Stay or Exit: Why Do Nonprofits Maintain Collaborations with Government?

Abstract

Although the public management literature has demonstrated a growing interest in public-nonprofit collaborations, it pays little attention to the sustainability of collaborations. This study proposes that nonprofits’ intentions to maintain collaborations with government are influenced by both instrumental and relational factors. Using a national sample of human service nonprofits, this study demonstrates that both nonprofits’ continuance commitment and affective commitment play a role in shaping their intentions to maintain collaborative relationships with government. Specifically, continuance commitment is driven by the presence of a formal agreement and the dependence on government funding, and affective commitment is shaped by distributive and procedural justice. The findings have implications for public managers to effectively manage their collaborations with nonprofits.

Keywords: public-nonprofit collaboration, intention to continue collaboration, commitment, procedural justice, distributive justice
Introduction

There has been an increasing interdependence between public and nonprofit organizations in service delivery and policy implementation (Bryson, Crosby, & Stone, 2006; Gazley & Brudney, 2007; Milward & Provan, 2000; Salamon, 1995). By collaborating, public and nonprofit organizations can pool their respective advantages in the advancement of public values. Public organizations, for instance, are advantageous in their relatively stable financial resources, professional knowledge, and democratic public priority setting processes (Salamon, 1995). Meanwhile, nonprofit organizations can contribute nimble and flexible operations, service expertise, and community knowledge (Salamon, 1995). Together, the two sectors can produce synergistic effects that each sector may not achieve alone (Huxham & Vangen, 2013; Salamon, 1995).

Given the scope and potential benefits of public-nonprofit collaborations, the public and nonprofit management literature in the past few decades has devoted substantial scholarly attention to examining various aspects of public-nonprofit collaborations, including nonprofits’ motivations to form collaborations with government (e.g., Gazley, 2010; Gazley & Brudney, 2007), the strategies and challenges in managing collaborative relationships (e.g., Ansell & Gash, 2008; Kort & Klijn, 2011; Suárez & Esparza, 2017), the measurement of collaboration effectiveness (e.g., Lu, 2016; Milward & Provan, 2003; Raab, Mannak, & Cambré, 2015), and the evolution of collaborative networks overtime (e.g., Heikkila & Gerlak, 2016; Provan, Huang, & Milward, 2009). However, one research question seems to receive insufficient scholarly attention: once a nonprofit establishes a collaboration with government, what factors would drive the nonprofit to sustain the collaboration?
Such a question has significant implications for public management. Under the governance models such as collaborative governance and third-party government, there is a growing government dependence on nongovernmental actors, especially nonprofits, to deliver services and achieve policy priorities (Ansell & Gash, 2008; Bryson, Crosby, & Stone, 2006; Salamon, 1995). However, when governments look beyond their boundaries to seek nonprofit partners, they usually have to confront a service market with a limited number of nonprofits that public managers can work with in collaborative service delivery (Girth et al., 2012; Van Slyke, 2003). Admittedly, identifying and initiating a cross-sector collaboration is not easy. However, once a collaborative relationship between government and nonprofits is established, how to maintain the collaboration over time presents an equally important challenge. Indeed, relationship dissolution has severe consequences for both parties, especially when they have a high level of interdependence (Dwyer, Schurr, & Oh, 1987). Public managers have to address the uncertainty in service delivery caused by relationship dissolution and have to develop new collaborations with only a few alternative service providers, both of which could undermine governance efficiency and effectiveness. Therefore, a lack of research on the maintenance of public-nonprofit collaborations forms a significant gap in informing public management practices.

To fill the gap in the literature, this study, using a national sample of human service nonprofits, proposes that nonprofits’ intentions to continue their collaborations with government are shaped by both instrumental and relational factors. From the instrumental perspective, we argue that the intentions to maintain collaborative relationships are driven by nonprofits’ need for resources and the availability of alternatives. However, such an instrumental perspective, ignoring the relational component of interorganizational relationship, is insufficient to explain
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collaboration persistence or severance (Ring & Van de Ven, 1994). This is especially relevant in human services, where the relational undertone of public-nonprofit collaborations has been widely documented (e.g., DeHoog, 1984; Van Slyke, 2007). Therefore, building on justice theory, we add that nonprofits’ affective commitment to collaborations could give rise to long-term collaborative relationships, which is further shaped by the extent to which nonprofits perceive fairness in the exchange process and in the distribution of outcomes.

In the next sections, we first briefly discuss the context of public-nonprofit collaborations. We then present the research hypotheses. This is followed by an introduction of the data, the analytical procedures, and the statistical results. We conclude the paper by discussing the implications of our findings as well as their limitations.

**Theoretical Framework**

A remarkable feature of contemporary public management is the increasing collaborations between nonprofits and government in the delivery of social services and the achievement of policy priorities (Bryson et al., 2006; Salamon, 1995; Milward & Provan, 2000). Indeed, in recent decades, devolution, privatization, technological advancements, and scarce resources lead to the fact that public managers increasingly find themselves incapable of tackling wicked problems independently. Collaboration with other organizations across boundaries thus becomes necessary to effectively address public problems (Huxham & Vangen, 2013; O’Leary & Vij, 2012). This kind of institutional arrangement has been termed by scholars as third-party government (Salamon, 1995), hollow state (Milward & Provan, 2000), and collaborative governance (Ansell & Gash, 2008). Indeed, the extensive scope of public-nonprofit collaborations has been widely documented in the literature (e.g., Boris et al., 2010; Gazley &
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Brudney, 2007; Pettijohn et al., 2013). With nonprofits becoming critical partners for public managers in service delivery, their intentions to maintain collaborations with government constitute an important question.

[Figure 1 Here]

As shown in Figure 1, our model entails that nonprofits’ intentions to maintain collaborations are influenced by both instrumental and relational considerations, following the common practice in studies of interorganizational relations (e.g., Ring & Van De Ven, 1994; Rowley et al., 2005). The instrumental perspective centers around the economic benefits (Rowley et al., 2015) of maintaining a collaboration. In other words, a nonprofit maintains its collaborations with government because it is in its economic interests to do so. This perspective can be explained by transaction cost economics (Williamson, 1985) and resource dependence theory (Pfeffer & Salancik, 1978). In light of transaction cost theory, nonprofits as rational actors engage in cost-benefit analyses of their collaborations with government. When the costs of terminating the relationship and seeking new partners outweigh the costs of managing current collaborations with government, nonprofits continue the collaborative relationships. On the other hand, resource dependence theory implies that when nonprofits heavily depend on government for resources to achieve their organizational missions, they are externally controlled by government to some extent (Pfeffer & Salancik, 1978). Nonprofits thus have stronger economic stakes in the collaborations and are likely to commit to sustaining the collaborative relationships.

