Service procurement in public sector:

The influence of the institutional context on the decision makers' attentiveness to transaction cost considerations

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Abstract

The public sector in most advanced economies accounts for a major share of the economy. In Norway, for example, the public sector purchases goods and services for more than 300 billion kroner annually (about 41 billion Euros, or about 15% of the GDP of mainland Norway). Yet, the public sector is often reported to fail in terms of procurement efficiency. In this study, we consider the extent to which public agencies follow the logic of transaction cost economics, and if following the logic of transaction cost economics is contingent on the decision maker's institutional context. Specifically, we examine how bureaucratic pressure moderates the relationship between asset specificity and the use of different contractual governance forms in public sector procurement.

In a Scandinavian survey of 310 relationships between public agencies (buyers) and external service suppliers, we find a moderating effect of institutional context on public agencies attentiveness to the logic of transaction costs. Bureaucratic pressure decreases the expected relations between buyer-held investments and contracting, both for (i) formal contract detail, (ii) formal contract flexibility and (iii) relational norms. However, our findings are more mixed related to supplier-held specific investments. This paper suggests that more research should explore how strategic sensitivity to the logic of transaction costs is contingent on decision makers' institutional context.

Key words: Public procurement, inter-organizational relations, governance, contracting, transaction cost economics, institutional theory

1. Introduction

Public procurement contracts are characterized by strong regulations and limited discretion (Spiller, 2008). Such forces in the institutional environment place constraints on public purchasing behavior. Although it is well known by institutional economists that formal rules and informal constraints in institutional environments have a significant influence on economic behavior (e.g. North, 1990), we have limited knowledge on how such institutional forces affect relationship governance in public purchasing arrangements. Thus, the purpose of this paper is to explore how specific characteristics of public sector procurement environments influence relationship governance. An analysis of such specific institutional conditions is of particular importance for the understanding of public contracting.

Institutional economics distinguish between institutional arrangements (e.g. governance and internal structures of institutions) and the institutional environments in which institutions are embedded (North, 1990; Williamson, 1991, 2000). This literature also recognizes that changes in institutional environments may influence governance forms and transaction costs. However, few empirical studies have tested such a framework, and we lack knowledge on how these micro and macro levels of institutions influence each other.

How to govern relationships between public agencies as buyers and private suppliers is the main phenomena of interest in this study. Transaction cost economics provides a powerful conceptual apparatus for analyzing this issue. First, the question of adaptability is the core issue of transaction cost economics (Rindfleisch & Heide, 1997; Williamson, 1991). Second, transaction cost economics provides insights into different governance mechanisms, and explicitly identifies the conditions under which alternative governance forms are most efficient with regard to adaptive capacities (Williamson, 1996). Specifically, the theory suggests how different governance forms should be aligned with the attributes of the transactions in order to economize on transaction costs.

Transaction cost economics was originally developed for the purpose of studying commercial transactions (Williamson, 1985). However, any issue that can be formulated as a contracting problem can be examined in transaction cost economizing terms (Williamson, 1998), and several scholars show the relevance of transaction cost economics in the context of public sectors (Macher & Richman, 2008). Although public agencies seem to be affected by stronger regulations and more ambiguous goals than private firms, they are still purposive

organizations seeking to reduce risks related to uncertainty (Brown & Potoski, 2003a), and a core concern of public sector service contracting is efficient service deliveries.

However, it is well known that the logic of transaction cost economics cannot be considered in isolation from the social environment of the decision maker (e.g. Noorderhaven, 1996; Roberts & Greenwood, 1997; Granovetter, 1985). In the case of public sector procurement, regulatory pressure is an obvious institutional component that may influence contracting decisions and purchasing practices in different directions. Therefore, this paper seeks to shed light on the following research problem: How does regulatory pressure affect the way in which decision makers employ the logic of transaction cost economics in contracting decisions?

In answering this question, this paper differs from prior research on public procurements in the following ways. First, it capitalizes on insights developed in the literature on long-term relationships in marketing and management. Grounded in transaction cost economics, marketing and management scholars have accumulated a considerable body of knowledge about the roles of formal and informal governance mechanisms in buyer-supplier relationships. Second, building on institutional theory and the seminal contributions by DiMaggio & Powell (1983) and Meyer & Rowan (1977), bureaucratic pressure is developed as a new construct for understanding public sector contracting. Third, by incorporating bureaucratic pressure into a transaction cost economics model for explaining relationship governance, the paper contributes by bridging literatures in organizational economics and sociology.

2. Theory and hypotheses

Transaction cost economics identifies specific investments surrounding an exchange as a key dimension for describing the transaction (Williamson, 1985). Specific investments are undertaken to create economic value (e.g. cost savings and/or service enhancement). However, these investments have also a down-side. As described by Rindfleisch & Heide (1997), relationship specific investments create safeguarding problems because such assets cannot be easily redeployed if the relationship should be terminated. Thus, relationship specific investments create bilateral dependence and lock-in effects exposing the actors to potential opportunism. The actors may exploit this situation by threatening to leave the relationship or engage in other forms of opportunistic behavior in order to capture a larger portion of the payments from the specific investments. According to transaction cost economics, this kind of threat motivates the investor to safeguard the investments. By drafting a detailed formal

contract, the investor promotes the longevity of the relationship and helps to secure the return of specific investments by specifying not only tasks, roles and responsibilities, but also a framework for handling unexpected events and resolving unforeseen disputes.

However, drafting detailed formal contracts is costly. These costs will only be undertaken if the consequences of a contractual break are significant (Poppo & Zenger, 2002), such as the risk of losing major specific investments. Thus, it is argued that formal contracting most likely will increase if higher levels of specific investments are undertaken. The positive association between asset specificity and formal contracts has been largely supported in empirical studies (e.g. Ghosh & John, 2009; Berthon, Pitt, Ewing, & Bakkeland, 2003; Heide, 2003; Buvik & Reve, 2001; Buvik & Haugland, 2005; Haugland, Reve, & Grønhaug, 2002; Reuer & Arino, 2003; Joskow, 1987; Poppo & Zenger, 2002; Reuer & Arino, 2007; Svendsen, 2005; Sande, 2007; Cannon & Perreault, 1999; Vlaar, 2006).

Another dimension of a formal contract is its flexibility (or incompleteness): the extent to which the explicit formal contract terms are left open to future negotiations (Crocker and Reynolds, 1993; Ghosh and John, 2005). With more flexible contracts, issues like price and product design are left open for future negotiation, and may not even be specified ex ante. Most frequently, researchers distinguish between fixed-price contracts and cost-plus/time and materials contracts (e.g., Carson, Madhok, and Wu, 2006; Susarla, Barua, and Whinston, 2009; 2010; Susarla and Barua, 2011; Banerjee and Duflo, 2000), however, more continuous scales have also been used (Crocker and Reynolds, 1993; Ghosh and John, 2005). We follow Ghosh and John (2005) and consider the extent to which price and service specifications are specified and left open for future negotiations.

