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What Are the Priorities of Bureaucrats?

Evidence from Conjoint Experiments with Procurement Officials*

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Abstract

A well-functioning bureaucracy is a precondition for efficient public goods provision. However, bureaucratic decision-making is still largely seen as a black box. We provide novel insights into the preferences of bureaucrats regarding their work outcomes. We focus on a major public sector activity and survey more than 900 real-life procurement officials in Finland and Germany. The questionnaire includes hypothetical choice experiments to study the relative importance of multiple features in tender outcomes. First, bureaucrats state to have substantial discretion at work but no important incentives. Second, our experimental results show that procurers are particularly worried about avoiding negative risks concerning prices and supplier reputation. Third, an avoidance of bidders with prior bad performance appears to be an extremely important factor. Fourth, procurers value a certain degree of competition, while litigation concerns and regional favoritism play only a small role. The striking lack of heterogeneous effects points towards the role of intrinsic motivation among public buyers in countries with high public sector capacity.

JEL codes: D73, D90; H11, H57, H83; K41; M54.

Keywords: Bureaucrats, Public Procurement, Preferences, Intrinsic Motivation, Conjoint Experiment

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1 Introduction

The functioning of public bureaucracies is considered a principal driver of government effectiveness and state capacity in general.[1] Arguably, one of the most important inputs into bureaucracies are individual bureaucrats themselves (Ashraf et al., 2020; Khan et al., 2019; Bertrand et al., 2019; Prendergast, 2007). While conventional wisdom and public perception support the view that bureaucratic choice sets are heavily regulated, in practice bureaucrats possess a considerable degree of leeway, and several recent studies have demonstrated potential positive implications of bureaucratic discretion across government organizations (Bosio et al., 2020; Rasul et al., 2020; Bandiera et al., 2020; Rasul and Rogger, 2018; Duflo et al., 2018).[2] Given the extensive control that individual bureaucrats frequently exert over public sector outcomes, their underlying preferences are key for an efficient functioning of bureaucracies. To isolate these preferences from real-world constraints, we rely on conjoint survey experiments that let bureaucrats form hypothetical decisions under full discretion. This provides us with unique information on bureaucrats' preferences and aids in unpacking the "black box" of bureaucratic choices. Investigating the preferences of bureaucrats is all the more relevant since extrinsic incentives in the public sector are either weak (Burgess and Ratto, 2003; Prendergast, 2007) or non-standard, drawing on mechanisms such as career advancement by seniority (Bertrand et al., 2019) or locational postings (Khan et al., 2019), rather than explicit pay-for-performance schemes.

In this paper, we implement repeated web-based choice experiments with real-life bureaucrats and derive causal evidence on the preferences underlying their most relevant choices. By randomizing a set of decision parameters for participating bureaucrats, we analyze what factors are driving their choices regarding their work results (here, hypothetical tender outcomes). Our online experiment in the field setting is the domain of public procurement, one of the largest sectors of government activity and thereby highly relevant for welfare considerations.[3] Due to the frequent and high-stakes decisions taken by related public officials across various institutional settings and sectors, we believe public procurement to be an ideal laboratory to study bureaucratic actions and prefer-

[1] The connection between bureaucratic attributes and state capacity goes back to Weber (1921), with Acemoglu et al. (2015) providing an overview of how state capacity affects prosperity.

[2] There are also studies which point to the negative effects of discretion, see for example Boland and Godsell (2020). More generally, recent work stresses the trade-off between rules and discretion for bureaucrats, as more autonomy leads to better decisions at the cost of higher probabilities for rent-seeking behavior (Calzolari and Spagnolo, 2009).

[3] For 2018, the expenditures for public procurement of the median OECD country amount to 13% of GDP and 41% of total government spending. This last percentage is arguably even higher when only considering public expenditure which is actively decided upon by bureaucrats. Moreover, a very large share of administrative tasks is to some degree related to the public procurement process.

ences. Moreover, bureaucratic choices regarding public purchases are easily measurable, and we can relate our findings to the emerging literature on the merits of providing discretion to public procurement officers (Bosio et al., 2020; Carril, 2020; Decarolis et al., 2020a).