In contrast, the relational perspective highlights the relational aspect of the decision to maintain a collaboration. This perspective aligns with Granovetter’s (1985) theory that economic actions cannot be disentangled entirely from the social context. More importantly, the relational perspective posits that parties’ past interactions and experience shape their decisions about the
future (Macneil 1974; Ring & Van De Ven, 1994). For a nonprofit, the decision to prolong a collaboration with government may be shaped by the treatment it has received from the government counterpart in the exchange process. Justice, denoting the issue of equity and fairness, is particularly important for the examination of the relational aspect because the power imbalance between government and nonprofits may put nonprofits in a more vulnerable position to experience unfairness and inequity (Smith, 1996; Verschuere & De Corte, 2014). Overall, the relational perspective proposes that nonprofits experiencing a fair process and outcome distribution in collaborations with government are more committed affectively to the collaborations.

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**Continuance Commitment, Affective Commitment, and Intention to Maintain Collaboration**

Our model centers on the concept of commitment — one key ingredient that ensures the success of long-term interorganizational relationships (Gundlach, Achrol, & Mentzer, 1995; Huxham & Vangen, 2013). Commitment in exchange relationships has received notable attention in many fields. For example, economist Williamson (1985) argues that long-term exchange relationships can be safeguarded by exchange partners making credible commitments. Sociologists Cook and Emerson (1978) view commitment as an attachment that leads individuals to repeatedly exchange with each other. They argue that the formation of attachment could lead individuals to forsake other alternatives, even better ones, in favor of old partners. Despite the varying conceptualizations of commitment, we focus on two widely used dimensions: continuance commitment and affective commitment, representing the instrumental and relational perspectives respectively.
Continuance commitment describes the tendency to engage in consistent lines of action because of the perceived costs associated with its termination and/or a lack of comparable alternatives (Allen & Meyer, 1990; Meyer & Allen 1991). In public-nonprofit collaboration, a nonprofit’s continuance commitment involves instrumental considerations of costs and alternatives of leaving a collaboration. The higher the costs or the fewer the alternatives, the more difficult it is to discontinue the collaboration. The high costs associated with leaving could be due to the fact that the nonprofit has invested considerable financial and/or human resources in establishing the collaboration; it could also be attributable to the fact that the collaboration is instrumental in gaining access to critical resources, improving service quality, or buffering environmental uncertainties (Gazley & Brudney, 2007). In these situations, the nonprofit would aim to preserve a long-term collaboration with government since it is costly to exit. Similarly, a lack of alternative collaborators can also lead to a strong intention to remain in a collaboration. Research has suggested government is the major funding source for many human service nonprofits (Boris et al., 2010; Salamon, 1995). As such, it might be hard for human service nonprofits to ignore collaborations with government and seek other alternatives.

Hypothesis 1: Continuance commitment is positively associated with the intention to maintain a collaboration.

While commitment has an instrumental component that involves rational calculation, it also has an affective one. The affective component of commitment in interorganizational research has been described in terms of psychological identification with and internationalization of an alliance relationship (Cullen, Johnson, & Sakano, 2000), feelings of unity or cohesion (Kim & Frazier 1997), and the desire to continue a relationship due to positive affect toward the
partner (Kumar, Scheer, & Steenkamp, 1995). Although the emphases of the conceptualizations vary, they all reflect the relational aspect of commitment.

Drawing on Meyer and Allen (1991), affective commitment in this study denotes a nonprofit’s affective orientation toward a collaboration. When affective commitment emerges, it means that a nonprofit identifies with the collaboration, and the collaboration has deep meaning for the organization. It also demonstrates a sense of belonging to the collaboration and the desire to remain in it. The presence of affective commitment can serve as the social glue that bonds the collaboration together.

Hypothesis 2: Affective commitment is positively associated with the intention to maintain a collaboration.

Formal Agreement, Resource Dependence on Government, and Continuance Commitment

A nonprofit’s continuance commitment to the collaboration is further driven by the presence of a formal agreement and the dependence on government funding. First, public-nonprofit collaborations are not necessarily bound by formal agreements. Indeed, a substantial portion of public-nonprofit collaborations proceed without formal agreements. For example, Gazley (2008) and Grønbjerg and Child (2004) found that nonprofits are involved in more joint activities with government agencies outside the traditional contractual arena. However, we argue that having formal agreements with government would enhance nonprofits’ continuance commitment to collaborations.

In light of the transaction cost perspective, formal agreements with government could increase nonprofits’ continuance commitment to collaborations for two primary reasons. First, formal agreements specify the details of a contractual relationship and rely on contract clauses to bind future contingencies. These agreements help coordinate and safeguard collaborative
activities, substantially reducing transaction costs throughout the collaboration process. For example, Gazley (2008) found that local governments are more likely to provide funding to nonprofits holding formal agreements with them. Second, a collaborative relationship bound by a formal agreement is more predictable. Documented evidence suggests that nonprofits’ contractual relationship with government is a path-dependence process. Nonprofits that have received formal service contracts from a government agency in previous years are highly likely to maintain the contractual relationship with the agency in proceeding years (Lu, 2015; Van Slyke, 2003). In this way, the continuation of the relationship associated with formal agreements would weaken nonprofits’ motivation to withdraw from the collaborations.

*Hypothesis 3: Having formal agreements with government is positively associated with continuance commitment to collaboration.*

Second, nonprofits’ degree of dependence on government funding could also influence their continuance commitment to collaborations with government. Indeed, under the institutional arrangements of third-party government (Salamon, 1995) and hollow state (Milward & Provan, 2000), there is a growing scope of government financing of nonprofit activities. As a result, government funding constitutes a significant portion of nonprofit revenue (Boris et al., 2010; Lu, 2015; Pettijohn et al. 2013). This kind of dependence on government funding has implications for nonprofits’ continuance commitment to the collaborative relationships with government.