Previous research gives conflicting predictions concerning the relationship between asset specificity and contract flexibility. Crocker and Reynolds' (1993) findings suggest that contracts become more rigid (or complete) as a response to past opportunistic behavior or potential for hold-up. As such, far-sighted communities should respond to relationship specific investments by less flexible contracts because they are difficult to renegotiate (Ghosh and John, 2005). Likewise, incomplete contract theory (e.g., Grossman and Hart, 1986) further suggest that, since more rigid contracts are more enforceable, they encourage specific investments (Ghosh and John, 2005). However, if adaptations over time are important to realize the benefits of relationship specific investments, asset specificity may also motivate more flexible contracts because they allow for renegotiations of the contract terms. Likewise,

when such concerns dominate, flexible contracts will also motivate relationship specific investments, because the parties know that the flexible contract will enable them to realize the gains from such investments (Ghosh and John, 2005; Bajari and Tadelis, 2001). Hence, several studies find a positive relationship between asset specificity and more flexible contracts (e.g., Ghosh and John, 2005; Susarla, Barua, and Whinston, 2009; 2010; Susarla and Barua, 2011). Some studies also find a non-significant relationship (e.g., Carson, Madhok, and Wu, 2006). However, in our case, the public sector, we expect that ex post appropriation concerns are generally greater than ex post adaptation. Therefore, we expect a negative relationship between asset specificity and contract flexibility.

Relational norms may also safeguard specific investments in similar ways as formal contracts (Poppo & Zenger, 2002). As described by Heide & John (1992), relational norms sanction opportunistic behavior and provide control in buyer-supplier relationships. Further, relational norms facilitate adaptations in procurement relationships and increase the expectation of relationship continuity (Heide & John, 1990; Tangpong & Ro, 2009; Noordewier, John & Nevin, 1990). Thus, relational norms reduce the risk of contractual break and thereby secure the return on specific investments.

Based on efficiency considerations as specified in transaction cost economics (Williamson, 1985), the costs of building and maintaining norms in buyer-supplier relationships will only be undertaken if the parties face contractual hazards in the relationship (Poppo & Zenger, 2002). The risk of losing specific investments due to relationship termination or opportunistic appropriation represents such a hazard. Thus, it is argued that relational norms most likely will increase if higher levels of specific investments are undertaken. Based on insights from relational exchange theory and transaction cost economics, a large number of studies have investigated the safeguarding role of relational norms in buyer-supplier relationships, and most empirical studies find positive associations between asset specificity and relational norms (e.g. Gençtürk & Aulakh, 2007; Andersen & Buvik, 2001; Bello & Gilliand, 1997; Bercovitz, Jap, & Nickerson, 2006; Gundlach, Achrol, & Mentzer, 1995; Zhou & Poppo, 2005; Haugland, Reve, & Grønhaug, 2002; Heide & John, 1990; Poppo & Zenger, 2002; Sande, 2007; Cannon & Perreault, 1999).

Institutional theory proposes that individual agents or organizations are influenced by external factors in the institutional environments (Scott, 2001). The core argument behind this proposition is that environments legitimate certain ways of behavior. Although institutional

theory has been used to a limited degree to analyze interorganizational governance in prior research, scholars have demonstrated the value of institutional explanations in other areas of administrative behavior. Building on the seminal works of DiMaggio & Powell (1983) and Meyer & Rowan (1977), this paper identify bureaucratic pressure as an important construct reflecting institutional pressures in public sector procurement environments.

Public sector procurement environments differ from the private sector, especially as public sector procurements are characterized by higher levels of regulations and stronger isomorphic pressures towards bureaucratization. It is expected that contracting partners conform to such pressure in order to gain external legitimacy.

Bureaucratic pressure is defined as the degree to which governmental agencies perceive expectations and societal influences from various stakeholders in order to comply with established public procurement directives and guidelines. Important legal requirements are, for example, stated in EU public procurement directives, WTO government procurement agreements, and in national public procurement laws. Established norms are typically manifested in national procurement guidelines and policies, various purchasing documents, and different standards and certification programs. We have identified a number of dimensions which seem to be of particular relevance for the study of perceived bureaucratic pressure in public contracting contexts; equal treatment, rule based, control oriented, written documentation, and impersonal prescriptions. Such regulations and guidelines are likely to impact the use of detailed formal contracts in public procurement relationships. Especially, from the perspective of the buyer (government agency), excessive contract detailing is expected to be a response to higher levels of perceived bureaucratic pressure. By extensive use of detailed contracts, government agencies signal transparency, control and responsibility to institutional constituents. It is simply harder for government agencies to justify low levels of contract detailing or leaving contract terms open for adjustments and flexibility if they are exposed to strong isomorphic pressures towards bureaucratization.

Public agencies exposed to strong bureaucratic pressures may be more concerned about following norms, rules and regulations than drafting an optimal contract based on transaction cost considerations. The outcome may be reliance on standardized contracts irrespective of the exposure to specific contractual hazards, resulting in too much formal and informal contracting in situations with low levels of specific investments and too little formal and informal contracting in situations with high levels of specific investments. Bureaucratic

pressure may simply reduce public agencies sensitivity to transaction cost considerations. From a theoretical point of view, it is therefore interesting to explore how bureaucratic pressure interacts with specific investments. Are public agencies able to simultaneously respond to both bureaucratic pressure and contractual hazards in drafting formal contracts with private firms, or are they only able to respond to bureaucratic pressure? We propose here that following established norms, rules and regulations is the dominating mindset in public agencies concerning how contracting decisions are made, and that this mindset undermines attention to specific contractual hazard. This allows the following hypotheses:

H1: The greater the bureaucratic pressure the less positive effect of asset specificity on formal contract detail.

H2: The greater the bureaucratic pressure the less negative effect of asset specificity on formal contract flexibility.

H3: The greater the bureaucratic pressure the less positive effect of asset specificity on relational norms.

The relationships between the constructs are illustrated in Figure 1.

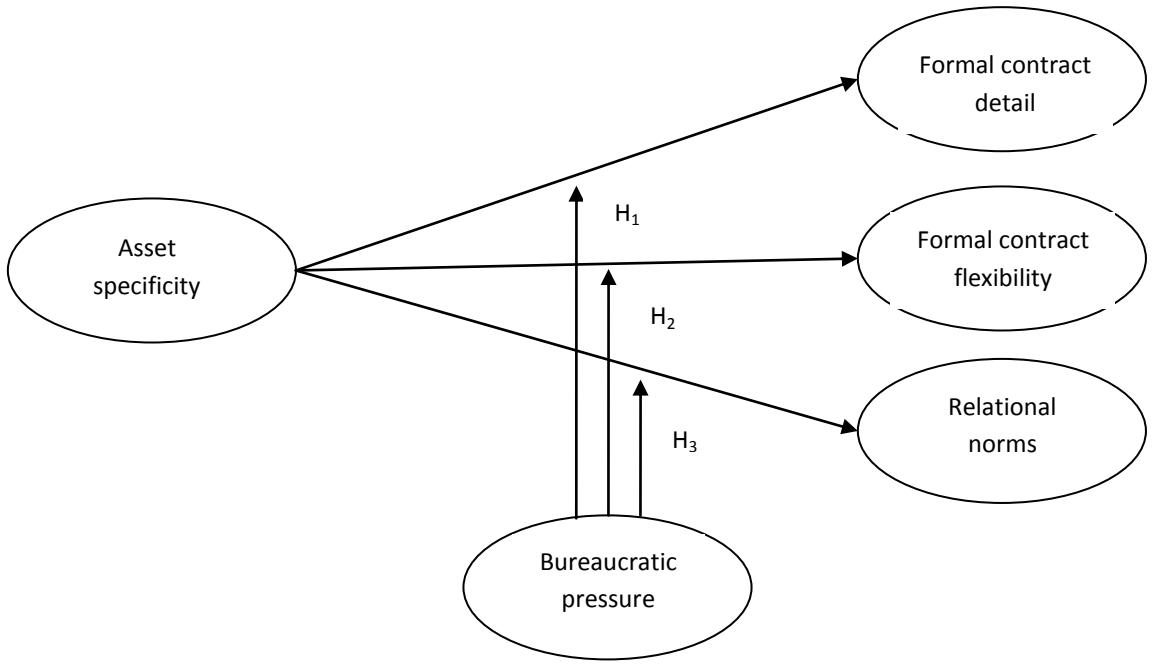


Figure 1: Conceptual model

3. Research method

3.1. Context, sampling, and data collection

The empirical setting, or research context, is public purchasing in Scandinavian countries (Norway, Sweden and Denmark) with a special focus on relationships between government agencies and external service suppliers. Hence, the specific unit of analysis is the buyer-supplier relationship for a particular contracted service.

