficiency. This is a primary tenet of transaction cost theory. The fifth proposes that organizations enter into collaborative relationships in order to achieve stability, predictability and dependability. Finally, interorganizational alliances can be viewed as a strategy for enhancing legitimacy.

Other research has focused on the conditions necessary for a successful collaboration. Shared mission and values, personal connection and relationships, expectation of mutual benefit, shared power and risk and mutual trust are the ingredients identified as important for successful collaborations (Rapp & Whitfield, 1999; Phillips & Graham, 2000; Austin, 2000).

The Model

Because the data for this study were not collected specifically to determine the success factors of interorganizational relationships, this paper focuses on the antecedents or predictors of existing collaborations. We postulate that collaboration is a function of endogenous organizational characteristics such as size, type, mandate, structure and age, the perceived impact of the environment on the organization and the attitude of organizational leaders towards collaboration and competition.

Organizational Characteristics. The model postulates that certain internal characteristics will predispose an organization to collaborate with others. For example, size of an organization can affect its propensity to cooperate with others. Larger organizations may be more appealing partners than small organizations in interorganizational collaborations because they have more resources to share with others (Mulford & Mulford, 1977).

A second characteristic is mandate of the organization. Goldman & Kahnweiler (2000) found that collaborators with role ambiguity are more successful than those with less tolerance for ambiguity. Applying this to nonprofit organizations would suggest that those with very broad mandates, such as social services or education/advocacy might be more likely to experience role ambiguity and thus might be more likely to collaborate than health organizations, which have a more defined mandate.

The final characteristic in this category is the type of organization. Organizations run by women may be more likely to participate in collaborations than are organizations run by men. Greenhalgh and Gilkey (1993) suggest that the psychosocial development of women is more compatible with being a successful collaborator. Evidence from both the for profit and nonprofit literature suggests that women have different *modi operandi* (Bradshaw et al., 1996; Foster & Orser, 1994; Perlmutter, 1994; Schein, 1975). The early socialization patterns of women differ from those of men. Males are taught to be hierarchical and independent (Harragan, 1977; Henning & Jardim, 1976; Lever, 1978), whereas females are encouraged to be nurturing and relationship oriented (Rosener, 1990; Tannen, 1990).

Environmental Pressures. The second factor in the model is environmental pressures. Much of the work done to date on collaborations has examined the external environment as a motivator. In both Canada and the United States, the nonprofit sector has had to adapt to a changing funding relationship with the government and to the demands of increasingly complex social problems (Austin, 2000). As the government downsizes, the responsibility for delivering some social and community services has been downloaded to the nonprofit sector (Phillips & Graham, 2000). At the same time, government funding to support the sector has been reduced.

This has been a particular hardship for voluntary organizations in Canada, given that such a high proportion of their funding comes from government sources (Hall & Banting, 2000; Picard, 1997). In Canada, the external environment has become more than just an influence on the decision to collaborate, in some instances, government support has been conditional on attracting partners (Phillips & Graham, 2000).

These external pressures may result in a perception of increased competition for scarce resources. Resource dependence theory (Pfeffer & Salancik, 1978) suggests that one way to mitigate this dependence is to engage in collaborative strategies with other organizations. Austin (2000) building on the work of Williamson (1975, 1985, 1991) suggests that collaboration may result in transaction cost savings and thus may be appealing to those who need to reduce costs.

Organizational Attitudes. The third factor in the model is attitudes toward collaboration. For example, the more benefits an organization identifies as emanating from a collaboration, the more likely it is to engage in interorganizational activities (Human & Provan, 1997). Likewise, if an organization does not view the advantages of collaboration as outweighing the disadvantages, its attitudes will be an obstacle to partnering with another organization (Rapp & Whitfield, 1999; Phillips & Graham, 2000; Stone, 2000). Another attitude that can reduce the propensity to collaborate is if the organization sees competition as advantageous (Baum & Singh, 1996).