Studying the "anatomy" of public procurement officials' (POs) choices is a difficult task since observable field data typically only shows aggregate realizations of these decisions. Furthermore, bureaucrats make choices resulting from complex trade-offs with multiple constraints (e.g. price versus quality) and with idiosyncratic levels of knowledge, resources, and behavioral biases. To understand how POs make complex decisions in the tender process, we field a tailor-made survey with randomized components to a large sample of POs in two different countries. In addition to detailed questions on the task structure and environment in which POs form decisions on tender outcomes, our main approach employs hypothetical choice experiments where respondents repeatedly choose between pairs of alternative tender outcome scenarios. While asking subjects for their preferred outcome by means of stated choice experiments has a long tradition in economics,[4] we use so-called conjoint experiments as a specific type of stated preference experiments to derive causal evidence on the determinants of bureaucratic choices (e.g., Hainmueller et al., 2014; Bansak et al., 2019).[5] Essentially, we make real-life POs repeatedly choose between pairs of hypothetical tender outcomes that randomly differ across various relevant attributes. Based on these decisions, we quantify the relative importance of single tender attributes for POs in their multi-faceted choice framework. The results in turn provide a clear characterization of the preferences underlying bu-

[4]Stated choice experiments have recently been applied to decisions about long-term care and saving (Ameriks et al., 2020), work arrangements (Mas and Pallais, 2017; Maestas et al., 2018), retirement (Van Soest and Vonkova, 2014) as well as housing demand (Fuster and Zafar, 2021). Some papers also ask choice probabilities rather than preferred choices (Wiswall and Zafar, 2018; Koşar et al., 2021) or ratings of alternatives (Hainmueller et al., 2015). Please see Rakotonarivo et al. (2016) for a methodological review. While discrete choice experiments have a number of similarities to conjoint experiments, a key difference is the fact that, unlike conjoints, they frequently make specific modeling assumptions regarding latent unobservable variables underlying stated choices (Buckell et al., 2021). In turn, conjoint experiments are agnostic about how respondents arrive at their decisions, be it through utility maximization or bounded rationality, when studying the causal determinants of stated preferences in hypothetical choice scenarios(Bettman et al., 1998). This also provides a rationale on why we use a conjoint in the given context, since we wanted to make the least possible number of restrictions about the structural parameters underlying bureaucratic decision making.

[5]The method originated in marketing but was formalized in the potential outcomes framework in the domain of political science by Hainmueller et al. (2014). Due to its beneficial qualities in predicting real-world behavior (Hainmueller et al., 2015), this method has recently been applied to a broad set of fields. Applications include studies on the attitudes towards immigration (Bansak et al., 2016; Hainmueller and Hopkins, 2015; Hainmueller and Hiscox, 2010) or public policy support (Bechtel et al., 2014; Bechtel and Scheve, 2013; Beetsma et al., 2020). Important aspects of the conjoint method have been refined and further developed by Leeper et al. (2020), Bansak et al. (2021) as well as Bansak et al. (2018).

reaucratic choices in arguably the most important stage of the procurement process.[6] Overall, we targeted more than 8,500 real-life public buyers in Finland and Germany[7] and received 933 completed answers.[8]

The conjoint experiment randomly alternates the following realized procurement tender attributes: the price of the selected bid, the quality of the good or service (as promised in the selected bid), the degree of competition (as measured by the number of placed bids), the reputation of the winning firm by its past performance, the presence of judicial litigation, and whether the chosen firm is from the same region as the contracting authority. The framing of the choices is such that POs should consider the end of the tender stage, that is just after the contract has been awarded but before the goods or services have been provided. This allows us to include and isolate key aspects of the tendering process like competition and litigation while still focusing on preferences over tender outcomes. Beyond that, we elicit various information on the social demographics, the task structure, workplace features, and detailed procurement practices and typical outcomes of the POs' and their offices. In its last part, our survey also elicits how far pure preferences, actual behavior, and career incentives align with the aforementioned attributes of the tender process.

