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AN ORGANIZATIONAL PERSPECTIVE ON THE IMPLEMENTATION OF STRATEGIC GOALS IN PUBLIC PROCUREMENT

Andreas H. Glas, Markus Schaupp and Michael Essig*

ABSTRACT. In the EU and especially in Germany, public procurement is bound to a tight legislation that also sets and enforces strategic goals such as innovation or sustainability. The purpose of this paper is to analyze whether different archetypes of public procurement organizations (centralized or decentralized; state-level or local-level) perceive and implement strategic goals differently. A survey with data from 104 entities is used for this purpose. The findings reveal that the implementation of strategy is different in centralized or state-level organizations compared with decentralized or local organizations. Centralized organizations give goals such as innovation, transparency, and sustainability a high priority, while local ones highlight regional development and SME support.

INTRODUCTION

The argument that organizations should align to coherent and distinctive strategies and adapt their internal characteristics to reflect these strategies has a respected place in the management literature and has also been researched in the context of public organizations (Andrews, Boyne, Law, & Walker, 2009). The discussion is closely linked to the contingency theory which states that an organization's ability to accomplish its goals involves congruence between organizational structure and its strategic orientation (Chandler, 1962).

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* *Andreas H. Glas, Ph.D., is a Postdoctoral Researcher and Lecturer, Markus Schaupp, MBA, is a Researcher and Doctorate Candidate, and Michael Essig, Ph.D. is a Full Professor and Director at the Research Center for Law and Management of Public Procurement of the Bundeswehr University Munich. Their research interests are in strategic public procurement and more specifically in performance based contracts and the procurement of innovations in public organizations.*

In fact, the public procurement organizational structure varies from a very simple to a very complex structure (Thai, 2001), what could have an influence on the structure-strategy fit. The main organizational alternatives discussed in the literature are the central or decentral procurement organizations (e.g. McCue & Pitzer, 2000), while also state or local level procurement organization is often mentioned (MacManus, 2002). Connecting to the research of Kamann (2007), who explains the diversity of public procurement organization with managerial approaches, this research names these four organizational alternatives (central, decentral, state, local) "organizational archetypes".

This study analyzes the fit of the organizational archetypes with strategic goals. Strategic goals in public procurement are often set or enforced through legal regulations (e.g. Brammer & Walker, 2011). Three sets of strategic goals of public procurement are distinguished: (1) regulatory goals, (2) commercial goals, and (3) socioeconomic (political) goals (Erridge & McIlroy, 2002). The inclusion of socioeconomic goals, more precisely strategic goals, in public procurement policies and practices has been progressively emphasized in recent years. The discussed strategic goals are social benefits e.g. support of minimum wages (McCrudden, 2004), environmental sustainable procurement (Gelderman, Semeijn & Bouma, 2015), the support of small and medium-sized enterprises (Nicholas & Fruhmann, 2014) or the procurement of innovation (Hommen & Rolfstam, 2009).

The existence of different goals calls for priorities and a substantial awareness of possible conflicts amongst them. However, the perception of strategic priorities and goal conflicts depends on the subjectivity of each public procurement organization and its personnel. This would support that different organizational archetypes set different priorities in the strategic goals according to their perception. Then the archetypes are strategically heterogeneous.

On the other hand, public procurement law is enforcing strategic goals in many countries. According to the regulatory goal of good governance and conformance to regulation, each public procurement organization is intended to interpret and apply the legislation and their strategic goals in the same way. This would support that different organizational archetypes have the same priorities of

strategic goals. Then, the archetypes are strategically aligned. In that case, only minor differences between the archetypes and their strategic goals are expected. Minor differences are maybe due to a disparity in the quality of implementation (implementation bias of strategic goals).

This research analyzes organizational archetypes and their heterogeneous or aligned perception of strategic goals. The purpose is to get deeper insights into the structure-strategy fit of public procurement entities, what promises to reveal recommendations for both strategy-use and strategy-implementation in public procurement.

For that purpose, the research work defines organizational archetypes and structures and discusses the strategic goals of public procurement and their linkages in various models. On that basis, two main hypotheses are developed and tested applying discriminant analysis on data from a survey. If the test reveals that the perception of strategic goals is significantly able to discriminate organizational archetypes, then the archetypes are strategically heterogeneous. If there is no significant discriminant function, the archetypes are strategically aligned.

The remainder of the paper is structured as follows. The next section reviews the organization of public procurement and illustrates the situation in Germany and other countries. Then, the theoretical foundations of strategic goals in public procurement are presented and structured using a maturity model. Next, the hypotheses are formulated and the methodology is described. This is followed by the findings section, which is divided into subsections for H1 and H2. The study's findings are discussed and recommendations outlined in the subsequent sections. The paper concludes with implications for research and practice.

ORGANIZATION OF PUBLIC PROCUREMENT

The organizational practice of public procurement is essentially divided into two perspectives: political and administrative (Thai, 2001). The political level sets strategic goals in the form of visions and regulations and particularly through procurement law. The administrative level is then tasked with process execution (Kattel & Lember, 2010; Thai, 2001). This paper focuses on the organizational setup of the administrative level of public procurement.

First, the organization of public procurement (administration) is divided into regional units on a local level with a high degree of autonomy and, on the other hand, federal or state-level procurement organizations (e.g. Johnson et al., 2003; Thai, 2009). The distinction between regional (local) and state (federal) organization is used in numerous studies on public procurement (e.g. Testa et al., 2012; OECD, 2015). State-level and local-level procurement organizations are responsible for the satisfaction of demand of their institutions which are either on the federal (national) level, e.g. ministries, government departments) or on a local level (regional authorities, municipalities) (Bianchi & Guidi, 2011).