The proposed model builds on the research done to date, in that it not only examines the relationship of specific factors to propensity to collaborate, but also examines the relationship among the factors and their role in amplifying or reducing this predisposition to cooperate.

Method

Design

Telephone interviews lasting approximately 45 minutes were conducted with the presidents or executive directors of nonprofit organizations located in every province of Canada.

Sample

This study was conducted on a sample of 645 organizations from across all provinces in Canada. The sample was drawn from three separate population pools:

- 1) Women's organizations that were affiliated with the National Action Committee on the Status of Women (NAC). NAC is an umbrella organization representing the concerns of women and women's organizations. NAC espouses a feminist ideology and is deeply concerned with issues of equality and social justice.

- 2) Women's organizations that were not affiliated with NAC. The reason for differentiating between groups of women's organizations is that although NAC is the largest coalition of voluntary organizations in Canada, it does not represent all women's organizations. In fact, some women's organizations are vocal opponents of NAC's advocacy of abortion rights, its anti-war/anti-nuclear stance and its criticism of neo-conservative economic policies.
- 3) Organizations that did not fall into the defined category of a women's organization.

Sampling targets were 300 women's voluntary organizations, equally divided between NAC organizations and Non-NAC organizations, and 300 other voluntary organizations. To qualify for inclusion in the sample, organizations had to fulfill the definitional requirements of a voluntary organization (Johnson, 1981:14): a) the organization does not owe its existence to statutory authority, but consists of a group of people who have come together voluntarily; b) the organization is self governing and decides its own constitution and policy; and c) the organization is non-profit making. To be classified as a women's voluntary organization, the Executive Director of the organization had to be a woman and two-thirds of the positions on the board had to be filled by women.

The sampling framework was based on a proportional representation of nonprofit organizations from the larger provinces, Quebec, Ontario and British Columbia, and a minimum of at least 25 organizations from the smaller provinces in the Maritimes and the Prairies.

In order to control for organizational size and organizational mandate, both of which might have an effect on perceptions of and responses to environmental changes, we tried to ensure that there would be a proper distribution of small, medium and large organizations in each subsample, as well as a proper distribution of social/community service, health and education/advocacy organizations in each subsample.

Size can be measured in several different ways. Kimberley (1981) identified four conceptually independent aspects of organizational size: a) physical capacity, b) personnel available, c) inputs / outputs and d) discretionary resources available. The choice of measurement depends on the objectives of the research. Since this study focuses on organization-environment transactions, resource availability, as measured by reported annual revenue, was chosen as the criterion for size. The sample was stratified on the basis of what we learned about size distribution in the pilot study, by selecting 30% small (less than \$100,000) 50% medium (\$100,000 - \$799,999) and 20% large (\$800,000 or more) organizations from each of the population pools. The actual sample didn't quite reach these ideal proportions, however there is good enough distribution of all the sizes in all three subsample to be able to run statistical controls.

From our pilot study, we found that most women's voluntary organizations fall into one of three basic categories: social services (e.g. Elizabeth Fry Society), health services (e.g. Women's Health Clinic), and a cluster that we label education/advocacy/lobbying (e.g. National Anti-Poverty Organization). Although these often overlap, each organization has a primary

mandate in one of these areas. Since the majority of women's organizations fall into the social services category, 60% of our sample will be selected from social service organizations, 20% from health service organizations, and 20% from education/advocacy/lobbying organizations. With the exception of NAC organizations, the quotas were reached.

Sampling procedure

Since there is no comprehensive list of nonprofit organizations in Canada, we had to comb several sources to use as a basis for contact lists:

- NAC membership list for the NAC organizations
- Revenue Canada list of Charitable organizations
- Community Blue books
- Internet listings

Using a table of random numbers, lists of organizations were generated for each province and distributed to our team of interviewers. Each interviewer called the organizations on their lists. They explained the purpose of the study and asked whether the organization would be interested in participating. If there was interest, the interviewer proceeded to ask a few screening questions to verify whether the organization qualified to be in our study according to our definitions and quota requirements of provincial location, organization size and organization mandate. If the organization qualified, the interviewers would set up an interview time and call back at the appointed day and hour to conduct the 45-minute interview.