The rationale behind choosing several countries was to secure the necessary variation concerning institutional pressures. Further, five different services were included in order to obtain variation on the different transactional dimensions. Therefore, the final setting comprises relationships between public agencies and private suppliers within the following service areas: (1) road maintenance, (2) recycling and waste collection, (3) elderly care and health care, (4) cleaning, and (5) information technology. These services represent common services contracted by local governments in Scandinavian countries.

The local government sector consists of 430 municipals in Norway, 290 municipals in Sweden, and 98 municipals in Denmark. Small municipals (less than 5000 citizens) were excluded. After defining the population, a database of 365 municipals with contact information was developed, based on official address lists in Norway, Sweden and Denmark. All municipals larger than 4999 citizens were contacted by phone.

In addition, we made telephone calls to the switchboards of the municipal units in order to identify potential key informants responsible for service procurement within the five specific services investigated in this study. A total of 877 informants were identified, herein 296 informants in Norway, 335 informants in Sweden, and 246 informants in Denmark. The market research firm Norstat, made the phone calls and compiled a complete list with contact information for each key informant. All informants were contacted and given a link to an electronic questionnaire. A total of 310 completed answers were returned. This gives a response rate of 35%, which is satisfactory compared to other large-scale electronic surveys.

3.2 Measures

All variables were measured by multi-item scales. We relied on previous used measures of specific investments, formal contract detail, formal contract flexibility, and relational norms within studies of business-to-business relationships. However, these measures have not been used in previous studies of business-government relationships. Thus, it was necessary to adapt the measures to the public purchasing context. A pilot study was therefore undertaken for the purpose of testing and adapting measurement scales to the context. The pilot study was also important for the purpose of developing new constructs grounded in institutional theory.

Formal contract detail

Formal contract detail is defined as the degree to which explicit contract terms specify the agreement in detail (Sande & Haugland, 2010; Lusch & Brown, 1996; Wuyts & Geyskens, 2005; Ryall & Sampson, 2009; Mooi & Ghosh, 2010). In line with prior studies in the literature on long-term relationships in marketing and management, two dimensions of formal contracts were identified as particularly relevant for this study (Lusch & Brown, 1996; Eckhard & Mellewigt, 2006; Luo, 2002; Sande & Haugland, 2010). The first dimension is formal role specification, which refers to the extent to which the contract describes roles, responsibilities, and how the parties should perform and execute their tasks (Sande, 2007; Argyres, Bercovitz, & Mayer, 2007; Heide, 1994; Lusch & Brown, 1996). The second dimension is formal contingency planning, which refers to the extent to which the contract specifies adaptations to changes. This dimension includes a description of how the actors should respond in cases when something unexpected happens as well as dispute settlement mechanisms (Sande, 2007; Argyres, Bercovitz, & Mayer, 2007; Heide, 1994; Lusch & Brown, 1996).

Formal contract flexibility

We define formal contract flexibility similarly to Ghosh and John (2005), as the extent to which contract terms are left open for possible future negotiations, and we operationalize the variable similarly to them as well, as the sum of two grounded measures related to those used by Crocker and Reynolds (1993) and Banerjee and Duflo (2000). We asked respondents to describe the price and service specifications using four different categories representing increasing flexibility (see Appendix 1 for the items). The most rigid contracts allow for no changes in either prices or service specifications, whereas in the most flexible contracts prices and services are not specified at all. The two items correlate positively with each other (ρ=0.3).

Relational norms

In this study, relational norms are defined as the buyer's perceived degree to which the actors share expectations of mutuality of interest, essentially prescribing stewardship behavior, in order to enhance the well-being of the relationship as a whole (Heide & John, 1992). Several dimensionalizations are outlined in the literature, but the most commonly measured dimensions are solidarity, flexibility, and information exchange (Heide & John, 1992). Solidarity refers to the norm of holding the exchange together (Macneil, 1980), which means "a bilateral expectation that a high value is placed in the relationship" (Heide & John, 1992, p. 36). Flexibility is defined as "a bilateral expectation of willingness to make adaptations as circumstances change" (Heide & John, 1992, p. 35). Information exchange is defined as "a bilateral expectation that parties will proactively provide information useful to the partner" (Heide & John, 1992, p. 35).

Specific investments

Williamson (1985) defines asset specificity as "durable investments that are undertaken in support of particular transactions" (p. 55). Asset specificity is here defined as the investments and/or adaptations made by the actors in physical assets, organizational procedures, and knowledge that are tailored to the relationship with a particular partner (Heide & John, 1990; Berthon, Pitt, Ewing, & Bakkeland, 2003; Buvik, 2002).

Drawing on the interorganizational literature (e.g. Rokkan, Heide, & Wathne, 2003), this study outlines three dimensions of asset specificity. First, the dimension of physical assets includes investments in equipment dedicated to the relationship, adjustments to adapt to the other party's technological norms, and adaptations of the firm's information systems to the need of other party. Second, the dimension of organizational procedures includes internal adjustments in the organization in order to deal effectively with the other party, and adjustments in routines and procedures dedicated to the relationship. Finally, the dimension of knowledge includes special training for employees working with the other party, and time used to learn the business practice of the other party. Although our primary focus is on investments undertaken by public agencies (buyers), we measured both buyer-held specific investments and supplier-held specific investments.

Bureaucratic pressure

Institutional theory is concerned with the influence of external forces on organizational decision-making, and emphasizes the role of social and cultural pressures imposed on organizations that influence organizational practices and structures (Scott, 1992). Such institutional environments specify rules, procedures, and structures for organizations as a condition for giving legitimacy and support (Meyer & Rowan, 1977). Coercive pressure refers to formal and informal pressures that are exerted on "organizations by other organizations upon which they are dependent and by cultural expectations in the society within which organizations function" (DiMaggio & Powell, 1983, p. 150). In this study, we focus on coercive forces related to public procurement contracting. Building on Meyer & Rowan (1977) and DiMaggio & Powell (1983), and on in-depth field interviews with government agencies, bureaucratic pressure was identified as an important dimension of institutional pressure in public procurements. Bureaucratic pressure is defined as the degree to which governmental agencies perceive expectations and societal influences from various stakeholders in order to comply with established public procurement directives and guidelines.

According to our knowledge, no measurement scale for this concept exists in the literature. However, it is closely related to public procurement principles outlined in general laws, regulations, judicial decisions, administrative rulings, procedures and policies on public procurement: i.e., transparency and openness, equal treatment, calculable rules, control and oversight, written specifications, and impersonal prescriptions. These dimensions are quite similar to Weberian bureaucratization principles (Weber, 1946, 1947). Appendix 1 describes the measures and the source of items on each scale.

