

## **Online Appendix**

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**1. Table A1: Descriptive statistics and measurement model estimates<sup>a</sup>**

Endogenous variables	Descriptive statistics		Measurement model estimates			
	Mean	Sd.	$\lambda$	$t$ value	$\lambda^s$	$\varepsilon$
<b>Outcome control (<math>\alpha = 0.87</math>)<sup>b</sup></b>						
Extent to which the buyer used the following control mechanisms:						
- We established specific performance goals for the supplier	3.13	1.10	1.00	-	0.75	0.53
- We monitored the extent to which the supplier realized the performance goals	3.39	1.08	1.13	14.79	0.86	0.30
- If the supplier did not meet performance goals, they were required to explain why	3.37	1.14	1.14	14.01	0.82	0.43
- We provided feedback about the <i>extent</i> to which the supplier achieved goals	3.29	1.15	1.15	14.19	0.83	0.42
- The supplier's rewards were based on performance compared to goals	3.06	1.31	0.93	9.71	0.58	1.14
<b>Behavior control (<math>\alpha = 0.91</math>)<sup>b</sup></b>						
Extent to which the buyer used the following control mechanisms:						
- We monitored the extent to which the supplier followed established procedures	2.86	1.19	1.00	-	0.83	0.44
- We evaluated the procedures the supplier used to accomplish a given task	3.12	1.15	1.00	17.51	0.85	0.36
- We tried to modify the supplier's procedures when desired results were not obtained	2.69	1.23	0.95	14.78	0.76	0.64
- We gave the supplier feedback on the manner in which the supplier accomplished the performance goals	3.02	1.19	0.99	16.37	0.82	0.48
- We participated in the supplier's cost of activities if they were carried out according to our guidelines	2.90	1.21	1.02	16.75	0.83	0.46
- To evaluate the supplier's methods, the supplier had to report periodically	2.31	1.25	0.83	12.08	0.65	0.89
<b>Supplier search time</b>						
- # person-days spent on comparing and selecting potential products and suppliers	38.05	86.76	-	-	-	-
- Log (# person-days)	1.11	0.65	1.00	-	0.95	0.04
<b>Supplier evaluation (<math>\alpha = 0.91</math>)</b>						
Extent to which the buyer invested time and effort in evaluating potential suppliers on the following selection criteria (during the selection process):						
- Competitive price	3.49	1.09	0.77	14.73	0.69	0.62
- Reliability	3.60	1.05	1.00	-	0.93	0.14
- Service	3.69	1.07	1.05	30.24	0.95	0.11
- Technological capabilities	3.54	1.10	0.96	22.76	0.86	0.32
<b>Supplier comparison information (<math>\alpha = 0.78</math>)</b>						
Extent to which the buyer possessed the following information (before deciding on the choice for a product and supplier):						
- Cost-benefit analysis of different products offered by potential suppliers	3.19	1.20	0.91	11.31	0.68	0.77
- Publicly available information about potential suppliers' attributes (technological, network and market positioning)	3.31	1.14	1.05	13.15	0.84	0.39
- Values, integrity and ethics of potential suppliers	3.10	1.11	1.00	-	0.81	0.42
<b>Process &amp; technology information (<math>\alpha = 0.82</math>)<sup>b</sup></b>						
Extent to which the buyer possessed the following information about the chosen supplier (at the moment of contracting):						
- The supplier's likelihood to continue activities in a similar way in the long term	3.33	0.87	0.70	10.44	0.63	0.46
- Information about the reliable achievement of milestones (e.g., cost and quality)	3.34	0.99	1.00	-	0.79	0.36
- Common knowledge of technology development plans and prospects	3.12	1.03	0.87	10.97	0.66	0.61
- Adaptiveness of supplier's technology development to our needs	3.40	0.92	0.98	14.01	0.83	0.26