Second, another prominent organizational distinction of public procurement is witnessed between centralized and decentralized purchasing organizations. Thai (2009) describes the tradeoffs between centralized and decentralized organizational forms, such that the emergence of a perfect decentralized or centralized structure is very unlikely. However, the forms may be defined as follows: "Centralization occurs when all of the rights, powers, duties, and authority relating to public procurement are vested in a central procurement officer [while] decentralization occurs when procurement personnel from other functional areas can decide unilaterally on sources of supply or negotiate with suppliers directly" (Thai, 2009). Briefly and in other words, decentralization exists whenever a non-central procurement authority has the right to adopt individual decisions independently within the legal and regulatory framework (Brezovnik et al., 2015).

Taken together, there are four organizational archetypes of organization: local, state, central, and decentral. There are some plausible relations between these archetypes. Centralization in its strictest form would result in only one single procurement office responsible for the procurement task (Brezovnik et al., 2015). On the other hand, decentralization can take place at state-level, e.g. when each state-level ministry is responsible for its own procurement. Besides, centralization may occur on a local level, e.g. when regional procurement offices take over a central, lead buying function for specific categories. Still, the academic discourse of the organization of public procurement is ongoing and many countries mix elements of these archetypes in their procurement systems (OECD, 2000).

To illustrate the range of centralized, decentralized and hybrid forms of public procurement organization, a list of some types of organizational practice is given (OECD, 2000): Central purchasing agency, national purchasing groups, regional procurement groups, situation-specific local buying consortia, central framework contracts for decentral use, international buying centers, specialized agencies for categories (e.g. medicine or defense), shared service centers, outsourced purchasing offices to private sector, purchasing offices in form of public-private partnerships, and, besides many other organizational practices supportive instruments, such as e-procurement platforms, provided by central institutions.

There are various arguments in favor of each archetype, while the discussion often focuses on the advantages of either a centralized or a decentralized structure (Table 1). Compared with a decentralized organization, a centralized procurement authority exhibits a higher volume of procurement actions both in terms of quantity and budget,

TABLE 1
Comparison of Centralized and Decentralized Procurement Organizations

Centralized	Decentralized
- Stronger negotiating position vs. suppliers, hence better prices and terms. - Construction of a group purchasing and procurement strategy. Uniformity leads to economies of scale. - Acquisition of better, more profound knowledge of the market. Establishment of a global supply view. - Efficient use of available purchasing skills. - Less administrative work and reduction of purchasing organization expenses.	- Local management responsible for all costs including purchasing might become frustrated if they lose control over such an important cost item. - Close cooperation between local buyers and users. Good fit with local requirements. - Choice of local suppliers, better and faster service, shorter delivery times, sometimes better terms, goodwill with the local community. - Local buyers more motivated.

Source: Arnold (1999).

due to aggregated demands as well as a more numerous and higher trained staff that arises from localization at one place and a related need for procurement specialists (Arnold, 1999). An additional aspect that relates to the aforementioned procurement targets is a higher degree of transparency that proceeds from better information systems for the reporting and recording of transactions, which results in a smaller margin for corruption and financial mismanagement (OECD, 2000; Albano & Sparro, 2010).

It is interesting to note that according to the literature, centralized and decentralized organizations differ in their ability to promote strategic goals. A centralized organization promotes the use of social, environmental and technical standards as well as innovation, while regional policy goals and support for SMEs are afforded less importance due to greater contract sizes and a longer distance to suppliers. The latter goals are instead linked to a decentralized structure and local authorities (OECD, 2000; Albano & Sparro, 2010).

AN OVERVIEW OF PUBLIC PROCUREMENT ORGANIZATION IN PRACTICE

Structuring public procurement in a more central, decentral or a balanced hybrid organization is a very important decision which may influence the process efficiency and the success of any public procurement project. The common practice shows that the organizational archetypes appear to a greater or lesser extent in almost every country (OECD, 2000; Brezovnik et al., 2015).

In Germany, the public procurement structure is often “given” by administrative rules, laws or management decisions. Some procurement structures (e.g., those in the defense sector) are even described in the German constitution. The public procurement offices are subject to change over time, as it is per se possible to centralize/decentralize structures or to promote local authorities to the status of state offices (or demote the latter to the status of the former). However, that change is only possible pursuant to a lengthy administrative and political process. A “quick” adoption to improve the congruence between organizational structure and its strategic orientation (Chandler, 1962) is hardly or only on the long-run possible. Accordingly, many public procurement offices (in Germany) remain too long in a traditional organizational structure, as the high degree of stable tasks, formalization and routines compromise the

ability and efforts to reform and adapt the public organization (Grimmer, 2013).

Traditionally, public procurement offices are highly decentralized in Germany due to the division of its governmental system into a federal state (Bund), (regional) states (Laender) and local authorities (Kommunen) as well as publicly owned or influenced companies and organizations (Essig et al., 2009). However, in recent years, some government bodies and municipalities have partly centralized their purchasing departments due to budgetary pressures, forming some big procurement players such as the "Federal Office of Defense Technology and Procurement" or the "Acquisition Office of the Federal Ministry of the Interior" (Essig et al., 2009).

This fragmentation of the governmental system is inherent in various countries and especially for those 35 countries belonging to the OECD, as is described as follows: "Government procurement here includes the values of procurement for central, state and local governments. The sub-central component refers to state and local governments. […] State government is only applicable to the nine OECD federal states: Australia, Austria, Belgium, Canada, Germany, Mexico, Spain (considered a quasi-federal country), Switzerland and the United States" (OECD, 2015).