3.3 Control variables

The following control variables were included: Environmental uncertainty, technological uncertainty, performance ambiguity, firm size, purchasing value, contracting experience, centralization of purchasing organization, service category, and country.

3.4 Measurement validation

Measurement validation starts by conducting single-factor confirmatory factor analysis. After post-hoc removing some items, we achieve satisfactory internal consistency. Next, we combine the various latent and observed variables in the full measurement model, however,

without second-order factors. This factor model fits the data reasonably well (χ^2(df): 1928.43 (1154), RMSEA: 0.041, SRMR: 0.047, CFI: 0.96, Critical N: 204, Parsimony-normed fit index: 0.73). We add the two second-order constructs as a set of restrictions on the first-order model. Adding formal contract detail as a second-order construct reduces the fit of the model significantly ($\Delta\chi^2$(df): 52.38 , p-value:0.00), but fit remains acceptable (χ^2(df): 1820.10 (1173), RMSEA: 0.042, SRMR: 0.047, CFI: 0.96, Critical N: 203) and Parsimony-normed fit index increases slightly to 0.74 . The same is the case for relational norms ($\Delta\chi^2$(df): 80.39, p-value: 0.00). However, also in this case fit remains acceptable (χ^2(df): 1900.49 (1209), RMSEA: 0.043, SRMR: 0.050, CFI: 0.96, Critical N: 202), and Parsimony-normed fit index increases to 0.76. We report the results from estimating the full second-order model in Table 1. Since loadings, AVE, and composite reliabilities are all high for the higher-order constructs, we regard the model to data fit as acceptable.

We present results from estimating the measurement model in Table 1. The table exhibits correlations, and standard-deviations of the correlations, as well as measurement diagnostics and descriptive statistics. The measurement diagnostics all suggest acceptable reliability, unidimensionality, internal and external consistency, and convergent validity. Discriminant validity is also acceptable, since all constructs share more variance with their own items than items to other constructs, and since all correlations are significantly different from unity. We calculate composite scores for latent variables based on the loading-weighted average of the items.

We also checked for common method bias, using a procedure described by Podsakoff et al. (2003). We augmented the second-order factor model with a new factor specified to be uncorrelated with other construct, but affecting all the reflective Likert scale items in the model. Including this factor increases model to data fit significantly, and it has an AVE of 14%, which is higher than for example Carlson and Clackmar (2001) who regard 11% as low. However, the explanatory power is highly uneven. It explains 50% of the variance of the norm-items, and only 4% of the variance in the remaining items. Further, when we took two of the dummy variables out (Denmark and Sweden); it explained only 6% of the variance in the items. Based on these tests, we consider the threat of common method bias as low. Note also that one of the dependent variable, contract flexibility, is not a reflective scale, but a grounded measure based on firms describing their contract in terms of clearly defined categories. This scale is therefore less susceptible to common method bias.

Table 1: Correlations, descriptive statistics, and measurement diagnostics[a]

Correlations (based on factor model)		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Buyer asset specificity	1	**0.703**	0.058	0.066	0.071	0.063	0.071	0.061	0.061	0.062	0.062	0.061	0.061	0.062	0.062	0.062	0.062	0.062	0.065			0.065			
Supplier asset specificity	2	0.358	**0.775**	0.062	0.067	0.062	0.069	0.058	0.057	0.060	0.060	0.059	0.057	0.059	0.059	0.060	0.060	0.060	0.057			0.056			
Bureaucratic pressure	3	-0.033	0.164	**0.770**	0.067	0.063	0.068	0.059	0.060	0.060	0.060	0.059	0.060	0.060	0.060	0.060	0.060	0.060	0.054			0.056			
Environmental uncertainty	4	0.032	0.137	-0.208	**0.709**	0.067	0.071	0.066	0.064	0.065	0.062	0.065	0.065	0.065	0.064	0.065	0.064	0.065	0.069			0.068			
Technological uncertainty	5	0.198	0.115	-0.127	0.174	**0.851**	0.069	0.061	0.060	0.058	0.058	0.045	0.059	0.058	0.059	0.060	0.060	0.059	0.064			0.063			
Performance ambiguity	6	0.157	-0.041	-0.192	0.323	0.132	**0.754**	0.068	0.066	0.066	0.066	0.065	0.066	0.066	0.066	0.066	0.066	0.066	0.070			0.068			
Centralization of purchasing organization	7	0.237	0.233	0.220	0.083	0.043	0.009	**0.899**	0.058	0.054	0.058	0.058	0.056	0.058	0.058	0.058	0.058	0.058	0.056			0.060			
Waste management	8	0.103	0.205	0.117	-0.140	-0.027	-0.035	0.076		0.053	0.054	0.053	0.056	0.057	0.055	0.056	0.056	0.055	0.058			0.060			
Nursing	9	-0.031	0.051	0.056	0.014	-0.180	0.026	0.269	-0.245		0.055	0.054	0.052	0.055	0.055	0.056	0.055	0.056	0.061			0.059			
Cleaning	10	-0.048	-0.023	0.059	0.237	-0.161	-0.014	-0.051	-0.239	-0.197		0.054	0.057	0.057	0.054	0.057	0.057	0.057	0.061			0.059			
IT	11	0.164	-0.092	-0.150	-0.039	0.518	0.114	-0.107	-0.270	-0.222	-0.217		0.053	0.055	0.055	0.057	0.057	0.052	0.058			0.060			
Value	12	0.122	0.226	0.117	-0.080	-0.092	-0.053	0.206	0.145	0.298	-0.048	-0.249		0.044	0.057	0.056	0.056	0.056	0.057			0.060			
Size	13	0.069	0.133	0.100	-0.066	-0.176	-0.025	0.090	0.009	0.163	0.072	-0.187	0.483		0.057	0.057	0.053	0.057	0.059			0.060			
Contracting experience	14	-0.077	0.082	0.129	-0.147	-0.114	-0.055	-0.044	0.161	-0.171	-0.206	-0.174	0.050	0.008		0.056	0.056	0.057	0.060			0.060			
Denmark	15	0.058	-0.007	0.125	-0.055	-0.010	0.033	0.100	0.125	0.098	0.016	-0.062	0.109	-0.033	-0.145		0.048	0.054	0.061			0.060			
Sweden	16	0.074	0.007	-0.044	-0.112	0.001	-0.002	-0.075	0.100	-0.177	-0.031	-0.046	0.103	0.254	0.113	-0.402		0.057	0.061			0.059			
Formal contract flexibility	17	0.039	-0.030	-0.131	0.029	0.155	0.052	-0.090	-0.157	-0.083	-0.042	0.283	-0.142	-0.052	0.050	-0.231	-0.003		0.053			0.060			
Formal contract detail	18	0.178	0.377	0.443	-0.126	-0.111	-0.157	0.344	0.234	0.096	0.053	-0.236	0.287	0.186	0.122	0.090	0.051	-0.374	**0.905**			0.059			
Detailed role specification	19																								
Detailed contingency specification	20																								
Relational norms	21	-0.075	0.350	0.370	-0.089	-0.042	-0.210	0.195	-0.002	0.135	-0.106	-0.081	-0.019	-0.040	0.100	-0.052	0.112	0.041	0.318			**0.924**			
Solidarity	22																								
Flexibility	23																								
Information exchange	24																								