Sampling proceeded until quotas were reached, or at least approached. With the three different quota requirements, it was hard to match all of our targets. It took 8 months to complete all interviews. Because of the absence of a comprehensive list, ours is not a true random sample, however, we feel that we achieved a representative sample, by including the variety of organizational types that we did.

Questionnaire

A 120-item questionnaire was constructed on the basis of in-depth interviews with 35 Executive Directors of nonprofit organizations (Meinhard & Foster, 1997). These interviews produced rich and varied responses which were used for delineating the key issues facing voluntary organizations and which provided the basis for developing answer categories for the various sections of the questionnaire. The questionnaire contains eight sections:

Background information including size of organization, mandate, sources of funding, clientele served and organizational structure.

Perceptions of the environment: 7 items describing different aspects of the environment scored on a five-point scale ranging from *Strongly disagree* to *Strongly agree*.

Changes in cooperative and competitive aspects of the environment: 13 items describing various aspects of competition and collaboration, scored on a nominal scale as increased, decreased or remained the same.

Impact of the environmental changes on the organization: 9 items describing impacts that the environmental changes had on the organization, scored on a five-point scale ranging from *A feel*

not at all to feel very strongly.

Organizational changes made in response to the impacts reported: 14 items describing various changes, scored on a five-point scale ranging from not at all to substantially.

Inter-organizational activities (count of all interorganizational activities) and the reasons for engaging in them: 8 items describing various reasons for engaging in inter-organizational behaviour scored on a five-point scale ranging from not very important to very important.

Opinions regarding collaboration and competition: 11 items about different aspects of collaboration and competition scored on a five-point scale ranging from strongly disagree to strongly agree.

Future outlook: 14 items describing various future scenarios scored on a five-point scale ranging from strongly disagree to strongly agree.

In addition, in each section there were opportunities for other responses and elaboration.

Data collection

A telephone survey was considered to be the best method to collect the data and secure the quotas for the varied sample that we wished to access. In our pilot study (Meinhard & Foster, 1997), we found that organizational leaders were eager to participate in the research. Three quarters of the women contacted agreed to be interviewed. This was a much higher response rate than can be achieved by mailed questionnaires.

Path Analysis

SPSS Stepwise Multiple Regression Analysis using forward selection with a $p=.05$ criterion for entry was used to determine the relationship between the extent of interorganizational activities engaged in by an organization and twenty-eight independent variables. The independent variables included: a) variables measuring organizational characteristics such as size, structure, mandate, age and type of organization; b) a variable measuring the perceived impact of the environmental changes occurring; c) variables measuring attitudes of the organization, such as optimism, pessimism, motivations for collaboration, competitive outlook and conditions for collaboration; and d) variables measuring organizational responses to environmental changes, such as downsizing, adopting business practices, entrepreneurial activities, and revenue diversification.

Of the twenty-eight variables, six reached the criterion for entry into the final regression equation, explaining 18% of the variance. The model is significant ($F=15.22$, $df=6$, 401 , $p=.000$). None of the variables operationalizing organizational responses was significant. Two of the organizational characteristics, size and type, and perceived environmental impact, and three attitudinal variables including motivation, competitive outlook and obstacles to collaboration were significant. Following is a definition of the variables in the final model.

Small Organization: Organizational size was measured by size of organizational budget and was grouped into categories of large, medium, and small. For the purposes of the regression analysis dummy variables for small and large organizations were created.

Feminist Organization: Three types of organizations were sampled. Feminist organizations represented by members of NAC, and non-feminist organizations represented by women's organizations that were not members of NAC, and organizations that were not women's organizations. Dummy variables were created for feminist and non-feminist organizations.