From the resource dependence perspective, when nonprofits depend on government for resources to advance their missions, they are externally controlled by government to some extent (Pfeffer & Salancik, 1978). Nonprofits with higher degrees of dependence on government funding would have stronger stakes in the collaborations (Hodge & Piccolo, 2005; Verschuere & De Corte, 2014). They would thus commit to sustaining the collaborative relationships until they
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can identify alternative resources to reduce their dependence on government. Before that, the
cost of terminating the collaborations would be less affordable for nonprofits. This kind of “lock-
in” effect (Williamson, 1985) leads to a strong motivation to sustain the collaborative
relationships. Gazley and Brudney (2007) found that nonprofits that are more dependent on
government funding value the collaborations more and demonstrate a greater interest in
enhancing the relationship with government compared with those without government funding.

Hypothesis 4: A high degree of dependence on government funding is positively
associated with continuance commitment to collaboration.

Distributive Justice, Procedural Justice, and Affective Commitment

Nonprofits’ affective commitment to the collaborations is shaped by their perceived
distributive and procedural justice in working with government. First, distributive justice
concerns the fairness of outcome distribution (Colquitt et al., 2001). Central to distributive
justice is the rule of equity\(^1\) describing outcomes should be distributed in a way that is
proportional to inputs (Ariño & Ring, 2010; Deutsch, 1975; Leventhal, 1976). When outcomes
or rewards are incommensurate with inputs or contributions, inequity or injustice occurs. The
experience of inequity can result in unpleasant emotional states, such as dissatisfaction and
distress, which could further drive actions to alleviate emotional suffering and restore equity
(Homans, 1961; Walster, Walster, & Berscheid, 1978).

From a nonprofit’s perspective, distributive justice denotes the extent to which its derived
benefits from a collaboration is proportional to its efforts and contributions. Yet, when dealing
with government, nonprofits could experience distributive injustice that may stem from a number
of sources, such as government payments not covering full program costs and government

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\(^1\) Other allocation rules such as equality and need can also be used in determining distributive justice (Deutsch 1975).
making late payments (Boris et al., 2010; U.S. Government Accountability Office, 2010). When nonprofits feel that the benefits they receive from the collaborations are not fair in view of the efforts they contribute and the responsibilities they shoulder, they would experience distributive injustice. If so, they would further lose confidence in the collaborations (Luo 2007) and have unfavorable reactions that jeopardize the relationships (Kumar et al., 1995). Distributive justice, on the contrary, would affirm a nonprofit’s contribution to the collaborative relationship (Leventhal, 1976). An organization receiving such confirmation would return with relational behaviors aimed to strengthen the solidarity of the relationship (Griffith, Harvey, & Lusch, 2006). Therefore, when a nonprofit perceives the distribution of benefits is properly executed, it would reciprocate by developing a strong relational bond to the collaboration and becoming more committed to the collaboration.

Hypothesis 5: Distributive justice is positively associated with affective commitment to the collaboration.

Second, unlike distributive justice, procedural justice concerns the fairness of the processes. According to Thibaut and Walker (1975), people tend to view procedures for making a decision as fair when they can influence the outcome of the decision (i.e., decision control) and have the opportunity to state one’s case in the decision-making process (i.e., process control). Research has suggested process control operates in two ways to produce procedural justice. First, the opportunity to express opinions in the decision-making process functions as an indirect decision control that allows people to indirectly shape the decision to their favor (Thibaut and Walker 1975). When people can influence the decision that affects them, they are more likely to perceive the decision-making process as fair. Second, process control also has a value-expressive aspect (Tyler, Rasinski, & Spodick, 1985). The opportunity to express opinions can have a value
in itself; it could lead to procedural justice, even when it has little or no influence over the outcome of the decision (Lind, Kanfer, & Early, 1990). Overall, Thibaut and Walker’s (1975) model of procedural justice suggests that, by allowing people to exert control over process and decision outcome, procedural justice offers an assurance that their interests are well protected in the long run (Lind & Tyler, 1988). Such an assurance of protection could advance social harmony in a group setting and consequently lead to group loyalty and cohesiveness (Lind & Tyler, 1988).

Adapting the model to our study, procedural justice concerns the extent to which nonprofits, in collaborations with government, can voice their opinions in the decision-making process and influence the outcomes of decision making. Research on interorganizational collaborations has demonstrated that procedural justice can foster organizations’ long-term orientation toward partners and bolster their relational behaviors that signal the willingness to go above and beyond their responsibilities (Griffith et al., 2006; Kumar et al., 1995). In this study, we expect that nonprofits’ perceptions of procedural justice would lead them to develop affective commitment toward the collaborations in two ways. First, having a voice in the process legitimizes a nonprofit’s status as a team member and makes it feel that government values its opinions, which promotes the development of attachment to a collaboration (Johnson, Korsgaard, & Sapienza, 2002; Korsgaard, Schweiger, & Sapienza, 1995). Second, the ability to influence the decision outcome would increase nonprofits’ ownership of the decisions made in the collaborations and thereby their commitment to the decisions and assuming responsibilities for them (Greenberg & Folger, 1983). In sum, a nonprofit’s perceived procedural justice would lead to higher affective commitment to the collaboration.

Hypothesis 6: Procedural justice is positively associated with affective commitment to the collaboration.
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Method

Sample

In this study, we mainly focus on human service nonprofits because they, as a sub-sector, have a long history of collaborations with government and have the highest frequency of public-nonprofit collaborations (Gazley, 2004). We obtained our sampling frame from the National Center for Charitable Statistics (NCCS) Business Master File (November 2014). The Business Master File (BMF) provided information for all active nonprofits that had registered for tax-exempt status with the Internal Revenue Service (IRS). Given the focus of the study, we followed Boris et al. (2010) and only 501c (3) human service nonprofits with more than $100,000 in annual revenue and from the following service sectors were included: crime and legal services (I), employment (J), food, agriculture, and nutrition (K), housing and shelter (L), public safety, disaster response and relief (M), youth development (O), and multipurpose human services (P). In total, there were 52,921 nonprofits from all 50 states and the District of Columbia in the sampling frame.