Whereas this administrative perspective remains quite similar in most countries, the grade of centralization varies. As for Germany, the organization of public procurement within the EU remains very scattered and decentralized, following the rationale that by "placing the procurement function closer to the needs of the final user", it is likely to be more economically efficient and better able to promote the development of the private sector, including small and medium-sized enterprises (SMEs)" (OECD, 2000).

However, growing efforts to centralize certain parts of the system have recently been detected (OECD, 2000; Brezovnik et al., 2015), following the rationale of reducing purchasing (process) cost considerably, that led many governments to centralize and aggregate public demands by implementing centralized procurement offices, e.g. GSA in the US, OGC and OGC Buying Solutions in the UK, PPS in Korea, ChileCompra in Chile, Hansel in Finland, BBG in Austria or Consip in Italy (Albano & Sparro, 2010).

STRATEGIC GOALS IN PUBLIC PROCUREMENT

The European Union (EU) comprises 28 EU member states, which collectively have an economic value of € 14.64 trillion, or 22% of the world GDP (Statista, 2015), and a total public procurement volume that amounts to approximately € 1.786 trillion in 2013 (EC, 2015). In recent years the usage of this public procurement volume for socioeconomic purposes and therefore the inclusion of strategic goals in procurement legislation has been progressively emphasized. Those goals as green and social goals, that were introduced in EU procurement law in 2004 (European Commission, 2004) or conditions for innovation and the support for SME that were extensively described by the EU in 2007 (European Commission, 2007) and were ultimately included in its 2014 reform (European Commission, 2014). Prior to these pronouncements, the desire to integrate such policy objectives into public procurement was already widespread throughout Europe, but EU member states implemented strategic policy goals (green, social, innovative procurement) in different ways and with different conditions (Kahlenborn et al., 2011). For example, in German public procurement law, strategic details have been present since the 2009 modernization, pursuant to European guidelines (Deutscher Bundestag, 2009).

In the scientific debate about strategic goals in public procurement, Erridge and McIlroy (2002) identified three sets of sometimes conflicting goals against which public procurement policy may be analyzed: (1) regulatory goals, (2) commercial goals, and (3) socioeconomic goals. This is in line with other frameworks that are also divided into economic, governance, and political goals (Schapper et al., 2006). The existence of different strategic goals calls for priorities and a substantial awareness of possible conflicts among goals (Table 2).

Erridge (2005) provided one of the very first research works that assessed UK public procurement policy practice against these regulatory, commercial and socioeconomic goals, proposing an analytical framework for evaluating the delivery of public procurement policies. The article postulates that although the achievement of regulatory and commercial goals remains important, opportunities to deliver wider socioeconomic policies through public procurement should be pursued more extensively. In this respect, the promotion of

TABLE 2
Goals of Public Procurement

Goals	Description
Regulatory goals	Focus on compliance with the EU Public Procurement Directives.
Commercial goals	Focus on the use of market mechanisms to achieve procurement goals such as reduced cost and increased quality.
Socioeconomic goals	Focus on the use of public procurement to support wider government policies such as sustainability and social welfare.

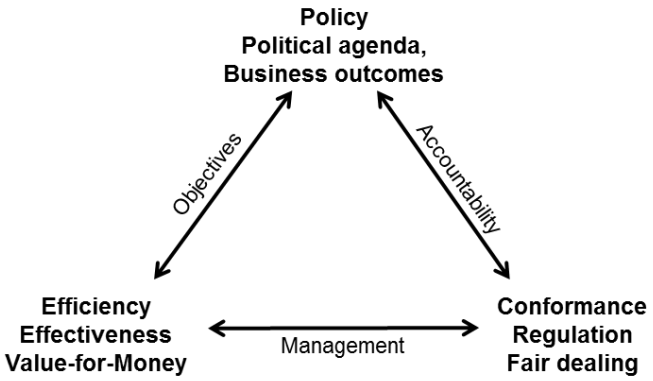
Source: Erridge and McIlroy (2002).

SMEs, as well as green and social aspects, are seen as valuable strategic target dimensions, while innovation goals are not explicitly acknowledged.

Following this argument, Schapper et al. (2006) suggested a theoretical background for the inclusion of strategic goals in public procurement by inserting a strategic respectively political dimension into their framework of public procurement goals, which are considered to be equivalent to regulatory (conformance, fair dealing, compliance with procurement law) and commercial goals (efficiency, effectiveness, value for money). This policy perspective is also stressed by Murray (2007) and in combination with the other dimensions by Williams-Elegbe (2016) and McCue et al. (2015).

Together, the three dimensions may be illustrated in the form of a goal triangle; this makes the conflict between them obvious, as each goal can only be achieved by giving due regard to the other goal dimensions (Figure 1). For example, the commercial goal of value for money is bound to the regulatory goal of legal conformity or long-term supplier relationships may have positive effects on value for money but stand in contrast to transparency and non-discrimination rules. Policy-driven goals such as the procurement of green products to support environmental goals may stand in contrast to cost efficiency (Matthews, 2005).

FIGURE 1
Goal Triangle of Public Procurement



Source: Schapper et al. (2006)

Possible goal conflicts are also emphasized by Edquist and Zabala-Iturragagoitia (2012), who argue that additional socioeconomic goals lower the overall efficiency of the procurement process. The inconsistency between the goals of efficiency and innovation is particularly emphasized by Yeow et al. (2012). The overriding necessity to balance and prioritize strategic goals is described by Thai (2006), who observes that "procurement officials [...] have been walking on a tight rope."

It remains unclear why innovation goals were not explicitly mentioned in the frameworks given by Schapper et al. (2006) and Erridge and McIlroy (2002), as there are varied sources preceding them that link public procurement with strategic inclusion of innovation goals (Geroski, 1990; Dalpé et al., 1992; Dalpé, 1994; Rothwell, 1994; Edquist et al., 2000).