Perceived Environmental Impact: A series of nine statements were presented to respondents to assess the impact of the environmental changes on their organizations. Respondents were asked to indicate on a scale of one to five, one indicating no impact at all, to five indicating a very strong impact to what extent they experienced various impacts. These included an increased demand to provide services and be accountable, the need to address inefficiencies and participate in for profit activities and an increased sense of vulnerability. An additive index was created to measure the overall impact of the environment on the organization. A high score indicates strongly felt impact.

Motivation for Collaboration: Respondents were presented with eight statements describing various reasons for collaborating with other organizations including achieving greater community involvement, reducing operating costs, providing integrating services and sharing the risk. They were asked to rate these on a scale of one to five, from not at all important to very important. An additive index was created to measure the overall importance of these variables as motivators for collaboration. A high score on this index indicates a high motivation for collaboration.

Collaboration Obstacles: The items that comprise this index were uncovered through the factor analysis of eleven statements describing how organizations relate to each other. The two items relate to the fact that collaboration is not important when times are good and for organizations that are financially independent. A high score on this index indicates a less positive attitude towards collaboration.

Competitive Outlook: The items that comprise this index were uncovered through the factor analysis of the same eleven statements referred to above. The two items referred to the fact that organizations must have a competitive edge to survive and that competition can be a positive influence on organizations. A high score on this index indicates a highly competitive outlook.

Extent of Interorganizational Activity: Respondents were asked whether their organization interacts in various ways with other organizations, ranging from informal contacts to long term joint ventures and collaborative enterprises. A count was taken of the number of different types of interorganizational interactions each respondent mentioned. The higher the score is on this index, the more types of relationships engaged in and the more formal the interconnection.

The PATH model presented in Figure 1 displays not only the relationships of the independent variables on the extent of interorganizational activity, but also their relationship with each other. The strengths of the relationships are measured by standardized beta

coefficients. All but one relationship depicted in the model is significant at the $p < .10$ level.

Interpreting the model, we see that small organizations are less likely to engage in interorganizational activities ($\beta = -.26, p = .000$), but feminist organizations are more likely to do so ($\beta = .11, p = .037$). Perceived environmental impact ($\beta = .13, p = .01$) and motivation for collaboration ($\beta = .15, p = .003$) are positively related to interorganizational activity, while collaboration obstacles ($\beta = -.13, p = .008$) and competitive outlook ($\beta = -.11, p = .033$) are negatively related. In other words, organizations that believe that collaboration is not important when times are good, and that financially independent organizations need not collaborate, are less likely to engage in interorganizational activities. Organizations that have a competitive outlook, believing that competition is the answer to these changing times, are also less likely to engage in interorganizational activities.

Perceived environmental impact is a powerful mediating variable, particularly for motivation for collaboration ($\beta = .41, p = .000$). The greater the perceived impact of the environmental changes, the greater is the motivation for collaboration. This may explain the finding that smaller organizations are less likely to engage in interorganizational activities. Given their small size, it could be argued that they have a greater need for sharing resources and collaborating. However, small organizations perceived the impact of environmental changes less negatively ($\beta = -.15, p = .000$). This mitigated their need for interorganizational activity. Small organizations are also marginally more likely to agree that in good times and financial stability there is less of a need to collaborate ($\beta = .07, p = .10$).

On the other hand, feminist organizations engage in significantly more interorganizational activity than non-feminist organizations. They are also more likely to perceive the impact of environmental changes more negatively ($\beta = .20, p = .000$), have much less of a competitive outlook ($\beta = -.27, p = .000$), and have a greater motivation for collaboration ($\beta = .07, p = .08$). They also do not agree that there is less need for collaboration in good times and for financially independent organizations ($\beta = -.08, p = .06$).

In general, the path analysis reveals the important role of perceived environmental impact as a mediating variable influencing attitudes towards collaboration, which in turn, influence the extent of interorganizational activity.