We used the stratified random sampling strategy to select 2,000 nonprofits from the sampling frame. First, all 52,921 nonprofits were stratified according to service sector and revenue size (i.e., between $100,000 and $250,000, between $250,000 and $1 million, and above $1 million). We mainly focused on organizations that directly provided services, so we excluded organizations that were 1) marked by common codes, 2) marked by “Not Elsewhere Classified,” and 3) professional societies and associations within each service category. The common codes indicate organizations service functions other than direct service. They included 01Alliance/Advocacy Organizations, 02 Management and Technical Assistance, 03 Professional Societies/Associations, 05 Research Institutes and/or Public Policy Analysis, 11 Monetary Support - Single Organization, 12 Monetary Support - Multiple Organizations, 19 Nonmonetary Support Not Elsewhere Classified (N.E.C.). The “Not Elsewhere Classified” organizations are marked as 99 within each service category.
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$1 million). Second, we used Excel to randomly select organizations from each stratum. Every tenth organization was selected. If the selected organization did not publish its executive director’s email address online, we then picked the following organization in the list until an organization with an available email address of the executive director was identified. Finally, a random sample from each stratum was generated in a number proportional to the stratum’s size in the sampling frame. Among the 2,000 nonprofits, human services (P) was the largest sector, which included 1,100 organizations, while public safety, disaster response, and relief (M) was the smallest sector, including only 16 organizations.

Data and Survey Design

The data were collected from February through March 2015 via online survey. We sent out the survey links to 2,000 executive directors. Three waves of follow-up emails were sent out as reminders in order to increase the response rate. We received 424 responses by the end of March, 2015, leading to a response rate of 21.2%.5

When designing the survey, we took several steps to make the responses comparable. First, we asked the nonprofit executive directors to consider their collaboration experience with the government entity they collaborated most with at the time of completing the survey. Second, we asked them to consider the principal or most active service area (e.g., homeless/housing, human services).

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3 We included revenue size to ensure that nonprofits with different sizes were represented in our sample. Following Boris et al. (2010), we considered a nonprofit with revenue less than $250,000 a small organization, a nonprofit with revenue between $250,000 and $1 million a medium organization, and a nonprofit with revenue above $1 million a large organization.
4 Of the 424 nonprofits that responded, 32 indicated at the beginning of the survey that they had no current collaboration with government, they were then sent to exit the survey without answering the rest of the questions.
5 We acknowledge that our response rate of 21.2% is not completely satisfactory, but it is still within the acceptable range in organizational studies where response rates are generally not high because of the challenges in reaching organizations (Lee, Benoit-Bryan, & Johnson, 2012; Tomaskovic-Devey, Leiter, & Thompson, 1994). Baruch and Holton’s (2008) systematic review of 490 studies employing organizational surveys published in refereed academic journals notes the average response rate is 35.7%, with a standard deviation of 18.8.
senior services/aging, and youth development) where they collaborated with the government entity. Third, we requested that they identify the form(s) of the collaboration within the principal service area. In particular, following the existing practice in the literature (e.g., Gazley, 2008; Gazley & Brudney, 2007), we operationalized public-nonprofit collaborations as government contracts, government grants, and other joint operations or decision making involving joint fundraising, joint recruitment of staff and volunteers, joint advocacy, joint purchasing, joint program development, joint policy development, joint service delivery, and joint case management. Nonprofits that did not have at least one of the ten collaborative activities were excluded from the study. Finally, 275 nonprofits were included in the final sample.

Table 1 reports the composition of our sampling frame and final sample. The sample of 275 human service nonprofits is fairly representative in terms of their service sectors and revenue sizes. The percentages of each service sector and each category of revenue size are very similar between the sample and the sampling frame. However, nonprofits with revenues between $100,000 and $250,000, youth development nonprofits, public safety, disaster response and relief nonprofits, and human service nonprofits are slightly underrepresented in the sample, while organizations with revenues between $250,000 and $1 million, organizations with revenues above $1 million, crime and legal related nonprofits, employment nonprofits, and food, agriculture and nutrition nonprofits are slightly overrepresented.

[Table 1 Here]

Measurements

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6 We excluded other types of collaboration such as information exchange and resource sharing because nonprofits’ motivation to maintain these types of collaboration could be different from what we study here (Gazley, 2008).
7 For those variables in our model that have less than 5% missing values, we replaced with the median for ordinal scales and the mean for continuous scales.
The details of variable measurement, including the survey items and the measurement scales, are reported in Appendix A. The dependent variable, *intention to maintain collaboration*, was measured by how likely an organization was to continue the collaboration in the future with the government entity it currently collaborates most with (1=very unlikely to 5=very likely).

We adapted the survey items of commitment from Allen and Meyer (1990). *Continuance commitment* was measured by averaging three Likert items (1=strongly disagree to 5=strongly agree): (1) the difficulty of leaving the collaboration, (2) the limited available options to consider if leaving the collaboration, and (3) the disruption that would occur if leaving the collaboration. *Affective commitment* was also measured by averaging three Likert items (1=strongly disagree to 5=strongly agree): (1) the collaboration with government has a great deal of meaning, (2) a strong sense of “belonging” to the collaboration with government, and (3) a strong desire to maintain the collaboration.

The measures of *distributive* and *procedural justice* were from Colquitt (2001) and were adapted into the context of public-nonprofit collaboration. Colquitt (2001) developed four *distributive justice* items based on Leventhal’s (1976) definition. We modified the items by incorporating some wordings from two studies (i.e., Liu, Huang, Luo, & Zhao, 2012; Luo, 2007), which measured distributive justice in inter-organizational relationships. The four *distributive justice* items (each on a 1-5 scale with 1=strongly disagree and 5=strongly agree) compare the benefits that nonprofits receive from the collaboration with the resources they have invested, the efforts they have exercised, the responsibilities they have assumed, and the performance they have achieved. Colquitt (2001) also developed measures for procedural justice that reflected Thibaut and Walker’s (1975) conceptualization. We also modified their wordings to fit into the context of the study. *Procedural justice* was measured by averaging two survey
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items (each on a 1-5 scale with 1=strongly disagree to 5=strongly agree): (1) the nonprofit has influence over the decisions made in the collaboration and (2) the nonprofit’s open expression of concerns is not being suppressed.

A nonprofit’s resource dependence on government was measured by the percentage of revenue from the government entity with which it collaborated most at the time of the survey. The existence of a formal agreement in the collaboration is a binary variable (1=formal contract, grant, or other legal agreement and 0 = otherwise).