Strategic goals in public procurement can be grouped into two categories. Social and green/ecological targets are often placed under the heading of sustainability (McCrudden, 2004; Brammer & Walker, 2007). Sustainability is defined as "procurement that is consistent with the principles of sustainable development, such as ensuring a strong, healthy and just society, living within environmental limits, and promoting good governance" (Brammer & Walker, 2007).

Another category encompasses socioeconomic targets that work as a lever for the economy (Murray, 2009) such as SME support or the procurement of new and innovative products or services, including the sourcing of R&D services to satisfy anticipated governmental needs. The intention is to promote innovation or SME in order to support the competitiveness of industries and safeguard the economic domain (Wan, 2014). Basic to these measures is the intention to innovate and improve upon government services while also promoting innovation in companies that purvey it, as introduced by the EU with its Community Lisbon Programme (European Commission, 2005) and defined in its Innovation-Strategy (European Commission, 2006). SME support policies contemplate facilitating SMEs' introduction to government contracting or targeting them with specially designed contracts (Loader, 2005; Loader, 2007). According to Uyarra and Flanagan (2010) such support would "favor greater competition and would make the formation of cartels more unlikely [and] raise the number of competing solutions while improving the chance of an innovative solution being selected."

The most recent and comprehensive framework that encompasses strategic goals was proposed by Harland et al. (2007). The varied goals within it comprise what is described as a seven-stage maturity model (lowest level 1 presented at the bottom, highest level 7 at the top of Table 3). The model juxtaposes higher-ranking commercial and regulatory priorities with lower-ranking strategic topics at its pinnacle, explicitly referencing green and sustainability goals as well as innovation. This classification is still approximate as it does not depict links between the goals. For example, the purchase of a green product can simultaneously support social sustainability, innovation goals, and SMEs. However, the framework serves as an appropriate starting point for the empirical analysis of goal dimensions.

HYPOTHESIS DEVELOPMENT

When designing a national public procurement system, the degree of centralization is one of the most crucial choices (Albano & Sparro, 2010). One core argument for centralization is bundling and aggregating demands (Dimitri et al., 2006). Due to economics of scale, the industry then should be able to produce at lower unit costs,

TABLE 3
Maturity Model of Strategic Goals in Public Procurement

Stage of development	Low-ranking	High-ranking
7. Deliverer of broader policy objectives	Innovation; sustainability; social inclusion; broader government objectives	---
6. Supporter of broader policy objectives	Equal opportunity; green procurement	---
5. Value for money	---	Value for money
4. Accountability	Ethics	Accountability; transparency; probity
3. Efficient use of public funds	---	Competition; efficiency; education
2. Compliance with legislation/regulation	---	Legal compliance; cost-effectiveness; education
1. Sourcing & delivering goods and services	---	---

Source: Harland et al. (2007).

so a centralized public procurement organization might be able to exploit economies of scale and cut prices. Besides these expected effects, policy makers and researchers in public procurement recognize centralization as a powerful lever to pursue broader policy goals (Albano & Sparro, 2010). Opposite, decentral public procurement organizations are then perceived to not suit at the same level with strategic policy goals of public procurement.

This is surprising as there are no specific strategies for centralized or decentralized public procurement organizations. They both shall follow the same regulatory framework. If specific strategic regulation is missing, all organizations must aim at the same strategic objectives. Of course, central and decentral organizations differ in

their procurement volume and available resources for conducting the procurement task, but they are not expected to differ in their strategic objectives. Therefore, the discriminant analysis should test, if (de)centralization of procurement organizations really can be explained by goal incongruence and if central public procurement organizations have a higher fit with strategic objectives. Based on this reasoning, the following hypothesis is offered:

H1: Centralized public procurement organizations have a higher strategic fit with up-to-date strategic objectives than decentralized organizations.

Considering the administrative and geographic level at which the organization operates (local or state-level), there are numerous contributions in the literature, which address and analyze local public procurement organizations specifically (e.g. Preuss, 2009; Basheka & Bisangabasaija, 2010; Nogueiro & Ramos, 2014). Apparently, researchers perceive local public procurement organizations as specific research objectives in particular in the context of public strategies and policies. However, Flynn and Davies (2015) found that congruence with superior public strategies (in their case SME-friendly policies) is not affected by the geographic level at which the organization operates (Flynn & Davies, 2015).

Therefore, it would be expected that discriminant analysis is not significant when examining state-level and local-level public procurement organizations and their strategic objectives. To test that assumption, the following hypothesis is offered:

H2: State-level public procurement organizations have a higher strategic fit with up-to-date strategic objectives than local organizations.

METHODOLOGY AND SAMPLE

This paper is informed by organizational theory and contingency theory with the idea that organizational design should have a “fit” with the environment of an organization and its strategy (Chandler, 1962). Empirically, this research work uses data from a survey of public buyers in the German federal state of Mecklenburg-Vorpommern (M-V) that was executed by the Wegweiser GmbH and the Research Center for Law and Management of Public Procurement

of the Bundeswehr University Munich on behalf of the Ministry of Economics, Construction, and Tourism of M-V.

The main purpose of this survey was to evaluate the effect of the newly introduced minimum wage law on public procurement performance. It was not originally designed to specifically analyze public procurement strategic goals and organizational structures. Therefore, this analysis is a secondary data analysis, as the research is conducted with already existing data. Nevertheless, the survey accords with the purpose and aims of this study, as inquiries concerning organizational form and perception of strategic goals were included within the questionnaire. The survey contained three parts. The first part solicited general views and opinions on public procurement (strategic) goals, tools and future developments. The second part was dedicated to minimum wage issues, and part three obtained detailed information about procurement offices.

