

## OFFSHORE INFORMATION SYSTEMS PROJECT SUCCESS: THE ROLE OF SOCIAL EMBEDDEDNESS AND CULTURAL CHARACTERISTICS

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## Appendix A

### Project Illustration

#### *Background of the Offshore Project*

The offshore vendor firm in India was contracted by a client firm in the United States, which operates in the automobile sector, to develop a multiuser decision support system. The client firm had not previously contracted the services of the offshore vendor. The system being developed was of strategic importance to the customer as its core business processes related to planning and management of vendors were enabled by this information system. Given the strategic nature of the project, the project complexity was high, based on an assessment of use cases and adjusted function points. The project was budgeted for nearly 150,000 man hours of development time and was projected to take about four months to complete with 30 consultants and analysts assigned to the project. To accommodate for the requirements uncertainty, a total of 20 formal written changes were made to the contract.

In terms of project outcomes, there was a total cost overrun of 15 percent for billed man-hours for the development effort; and 22 percent additional expenditures incurred by the client above and beyond the negotiated billed expenses for specialized software, training, conferences, and visits to sites of customers or partners of the client firm. The project took a little under five months to complete. The client satisfaction,

measured four months after the completion of the project, was 3.8 on a scale of 1 to 7.

**Contractual Characteristics**

The project was monitored using a moderate level of detail for SLAs that were specified in the contract. Examples of these SLAs included budgeted versus actual man hours and monthly reporting. In addition, the contract type is best described as one focused on time and materials.

**Relational Exchange Characteristics**

The client firm’s score for trust in the vendor was 4.2 on the 1 to 7 scale. To facilitate coordination, a client representative of U.S. origin was assigned by the client firm to the project, and spent 20 percent of his time at the site in India. To facilitate discussions on critical issues and information exchange, the client visited the project team two times. During the project, an average of three project team members visited the client site two times.

**Vendor–Client Firm Work Practices Differences**

Based on the three-item scales for each of the six dimensions of organizational work practices, the scores for the client and vendor firm are shown below.

Work Practices Norms	Client	Vendor
Process versus result orientation	4.1	5.2
Employee versus job orientation	4.4	4.7
Parochialism versus professionalism	3.8	3.9
Open versus closed system	4.7	3.9
Loose versus tight control	5.0	5.2
Normative versus pragmatic orientation	4.0	5.1

As can be seen, the firms are quite similar with respect to three of the six practices. The largest differences were in the areas of process versus result orientation, open versus closed system, and normative versus pragmatic orientation.

**Project Leader Cultural Values and Differences with Client Representative**

A female project leader was assigned to manage the project. The project leader had significant project management experience, having managed 12 completed projects prior to this engagement. The cultural values of the project leader and the client representative, and their differences, based on Hofstede’s 100-point scale—as specified in the VSM 94 manual—are shown below.

Espoused Cultural Values	Project Leader	Client Representative
Uncertainty avoidance	42	64
Long-term orientation	64	29
Power distance	52	46
Individualism/collectivism	44	80
Masculinity/femininity	55	60

As can be seen, the project leader and the client representative are quite similar with respect to two of the five values. The largest differences between them are in the areas of uncertainty avoidance, long-term orientation, and individualism/collectivism.

# Appendix B

## Scales

**Organizational Work Practices (Hofstede et al. 1990);** 100-point scale (e.g., 0 = process-oriented; 100 = result-oriented)—the score for each practice is the average of the response to each of the three items.

*Process-oriented versus Result-oriented*

1. Comfortable in unfamiliar situations.
2. Each day brings new challenges.
3. People put in maximal effort.

*Employee-oriented versus Job-oriented*

1. Important decisions made by individuals.
2. Organization only interested in work people do.
2. Little concern for personal problems of employees.

*Parochial versus Professional*

1. People's private life is their own business.
2. Job competence is only criterion in hiring people.
3. Think three years ahead or more.

*Open System versus Closed System*

1. Only very special people fit in organization.
2. Organization and people closed and secretive.
3. New employees need more than a year to feel at home.

*Loose Control versus Tight Control*

1. Everybody cost-conscious.
2. Meeting times kept punctually.
3. Always speak seriously of organization and job.

*Normative versus Pragmatic*

1. Pragmatic, not dogmatic in matters of ethics.
2. Major emphasis on meeting customer needs.
3. Results more important than procedures.

