A Structural Equation Modeling of Antecedents and Outcomes of Trust Between Non-profit Organizations and Enterprises

Yang-cheng HU¹,* and Xiao-ling PANG²

¹School of Business Administration, Nanchang Institute of Technology, Nanchang, China
²Library, Nanchang Institute of Technology, Nanchang, China

*Corresponding author

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Abstract. Trust is widely accepted as an important determinant of cooperative performance in strategic alliance, whereas few studies have been conducted in cross-sector partnerships. In this study, a conceptual model was constructed to explore the antecedents and outcomes of trust between non-profit organizations and enterprises. In the conceptual model, partner reputation and prior cooperative experience were selected as antecedents. Based on the questionnaires, the conceptual model was empirically tested via structural equation modeling using LISREL 8.80 software package. The empirical results reveal that partner reputation and prior cooperative experience have significant positive impacts on trust, and trust has significant positive impact on cooperative performance. The results can be used to guide the cooperative practices between non-profit organizations and enterprises. Limitations as well as research directions were also discussed.

Introduction

In recent years, the role of trust between non-profit organizations and enterprises has gradually attracted the attention of scholars. Although existing research has recognized that inter-organizational trust has an important influence on the cooperative outcomes, there are still many shortcomings in theoretical and empirical research. First, there is a lack of research on antecedents of trust. After confirming that inter-organizational trust does improve cooperative performance, it will be necessary to understand how to achieve trust between the partners, meaning that it is necessary to study the factors that influence it. Next, there is a lack of research on trust between non-profit organizations and enterprises. Since there are many fundamental differences between cross-sector cooperation and alliance within the same sector, it is necessary to conduct specialized research on trust between non-profit organizations and enterprises. Finally, the current transformation of Chinese institutions has led both non-profit organizations and enterprises to face a complex and changing environment resulting from the comprehensive deepening of reform. Accordingly, it is necessary to further examine trust between non-profit organizations and enterprises in Chinese contexts.

The reminder of this paper is organized as follows. Firstly, we construct a conceptual model based on the review of relevant literature. Secondly, we elaborate the structural equation modeling method used to conduct hypotheses testing and empirical analysis on a survey of Chinese non-profit organizations. Thirdly, we interpret the hypotheses testing and empirical results. Fourth, we discuss the conclusions, implications, limitations and directions for future research.

Constructing of the Conceptual Model

Partner Reputation and Trust

Resource-based theory argues that a good reputation is a valuable intangible asset that contributes toward an organization obtaining scarce resources from the external environment. Reputation can provide information concerning management quality, employee competence, financial stability, social responsibility, and product and service quality. A good reputation can be used as a substitute for
direct communication with a potential cooperative partner, thereby reducing concerns about moral risk and reverse choice. Once a corporation has established a reputation of honesty, fairness, and trustworthiness, potential partners will consider the corporation to be reliable and trustworthy. On the contrary, an corporation with a poor reputation may be considered more likely to take opportunistic action. The empirical results showed that reputation is positively correlated with trust[1]. Therefore, this study presents the following hypothesis:

H1: Partner reputation has a significant and positive effect on trust.

Prior Cooperative Experience and Trust

According to organizational learning theory, an experience in participating in a specific event or practice helps to identify and correct existing errors and improve its future behavior by utilizing the acquired knowledge. Accumulated cooperation experience has a notable impact on the value of an alliance partner. A large number of studies have stressed the importance of organizational learning concerning the arrangement of cooperation between different organizations. Therefore, prior cooperative experience can lead to trust during the establishment of reputation. Some studies have proved that specific partner experience affects trust in strategic alliances [2]. In summary, this study presents the following hypothesis:

H2: Prior cooperative experience has a significant and positive effect on trust.

Trust and Cooperative Performance

Studies on the relationship between trust and cooperative effects have shown inconsistencies. Many scholars found trust had a positive impact on cooperative effect. However, others have found no significant link. Theoretically, trust can help to eliminate speculation, prevent opportunism, and promote collaboration [3]. On the basis of trust, the partners can conduct thorough communications and thus help to find better solutions for various problems, thus helping to ensure the achievement of the expected results. This view is supported by some empirical studies [4, 5]. In this regard, this study presents the following hypothesis:

H3: There is a positive relationship between trust and cooperative performance.