The survey was conducted between March and April 2014 via the Ministry of Economics, Construction, and Tourism of M-V and was the very first German state to conduct an evaluation survey of all public procurement offices within its borders. The survey data and their results were reported to the state parliament of M-V and can be downloaded there (Wegweiser GmbH, 2015). Other German states have since decided to evaluate their public procurement laws via surveys (e.g., Schleswig-Holstein and Thuringia, both in 2016). Such efforts are intended to broaden the empirical foundation by combining or comparing results from M-V with data from the other planned surveys, as soon as such data are collected and made available.

The survey in M-V was both Internet- and paper-based and was sent out to every procurement office located within the state. The survey was accordingly intended to be a total population survey, with a total of 1,045 institutions contacted. The high number of public procurement offices in that state is an indication of the highly decentralized structure of the public procurement system in Germany. In total, 162 returns were received, equating to a response rate of 15.5%. Due to response bias and incomplete data, (no indication of state/local status, procurement volume, number of staff, trained staff or procurement goals), a number of questionnaires were excluded from the analysis. Additionally, returns from publicly owned companies were excluded, as they were too few in number and did

not align with the goal of comparing state and local authorities or centralized and decentralized procurement offices.

The distinction between local or state-level organization was made on basis of the responses to a question on the manifest construct of the administrative level of the organization. Overall, 51 organizations are placed on state-level (e.g. ministries of M-V) and 53 are placed on a local level (e.g. municipalities). The distinction between centralized and decentralized organizations was assessed by analyzing if a procurement organization is taking over procurement decisions and tasks not only for its "own" users but for other "external" users or public procurement organizations. To distinguish the two archetypes, it would be necessary to measure the latent construct of "degree of decentralization" (Güttler, 2009; Aiken & Hage, 1966). The construct is measured with several indicator items. However, the operationalization of that construct uses indicators which showed bias in the pretests. Central as well as highly de-central public procurement organizations gave both high agreement with the same indicators, e.g. "We are in a position to take independent decisions" or "Particularly in non-critical decisions we are able to make decisions independently." This shows, that "measuring and comparing the degree of centralization of public procurement [...] is a very troublesome task" (Albano & Sparro, 2010).

Therefore, this analysis used manifest centralized procurement characteristics to assess the degree of (de)centralization (procurement volume, personnel, specific qualification). The predominant characteristic of a highly centralized organization was procurement volume (>= 5 million), as the volume increases if an organization is bundling demands for a number of users. Additionally, the number of staff personnel was taken into account, as typically central organizations have a higher number of staff (>=10). Also, the staff of central organizations is to be expected to be trained and educated in public procurement operations and management (yes), while decentralized organizations often have part-time procurement staff, which does not get per the same level of education and training. Overall, 15 centralized and 89 decentralized organizations could be identified. The classification of the centralized organizations was checked by the authors of this article to safeguard data validity. The characteristics of the filtered sample (N = 104) distinctions are presented in Table 4.

TABLE 4
Sample Characteristics

Administrative distinction:	**N = 104**		
State level	51		49.5%
Local (municipality) level	53		50.5%
Organizational distinction:			
- Procurement volume:	**N = 84 (missing: 20)**		
	Centralized	Decentralized	
>= 5 million EUR	15	0	14.6%
<5 million and >1 million EUR	0	20	19.4%
<=1 million EUR	0	49	67.0%
- Procurement Personnel:	**N = 87 (missing: 17)**		
	Centralized	Decentralized	
>=10	7	3	11.5%
10> and >2	7	31	43.7%
<=2	1	38	44.8%
- Trained Personnel:	**N = 96 (missing: 8)**		
	Centralized	Decentralized	
Yes	13	14	28.1%
No	2	67	71.9%

The attitude towards and perception of strategic goals in public procurement was measured on a 4-point Likert scale. Each of the 14 goal dimensions under consideration was assessed according to its importance to the respondent organization. The survey's measurement is described in detail in Appendix A.

Discriminant analysis is generally used to determine which variables discriminate between two or more naturally occurring groups (here: organizational archetypes). The method is not identifying groups, like cluster analysis performs, but is testing the differences between the groups. It also could be used to determine which variable(s) (here: perception of strategy goals) are the best predictors of the group. Thus, a two-group discriminant analysis is used to prove whether the perception of different strategic goals predicts the organizational form of the public procurement entity.

RESULTS

The descriptive statistics (see Table 5) indicate that there are interdependencies (e.g., significant correlations) between strategic goals. However, it remains unclear if these interdependencies really predict organization to a significant extent. If the hypotheses must be rejected, then there is no significant difference in the strategy-structure fit (Venkatraman & Camillus, 1984). If the variables (strategic goals) can predict the organizational form, then there is a different strategy-structure fit. The discriminant analysis could then

TABLE 5
Correlation Matrix of Perceived Importance of Strategic Goals

Strategic goal	*Mean*	*Standard Deviation*	Value for Money	Transparency	Quality improvement	Security of supply	Regional development	Budget consolidation	Competition	Social responsibility	Ecology	SME support	Innovation
Value for Money	3.55	.500	1										
Transparency	3.24	.615	**.346** [b]	1									
Quality improvement	3.09	.628	**.381** [b]	**.227** [a]	1								
Security of supply	3.04	.835	**.258** [b]	**.265** [b]	**.332** [b]	1							
Regional development	2.88	.722	.041	-.048	.054	.064	1						
Budget consolidation	2.85	.737	.129	-.007	.133	.170	**.309** [b]	1					
Competition	2.83	.753	.182	**.219** [a]	**.202** [a]	**.241** [a]	**.333** [b]	.156	1				
Social responsibility	2.79	.536	.179	.188	**.290** [b]	**.258** [b]	.150	.041	.148	1			
Ecology	2.69	.692	**.206** [a]	.128	.169	.171	.193	**.044** [a]	**.262** [b]	**.624** [b]	1		
SME support	2.63	.754	.143	-.079	.103	.007	**.339** [b]	**.304** [b]	**.374** [b]	-.097	.132	1	
Innovation	2.29	.777	.101	.134	**.242** [a]	.139	.161	.134	.090	.171	**.199** [a]	.169	1
Example for industry	2.25	.825	**.304** [b]	.191	**.349** [b]	**.264** [b]	.135	.176	.171	**.449** [b]	**.243** [a]	**.243** [a]	**.224** [a]

Notes: [a] Correlation is significant with $p<0.05$; [b] Correlation is significant with $p<0.01$; N=104.

reveal which strategic goal most accounts for the differences between the average score profiles of the two groups.