**Interorganizational Trust (Aulakh et al. 1996);** Anchors: 1 = Strongly Disagree; 7 = Strongly Agree.

1. Our business relationship with [vendor name] is characterized by high levels of trust.
2. Our firm and [vendor name] generally trust each other that each will stay within the terms of the contract.
3. We and [vendor name] are generally skeptical of the information provided to each other. (reverse coded)

**Client Satisfaction (Nidumolu 1995);** Anchors: 1 = Very Poor; 7 = Very Good.

1. Ease of use of software.
2. Ability to customize outputs to various user needs.
3. Range of outputs that can be generated.
4. Overall responsiveness of software to users.

**Esposued Cultural Values (Hofstede's VSM94); 100-point scale**

*Calculations:*

Note that, mathematically, it is possible for the values to be below 0 and above 100.

Uncertainty avoidance =  $25(\text{item1}) + 20(\text{item2}) - 50(\text{item3}) - 15(\text{item4}) + 120$

Long-term orientation =  $45(\text{item1}) - 30(\text{item2}) - 35(\text{item3}) + 15(\text{item4}) + 67$

Power distance =  $-35(\text{item1}) + 35(\text{item2}) + 25(\text{item3}) - 20(\text{item4}) - 20$

Individualism =  $-50(\text{item1}) + 30(\text{item2}) + 20(\text{item3}) - 25(\text{item4}) + 130$

Masculinity =  $60(\text{item1}) - 20(\text{item2}) + 20(\text{item3}) - 70(\text{item4}) + 100$

<sup>a</sup>Measured on a 5-point Likert scale: 1 = very seldom; 5 = very frequently.

<sup>b</sup>Measured on a 5-point Likert scale: 1 = strongly disagree; 5 = strongly agree.

<sup>c</sup>Measured on a 5-point Likert scale: 1 = of utmost importance; 5 = of very little or no importance.

<sup>d</sup>Measured on a 5-point Likert scale: 1 = never; 5 = always.

*Uncertainty Avoidance (0 = weak uncertainty avoidance; 100 = strong uncertainty avoidance)*

1. How often do you feel nervous at work?<sup>a</sup>
2. One can be a good manager without having precise answers to most questions that subordinates may raise about their work.<sup>b</sup>
3. Competition between employees usually does more harm than good.<sup>b</sup>
4. A company's or organization's rules should not be broken—not even when the employee thinks it is in the company's best interest.<sup>b</sup>

*Long-term Orientation (0 = very short-term oriented; 100 = very long-term oriented)*

In your private life, how important is each of the following to you?

1. Personal steadiness and stability.<sup>c</sup>
2. Thrift.<sup>c</sup>
3. Persistence (perseverance).<sup>c</sup>
4. Respect for tradition.<sup>c</sup>

*Power Distance (0 = small power distance; 100 = large power distance)*

1. In your job, how important would it be to you to have a good working relationship with your direct superior?<sup>c</sup>
2. In your job, how important would it be to you to be consulted by your direct superior in his/her decisions?<sup>c</sup>
3. In your experience, how frequently are subordinates afraid to express disagreement with their superiors?<sup>d</sup>
4. An organization's structure in which certain subordinates have two bosses should be avoided at all costs.<sup>b</sup>

*Individualism/collectivism (0 = strongly collectivist; 100 = strongly individualist)*

1. In your job, how important would it be to you to have sufficient time for your personal or family life?<sup>c</sup>
2. In your job, how important would it be to you to have good physical working conditions?<sup>c</sup>
3. In your job, how important would it be to you to have security of employment?<sup>c</sup>
4. In your job, how important would it be to you to have an element of variety and adventure in the job?<sup>c</sup>

*Masculinity/femininity (0 = strongly feminine; 100 = strongly masculine)*

1. In your job, how important would it be to you to work well with people who cooperate well with one another?<sup>c</sup>
2. In your job, how important would it be to you to have an opportunity for advancement to higher level jobs?<sup>c</sup>
3. Most people can be trusted.<sup>b</sup>
4. When people have failed in life it is often their own fault.<sup>b</sup>

## Appendix C

### Equations

The dependent variables—cost overruns<sub>*ij*</sub> and client satisfaction<sub>*ij*</sub>—represent the outcomes for project *i* under project leader *j*. The intercepts are estimated separately for each project leader as indicated by the subscript *j* for each beta coefficient ( $\beta$ ). The level-1 residual is noted by  $r_{ij}$  (Bryk and Raudenbush 1992; Hofmann 1997). The gamma coefficients ( $\gamma$ ) are similar to beta coefficients, except that they are at level-2 and are estimated using a generalized least squares (GLS) approach (Bryk and Raudenbush 1992). Finally,  $U_{0j}$  is a level-2 residual. As the equations below indicate,  $\beta_{0j}$  was allowed to randomly vary so that we could test the cross-level main effects.