**Table A1 (continued)**

	Mean	Sd.	$\lambda$	$t$ value	$\lambda^s$	$\epsilon$
<b>Cooperation &amp; dependence information (<math>\alpha = 0.73</math>)<sup>b</sup></b>						
Extent to which the buyer possessed the following information about the chosen supplier (at the moment of contracting):						
- Agreed expectations about the cooperation	3.47	0.83	1.00	-	0.81	0.23
- Mutual dependence	3.59	0.76	0.87	11.02	0.77	0.24
- Scenario's on how to cooperate with broad consensus on paths to be followed	3.22	0.87	0.64	7.62	0.49	0.57
<b>Exogenous variables</b>						
<b>Transaction size</b>						
Initial contract price in Euros; (range 1-5; less than 12,500; 12,500 - 25,000; 25,000 – 50,000; 50,000 - 100,000; more than 100,000)						
	3.27	1.42	1.00	-	0.90	0.40
<b>Asset specificity (<math>\alpha = 0.81</math>)</b>						
If the product had failed and had to be replaced, what would have been the loss in time and money associated with:						
- Training your personnel	2.96	1.35	1.00	-	0.76	0.76
- Data re-entry	3.17	1.37	1.17	12.78	0.89	0.40
- Idle production	2.99	1.47	0.95	10.94	0.67	1.19
<b>Uncertainty (<math>\alpha = 0.75</math>)</b>						
- Difficulty assessing the quality of the supplier's product at delivery	2.85	1.16	1.05	12.17	0.89	0.25
- Difficulty comparing different suppliers' products	2.99	1.08	1.00	-	0.84	0.34
- Difficulty comparing the price/quality ratio of different suppliers' products	3.00	1.08	0.59	7.61	0.46	1.06
<b>Task interdependence (<math>\alpha = 0.72</math>)<sup>c</sup></b>						
Mean of two following standardized items:						
- # Components/services bought (from list of 18; range 1-17)	4.45	3.08	-	-	-	-
- Product complexity (see Table 1, Panel B)	3.67	1.37	-	-	-	-
<b>Dependence</b>						
- Perceived dependence on supplier	3.20	1.06	1.00	-	0.89	0.23
<b>Competition (<math>\alpha = 0.85</math>)</b>						
- Number of potential suppliers at time of purchase	2.62	1.16	1.00	-	0.91	0.24
- Number of alternative products at time of purchase	2.49	1.14	0.87	8.88	0.81	0.44
<b>Partner experience (<math>\alpha = 0.95</math>)</b>						
- How long was your firm engaged with this supplier before the purchase of this product (in years and months; square root)	1.38	1.42	1.00	-	0.89	0.41
- How frequent was your firm, before the purchase of this product, already engaged in transactions with this supplier?	1.92	1.86	1.40	27.87	0.96	0.28
- How substantial, in terms of purchase amount, were the prior transactions that your firm had with this supplier before the purchase of this product?	1.97	1.86	1.41	28.13	0.96	0.25

<sup>a</sup> Items are measured on a 5-point Likert scale (1=low degree; 5=high degree) unless noted otherwise. In the MM estimation, covariances are specified among all constructs. GOF statistics:  $\chi^2=1187.58$  (df=653;  $p<0.01$ ); RMSEA=0.052; SRMR=0.054; GFI=0.83; NNFI=0.95; CFI=0.96. All error variances ( $\epsilon$ ) are significant at  $p<0.01$ . We report Cronbach alpha since all latent variables have effect indicators. Reporting this would be inappropriate when observed items cause the construct and no covariances between them are expected (Bollen & Lennox 1991).

<sup>b</sup> Items for the control and supplier information dimensions were provided in mixed order. Two items (the supplier's reputation for quality, price and delivery, and possibilities to extend the relationship to new businesses, markets and technologies) cross-loaded significantly on the information dimensions and were deleted. Including them with cross-loadings provides similar SM results although model fit weakens significantly.

<sup>c</sup> Items standardized before computation for their mean, because of differences in measurement scales.

## **2. Results of alternative measurement model and structural model specifications**

This section describes the results of comparisons with alternative model specifications, relating to the sections *Results for the measurement model*, and *Results for the structural model*.

A series of alternative measurement model specifications that includes combinations of constructs and items expected to correlate most strongly provides substantial weakening of model fit and factor loadings, supporting the reported measurement model. These re-specifications include: letting transaction size load on dependence, uncertainty and asset specificity, respectively; letting dependence load on asset specificity; combining the items of asset specificity and uncertainty, of process & technology information and cooperation & dependence information, of outcome control and behavior control, and of supplier evaluation with supplier search time and supplier comparison information, respectively.

