Judgment model for relationship quality in New Zealand construction projects

Work-In-Progress

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Outline

- Research Motivation/ Problem Statement
- Research Objectives/ Research Questions
- Research Method
- Conceptual framework
- Results
- Conclusions
- Benefits to the industry
- Articles

Relationship Quality (RQ) has been established in other fields as a measure of relationship statues (Business and marketing) (Crosby et al., 1990; Dorsch et al., 1998; Roberts et al., 2003)

In construction relationship evaluation techniques are not clearly structured or formulized (Bygballe et al., 2010)

It is difficult to indicate how relational a contract or agreement can be; and contracting parties do not know how relationships are assessed by the other party (Meng, 2010; Yeung et al., 2012)

If it is recognized how different parties judge their RQ in construction; relationship management could become much easier (Ling et al., 2014)
The current study tries to understand the nature of attributes used for RQ judgments among construction practitioners.

Based on evaluating the judgment of construction professional’s towards their working relationships the importance of RQ attributes is quantified.

It is also important to understand if there is a general consensus over RQ or are there different views of judgment among construction practitioners.
The research is conducted among New Zealand construction practitioners

Professional bodies

- NZCID
- BRANZ
- PMI NZ
- AMINZ

RESEARCH METHOD: DATA STAGES

- Literature review
  - Finding relational attributes in previous work (80 articles were reviewed)
  - Criticality, citing and significance in literature
- Interviews
  - To acquire a more practice based view of RQ attributes and validate the findings in the literature
  - Interviewees (managers, engineers, project managers, mediators, negotiators, and arbitrators) 21 in total
- Survey
  - The survey design was based on conjoint analysis (orthogonal array)
  - The survey was conducted among construction industry practitioners

Method of data analysis

- Content analysis (literature and interviews)
- Conjoint analysis (survey results)
- Cluster analysis (survey results)
- Correspondence analysis (survey results)

Ethics approval was obtained in early 2013 the process of data collection started immodestly in March 2013.

**Survey Design (for Judgment Model)**

The goal was to evaluate how industry participants make judgments regarding their Relationship Quality

<table>
<thead>
<tr>
<th>Card ID</th>
<th>Trust</th>
<th>Performance satisfaction</th>
<th>Commitment</th>
<th>Teamwork</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Fairly satisfied</td>
<td>Fairly Committed</td>
<td>Moderate teamwork</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>No satisfaction</td>
<td>Extremely committed</td>
<td>Moderate teamwork</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Extremely satisfied</td>
<td>Fairly Committed</td>
<td>Poor teamwork</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>Fairly satisfied</td>
<td>Not committed</td>
<td>Great teamwork</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>Extremely satisfied</td>
<td>Not committed</td>
<td>Moderate teamwork</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>No satisfaction</td>
<td>Fairly Committed</td>
<td>Great teamwork</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>No satisfaction</td>
<td>Not committed</td>
<td>Poor teamwork</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>Extremely satisfied</td>
<td>Extremely committed</td>
<td>Great teamwork</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>Fairly satisfied</td>
<td>Extremely committed</td>
<td>Poor teamwork</td>
</tr>
<tr>
<td>10a</td>
<td>10</td>
<td>No satisfaction</td>
<td>Extremely committed</td>
<td>Poor teamwork</td>
</tr>
<tr>
<td>11a</td>
<td>11</td>
<td>Fairly satisfied</td>
<td>Extremely committed</td>
<td>Poor teamwork</td>
</tr>
<tr>
<td>12a</td>
<td>12</td>
<td>No satisfaction</td>
<td>Extremely committed</td>
<td>Poor teamwork</td>
</tr>
<tr>
<td>13a</td>
<td>13</td>
<td>No satisfaction</td>
<td>Not committed</td>
<td>Great teamwork</td>
</tr>
</tbody>
</table>

Orthogonal array generated for the four relationship quality attributes in three levels via fractional factorial design (SPSS).