Hypothesis 1

In this sub-section, H1 is explored, testing whether centralized public procurement organizations have a different strategic fit than decentralized public procurement organizations. To this end, a discriminant function was estimated for the two groups: central organizations and decentralized organizations (see Table 6). The canonical correlation associated with this function is 0.561. The square of this correlation is 0.314 and indicates that 31.4% of the variation in the disparity of strategic goals is explained by this model. To test for the significance of this function, Wilks' statistic was examined. The value of Wilks' L is 0.685, which translates to a chi-square of 31.014 with 12 degrees of freedom and significance of $p < 0.002$. In other words, the null hypothesis "Groups are not different from each other" must be rejected. This indicates that the model is significant and explains the strategic perception of different public procurement organizations.

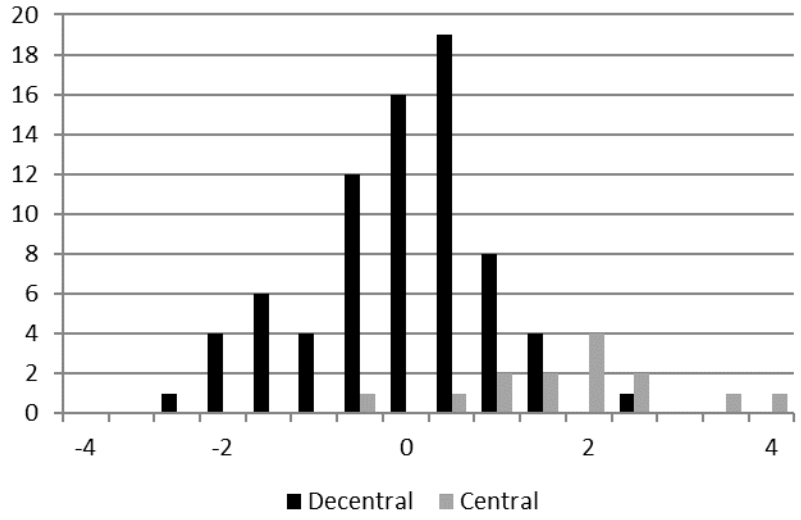
TABLE 6
Discriminant analysis results

Variables (Strategic objectives)	Structure matrix (canonical loadings)	Unstandardized canonical discriminant function coefficient
Innovation	.575	.471
Transparency	.354	.246
Ecology	.350	.253
Competition	.346	.351
Social responsibility	.335	.356
Value for money	.299	.146
SME support	.279	.306
Regional development	-.275	-.706
Quality improvement	.245	-.141
Budget consolidation	.244	.290
Example for industry	.206	-.144
Security of supply	.084	-.195

The relative importance of the predictor variables was determined by examining the structural correlations, also called canonical loadings. The results suggest that innovation, transparency, ecology, competition and social responsibility are the five most important predictors that differentiate the two groups with respect to all strategic goals. The other factors have canonical loadings <0.3 and thus have only a minor influence.

The findings and the model fit can be illustrated by a plot of canonical discriminant function 1 for H1 (see Figure 2). Obviously, the distribution of decentralized organizations (mean -0.29, SD = 0.976) differs from that of centralized public procurement organizations (mean 1.56, SD = 1.120).

FIGURE 2
Canonical Discriminant Function



The classification results (see Table 7) were examined; 83.3% of the cases were correctly classified. Because it has been suggested that the classification accuracy achieved by discriminant analysis should be approximately 25% greater than that obtained by chance (Malhotra, 1996), the model seems to have satisfactory predictive power. Because H1 could not be rejected, centralized public

procurement organizations adopt strategies differently than decentralized organizations and do so according to strategic objectives.

TABLE 7
Classification results

		Predicted group		Sum of cases
		Decentralized	Centralized	
Number	Decentralized	64	12	76
	Centralized	3	11	14
Percent	Decentralized	84,2	15,8	100,0
	centralized	21,4	78,6	100,0

Note: a. 83.3% is the percentage of "grouped" cases classified correctly.

Hypothesis 2

In this section, H2 is explored, testing whether state-level public procurement organizations have a different strategic fit than local ones. To this end, a discriminant function was also estimated for the two groups: state-level and local-level organizations (see Table 8). The canonical correlation associated with this function is 0.764. The square of this correlation is 0.583 and indicates that 58.3% of the variation in the type of organization is explained by this model. For this discriminant analysis, the significance test was also examined with Wilks' statistics. The value of Wilks' L is 0.416, which translates to a chi-square of 71.98 with 12 degrees of freedom. The test is highly significant ($p < 0.000$), what means that the null hypothesis "The groups are not different from each other" must be rejected. This indicates that the model is significant and explains the strategic perception of different public procurement organizations.