The equations for the results presented in Table 4 are outlined below. Note that the equations used to predict cost overruns and client satisfaction are the same. In the interest of brevity, we present the equations for cost overruns.

**Model 1***Level-1:*

Cost overruns<sub>ij</sub> =  $\beta_{0j}$  +  $\beta_{1j}$  Project complexity +  $\beta_{2j}$  Requirements uncertainty +  $\beta_{3j}$  Project size +  $\beta_{4j}$  Service level agreements +  $\beta_{5j}$  Risk sharing +  $r_{ij}$

*Level-2:*

$\beta_{0j} = Y_{00} + Y_{01}$  Project leader experience +  $U_{0j}$ ;  $\beta_{1j} = Y_{10}$ ;  $\beta_{2j} = Y_{20}$ ;  $\beta_{3j} = Y_{30}$ ;  $\beta_{4j} = Y_{40}$ ;  $\beta_{5j} = Y_{50}$

**Model 2***Level-1:*

Cost overruns<sub>ij</sub> =  $\beta_{0j}$  +  $\beta_{1j}$  Project complexity +  $\beta_{2j}$  Requirements uncertainty +  $\beta_{3j}$  Project size +  $\beta_{4j}$  Service level agreements +  $\beta_{5j}$  Risk sharing +  $\beta_{6j}$  Firm history +  $\beta_{7j}$  Trust +  $\beta_{8j}$  Clientmeet +  $\beta_{9j}$  Teammeet +  $\beta_{10j}$  Client representative +  $r_{ij}$

*Level-2:*

$\beta_{0j} = Y_{00} + Y_{01}$  Project leader experience +  $U_{0j}$ ;  $\beta_{1j} = Y_{10}$ ;  $\beta_{2j} = Y_{20}$ ;  $\beta_{3j} = Y_{30}$ ;  $\beta_{4j} = Y_{40}$ ;  $\beta_{5j} = Y_{50}$ ;  $\beta_{6j} = Y_{60}$ ;  $\beta_{7j} = Y_{70}$ ;  $\beta_{8j} = Y_{80}$ ;  $\beta_{9j} = Y_{90}$ ;  $\beta_{10j} = Y_{100}$

**Model 3***Level-1:*

Cost overruns<sub>ij</sub> =  $\beta_{0j}$  +  $\beta_{1j}$  Project complexity +  $\beta_{2j}$  Requirements uncertainty +  $\beta_{3j}$  Project size +  $\beta_{4j}$  Service level agreements +  $\beta_{5j}$  Risk sharing +  $\beta_{6j}$  Firm history +  $\beta_{7j}$  Trust +  $\beta_{8j}$  Clientmeet +  $\beta_{9j}$  Teammeet +  $\beta_{10j}$  Client representative +  $\beta_{11j}$   $\Delta$ Process +  $\beta_{12j}$   $\Delta$ Employee +  $\beta_{13j}$   $\Delta$ Parochial +  $\beta_{14j}$   $\Delta$ Open +  $\beta_{15j}$   $\Delta$ Loose +  $\beta_{16j}$   $\Delta$ Normative +  $r_{ij}$

*Level-2:*

$\beta_{0j} = Y_{00} + Y_{01}$  Project leader experience +  $U_{0j}$ ;  $\beta_{1j} = Y_{10}$ ;  $\beta_{2j} = Y_{20}$ ;  $\beta_{3j} = Y_{30}$ ;  $\beta_{4j} = Y_{40}$ ;  $\beta_{5j} = Y_{50}$ ;  $\beta_{6j} = Y_{60}$ ;  $\beta_{7j} = Y_{70}$ ;  $\beta_{8j} = Y_{80}$ ;  $\beta_{9j} = Y_{90}$ ;  $\beta_{10j} = Y_{100}$ ;  $\beta_{11j} = Y_{110}$ ;  $\beta_{12j} = Y_{120}$ ;  $\beta_{13j} = Y_{130}$ ;  $\beta_{14j} = Y_{140}$ ;  $\beta_{15j} = Y_{150}$ ;  $\beta_{16j} = Y_{160}$