We controlled for the size of the nonprofit, measured by the organization’s total revenue in 2014, because large nonprofits are more likely to collaborate with government (Boris et al., 2010). Furthermore, we controlled for the length (in years) of the government-nonprofit collaboration, which might affect a nonprofit’s intention to maintain the collaboration. Finally, we included two characteristics of the government entity in the collaboration, including the level of the government (i.e., local, state, or federal government) and the level of government red tape as perceived by nonprofit executive directors. The latter variable was found to affect nonprofit executive directors’ attitudes toward collaborations with government (Gazley, 2010).

Analytical Technique

To test the complex relationships, we used structural equation modeling (SEM) as the analytical technique. Mplus Version 7.4 was used to assess the measurement model and the associated structural equation model. Since our dependent variable (intention to maintain collaboration) is ordered categorical, weighed least-squares with mean and variance adjustment, or MLuMV, is recommended and is the default estimator in Mplus for modeling categorical outcome variables (Muthén & Muthén, 1998-2017). Further, WLSMV is a robust estimator that can be applied to a combination of categorical, binary, and continuous indicators in the model.
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(Wang & Wang, 2012). Given the indicators of our constructs include ordered categorical indicators (e.g., indicators of intention to maintain collaboration, affective commitment, continuance commitment, procedural justice, and distributive justice), continuous indicators (e.g., indicators of nonprofits’ resource dependence on government) and binary indicators (e.g., indicators of the existence of formal agreement), WLSMV is the appropriate estimator for our analysis. In their simulation research, Flora and Curran (2004) found that the WLSMV estimator is able to yield accurate test statistics, parameter estimates, and standard errors with both normal and nonnormal latent response distributions.

Results

[Tables 2a and 2b Here]

Tables 2a and 2b report the descriptive statistics of all the variables. The nonprofits in our sample reported relatively high levels of intention to continue their collaborations with government. This is not surprising given that the nonprofit executives were asked about their intentions to continue the collaborations with the government entity they collaborated most. The majority of nonprofits in our sample (87.27%) signed formal agreements with their governmental counterparts. We also found that 64% of nonprofits in our sample collaborated most with local governments. The average length of the collaborations was 4.07 years. Table 3 reports the zero-order correlations of the studied variables in the model. As expected, continuance commitment, distributive justice, procedural justice, formal agreement, and resource dependence on government funding were all positively and significantly associated with a nonprofit’s intention to continue the collaboration.

[Table 3 Here]
Confirmatory factor analysis (CFA) was used to study construct validity and to assess factorial structure of scales used in measuring the constructs. We conducted CFA for four latent variables that were measured by multiple items, including distributive justice, procedural justice, affective commitment and continuance commitment. All the factor loadings were significant ($p<0.01$). The $\chi^2$ statistics for the model being tested is $\chi^2=98.713$, $df=44$, $p=0.000$. However, the model $\chi^2$ statistic is highly sensitive to sample size, and the significance of the $\chi^2$ test should not be a reason by itself to reject a model (Wang & Wang, 2012). The comparative fit index (CFI) and Tucker-Lewis index (TLI) achieved the recommended cutoffs of 0.95 (CFI=0.994; TLI=0.991). The root mean square error of approximation (RMSEA=0.067) was less than 0.08. The weighted root mean square residual (WRMR=0.669) is particularly suitable for outcome measures with non-normal distributions (Wang & Wang, 2012). The WRMR value was below the recommended cutoff of 1.0 (Yu, 2002). Overall, the fit indices indicated an acceptable fit to the data.

The model fit of the structural model was also assessed by multiple fit indexes ($\chi^2=179.225$, $df=117$, $p=0.000$; RMSEA=0.044; CFI=0.991; TLI=0.988; WRMR=0.915). Based on the criteria discussed above, the structural model provided an adequate level of model fit. The model accounts for 28% of the variance in explaining a nonprofit’s intention to continue the collaboration with government.\(^8\)

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\(^8\) We also tested whether our model in Figure 1 was the best representation of the data by comparing our model with two alternative models. The first alternative model included the direct paths from formal agreement, resource dependence, distributive justice, and procedural justice to intention to maintain collaboration, in addition to the paths specified in the proposed model. The second alternative model included the direct paths from formal agreement and resource dependence to affective commitment, the direct paths from distributive justice and procedural justice to continuance commitment, in addition to the paths specified in the first alternative model. Both alternative models were not significantly better than our model since $\Delta \chi^2(\Delta df)$ for both alternative models was not statistically significant. Therefore, we retained our model as the best fitting model.
Figure 2 presents the standardized path coefficients. H$_1$ and H$_2$ were both supported: continuance commitment (β=0.40, p<0.01) and affective commitment (β=0.37, p<0.01) were positively associated with nonprofits’ intentions to continue their collaborations. The standardized total effect of continuance commitment and affective commitment on our dependent variable was 0.40 (p<0.01) and 0.37 (p<0.01), respectively. Both continuance commitment and affective commitment were positively associated with nonprofits’ intentions to maintain their collaborations.

Consistent with H$_3$ and H$_4$, both the existence of a formal agreement (β =0.26, p<0.01) and resource dependence on government funding (β=0.35, p<0.01) were positively and significantly associated with continuance commitment. The standardized total effect of formal agreement and resource dependence on continuance commitment was 0.26 and 0.35, respectively. Altogether, both variables explained 31% of the variance of continuance commitment. The standardized total effect of formal agreement and resource dependence on intention to maintain collaboration was 0.10 and 0.14, respectively.

Distributive justice (β=0.40, p<0.01) and procedural justice (β=0.80, p<0.01) were also positively associated with affective commitment, therefore supporting H$_5$ and H$_6$. The fraction of the variance of affective commitment explained by the two variables was 87%. We also noticed that procedural justice appears to have more influence than distributive justice in predicting affective commitment and nonprofits’ intentions to maintain collaborations. The standardized total effect of procedural justice and distributive justice on affective commitment was 0.56 and 0.25, respectively. The standardized total effect of procedural justice and distributive justice on intention to maintain collaboration was 0.29 and 0.14, respectively.

[Figure 2 here]
None of our control variables, including the size of the nonprofit, the length (in years) of the government-nonprofit collaboration, the level of government (i.e., local, state, or federal government) with which nonprofits collaborate, and the level of government red tape, were statistically significant.