Descriptive statistics	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mean	2.567	3.124	5.775	2.744	2.829	3.142	3.578	0.229	0.168	0.161	0.197	1.168	7.717	16.261	0.271	0.303	2.218	5.096	5.212	4.979	5.327	5.490	5.068	5.428
Standard deviation	1.258	1.399	1.042	1.282	1.517	1.429	2.093	0.421	0.374	0.368	0.398	1.256	0.946	14.020	0.445	0.460	0.609	1.499	1.479	1.717	1.092	1.184	1.258	1.217
Skewness	0.830	0.361	-1.224	0.794	0.731	0.517	0.262	1.290	1.779	1.842	1.525	1.014	0.684	1.302	1.031	0.856	0.436	-0.830	-1.032	-0.699	-0.677	-0.747	-0.516	-0.826
Kurtosis	0.320	2.485	4.543	3.456	2.763	2.734	1.614	2.663	4.163	4.392	3.327	4.002	3.483	4.352	2.062	1.733	3.428	2.975	3.452	2.468	3.190	2.923	2.767	3.347
Maximum	6.769	7.000	7.000	7.000	7.000	7.000	7.000	1.000	1.000	1.000	1.000	6.830	10.702	70.000	1.000	1.000	4.000	7.000	7.000	7.000	7.000	7.000	7.000	7.000
Minimum	1.000	1.000	1.804	1.000	1.000	1.000	1.000	0.000	0.000	0.000	0.000	0.000	6.225	0.000	0.000	0.000	1.000	1.000	1.000	1.000	1.908	1.730	1.566	1.000

Measurement diagnostics																							
Composite reliability	0.829	0.881	0.879	0.751	0.887	0.723	0.944											0.901	0.912	0.922	0.946	0.889	0.688	0.856
Average variance extracted	0.494	0.600	0.592	0.503	0.724	0.568	0.808											0.819	0.722	0.797	0.853	0.709	0.516	0.665
Highest loading	0.808	0.891	0.814	0.787	0.892	0.823	0.943											0.912	0.9	0.922	0.944	0.907	0.835	0.858
Lowest loading	0.653	0.637	0.703	0.624	0.763	0.677	0.869											0.898	0.807	0.876	0.885	0.781	0.605	0.738

[a] Correlations can be found to the left of the diagonal, and their standard deviations (in italics) to the right of the diagonal. The diagonal (in bold) exhibits the square root of average variance extracted for each construct. Correlations significantly different from zero are flagged: *= $p<0.05$ (two-tailed). All correlations are significantly different from unity. Correlations are all based on out output from the confirmatory factor model. Descriptive statistics are based on weighted mean scores.

4. Results

We test the results using heteroscedasticity-robust probit and OLS, since a Breusch-Pagan/Cook-Weisberg test rejects the hypothesis of homoscedasticity for both formal contracting detail (χ^2(df)= 27.10(1), p-val=0.00) and relational contracting χ^2(df)= 7.92(1), p-val=0.01). We present the results in Table 2.

To better interpret the results in Table 2, we also conduct simple slope analysis using the Johnson-Neyman technice (Johnson and Neyman, 1936; Bauer and Curran, 2005), presented in Figures 2 to 4. Figures 2 to 4 all exhibit the conditional effects of buyer and supplier asset specificity on the three dependent variables (solid line) as well as 95% confidence bands around these effects. When the confidence bands are entirely above or below the 0-line, it means that the conditional effect is significantly different from zero. Note also the histogram that we have placed in the background. This histogram illustrates the distribution of bureaucratic pressure, and shows how a substantial number of observations underlie both the region of significance and the region of insignificance. The figure also shows that a majority of respondents have indicated that the degree of bureaucratic pressure is around 5 to 7 on the scale. The skewed distribution of bureaucratic pressure explains why the confidence band is at the narrowest 6 on the scale, and is very wide when bureaucratic pressure is low.

Regarding H1, we receive some support for our hypothesis. Both buyer- and supplier asset specificity are on average, as expected, positively related to formal contract detail. In support of H1 we find a significant and negative interaction effect between bureaucratic pressure and buyer asset specificity. However, we find no such interaction effect between bureaucratic pressure and supplier asset specificity. To explore these findings further, in Figure 2, we have plotted the conditional effects of buyer and supplier asset specificity. As expected, when bureaucratic pressure is low, there is a significant positive effect of buyer asset specificity on formal contract detail. The effect of supplier asset specificity is less sensitive to bureaucratic pressure. The effect on formal contract detail when bureaucratic pressure is low is insignificant.

Regarding H2, we receive conflicting support for this hypothesis. Whereas neither buyer nor supplier asset specificity have significant average relationships with formal contract flexibility, they both interact significantly with bureaucratic pressure in affecting formal contract flexibility, albeit in opposite directions. Bureaucratic pressure interacts positively with buyer

asset specificity, supporting H2, whereas it interacts negatively interacts with supplier asset specificity, rejecting H3. Figures 3a and 3b shed more light on these effects. Buyer asset specificity is positively and significantly related to contract flexibility when bureaucratic pressure is low. When the pressure becomes close to maximum (>6.5 on the Likert scale), the effect of buyer asset specificity becomes positive. Supplier asset specificity, on the other hand, is positively related to contract flexibility when bureaucratic pressure is low. When bureaucratic pressure becomes high, the relationship becomes insignificant. In conclusion, Figures 3a and 3b both suggest that the relationships between asset specificity and formal contract flexibility become smaller and less significant as bureaucratic pressure increases.

Also when it comes to H3, relating to relational norms, we observe that bureaucratic pressure interacts differently with buyer and supplier asset specificity. The average effects of buyer and supplier asset specificity are opposite to one another, with buyer asset specificity being negatively related to relational norms and supplier asset specificity being positively related to relational norms. Bureaucratic pressure has a weak positive interaction term with buyer asset specificity and a weak negative interaction term with supplier asset specificity. From Figure 4a and 4b, we can therefore se that as bureaucratic pressure increases, the effects of buyer and supplier asset specificity become smaller and closer to zero. In the case of buyer asset specificity the negative effect becomes insignificant when bureaucratic pressure is high.

Some of the other parameters in the model are also worth noticing. First, bureaucratic pressure is on average strongly and significantly related to both formal contract detail and relational norms, suggesting that communities with strong bureaucratic pressure tend to also use both detailed formal contracts and relational norms more in their supplier relationships. None of the uncertainty variables are significantly related to formal contract detail, formal contract flexibility nor relational norms. There are however significant differences between the different types of services included in the data. Waste management services tend to be characterized by more detailed contracts and weaker relational norms. Elderly care and health care tend to be characterized by stronger relational norms. IT services tend to be characterized by more flexible contract. There are also significant differences between the different countries as well. In Denmark relationships tend to be characterized by stronger relational norms, whereas in Sweden the contracts tend to be more rigid.