**Model 4***Level-1:*

Cost overruns<sub>ij</sub> =  $\beta_{0j}$  +  $\beta_{1j}$  Project complexity +  $\beta_{2j}$  Requirements uncertainty +  $\beta_{3j}$  Project size +  $\beta_{4j}$  Service level agreements +  $\beta_{5j}$  Risk sharing +  $\beta_{6j}$  Firm history +  $\beta_{7j}$  Trust +  $\beta_{8j}$  Clientmeet +  $\beta_{9j}$  Teammeet +  $\beta_{10j}$  Client representation +  $\beta_{11j}$  Process +  $\beta_{12j}$   $\Delta$ Employee +  $\beta_{13j}$   $\Delta$ Parochial +  $\beta_{14j}$   $\Delta$ Open +  $\beta_{15j}$   $\Delta$ Loose +  $\beta_{16j}$   $\Delta$ Normative +  $r_{ij}$

*Level-2:*

$\beta_{0j} = Y_{00} + Y_{01}$  Project leader experience +  $Y_{02}$  Uncertainty avoidance +  $Y_{03}$  Long-term orientation +  $Y_{04}$  Power distance +  $Y_{05}$  Masculinity +  $Y_{06}$  Individualism +  $U_{0j}$ ;  $\beta_{1j} = Y_{10}$ ;  $\beta_{2j} = Y_{20}$ ;  $\beta_{3j} = Y_{30}$ ;  $\beta_{4j} = Y_{40}$ ;  $\beta_{5j} = Y_{50}$ ;  $\beta_{6j} = Y_{60}$ ;  $\beta_{7j} = Y_{70}$ ;  $\beta_{8j} = Y_{80}$ ;  $\beta_{9j} = Y_{90}$ ;  $\beta_{10j} = Y_{100}$ ;  $\beta_{11j} = Y_{110}$ ;  $\beta_{12j} = Y_{120}$ ;  $\beta_{13j} = Y_{130}$ ;  $\beta_{14j} = Y_{140}$ ;  $\beta_{15j} = Y_{150}$ ;  $\beta_{16j} = Y_{160}$

The equations for the results presented in Table 5 are outlined below. Note that the equations used to predict cost overruns and client satisfaction are the same. In the interest of brevity, we present the equations for cost overruns.

**Model 1***Level-1:*

Cost overruns<sub>ij</sub> =  $\beta_{0j}$  +  $\beta_{1j}$  Project complexity +  $\beta_{2j}$  Requirements uncertainty +  $\beta_{3j}$  Project size +  $\beta_{4j}$  Service level agreements +  $\beta_{5j}$  Risk sharing +  $r_{ij}$

*Level-2:*

$\beta_{0j} = Y_{00} + Y_{01}$  Project leader experience +  $U_{0j}$ ;  $\beta_{1j} = Y_{10}$ ;  $\beta_{2j} = Y_{20}$ ;  $\beta_{3j} = Y_{30}$ ;  $\beta_{4j} = Y_{40}$ ;  $\beta_{5j} = Y_{50}$

**Model 2***Level-1:*

Cost overruns<sub>ij</sub> =  $\beta_{0j}$  +  $\beta_{1j}$  Project complexity +  $\beta_{2j}$  Requirements uncertainty +  $\beta_{3j}$  Project size +  $\beta_{4j}$  Service level agreements +  $\beta_{5j}$  Risk sharing +  $\beta_{6j}$  Firm history +  $\beta_{7j}$  Trust +  $\beta_{8j}$  Clientmeet +  $\beta_{9j}$  Teammeet +  $\beta_{10j}$   $\Delta$ Process +  $\beta_{11j}$   $\Delta$ Employee +  $\beta_{12j}$   $\Delta$ Parochial +  $\beta_{13j}$   $\Delta$ Open +  $\beta_{14j}$   $\Delta$ Loose +  $\beta_{15j}$   $\Delta$ Normative +  $r_{ij}$