**Discussion**

The collaborations between government and nonprofits are ubiquitous in service provision and policy implementation in the contemporary policy environment. Although extensive research attention has been devoted to examining various aspects of public-nonprofit collaborations, the lack of research on collaboration sustainability (with an exception of Cropper 1996) constitutes a barrier not only to fully understanding the dynamics of public-nonprofit collaborations but also to informing public management practices in nurturing long-term collaborative relationships with nonprofits to improve governance effectiveness. To help address this gap, this study proposes a two-perspective model to explicate nonprofits’ intentions to maintain collaborations with government. Through analyzing a national sample of human service nonprofits, our statistical results provide full support for the theoretical model. Overall, our study adds theoretical and practical implications to the collaboration literature in the following ways.

First, consistent with the literature on interorganizational relationships (e.g., Ring & Van de Ven, 1994; Rowley et al., 2005), our findings suggest that instrumental and relational factors work in combination to safeguard the long-term relationship of public-nonprofit collaboration. In particular, we find two key components of commitment — continuance commitment and affective commitment — acting as the linchpin in the instrumental and relational perspectives. Actually, the collaboration literature has long emphasized the critical role of commitment (Huxham & Vangen, 2013; Shaw, 2003), but the studies of public-nonprofit collaboration have
not examined different components of commitment. This differentiation is important because continuance and affective commitment stem from different antecedents and can lead to varying attitudinal and behavioral outcomes (Meyer & Allen, 1991). This study suggests that nonprofits’ intentions to continue collaborations are predicated not only upon their instrumental evaluation of costs and alternatives but also upon their affective commitment. The findings imply that public managers need to put effort into building and maintaining relationships with nonprofit partners and utilize social or relational mechanisms to manage their collaborations in addition to formal control mechanisms (Lu, 2016; Van Slyke, 2007).

Second, in the relational line of analysis, the study brings the notion of justice to the study of public-nonprofit collaborations. Although there have been a few brief mentions of justice in the collaboration literature (e.g., Ansell & Gash, 2008; Cropper, 1996; Thomson, Perry, & Miller, 2008), an in-depth examination in the context of public-nonprofit collaboration can offer important insights because the perception of justice lays the ground for understanding important attitudes (e.g., trust) developed by nonprofits and government partners and the cooperative behaviors undertaken by them. This study suggests that nonprofits that are fairly compensated for their contributions, have a say in the collaboration process, and are able to shape the decisions made would develop deeper affective commitment to the collaborations. Consequently, they show strong intentions to continue the collaborations with government.

The finding corroborates with Cropper’s (1996) argument that commitment to sustaining collaboration is dependent on the realization of distributive justice. It shows that public managers should be cognizant of the potential injustice in economic distribution and strive to eradicate it. Indeed, the issue of distributive injustice is one of the challenges that nonprofits constantly face in collaborating with government (e.g. Boris et al., 2010). The finding also shows that procedural
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justice has a larger impact on affective commitment to collaborations than distributive justice. This indicates that, in addition to a fair economic outcome distribution, public managers need to focus more on the norms and procedures that increase nonprofits’ voice and influence in the collaboration process. One benefit that procedural justice brings to the collaborations is delayed gratification, that is, people do not mind if they are not immediately rewarded as long as there are fair procedures in place to protect their interests in the long run (Reis, 1986). In other words, the presence of procedural justice in collaboration can ensure organizations’ willingness to make short-term sacrifices with the understanding that the other party will reciprocate in the future — a mindset that is critical for the long-term relationship between government and nonprofits (Smith, 1996).

The critical roles of distributive and procedural justice in preserving long-term collaborations have implications for the design of governance mechanisms in public-nonprofit collaborations. Governance involves partners in a collaboration collectively make decisions about the rules that govern their behaviors and relationships (Bryson, Crosby, & Stone, 2006; Thomson, Perry, & Miller, 2008, 2009). A proper governance system warrants the effectiveness of a collaborative network (Provan & Kenis 2008), while a flawed one can lead to the demise of a collaboration (Takahashi & Smutny, 2002).

Our study highlights the need to consider each organization’s perception of justice and fairness when establishing and implementing the rules that govern the essential activities in collaborations, including distribution of costs and benefits, interactions and exchanges, coordination, monitoring, negotiation, and conflict resolution (Bryson, Crosby, & Stone, 2006; Cornforth, Haynes, & Vangen, 2014, Provan & Kenis, 2008; Thomson, Perry, & Miller, 2008). In fact, Husted and Folger (2004, p.79) argue “governance design will fail if it does not take into
account the relationship between informal norms like justice and formal structures.” A fair governance system signals the distribution of benefits is in accordance with the resource contributions and responsibilities shouldered by each organization. It also establishes norms for expected behavior and interaction (Luo, 2007) and enable organizations’ participation and influence in the process of decision-making, negotiation, and conflict resolution. With fair governance comes relational values and cooperation (Ariño & Ring, 2010; Luo, 2005), with relational values and cooperation comes long-term collaborative relationships.

Finally, our findings show the important role of instrumental factors in sustaining public-nonprofit collaborations. We find that having formal agreements to govern collaborative relationships is indirectly and positively associated with nonprofits’ intentions to the collaborations. Formal agreements could substantially reduce transaction costs in the collaborations and thus make relationships more stable and predictable. As a result, nonprofits would have weaker motivations to leave the collaborations in view of the tangible benefits of working with government. Indeed, nonprofits currently always operate in a turbulent environment with limited resources to achieve their missions. Formal agreements would protect nonprofits from unexpected contingencies and environmental uncertainties, making them more committed to the collaborations. Public managers thus should consider employing formal agreements to structure their collaborations with nonprofits when possible.

The research also notes that the degree of dependence on government funding would indirectly affect nonprofits’ intentions to stay in collaborations with government. The higher the percentage of government funding a nonprofit has in its revenue, the stronger the continuance commitment the nonprofit will have toward the collaboration. Indeed, increasing government financing of nonprofit activities in recent decades makes government funding a critical source
for human service nonprofits. A high degree of nonprofit dependence on government funding leads to the concern that government funding would cause nonprofits’ mission drift and loss of autonomy (e.g., Alexander, Nank, & Stivers, 1999; Nikolic & Koontz, 2007; Salamon, 1995). Our finding adds to this body of literature by showing that a higher portion of government funding would make nonprofits more likely to be locked in the relationship with government and less likely to work independently over time. Accordingly, government funding might blur nonprofit identity and eliminate the distinct functions the nonprofit sector performs in democratic governance.