Table 4: Results from hypothesis testing[a]

Dependent variables:		Formal contract detail			Formal contract flexibility			Relational norms	
Explanatory variables:	H	Coeff.	St.error.	H	Coeff.	St.error.	H	Coeff.	St.error.
Buyer asset specificity (BSA)		0.100	0.064		-0.016	0.052		-0.157***	0.048
Supplier asset specificity (SSA)		0.205***	0.061		0.045	0.047		0.308***	0.046
Bureaucratic pressure (BURPRE)		0.389***	0.087		-0.104	0.066		0.244***	0.062
BSA*BURPRE	1	-0.135**	0.067	2	0.179***	0.052	3	0.087*	0.051
SSA*BURPRE	1	0.050	0.059	2	-0.096**	0.045	3	-0.087*	0.046
Environmental uncertainty		-0.068	0.063		-0.009	0.058		-0.031	0.046
Technological uncertainty		-0.013	0.057		-0.004	0.046		-0.024	0.039
Performance ambiguity		-0.047	0.057		0.019	0.047		-0.058	0.042
Centralization of purchasing organization		0.129***	0.038		-0.010	0.030		0.068**	0.028
Purchasing value		0.105	0.072		-0.058	0.059		-0.126**	0.049
Firm size		0.023	0.092		0.066	0.080		-0.121**	0.060
Contracting experience		0.007	0.006		0.009*	0.005		0.003	0.004
Waste management		0.399*	0.216		-0.115	0.176		-0.338**	0.168
Elderly and health care		0.209	0.262		0.056	0.221		0.299*	0.167
Cleaning		0.390	0.260		0.088	0.238		-0.298	0.190
IT		-0.217	0.265		0.891***	0.219		0.064	0.210
Denmark		0.168	0.189		-0.236	0.156		0.546***	0.133
Sweden		0.024	0.168		-0.470***	0.147		0.044	0.140
Constant for OLS		4.794***	0.307					5.342***	0.214
R-square		0.338						0.307	
Cut-off-values for probit:									
/cut1					-1.912	0.270			
/cut2					-1.022	0.266			
/cut3					0.082	0.259			
/cut4					1.008	0.266			
/cut5					1.762	0.290			
/cut6					2.253	0.299			
Estimation method:		Heteroscedasticity-robust OLS			Heteroscedasticity-robust ordered probit			Heteroscedasticity-robust OLS	

*: p<0.1, **:p<0.05, ***p<0.01.

Figure 2a: The conditional effect of buyer asset specificity on formal contract detail

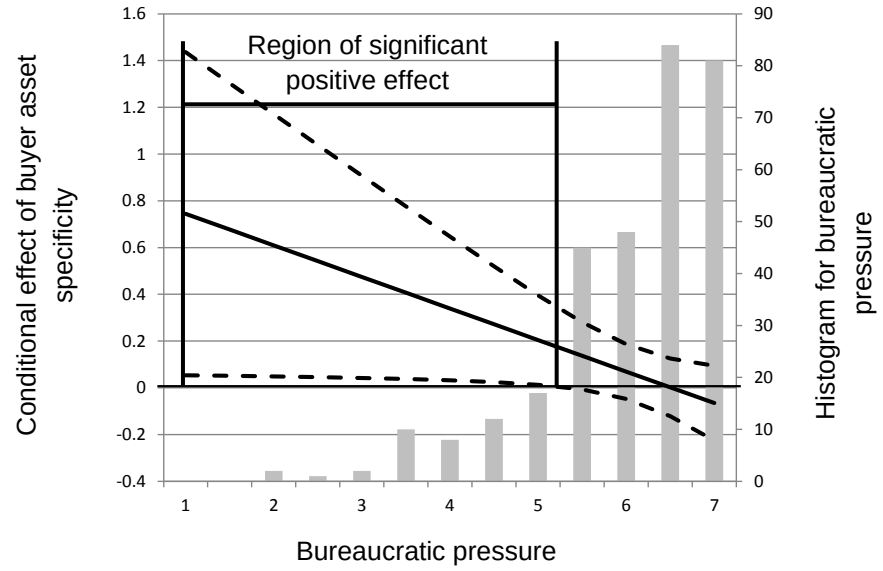


Figure 2b: The conditional effect of supplier asset specificity on formal contract detail

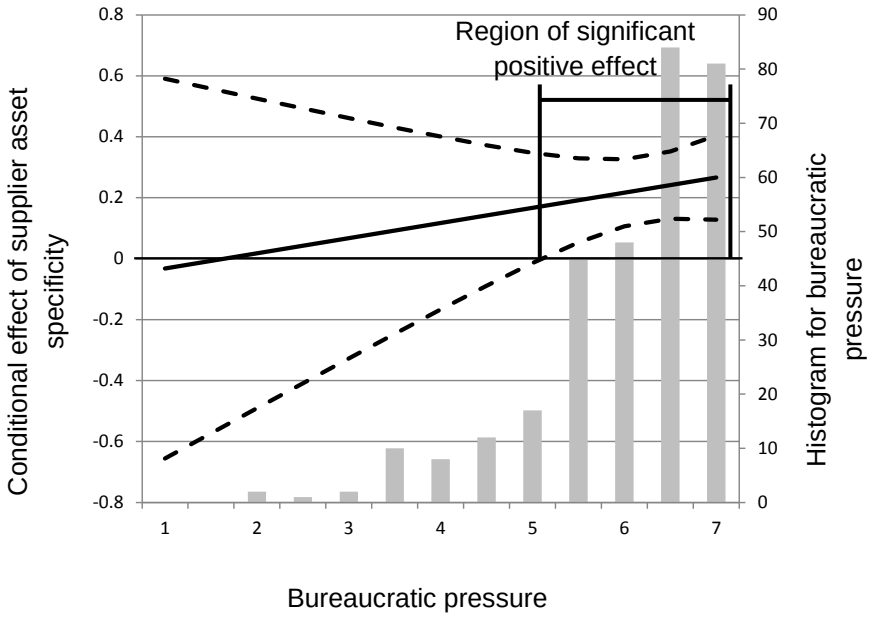


Figure 3a: The conditional effect of buyer asset specificity on formal contract flexibility

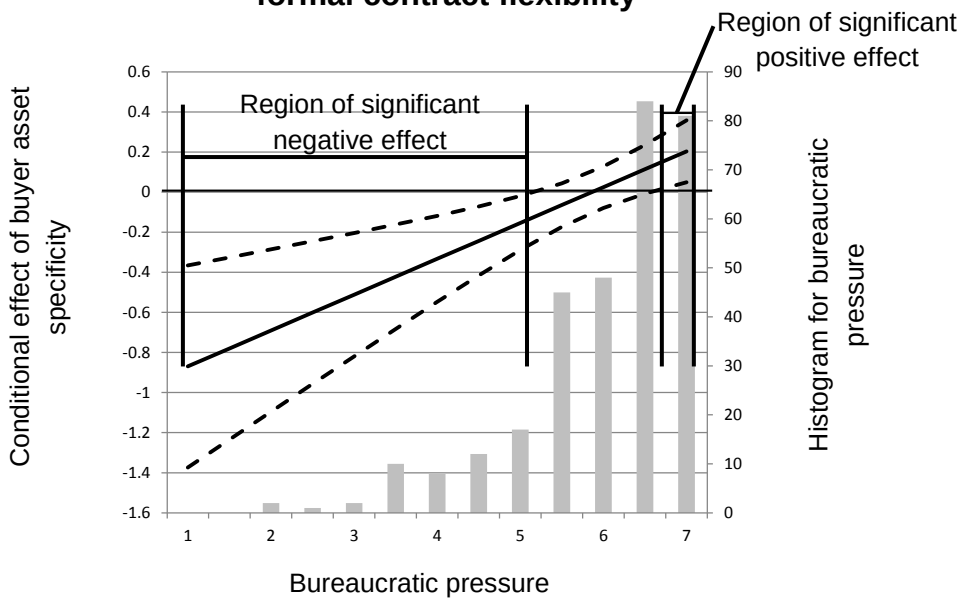


Figure 3b: The conditional effect of supplier asset specificity on formal contract flexibility