**Level-2:**

$$\beta_{0j} = \gamma_{00} + \gamma_{01} \text{ Project leader experience} + U_{0j}; \beta_{1j} = \gamma_{10}; \beta_{2j} = \gamma_{20}; \beta_{3j} = \gamma_{30}; \beta_{4j} = \gamma_{40}; \beta_{5j} = \gamma_{50}; \beta_{6j} = \gamma_{60}; \beta_{7j} = \gamma_{70}; \beta_{8j} = \gamma_{80}; \beta_{9j} = \gamma_{90}; \beta_{10j} = \gamma_{100}; \beta_{11j} = \gamma_{110}; \beta_{12j} = \gamma_{120}; \beta_{13j} = \gamma_{130}; \beta_{14j} = \gamma_{140}; \beta_{15j} = \gamma_{150}$$

**Model 3**

**Level-1:**

$$\text{Cost overruns}_{ij} = \beta_{0j} + \beta_{1j} \text{ Project complexity} + \beta_{2j} \text{ Requirements uncertainty} + \beta_{3j} \text{ Project size} + \beta_{4j} \text{ Service level agreements} + \beta_{5j} \text{ Risk sharing} + \beta_{6j} \text{ Firm history} + \beta_{7j} \text{ Trust} + \beta_{8j} \text{ Clientmeet} + \beta_{9j} \text{ Teammeet} + \beta_{10j} \Delta \text{Process} + \beta_{11j} \Delta \text{Employee} + \beta_{12j} \Delta \text{Parochial} + \beta_{13j} \Delta \text{Open} + \beta_{14j} \Delta \text{Loose} + \beta_{15j} \Delta \text{Normative} + r_{ij}$$

**Level-2:**

$$\beta_{0j} = \gamma_{00} + \gamma_{01} \text{ Project leader experience} + U_{0j}; \beta_{1j} = \gamma_{10}; \beta_{2j} = \gamma_{20}; \beta_{3j} = \gamma_{30}; \beta_{4j} = \gamma_{40}; \beta_{5j} = \gamma_{50}; \beta_{6j} = \gamma_{60}; \beta_{7j} = \gamma_{70}; \beta_{8j} = \gamma_{80}; \beta_{9j} = \gamma_{90}; \beta_{10j} = \gamma_{100}; \beta_{11j} = \gamma_{110}; \beta_{12j} = \gamma_{120}; \beta_{13j} = \gamma_{130}; \beta_{14j} = \gamma_{140}; \beta_{15j} = \gamma_{150}$$

**Model 4**

**Level-1:**

$$\text{Cost overruns}_{ij} = \beta_{0j} + \beta_{1j} \text{ Project complexity} + \beta_{2j} \text{ Requirements uncertainty} + \beta_{3j} \text{ Project size} + \beta_{4j} \text{ Service level agreements} + \beta_{5j} \text{ Risk sharing} + \beta_{6j} \text{ Firm history} + \beta_{7j} \text{ Trust} + \beta_{8j} \text{ Clientmeet} + \beta_{9j} \text{ Teammeet} + \beta_{10j} \Delta \text{Process} + \beta_{11j} \Delta \text{Employee} + \beta_{12j} \Delta \text{Parochial} + \beta_{13j} \Delta \text{Open} + \beta_{14j} \Delta \text{Loose} + \beta_{15j} \Delta \text{Normative} + \beta_{16j} \Delta \text{Uncertainty avoidance} + \beta_{17j} \Delta \text{Long-term orientation} + \beta_{18j} \Delta \text{Power distance} + \beta_{19j} \Delta \text{Masculinity} + \beta_{20j} \Delta \text{Individualism} + r_{ij}$$

**Level-2:**

$$\beta_{0j} = \gamma_{00} + \gamma_{01} \text{ Project leader experience} + U_{0j}; \beta_{1j} = \gamma_{10}; \beta_{2j} = \gamma_{20}; \beta_{3j} = \gamma_{30}; \beta_{4j} = \gamma_{40}; \beta_{5j} = \gamma_{50}; \beta_{6j} = \gamma_{60}; \beta_{7j} = \gamma_{70}; \beta_{8j} = \gamma_{80}; \beta_{9j} = \gamma_{90}; \beta_{10j} = \gamma_{100}; \beta_{11j} = \gamma_{110}; \beta_{12j} = \gamma_{120}; \beta_{13j} = \gamma_{130}; \beta_{14j} = \gamma_{140}; \beta_{15j} = \gamma_{150}; \beta_{16j} = \gamma_{160}; \beta_{17j} = \gamma_{170}; \beta_{18j} = \gamma_{180}; \beta_{19j} = \gamma_{190}; \beta_{20j} = \gamma_{200}$$

The equations for the results presented in Table 6 are outlined below. Note that the equations used to predict cost overruns and client satisfaction are the same. In the interest of brevity, we present the equations for cost overruns.