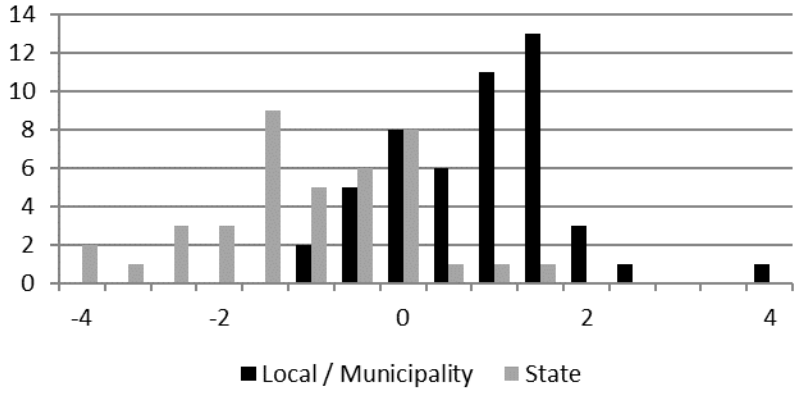
The canonical loadings provide indications about the relative importance of variables (Table 8), suggesting that regional development and SME support are the only factors of (high) relevance (>0.3 loading). Obviously, the regional development factor is key for differentiating the two types of organizations, whereas the other strategic factors of social and ecological responsibility and innovation are not important for predicting group membership.

TABLE 8
Results of the Discriminant Analysis

Variables (Strategic objectives)	Structure matrix (canonical loadings)	Unstandardized canonical discriminant function coefficient
Regional development	.680	.800
SME support	.379	.564
Transparency	-.270	-.290
Value for money	-.227	-.318
Security of supply	-.204	-.312
Quality improvement	-.179	-.326
Competition	.137	-.077
Budget consolidation	.112	-.151
Innovation	-.098	-.005
Ecology	.082	-.116
Example for industry	.022	.161
Social responsibility	0.19	.242

The findings and the model fit are illustrated by a plot of canonical discriminant function 1 for H2 (see Figure 3). The distributions overlap, but state-level organizations (mean -1.31, SD = 1.082) differ from local-level ones (mean 1.05, SD = 0.929).

FIGURE 3
Canonical Discriminant Function 1



The classification results (see Table 9) reveal that 91.3% of organizations were "grouped" correctly according to the two types of organizations. This is a very high value, as the classification accuracy achieved by discriminant analysis should be approximately greater than 75% (Malhotra, 1996). Thus, the model seems to have very high predictive power. Because H2 could not be rejected, state-level public procurement organizations adopt strategies differently than local organizations and do so according to strategic objectives.

TABLE 9
Classification Results

		Predicted group		Sum of cases
		State	Local	
Number	State	37	3	40
	Local	5	45	50
Percent	State	92.5	7.5	100,0
	Local	10.0	90.0	100,0

Note: 91.1% is the percentage of "grouped" cases classified correctly.

DISCUSSION AND IMPLICATIONS

The findings show that hypotheses H1 and H2 could not be rejected, and thus, the strategic perception of centralized and state-level organizations differs from that of decentralized and local-level organizations. This is interesting and indicates significant connections between strategic perception and organization. There are some methodological limitations, e.g. causality, which will be addressed at the end of this section.

The discrimination could not only show difference within central/decentral or state/local, but the discriminant functions for the prediction of group membership also differ completely between centralized/decentralized organizational archetypes and state/local organizational archetypes. This is to some extend surprising, as it could be assumed that central organizations also operate on a state level and decentralized organizations operate on a local level. As seen in the descriptive analysis (Table 5), the organizational archetypes do not correlate significantly. To avoid misinterpretation a

further look at the sample through cross-tabulation was performed. Cross-tabulation revealed that the cases are distributed almost equally across a state/local level or a centralized/decentralized level (Table 10).

TABLE 10
Cross-tabulation of Organizational Types

	Centralized	Decentralized	Sum
State	8 (53.3%)	43 (48.3%)	51
Local	7 (46.7%)	46 (51.7%)	53
Total	15 (100%)	89 (100%)	104

There is no significant relationship in the sample between the organizational form archetypes (Chi-square .129; Cramér-V 0.35; approximate significance .719). Therefore, each of the four archetypes is differentiated according to its respective perception of strategic goals, which constitutes the major result of this study: The administratively "given" de facto existence of different organizational types on regional levels (in Germany, the federal, regional, and municipal levels) and their administratively "given" responsibilities (centralized and decentralized procurement tasks) can be predicted by each organizational form's perception of strategic goals.

According to the discriminant functions, it is also possible to perform in the following paragraphs an initial interpretation according to both the strategic goal framework (the goal triangle of political, regulatory, and commercial goals) and the maturity model (levels 1-7) described in the foregoing literature review (Schapper et al., 2006; Harland et al., 2007).

It seems that centralized public procurement organizations are "strategists," as they discriminate according to real political goals. Centralized organizations are discriminated by the most influential strategic objectives of innovation, transparency, ecologic sustainability, promotion of competition and social responsibility. The canonical loadings show the high discriminating power of these goals. Referring to the goal framework and the maturity model, centralized public procurement organizations perceive political goals much more important than regulatory or commercial goals (political goal

dominance). This also shows the ambition of centralized organizations, so it is possible to name them supporter or deliverer of political goals (maturity level 6-7).

In contrast, it seems that decentralized public procurement organizations are "traditionalists" as they perceive these goals to be largely irrelevant, thus implying a stronger focus on non-political goals such as cost efficiency and regulatory (governance) goals (regulatory and commercial goal dominance). This implies that decentral public procurement organizations are foremost interested to fulfill the procurement task (efficiently and effectively) (maturity level 1-5).