A series of alternative structural model specifications result in significantly reduced model fit, including models that omit paths of: (1) transaction context on the supplier information dimensions ( $\chi^2=1256.74$ ;  $df=678$ ) and (2) also on the control dimensions ( $\chi^2=1303.62$ ;  $df=690$ ), (3) partner experience on the supplier information dimensions ( $\chi^2=1231.04$ ;  $df=663$ ) and (4) also on the control dimensions ( $\chi^2=1241.67$ ;  $df=665$ ), and (5) comparison information on supplier specific information ( $\chi^2=1219.17$ ;  $df=662$ ). A model that adds paths from search time and supplier evaluation to the control dimensions provides only a small reduction in chi-square ( $\chi^2=1190.22$ ;  $df=656$ ) and the added paths are insignificant. Similarly, a model that also adds paths from search time to all supplier information dimensions provides only a small incremental reduction in chi-square ( $\chi^2=1187.58$ ;  $df=653$ ).

### **3. Discussion of the effects of transaction context on partner search, supplier information and use of control mechanisms.**

This section provides an additional discussion of the influence of the transaction context on partner search, supplier information and use of control mechanisms, relating to the section *Results for the structural model*.

Consistent with expectations, the estimates in Table 3 show that variables of the transaction context that provide potential control problems are associated with the partner search process. As shown in Panel A, transaction size, uncertainty and task interdependence are positively associated with supplier search time, indicating that these factors increase buyers' search effort to find a "good" partner. Dependence has a marginally significant negative effect on search time, possibly caused by the lack of access to alternative suppliers (and inconsistent with dependent buyers searching more intensively as a "dependence avoidance strategy"; Dekker 2008). With respect to the interrelation between the two partner search dimensions, Table 3 shows that search time is positively associated with supplier evaluation. This effect is consistent with the argument that sufficient search time is a prerequisite for more intensive supplier evaluation (Nijssen et al. 2001). Asset specificity has a marginally negative effect on supplier evaluation, possibly due to difficulties in evaluating different suppliers for more unique products and services. The direct effects of transaction size, task interdependence and uncertainty are, however, insignificant, suggesting these factors only directly affect search time which, in turn, affects supplier evaluation. Transaction size also shows a marginally significant total effect on supplier evaluation that follows from its strong direct effect on search time. However, supplier evaluation appears to be most strongly associated with exchange partner characteristics. While supplier competition facilitates such evaluations, dependence appears to induce buyers to more intensively evaluate existing suppliers for a new transaction and to spend less time searching for new partners. Following these offsetting effects, the total effect of dependence is insignificant.

Table 3 further provides some support that the acquisition of supplier information increases in importance with potential control problems. Transaction size relates to all three information dimensions. Supplier competition, which improves the ability to compare suppliers' offerings, is associated with acquisition of supplier comparison information. Dependent buyers acquire less

comparison information, but more supplier specific process & technology information. Thus, in the absence of choice, dependent buyers appear to limit searching for alternative suppliers, although they still evaluate their existing supplier for new transactions and acquire enhanced process & technology information about this supplier. Uncertainty and asset specificity are negatively associated with the acquisition of process & technology information and cooperation & dependence information, respectively. Indeed, by its own nature, uncertainty may hinder effective acquisition of information (Anderson & Dekker 2005; Poppo & Zenger 2002), which similarly may be complicated for more unique and highly specific transactions.

With respect to the two types of control mechanisms, the estimates in Table 3 support that their use is responsive to the transaction context that generates a need for control. Panel A shows that asset specificity is significantly associated with the use of both outcome and behavior controls. Uncertainty is particularly associated with the use of outcome control, which suggests that under conditions of uncertainty the planning, specification and measurement of desired outcomes is primarily used for managing the transaction. The total effects in Panel B further indicate the presence of several indirect effects on the use of control mechanisms, through partner search and information acquisition. Through their influence on these processes, transaction size is positively associated with use of both control mechanisms, and task interdependence is (marginally significantly) associated with the use of behavior control mechanisms. In addition, through these processes, uncertainty has a significant total effect on behavior control which suggests that in particular the evaluation of different suppliers and generation of comparison information enables more extensive use of behavior control mechanisms during transaction management. These significant total effects jointly thus indicate that the learning that takes place during the partner search process, in response to these transaction (partner) characteristics, facilitates the design of control structures. In sum, the results support that control choices respond to contextual variables that represent anticipated control problems, and also show that different control mechanisms are associated with different control problems.

## References

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