**Model 1**

**Level-1:**

$$\text{Cost overruns}_{ij} = \beta_{0j} + \beta_{1j} \text{ Project complexity} + \beta_{2j} \text{ Requirements uncertainty} + \beta_{3j} \text{ Project size} + \beta_{4j} \text{ Service level agreements} + \beta_{5j} \text{ Risk sharing} + r_{ij}$$

**Level-2:**

$$\beta_{0j} = \gamma_{00} + \gamma_{01} \text{ Project leader experience} + U_{0j}; \beta_{1j} = \gamma_{10}; \beta_{2j} = \gamma_{20}; \beta_{3j} = \gamma_{30}; \beta_{4j} = \gamma_{40}; \beta_{5j} = \gamma_{50}$$

**Model 2**

**Level-1:**

$$\text{Cost overruns}_{ij} = \beta_{0j} + \beta_{1j} \text{ Project complexity} + \beta_{2j} \text{ Requirements uncertainty} + \beta_{3j} \text{ Project size} + \beta_{4j} \text{ Service level agreements} + \beta_{5j} \text{ Risk sharing} + \beta_{6j} \text{ Firm history} + \beta_{7j} \text{ Trust} + \beta_{8j} \text{ Clientmeet} + \beta_{9j} \text{ Teammeet} + \beta_{10j} \Delta \text{Process} + \beta_{11j} \Delta \text{Employee} + \beta_{12j} \Delta \text{Parochial} + \beta_{13j} \Delta \text{Open} + \beta_{14j} \Delta \text{Loose} + \beta_{15j} \Delta \text{Normative} + r_{ij}$$

**Level-2:**

$$\beta_{0j} = \gamma_{00} + \gamma_{01} \text{ Project leader experience} + U_{0j}; \beta_{1j} = \gamma_{10}; \beta_{2j} = \gamma_{20}; \beta_{3j} = \gamma_{30}; \beta_{4j} = \gamma_{40}; \beta_{5j} = \gamma_{50}; \beta_{6j} = \gamma_{60}; \beta_{7j} = \gamma_{70}; \beta_{8j} = \gamma_{80}; \beta_{9j} = \gamma_{90}; \beta_{10j} = \gamma_{100}; \beta_{11j} = \gamma_{110}; \beta_{12j} = \gamma_{120}; \beta_{13j} = \gamma_{130}; \beta_{14j} = \gamma_{140}; \beta_{15j} = \gamma_{150}$$

**Model 3**

**Level-1:**

$$\text{Cost overruns}_{ij} = \beta_{0j} + \beta_{1j} \text{ Project complexity} + \beta_{2j} \text{ Requirements uncertainty} + \beta_{3j} \text{ Project size} + \beta_{4j} \text{ Service level agreements} + \beta_{5j} \text{ Risk sharing} + \beta_{6j} \text{ Firm history} + \beta_{7j} \text{ Trust} + \beta_{8j} \text{ Clientmeet} + \beta_{9j} \text{ Teammeet} + \beta_{10j} \Delta \text{Process} + \beta_{11j} \Delta \text{Employee} + \beta_{12j} \Delta \text{Parochial} + \beta_{13j} \Delta \text{Open} + \beta_{14j} \Delta \text{Loose} + \beta_{15j} \Delta \text{Normative} + r_{ij}$$

**Level-2:**

$$\beta_{0j} = \gamma_{00} + \gamma_{01} \text{ Project leader experience} + \gamma_{02} \text{ Uncertainty avoidance} + \gamma_{03} \text{ Long-term orientation} + \gamma_{04} \text{ Power distance} + \gamma_{05} \text{ Masculinity} + \gamma_{06} \text{ Individualism} + U_{0j}; \beta_{1j} = \gamma_{10}; \beta_{2j} = \gamma_{20}; \beta_{3j} = \gamma_{30}; \beta_{4j} = \gamma_{40}; \beta_{5j} = \gamma_{50}; \beta_{6j} = \gamma_{60}; \beta_{7j} = \gamma_{70}; \beta_{8j} = \gamma_{80}; \beta_{9j} = \gamma_{90}; \beta_{10j} = \gamma_{100}; \beta_{11j} = \gamma_{110}; \beta_{12j} = \gamma_{120}; \beta_{13j} = \gamma_{130}; \beta_{14j} = \gamma_{140}; \beta_{15j} = \gamma_{150}$$