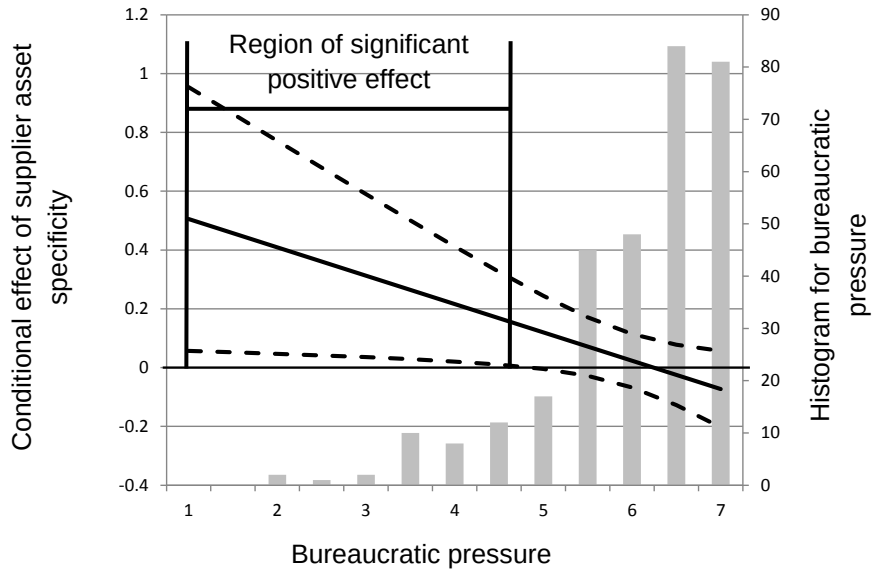


Figure 4a: The conditional effect of buyer asset specificity on relational norms

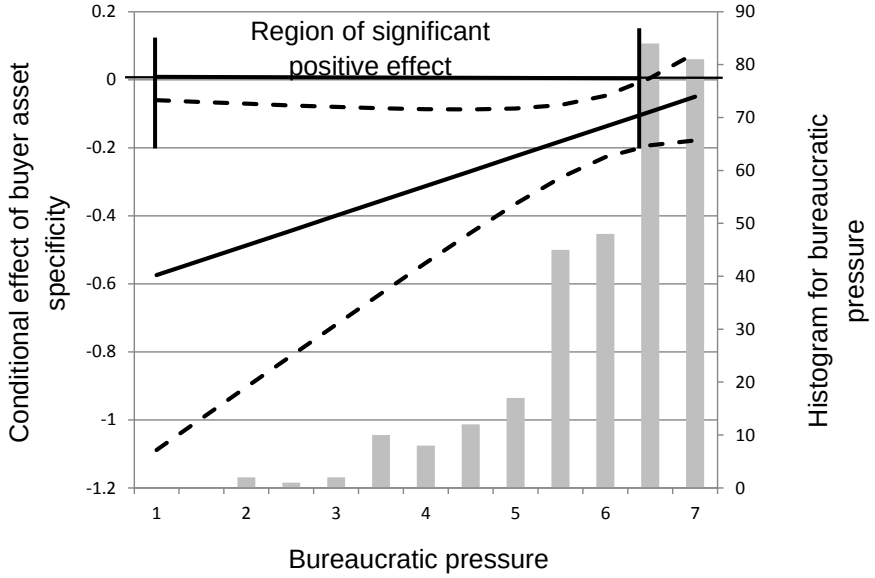
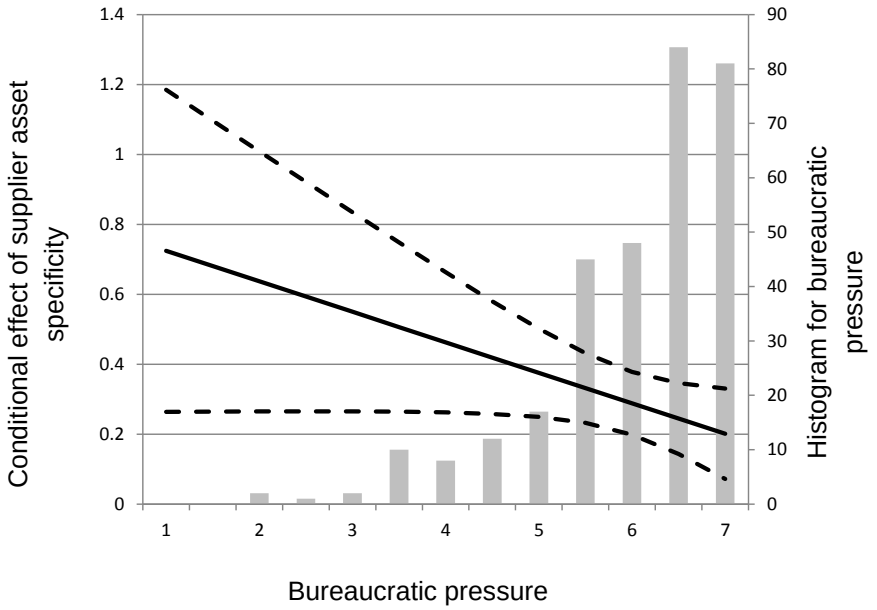


Figure 4b: The conditional effect of supplier asset specificity on relational norms



5. Discussion and conclusion

5.1 Discussion of the results

The purpose of the study is to enhance our understanding of the rationality of existing public contracting practices. In particular, we consider the extent to which public agencies follow the logic of transaction cost economics, and if following the logic of transaction cost economics is contingent on the decision maker's institutional context. More specific, we examine the idea that bureaucratic pressure may moderate the expected relationships between asset specificity and different contract forms in public sector procurement. Our results provide support for this idea. Purchasers surrounded by low levels of bureaucratic pressure seem to respond more in line with transaction cost predictions than purchasers surrounded by higher levels of bureaucratic pressure.

The results of our analyses show that without taking into account bureaucratic pressure, buyer asset specificity has no impact on formal contract detail and formal contract flexibility and a negative impact on relational norms. However, when considering the interaction effect of buyer asset specificity and bureaucratic pressure, this interaction effect has a negative impact on formal contract detail, and positive impacts on formal contract flexibility and relational norms. By further exploring this interaction effect, we find that public agencies surrounded by low levels of bureaucratic pressure respond as predicted by TCE, while public agencies surrounded by high levels of bureaucratic pressure do not respond as predicted by TCE. Our results indicate that under high levels of bureaucratic pressure, public agencies are so concerned about following rules, procedures and guidelines that they are not able to fully take into account specific transaction hazards as suggested by TCE.

It is both surprising and interesting that supplier asset specificity has very different effects compared to buyer asset specificity. First, without considering bureaucratic pressure, supplier asset specificity has no impact in formal contract flexibility and positive impacts on formal contract detail and relational norms. When considering the interaction between supplier asset specificity and bureaucratic pressure, this interaction effect has no impact on formal contract detail and negative impacts on formal contract flexibility and relational norms. These findings indicate that in situations when public agencies are exposed to high levels of bureaucratic pressure, the specific investments made by the supplier do not play any role for formal contract flexibility or relational norms.