In summary, the overall conceptual model shown in Fig. 1 was developed.

![Conceptual model of this study.](image)

Methodology

Sample and Data Collection

The target samples for this study were non-profit organizations that had cooperative experience with enterprises. A total of 650 questionnaires were handed out, and 167 valid questionnaires were returned. The sample non-profit organizations involve different size and types, which better ensure the representativeness of the sample.

Variables and Measures

Based on previous studies[1, 6], partner reputation was measured by four items. Based on previous studies [1, 2], prior cooperative experience was measured by four items. Based on previous studies [3,
7], trust between non-profit organizations and enterprises was divided into four dimensions. Based on studies of [3, 8, 9], the cooperative performance was divided into three dimensions. All the scale items were measured with a seven-point Likert-type scale ranging from 1 = “completely disagree” to 7 = “completely agree.”

**Statistical Method**

Structural equation modeling (SEM) method was used in this study to test the hypotheses. The SEM includes two parts: the structural model and the measurement model. The structural model reflects the causal relationships between the latent variables, while the measurement model represents the relationships between the latent variable and the observed variable [10, 11]. As shown in Fig. 2, there are two exogenous variables (partner reputation and prior cooperative experience) and two endogenous variable (trust and cooperative performance).

The detailed matrix equations of SEM are as follows.

Structural equation:

\[
\begin{bmatrix}
\eta_1 \\
\eta_2
\end{bmatrix} =
\begin{bmatrix}
0 & 0 \\
\beta_{21} & 0
\end{bmatrix}
\begin{bmatrix}
\eta_1 \\
\eta_2
\end{bmatrix} +
\begin{bmatrix}
\gamma_{11} \\
\gamma_{12}
\end{bmatrix}
\begin{bmatrix}
\xi_1 \\
\xi_2
\end{bmatrix} +
\begin{bmatrix}
\gamma_1 \\
\gamma_2
\end{bmatrix}
\begin{bmatrix}
\xi_1 \\
\xi_2
\end{bmatrix}.
\]

(1)

Measurement equations:

\[
\begin{bmatrix}
y_1 \\
y_2 \\
y_3 \\
y_4 \\
y_5 \\
y_6 \\
y_7
\end{bmatrix} =
\begin{bmatrix}
\lambda_{y_{11}} & 0 \\
\lambda_{y_{21}} & 0 \\
\lambda_{y_{31}} & 0 \\
\lambda_{y_{41}} & 0 \\
0 & \lambda_{y_{52}} \\
0 & \lambda_{y_{62}} \\
0 & \lambda_{y_{72}}
\end{bmatrix}
\begin{bmatrix}
\eta_1 \\
\eta_2 \\
\xi_1 \\
\xi_2 \\
\xi_1 \\
\xi_2 \\
\xi_1
\end{bmatrix} +
\begin{bmatrix}
\epsilon_1 \\
\epsilon_2 \\
\epsilon_3 \\
\epsilon_4 \\
\epsilon_5 \\
\epsilon_6 \\
\epsilon_7
\end{bmatrix}.
\]

(2)

\[
\begin{bmatrix}
x_1 \\
x_2 \\
x_3 \\
x_4 \\
x_5 \\
x_6 \\
x_7 \\
x_8
\end{bmatrix} =
\begin{bmatrix}
\lambda_{x_{11}} & 0 \\
\lambda_{x_{21}} & 0 \\
\lambda_{x_{31}} & 0 \\
\lambda_{x_{41}} & 0 \\
0 & \lambda_{x_{52}} \\
0 & \lambda_{x_{62}} \\
0 & \lambda_{x_{72}} \\
0 & \lambda_{x_{82}}
\end{bmatrix}
\begin{bmatrix}
\eta_1 \\
\eta_2 \\
\xi_1 \\
\xi_2 \\
\xi_1 \\
\xi_2 \\
\xi_1 \\
\xi_2
\end{bmatrix} +
\begin{bmatrix}
\delta_1 \\
\delta_2 \\
\delta_3 \\
\delta_4 \\
\delta_5 \\
\delta_6 \\
\delta_7 \\
\delta_8
\end{bmatrix}.
\]

(3)

The SEM with parameters of this study was established, as shown in Fig. 2.