### RESULTS (CONJOINT ANALYSIS)

<table>
<thead>
<tr>
<th>Factors</th>
<th>Levels</th>
<th>Utility Estimate (Discrete)</th>
<th>Utility Estimate NOP* (Discrete)</th>
<th>Utility Estimate (Linear)</th>
<th>Utility Estimate NOP* (Linear)</th>
<th>Importance index</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trust</strong></td>
<td>There is no trust indication</td>
<td>-.752</td>
<td>-1.096</td>
<td>.588</td>
<td>.782</td>
<td>23.200(D)</td>
</tr>
<tr>
<td></td>
<td>Fairly trustworthy</td>
<td>.329</td>
<td>.471</td>
<td>1.176</td>
<td>1.565</td>
<td>22.430(NOP* D)</td>
</tr>
<tr>
<td></td>
<td>Extremely trustworthy</td>
<td>.423</td>
<td>.625</td>
<td>1.764</td>
<td>2.347</td>
<td>20.861(L)</td>
</tr>
<tr>
<td><strong>Performance satisfaction</strong></td>
<td>No satisfaction</td>
<td>-1.797</td>
<td>-2.141</td>
<td>1.455</td>
<td>1.640</td>
<td>31.900(D)</td>
</tr>
<tr>
<td></td>
<td>Fairly satisfied</td>
<td>.685</td>
<td>.845</td>
<td>2.910</td>
<td>3.281</td>
<td>31.949(NOP* D)</td>
</tr>
<tr>
<td></td>
<td>Extremely satisfied</td>
<td>1.113</td>
<td>1.296</td>
<td>4.365</td>
<td>4.921</td>
<td>34.797(L)</td>
</tr>
<tr>
<td><strong>Commitment</strong></td>
<td>Not committed</td>
<td>-.892</td>
<td>-1.200</td>
<td>.968</td>
<td>1.129</td>
<td>21.514(D)</td>
</tr>
<tr>
<td></td>
<td>Fairly Committed</td>
<td>-.153</td>
<td>-.015</td>
<td>1.937</td>
<td>2.258</td>
<td>21.819 (NOP* D)</td>
</tr>
<tr>
<td></td>
<td>Extremely committed</td>
<td>1.045</td>
<td>1.215</td>
<td>2.905</td>
<td>3.388</td>
<td>23.259(L)</td>
</tr>
<tr>
<td><strong>Teamwork</strong></td>
<td>Poor team work</td>
<td>-.559</td>
<td>-.907</td>
<td>.854</td>
<td>.908</td>
<td>23.386(D)</td>
</tr>
<tr>
<td></td>
<td>Moderate teamwork</td>
<td>-.590</td>
<td>-.470</td>
<td>1.707</td>
<td>1.816</td>
<td>23.803 (NOP* D)</td>
</tr>
<tr>
<td></td>
<td>Great teamwork</td>
<td>1.149</td>
<td>1.377</td>
<td>2.561</td>
<td>2.724</td>
<td>21.086(L)</td>
</tr>
</tbody>
</table>

*Table 1: utility and importance index for relationship quality components

*New Orthogonal Plan (NOP)*

Results (CONJOIT ANALYSIS)

CLUSTER ANALYSIS

Clustering of the importance index for RQ generated via conjoint analysis

<table>
<thead>
<tr>
<th>Cluster members</th>
<th>Trust</th>
<th>Performance satisfaction</th>
<th>Commitment</th>
<th>Teamwork</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster 1</td>
<td>26</td>
<td>19.26</td>
<td>22.43</td>
<td>27.38</td>
</tr>
<tr>
<td>Cluster 2</td>
<td>15</td>
<td>50.03</td>
<td>14.85</td>
<td>14.87</td>
</tr>
<tr>
<td>Cluster 3</td>
<td>32</td>
<td>14.32</td>
<td>48</td>
<td>18.45</td>
</tr>
<tr>
<td>Cluster 4</td>
<td>1</td>
<td>7.41</td>
<td>18.52</td>
<td>66.66</td>
</tr>
</tbody>
</table>
CORRESPONDENCE ANALYSIS

Perceptual mapping of industry groups based on RQ judgment
Trust, commitment, teamwork and performance satisfaction are the main attributes of RQ.

In general, the most decisive factor in judgment of RQ is performance satisfaction.

There is no general agreement among the judgments and perceptions of different industry members.

The judgment trends of different industry groups are identified.

It is perceived that the judgment of the industry groups has two underlying basic dimensions of tangibility and effort of achievement.

Identified judgment trends among industry groups (based on RQ attributes)

The identified action, strategies and attributes for RQ enhancement

Industry can comprehend and Identify fit for purpose relationships

Industry can move towards using appropriate actions and strategies in maintaining their valuable relationships

An overall evaluation of each working relationship is also possible

ARTICLES


Thank You