**Limitations, Future Research, and Conclusion**

The study has several limitations that point toward directions for future research. First of all, the data used in the study is cross-sectional in nature. Future research may deploy a longitudinal design to test the causal relationships. Furthermore, although the stratified random sampling strategy was used to select the sample, the final sample in the analysis is by no means representative of all human services nonprofits in the U.S.. For example, given the focus on human services nonprofits and government collaboration, the survey excluded those that did not have current collaboration with government. Also, the final sample excluded organizations that did not have one of the ten collaboration activities with government. Hence, the generalization of this study’s findings should be cautious.

This study primarily explores the factors that impact the likelihood that nonprofits will maintain or continue their current collaborations with government organizations. Future research could build on Gazley (2010) and explore the reasons why certain nonprofits are not willing to maintain or continue their collaborations with government agencies. Next, we only focus on ten forms of collaboration and asked survey participants to consider their collaborations with one
government entity with which they collaborated most in the principal service area. This measurement strategy increases the comparability of survey responses and the internal validity of the analysis, but it might not capture the entire spectrum of collaborative efforts between government and nonprofits. Further, the measurements of many variables in this study are based on subjective judgments of nonprofit executive directors. Such subjective assessments only illustrate what could happen rather than what will happen. It would be interesting for future studies to collect objective data to measure the actual dissolution of collaborative relationships.

Although our study mainly focuses on a public-nonprofit dyadic relationship, it is possible that such relationship is embedded in a broader network composed of other actors. Future research can test nonprofits’ willingness to maintain collaboration by taking network factors into account. Furthermore, applying distributive and procedural fairness to the inter-organizational network research can be a fruitful line of inquiry. While distributive justice illuminates the extent to which the allocation of resources and benefits is equitable from each network actor’s perspective, procedural justice provides insight into the norms and procedures that govern the behavior and interactions of network actors. Both of the concepts could shape factors such as trust, reciprocity, and cooperation that are crucial in fostering network inner stability and success (Turrini, Cristofoli, Frosini, & Nasi, 2010). Hence, future network research could empirically test the role and impact of distributional and procedural justice.

There are a few limitations associated with the justice concepts in this study. As Colquitt’s (2001) distributive justice measures, our items do not specify a comparison of a nonprofit’s benefit-contribution ratio with that of the government collaborator. While Adam (1965) theorized the need for a comparison party in determining equity, later research such as Deutsch (1975) and Leventhal (1976) and many widely used measures of distributive justice
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have (e.g., Colquitt, 2001; Sweeney & McFarlin, 1993) deemphasized such comparison. We also deemphasized such comparison because nonprofits and government collaborate in many different ways, it is not always appropriate to draw a comparison between their benefit-contribution ratios. Furthermore, procedural justice in this study focuses on nonprofits’ voice and influence in decision making rather than the fairness of the actual procedures used in the collaboration. Future research that applies Leventhal’s (1980) six criteria of fair procedures to public-nonprofit collaboration can offer important insights. For instance, studies can investigate whether there are existing procedures to govern the decision-making processes and conflict resolution. They can also examine the extent to which the procedures governing each developmental phase of a collaboration are transparent, unbiased and nondiscriminatory to each party involved, and consistent with the contract or formal agreement (Luo 2007).

In addition, our model does not examine the role of interactional justice in maintaining collaboration. Interaction justice refers to the fairness of treatment received in interpersonal interaction (Bies & Moag, 1986; Luo, 2007); it can offer important perspectives that distributive and procedural justice do not capture. Future research is necessary to test the influence of interactional justice on public-nonprofit collaboration. Specifically, research can examine the extent to which a nonprofit manager is treated with respect, dignity, and politeness (Luo 2007) in the collaboration influences his or her attitudes toward the collaboration. Also, the study only examines distributive and procedural justice from nonprofit executives’ perspectives. Future research could examine whether there is a shared justice perception between nonprofits and government partners. If the perception of justice is not common to both parties, negative emotions and conflicts may arise (Luo, 2005).
In sum, despite these limitations, this study represents the first effort in exploring the maintenance of public-nonprofit collaborations from a nonprofit perspective. It contributes to the literature by simultaneously considering instrumental and relational factors in shaping public-nonprofit collaboration continuation and offering important public management implications. We call for future research to employ more nuanced data to further explore this question.
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References


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<table>
<thead>
<tr>
<th>Service Sector</th>
<th>Revenue</th>
<th>Sampling Frame</th>
<th>Sample</th>
<th>Sampling Frame</th>
<th>Sample</th>
<th>Sampling Frame</th>
<th>Sample</th>
<th>Sampling Frame</th>
<th>Sample</th>
<th>Total percentage of organizations</th>
</tr>
</thead>
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<tr>
<td></td>
<td>$100,000 - $250,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crime and legal related (I)</td>
<td>1.58%</td>
<td>4.00%</td>
<td>2.02%</td>
<td>2.55%</td>
<td>1.65%</td>
<td>0.73%</td>
<td>5.25%</td>
<td>7.27%</td>
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<tr>
<td>Employment (J)</td>
<td>0.63%</td>
<td>0.36%</td>
<td>1.84%</td>
<td>1.82%</td>
<td>2.89%</td>
<td>4.00%</td>
<td>5.37%</td>
<td>6.18%</td>
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<td></td>
</tr>
<tr>
<td>Food, agriculture, and nutrition (K)</td>
<td>1.25%</td>
<td>1.45%</td>
<td>1.03%</td>
<td>0.73%</td>
<td>1.20%</td>
<td>2.55%</td>
<td>3.48%</td>
<td>4.73%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing and shelter (L)</td>
<td>5.81%</td>
<td>1.45%</td>
<td>9.19%</td>
<td>12.73%</td>
<td>6.75%</td>
<td>6.91%</td>
<td>21.75%</td>
<td>21.09%</td>
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<td>Public safety, disaster response and relief (M)</td>
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<td>0.36%</td>
<td>0.30%</td>
<td>0.00%</td>
<td>0.13%</td>
<td>0.00%</td>
<td>0.81%</td>
<td>0.36%</td>
<td></td>
<td></td>
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<tr>
<td>Youth development (O)</td>
<td>2.79%</td>
<td>1.82%</td>
<td>3.15%</td>
<td>2.55%</td>
<td>2.40%</td>
<td>2.18%</td>
<td>8.34%</td>
<td>6.55%</td>
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<td></td>
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<tr>
<td>Human services organizations (P)</td>
<td>13.45%</td>
<td>8.73%</td>
<td>18.56%</td>
<td>21.09%</td>
<td>23%</td>
<td>24.00%</td>
<td>55%</td>
<td>53.82%</td>
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</tr>
<tr>
<td><strong>Total percentage of organizations</strong></td>
<td><strong>26.50%</strong></td>
<td><strong>18.18%</strong></td>
<td><strong>36.33%</strong></td>
<td><strong>41.45%</strong></td>
<td><strong>38.09%</strong></td>
<td><strong>40.36%</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
*There are minor differences between this version and the published version.