Local public procurement organizations seem to be "regional developers," as they are distinguished from state-level groups by a high perception of regional and SME support goals. The canonical loading of regional development is very high, closely followed by SME-support. These two political goals seem to be of higher importance than regulatory or commercial goals (political goal dominance). Therefore, local public procurement organizations can at least be seen as supporters of superior policy goals (maturity level 6).

The other way round the discrimination and distribution of state-level public procurement organizations seem to suggest that these organizations perceive the regional and SME support factors to be of limited importance. As the canonical loadings of the factor transparency, value for money are negative, this implies that state-level organizations are "accountability levers," as their separation from suppliers supports good governance and transparency (regulatory goal dominance). These organizations support in particular accountability (maturity level 4).

Overall, this analysis of the four organizations and their adoption to strategic goals indicate that four different means of strategy implementation exist. If these empirical findings are also supported in broader studies in the context of other countries, research should focus its strategic analysis efforts not on generic "public sector"-wide studies, but rather on distinct organizational archetypes. Public procurement practice should follow the same logic and discuss possibilities for using specific organizational archetypes to implement particular strategic goals (e.g., innovation and sustainability for strategists), while other organizational archetypes are used for other goals (e.g., competition for the accountability levers). The consequence for practice would be to reject the axiom of "one

(strategic) regulation (i.e., legislation/ directive) fits all" in favor of strategy differentiation according to the organization.

As mentioned before, there are also some limitations of this research work. First, the discriminant analysis predicts membership in a group on observed values of variables. It does not show causality between variables. In this study, we found connections between the perception of strategic goals and four organizational archetypes, but not whether the organizational archetype is the causal variable for a different perception of strategic goals or only an intervening variable of other latent constructs. Second, the survey is conducted on data from one specific geographical region and findings should be evaluated by broader studies in other countries. Third, this work faces the typical methodological limitations of quantitative surveys, such as sample size and representativeness. This research uses data from a total population survey, with a response rate of 15.5%. Future research could expand and evaluate the empirical basis. Another methodological limitation refers to construct validity. The measurement of the degree of centralization, as a "very troublesome task" (Albano & Sparro, 2010, p. 2), must be mentioned here. Survey pretests and researcher discussions shed light on the measurement problem with existing operationalization approaches. As mentioned above, this analysis classified organizations according to manifest variables (procurement volume, staff, training) and cross-checked the classification of centralized organizations. As a matter of fact, a new or enhanced operationalization of the construct or different empirical measurement approaches could expand and evaluate the findings of this research work.

CONCLUSIONS

This paper explored the strategy-structure fit in public procurement organizations and provided several new insights to the wider research area of public procurement organization and strategy implementation. First, it supported the hypothesis that centralized organizations adopt differently to strategy objectives than decentralized organizations. This was also the case for the hypothesis on state-level versus local-level organizations.

Second, it supported the assumption that centralized organizations (strategists) perceive up-to-date strategic objectives (recently manifested in a new legislation directive) to be more

important than decentralized organizations (traditionalists). On the other hand, state-level organizations (accountability levers) perceive the support of distinct local needs differently from local-level organizations (regional developers).

Finally, these findings further support the wider assumption that strategy implementation is successful if the normative (political) goal setting considers the particular behavior of different public procurement organizational archetypes. It also explains to some extent the low degree of strategic goal achievement of some organizations; confronted with goals, these organizations could simply not adapt to them (at least not as well as other organizational forms).

These findings have several implications for practice. If decentralized and local public procurement organizations adopt differently to strategic changes, it would be necessary to have different strategic objectives – or at least different implementation strategies – for both centralized (state-level) and decentralized (local-level) procurement organizations. Conversely, growing political interest in the fulfillment of strategic goals would call for further efforts on the part of procurement offices in facilitating centralization. This should be the focus of further research.

A next step could be the augmentation of the findings of this study by expanding the sample size or country scope to evaluate the results in different context. Also, the content could be expanded by including regional organizations as "hybrids" between local- and state-level public procurement organizations in the analysis. Another content dimension with potential for extension are the predictor variables. In this study 12 strategic goals were used, but other variables may also have an influence on the ability to discriminate the organizational archetypes in public procurement, e.g. kind of procedures, processes, IT-system in use etc. From a methodological perspective, further research work on the (de)centralization construct would ease measurement and comparison of studies in the area of organizational archetypes.

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APPENDIX A

Items	Scale	Source
Which of the following goals are especially important for your procurement entity?	4-point Likert scale	Goals derived from Harland et al. (2007)
not important / rather unimportant / rather important / important Value for Money ☐ ☐ ☐ ☐ Transparency ☐ ☐ ☐ ☐ Quality improvement ☐ ☐ ☐ ☐ Security of supply ☐ ☐ ☐ ☐ Regional development ☐ ☐ ☐ ☐ Budget consolidation ☐ ☐ ☐ ☐ Competition ☐ ☐ ☐ ☐ Social responsibility ☐ ☐ ☐ ☐ Ecology ☐ ☐ ☐ ☐ SME support ☐ ☐ ☐ ☐ Innovation ☐ ☐ ☐ ☐ Example for industry ☐ ☐ ☐ ☐		
Which administrative level fits your organization?	Nominal scale	Essig et al. 2009, Thai 2009
State ☐ local ☐ Others ☐		
What procurement volume was recorded for your entity in 2012 respectively 2013?	Open scale (average used for classification)	OECD 2000, Albano & Sparro 2010
2012 _____€ 2013 _____€		

APPENDIX A (Continued)

Items	Scale	Source
How many employees are dealing with procurement in your organization?	Open scale	OECD 2000, Albano & Sparro 2010
Number of employees: _____		
Is the procurement staff of your organization especially trained in public purchasing?	Ordinal scale	OECD 2000, Albano & Sparro 2010
Yes ..... ☐ No..... ☐		