Figure 2. Theoretical model with parameters.
Results and Hypotheses Testing

Fit of the Conceptual Model

Using the LISREL 8.80 statistical software, the path relationships between the variables were analyzed via SEM [10, 11].

The normalized factor loadings of the measurement items are all significant (p < 0.01); the values are between 0.50 and 0.95; and there are no negative measurement errors. $\chi^2 = 107.54$, $df = 86$, and $\chi^2/df < 3$; $RMR = 0.068$, $RMSEA = 0.039$, and all meet the criteria of being less than 0.10. $GFI = 0.92$, $NFI = 0.94$, $CFI = 0.99$, and all meet the standard of 0.90. The goodness of fit of the conceptual model is enough. Hence, the proposed research hypotheses can be tested based on the path relationships between the model variables. The results are shown in Fig. 3 and Table 1.

![Figure 3. Path relationships between variables.](image)

Hypotheses Testing

The standardized coefficients were used to explain the relationship between the variables. Fig. 3 shows that the normalized path coefficient between partner reputation and trust is positive and significant ($\gamma_{11} = 0.37$, $t$ - value = 3.86, $p < 0.001$), therefore, this study accepts hypotheses H1. The normalized path coefficient between prior cooperative experience and trust is positive and significant ($\gamma_{12} = 0.21$, $t$ - value = 2.42, $p < 0.05$), therefore, this study accepts hypotheses H2. The normalized path coefficient between trust and cooperative performance is positive and significant ($\beta_{21} = 0.75$, $t$ - value = 7.36, $p < 0.001$), indicating that the impact is strong. Therefore, this study accepts hypotheses H3.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Path relationship</th>
<th>Normalized coefficient</th>
<th>$t$-value</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>PAR $\rightarrow$ INT</td>
<td>0.37</td>
<td>3.86 ***</td>
<td>Supported</td>
</tr>
<tr>
<td>H2</td>
<td>PCE $\rightarrow$ INT</td>
<td>0.21</td>
<td>2.42 *</td>
<td>Supported</td>
</tr>
<tr>
<td>H3</td>
<td>INT $\rightarrow$ COP</td>
<td>0.75</td>
<td>7.36 ***</td>
<td>Supported</td>
</tr>
</tbody>
</table>

Table 1. Hypotheses testing results.
Conclusions, Implications and Research Directions

Conclusions

In this study, a conceptual model was constructed in the context of cooperation between non-profit organizations and enterprises. The results support our three hypotheses. First, both partner reputation and prior cooperative experience have positive impacts on trust. Using partner reputation and prior cooperative experience as antecedents, this study revealed how to improve trust between non-profit organizations and enterprises. Second, we provided empirical evidence that trust is positively associated with collaborative performance which deepens the arguments that trust is an important factor that determines collaborative effectiveness [3].

Practical Implications

Our findings confirm the long-standing belief that trust is a key prerequisite for successful cooperation. This means that non-profit organizations and enterprises should constantly strive to establish and maintain mutual trust through which to improve the effectiveness of their cooperation. Further, this study offers an implementation path for building trust. Namely, the partners need to shape a good organizational reputation while actively participating in cooperative activities, which will help to build trust between them.

Limitations and Research Directions

Firstly, the study asked a single key respondent from non-profit organizations. Future research should collect data from both non-profit organizations and enterprises. Secondly, the study does not explore other antecedents, like environmental uncertainty and partner fit, which is worth to be empirically tested. Finally, additional work in this area can explore the influencing mechanism of trust on cooperative performance. A conceptual model that includes mediating variables and moderating variables is need to be explored.

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References