# Appendix D

## Descriptive Statistics and Correlations for Post Hoc Analysis (N = 53)

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Cost overruns	31.20	12.58															
2. Client satisfaction	4.80	1.38	-.35***														
3. Project complexity	9.050	2.180	.23***	-.22***													
4. Req. uncertainty	18.25	6.29	.26***	-.26***	.31***												
5. Project size	410,184	68,689	.28***	-.29***	.30***	.32***											
6. Project experience	8.00	2.25	-.19**	.21***	.09	.29***	.18*										
7. SLA	1.30	0.45	-.21***	.18**	.25***	.25***	.21***	.25***									
8. Risk sharing	1.40	0.41	-.39***	.23***	.20**	.24***	.27***	.19**	.17*								
9. Firm history	3.19	1.40	-.16*	.26***	.27***	.18**	.24***	.19**	.29***	.27***							
10. Trust	4.59	1.50	-.30***	.35***	.20**	.20**	.15*	.28***	.14*	-.15*	.13*						
11. Clientmeet	4.55	1.60	-.22***	.25***	.23***	.27***	.19*	.23***	.20**	.09	.27***	.15*					
12. Teammeet	8.40	1.10	-.14*	.12*	.20**	.18**	.28***	.14*	.23***	.18**	.21***	.17*	.20**				
13. ΔProcess	12.30	7.15	.21***	-.26***	.10	.12*	.08	.10	.04	.10	.11	.10	.06	.08			
14. ΔEmployee	11.60	7.13	.10	.08	.17**	.15*	.02	.06	.10	.11	.13*	.06	.03	.14*			
15. ΔParochial	9.20	6.84	.16*	.15*	.17**	.10	.15*	.15*	.15*	.14*	.08	.14*	.04	.06	.15*	.22***	
16. ΔOpen	7.50	8.88	.26***	.25***	.11	.09	.14*	.17*	.10	.08	.10	.08	.20**	.03	.19**	.21***	.17*
17. ΔLoose	9.10	5.10	.10	-.09	-.16*	.07	.14*	.15*	.12*	.16*	.14*	.04	.06	.11	.15*	.19**	.19**
18. ΔNormative	6.71	5.99	.22***	-.20**	.15*	.11	.09	.04	.13*	.10	-.16*	.10	.08	.11	.20**	.15*	.23***
19. ΔAvoidance	45.51	7.30	.20**	.23***	.17**	.07	.05	.09	-.10	.08	.10	.10	.07	.06	.05	.10	.02
20. ΔLong-term	58.80	9.82	-.19**	.22***	.18**	.08	.09	.15*	.10	.10	.10	.12*	.02	.05	.02	.13*	.05
21. Power	71.85	11.20	.11	.19**	.09	.10	.01	.07	.13*	.08	.02	.07	.05	.02	.08	.12*	.02
22. Masculinity	58.10	7.10	-.21***	.10	.13*	.13*	.04	.09	.05	.15*	.05	.05	.09	.01	.09	.10	.04
23. Individualism	56.60	8.54	.04	.04	.10	.12*	.10	.10	.13*	.12*	.10	.04	.10	.04	.10	.11	.10

Variables	16	17	18	19	20	21	22
17. ΔLoose	.22***						
18. ΔNormative	.25***	.20**					
19. Avoidance	-.13*	-.13*	.06				
20. Long-term	-.10	.10	.05	-.24***			
21. Power	-.20	.08	.10	.19**	.25***		
22. Masculinity	.04	.13*	.10	-.17*	.28***	.25***	
23. Individualism	-.10	.10	.11	.21***	.21***	.21***	.27***

Notes:

1. Clientmeet: number of client visits; Teammeet: number of team visits to client (unweighted); Δ: absolute difference (e.g., ΔProcess: client-vendor difference in process orientation).
2. Level-1, n = 53; Level-2, n = 22.
3. \*p < .05; \*\*p < .01; \*\*\*p < .001.