Discussion

Based on previous research, we proposed that internal organizational characteristics, environmental pressures and organizational attitudes are important in determining whether an organization will collaborate, and that these three factors interrelate to increase or reduce the predisposition to collaborate.

One organizational characteristic predicted to influence collaboration was size. We suggested that large organizations would be more likely to collaborate than small organizations because they have more resources (Mulford & Mulford, 1977). Instead of exactly what was predicted, our results indicate that small organizations are significantly less likely than either

medium or large organizations to collaborate. One of the difficulties in using size as a variable is that different criteria are used to categorize organizations by size and what may be small by one standard is medium by another. For this reason, there are many contradictory findings in the literature with respect to the impact of size. Shan and Hamilton (1991) found that in the for profit world, small firms are more likely to cooperate than are large firms. On the other hand, Park and Ungson (1997) found that neither size nor age of firm had any impact on the duration of a joint venture or the chances of dissolving it. Gulati (1995) attempted to avoid the definitional issue of size and looked at the relative size of partners. He found that firms seek out partners who differ from each other in size. While it is clear that size is a factor in predisposition to collaborate, our model also demonstrated that the relationship of size to perceived environmental impact is a mitigating factor in engaging in interorganizational activities.

Environmental impact was also a factor in the predisposition of feminist organizations to collaborate. Our significant results with feminist versus non-feminist organizations were consistent with the literature in the for profit sector on the differences between male and female management style, and with previous work on the attitudinal and behavioural differences between nonprofit organizations run by men and those run by women (Meinhard & Foster, 2000). Interestingly, in Goldman and Kahnweiler's (2000) study of individual characteristics and collaboration outcomes, males rather than females were more highly correlated with the successful collaborator profile. The authors suggested that these surprising findings might only be applicable to the nonprofit sector because of who was attracted to pursue careers in this type of organization. These results are not necessarily contradictory to ours in that we categorized the organizations in terms of their philosophical underpinning as opposed to the gender of the leader.

Our model also predicted that organizational mandate would be a predictor of collaborative behaviour. Our results were not significant. Either mandate has no impact on propensity to collaborate or we needed to look at it from another perspective. For example, Oliver (1990) suggests that the greater the similarity of interests, the more likely will organizations choose collaboration. We had focused on role ambiguity as the defining characteristic and perhaps community of interest would have been more appropriate.

As mentioned previously, environmental pressures were identified in the model as a determinant of interorganizational activity. The results indicate that perceived impact not only has a direct influence on propensity to collaborate, but also is an important intervening factor that can reduce or amplify predispositions that exist as a result of a particular internal organizational characteristic. In addition, environmental pressures can intensify motivation to collaborate because organizations seek to reduce uncertainty (Pfeffer & Salancik, 1978). More reasons to collaborate, in turn, increase the probability of actually engaging in interorganizational activity.

Milliken (1987) suggested that there were three types of environmental uncertainty. "State uncertainty" exists when a particular component to the environment is perceived to be unpredictable. "Effect uncertainty" occurs when an organization is unable to predict the future state of the environment. Finally, "response uncertainty" occurs when organizations lack knowledge about either the options that exist to respond to the uncertainty or the consequences

of those options. It would appear that our respondents are feeling “effect uncertainty” and choosing collaboration is seen as an effective and appropriate way to decrease that uncertainty.

Conclusion

Previous research has looked at conditions for collaboration but usually from the perspective of organizational characteristics or environmental pressures or organizational attitudes, but not together in one model. This study indicates that the predisposition to engage in interorganizational activities is the result of the combination of factors that work together to intensify the need to collaborate. In this research, we did not directly study collaborations. We asked organizations about their existing interorganizational activities and then linked propensity to collaborate with structural and attitudinal antecedents and predictors. We found that feminist organizations, those organizations that felt environmental uncertainty more keenly and those that had high motivation for collaboration indeed engage in more complex interorganizational activities.

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