In sum, our results may indicate that when the bureaucratic pressure reaches a certain level, this pressure may override any efficiency consideration as suggested by TCE. This seems plausible from the viewpoint of public agencies, but it is more puzzling from the viewpoint of private suppliers. However, private suppliers transacting with public agencies operating under high levels of bureaucratic pressure, may consider the public agencies as trustworthy. Bureaucratic pressure may signal a trustworthy public agency that will treat all suppliers equally irrespective of the level of specific investments made by the suppliers. Suppliers heavily investing in specific investments made therefore not require a more detailed and rigid contract. The fact that there is a strong association between bureaucratic pressure and relational norms may further support this.

5.2 Implications

The study provides an important step in the exploration of how specific characteristics of public sector procurement environments influence relationship governance. First, the study develops bureaucratic pressure as a useful construct for understanding public sector contracting given the unique regulative and societal aspects of this setting. Our analyses demonstrate that decision makers are subject to such external pressure when they design and implement formal and informal contracts. This construct offers an important contribution to the literature on public procurements and public-private partnerships.

Second, our findings have important implications for understanding the interplay between micro and macro levels of institutions related to public procurements. Our study identifies specific institutional conditions where classical micro foundations in transaction cost economics do not seem to be supported. Bureaucratic pressure seems to reduce public agencies' sensitivity to transaction cost considerations. Public agencies exposed to strong bureaucratic pressure seem to be very concerned about how to gain external legitimacy, and such a mindset may undermine attention to specific contractual hazards. This finding is different from previous results in the inter-organizational literature and offers interesting new considerations for transaction costs economics and relationship governance.

5.3 Limitations and further research

Some limitations of the present study should be mentioned. First, the validity of the construct of bureaucratic pressure may be questioned. It is not entirely clear how we shall view the theoretical domain for this construct and which dimensions to include or exclude. An interesting direction for future research can be a more in-depth exploration of what kind of pressure public agencies are exposed to when they make decisions related to different procurement activities. However, the construct developed in this study provide some interesting opportunities for future research.

Second, only the reduced form hypothesis of transaction cost economics is tested in this study. A comprehensive test of transaction cost economics should also include analyses of the performance implications. Such research can potentially provide important contributions to the understanding of the micro-foundations related to how "rules of the game" may impact the "play of the game". This may also help to bridge literatures in organizational economics and sociology.

Finally, from the perspective of institutional theory, more research is needed to better understand how different regulative, normative and cognitive institutions may affect decision makers' attentiveness to transaction cost considerations. There is a need for more knowledge about governance and transaction costs in different legal, political, and social environments (Klein, 2005) and the context of public procurement environments provides some interesting opportunities for studying such determinants.

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Appendix 1: Measures and source of items

Construct	Items	Empirical studies using items
Buyer specific investments	– We have tailored our routines and procedures to the particular services that we buy from this supplier. – We have given special training for employees working with this supplier. – We have spent a considerable amount of time trying to familiarize ourselves with various aspects of the work performed by this supplier. – We have made significant investments in equipment and/or plant in order to adapt to the services we buy from this supplier. – We have to a great extent adapted our control and report systems to this supplier.	Heide & Stump (1995); Jap & Ganesan (2000); Sande, (2007); Sunde (2007); Svendsen (2005); Rokkan, Heide, & Wathne (2003); Heide & John (1990); Heide & John (1992); Buvik (2002)
Supplier specific investments	– This supplier has made extensive internal adjustments their organization in order to work effectively with our organization. – This supplier has given special training for employees working with our organization. – This supplier has spent a considerable amount of time trying to familiarize themselves with various aspects of our organization's activities. – This supplier has made significant investments in equipment and/or plant in order to adapt to our procurement needs. – This supplier has to a great extent adapted their control and report systems to our organization.	Heide & Stump (1995); Jap & Ganesan (2000); Sande, (2007); Sunde (2007); Svendsen (2005); Rokkan, Heide, & Wathne (2003); Heide & John (1990); Heide & John (1992); Buvik (2002)
Formal contract detail	*Detailed role specification:* – We have a detailed, contractual agreement with this supplier. – Our contract or agreement clearly states what contributions each of the parties shall offer. – There are rules and procedures for most issues in this relationship. – How to handle the day-to-day management of the relationship is expressed in a written agreement. – Our contract or agreement precisely states legal ramifications of failure to comply with the agreement. – *Detailed contingency planning:* – Our contract or agreement precisely states how the occurrence of unexpected events will be managed. – Our contract or agreement clearly states how disagreements between the two parties will be resolved.	Lusch & Brown (1996); Heide (2003); Sande (2007); Sunde (2007); Svendsen (2005); Cannon, Achrol, & Gundlach (2000)

Formal contract flexibility	*Flexible contract terms regarding <u>services:</u>* • How would you say that the services are specified in the contract (s)? Choose the alternative that fits best. – The contents of the specified service cannot be altered or changed. – Minor adjustments can be made to the specified content (by mutual agreement between the parties). – It is possible to make changes in the content specified through negotiation between the parties. – The contract does not specify the content of the service. *Flexible contract terms regarding <u>pricing:</u>* • How would you describe the pricing model of the contract (s)? Choose the alternative that fits best. – Fixed price through the life time of the contract. – Specified prices / rates with adjustment clause (eg. Consumer price index, cost index, wage statistics). – Specified prices / rates, but with the possibility of changes through negotiation. – Pricing is not specified prior to delivery.	Crocker and Reynolds (1993); Ghosh and John (2005)
Relational norms	*Norms of solidarity:* – The parties are committed to improvements that may benefit the relationship as a whole. – Problems that arise during the course of this relationship are treated as joint responsibilities by the two parties. – The relationship between the parties is better described as a cooperative effort than an "arms-length negotiation". – The responsibility for making sure that the relationship works for both of us is shared jointly. *Norms of flexibility:* – Flexibility in response to requests for changes is a characteristic of this relationship. – When an unexpected situation arises, the parties would rather work out a new agreement than hold each other to the terms in the original agreement. – To be able to manage changing circumstances, both parties anticipate that there may be adjustments in the ongoing relationship. *Norms of information exchange:* – In this relationship, it is expected that any information that may benefit the other party will be provided to them. – In this relationship, exchange of information takes place frequently and informally, and not only according to a prescribed agreement. – It is expected that we keep each other informed about events or changes that may affect the other party.	Antia & Frazier (2001); Bello, Chelariu, & Zhang (2003); Cannon & Perreault (1999); Jap & Ganesan (2000); Heide & John (1992); Heide & Miner (1992); Lusch & Brown (1996); Rokkan, Heide, & Wathne (2003); Sande (2007); Sunde (2007); Svendsen (2005); Wathne & Heide (2004); Berthon, Pitt, Ewing, & Bakkeland (2003)

Bureaucratic pressure	The statements below illustrate different kinds of external demands and expectations that organizations can experience (for example, pressure from the media, politicians, legislation and higher authorities). Consider the following statements and consider whether they provide an adequate description of the situation of your organization (*introduction text*). We perceive there is strong expectations that we: – ensure that all our decisions related to procurement and management of suppliers are exclusively based on fairness and equal treatment – manage our relationships with external service suppliers using as clear rules as possible – have complete control and monitoring of our service purchases – ensure that all matters related to our procurement contracts are documented in writing – ensure that decisions related to our procurements are unaffected by personal relationships between the partners	New items