Table 2a. Descriptive Statistics (Continuous Variables)

<table>
<thead>
<tr>
<th>Studied Variables</th>
<th>Mean</th>
<th>S.D.</th>
<th>Min</th>
<th>Max</th>
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<td>Intention to maintain collaboration</td>
<td>4.70</td>
<td>0.60</td>
<td>1</td>
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<tr>
<td>Affective commitment</td>
<td>3.53</td>
<td>0.79</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Continuance commitment</td>
<td>3.51</td>
<td>1.04</td>
<td>1</td>
<td>5</td>
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<tr>
<td>Distributive justice</td>
<td>3.64</td>
<td>0.97</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Procedural justice</td>
<td>3.30</td>
<td>0.80</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Resource dependence on government (%)</td>
<td>29.82</td>
<td>28.40</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Control Variables</th>
<th>Mean</th>
<th>S.D.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government red tape</td>
<td>50.92</td>
<td>28.01</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Length of collaboration (years)</td>
<td>4.07</td>
<td>1.12</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Nonprofit revenue size (US $)</td>
<td>$3,909,729</td>
<td>11,100,000</td>
<td>$100,113</td>
<td>$130,000,000</td>
</tr>
</tbody>
</table>

Table 2b. Descriptive Statistics (Categorical Variables)

<table>
<thead>
<tr>
<th>Studied Variable</th>
<th>Percentage of Organizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal agreement</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>87.27</td>
</tr>
<tr>
<td>No</td>
<td>12.73</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Control Variable</th>
<th>Percentage of Organizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levels of government</td>
<td></td>
</tr>
<tr>
<td>Local</td>
<td>64.00</td>
</tr>
<tr>
<td>State</td>
<td>27.27</td>
</tr>
<tr>
<td>Federal</td>
<td>8.73</td>
</tr>
</tbody>
</table>
*There are minor differences between this version and the published version.

**Table 3. Zero-Order Correlations**

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Intention to maintain collaboration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2  Affective commitment</td>
<td></td>
<td>0.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3  Continuance commitment</td>
<td>0.22***</td>
<td>-0.26***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4  Distributive justice</td>
<td>0.10*</td>
<td>0.38***</td>
<td>-0.12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5  Procedural justice</td>
<td>0.14**</td>
<td>0.55***</td>
<td>-0.17***</td>
<td>0.41***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6  Formal agreement</td>
<td>0.12***</td>
<td>0.07</td>
<td>0.32***</td>
<td>0.15**</td>
<td>-0.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7  Resource dependence on government</td>
<td>0.15***</td>
<td>-0.14**</td>
<td>0.39***</td>
<td>-0.02</td>
<td>-0.14**</td>
<td>0.18***</td>
<td></td>
</tr>
</tbody>
</table>

Note: N = 275, * p < .1, ** p < .05, *** p < .01.
*There are minor differences between this version and the published version.

Figure 1. Theoretical Model
Figure 2. Final Structural Model

Note: ***p<.01. For purposes of clarity, control variables (nonprofit size, the length of the collaboration, the level of government in collaboration, and government red tape) are not shown in the graph.
*There are minor differences between this version and the published version.*

### Appendix A. Variable Measurements

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intention to maintain collaboration (a)</td>
<td>How likely is it that your organization will continue the collaboration in the future with the government entity that your organization currently collaborates most with?</td>
</tr>
</tbody>
</table>
| Continuance commitment (CC) \(b\)            | CC1: It would be very hard for our organization to leave the collaboration right now, even if we wanted to.  
                                          | CC2: We feel that we have too few options to consider if we leave this collaboration.  
                                          | CC3: Too many of our organizational activities would be disrupted if we decided to leave the collaboration. |
| Affective commitment (AC) \(b\)              | AC1: This collaboration has a great deal of meaning for our organization.  
                                          | AC2: We do not feel a strong sense of belonging to this collaboration (reverse coding).  
                                          | AC3: Right now, staying in the collaboration is a matter of necessity rather than desire (reverse coding). |
| Resource dependence on government            | The percentage of revenue funded by the government entity that your organization currently collaborates with most in 2014. |
| Formal agreement                             | Formal contracts, grants, or legal agreements=1; otherwise =0                                                                                 |
| Distributive justice (DJ) \(b\)              | DJ1: The benefits we derive from our collaboration with the government is fair in view of the resources we contribute to the collaboration.  
                                          | DJ2: The benefits we derive from our collaboration with the government is fair in view of the amount of effort we put into the collaboration.  
                                          | DJ3: The benefits we derive from our collaboration with the government is fair in view of the level of responsibility we have in the collaboration.  
                                          | DJ4: The benefits we derive from our collaboration with the government is fair in view of our performance in the collaboration. |
| Procedural justice (PJ) \(b\)                | PJ1: Our organization has a great deal of influence over the decisions made in the collaboration.  
                                          | PJ2: Our organization can openly express its concerns in the collaboration. |
| Red tape \(c\)                                | How would you rate the level of red tape in dealing with the government entity that your organization currently collaborates with most?         |
| Organization size                             | Total revenue in U.S. dollars in 2014 in natural logarithm                                                                                   |
| Levels of government                          | What is the level of government entity that your organization currently collaborates most with (local=1, state=2, federal=3)? |
Collaboration years | How many years has your organization collaborated with the government entity that your organization currently collaborates most with?
--- | ---

Notes:

a. All items were measured on a 1-5 scale (1=very unlikely, 2=unlikely, 3=undecided, 4=likely, 5=very likely).
b. All items were measured on a 1-5 scale (1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree).
c. Items were measured on a 100-point scale with 1= the lowest level of red tape and 100 = the highest level of red tape.