Drawing on descriptive evidence from our field survey, we underscore the relevance of our approach based on hypothetical decisions under full discretion. The bureaucrats in our sample perceive low levels of extrinsic incentives but rather sizable discretion in their daily work. However, when asked about typical obstacles to a successful procurement process, the most frequent response is "rigid regulation". Thus, investigating preferences underlying bureaucratic decisions is all the more important given the observation of low incentives, high autonomy, and the aversion for rigid rules.

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[6] A public procurement process mainly involves two macro-steps. The first step (i.e., pre-award) concerns the tender process; it initiates with a specific request within a public agency and concludes with signing the procurement contract. The second step (i.e., post-award) deals with all aspects of contract execution, including potential re-negotiations and the effective delivery of the procured good or service. See Giuffrida and Rovigatti (2019) for a recent comprehensive review of the literature on ex-post procurement outcomes and their drivers.

[7] In Finland, the Finnish Competition and Consumer Authority (FCCA) conducted the survey. They contacted the universe of all Finnish procurement office contact persons who had submitted a tender to the national public procurement online platform HILMA. The German survey was fielded in collaboration with the *Deutsches Vergabenetzwerk* (DVNW), a leading web and exchange platform for public procurers in Germany, and was supervised by ZEW Mannheim. Unlike the Finnish case, the sample of German contacts is, however, not necessarily representative of the overall population of German bureaucrats active in procurement. However, we argue that the samples in both countries are externally valid due to the heterogeneous pool of participants we could acquire (see Section 5.2 for details).

[8] We also administered the same survey in Italy, with an unfortunately low response rate. The qualitative results are, however, very similar to Germany and Finland. Please refer to our discussion on external validity in Section 5.2 and more details on the Italian survey in Appendix 7.3.

We identify the effect of each attribute in driving stated choices by estimating its average marginal component effect (AMCE). Intuitively, this approach estimates how observed choices are driven by a given level of an attribute compared to an omitted base category of the same attribute in our hypothetical choice scenarios– for instance, comparing a higher than expected price to an expected one. Key to identification is a sufficient number of observations for each respondent and full randomization of all attribute levels across choice scenarios and respondents. The conjoint design also alleviates concerns of experimenter demand bias and increases realism because subjects have to trade-off distinct relevant factors of the tendering process. Conjoint experiments were also found to resemble real-life decisions in other contexts very well (Hainmueller et al., 2015).

Our estimations produce several interesting findings. First and most important, we find bureaucrats to be particularly worried about potential negative risks regarding prices and supplier reputation. Specifically, for both the price and supplier reputation effect, the size of the effect (in absolute terms) is considerably stronger for negative realizations than for positive ones. In other words, avoiding negative realizations of these dimensions is a much stronger driver of the observed choices than grasping positive opportunities. A possible explanation is that politicians or PO's supervisors are more concerned with avoiding failures (possibly perceived by the media and public opinion as misconducts or scandals) than attaining particularly positive results. This observed behavior, at least for price considerations, can best be reconciled with theories of loss aversion (Kahneman and Tversky, 2013). Taking the expected price as a reference point, the effects are particularly strong in case of negative deviations from this benchmark.

Second, our baseline results show distinct and very robust priorities in procurement officers' choices regarding the randomized attributes. Unfavorable reputation, in particular negative previous interactions with a given firm, is valued extremely negatively by respondents. Likewise, unexpectedly high prices are seen as extremely unfavorable purchase conditions. The results concerning competition show that POs have non-linear preferences towards additional bid submissions with a flattening curve after about four offers. We also show that litigation resulting from the bid process is valued negatively but related effects are small. Lastly, whether or not the firm is located in the same region as the PO does not have a strong influence on the stated choices of public buyers. We take this as evidence that while regional favoritism may be often observed in field data, pure locality considerations may in fact play a minor role in buyers' choices once controlling for other tender aspects such as quality and familiarity as in our experiment.

One of the most striking findings throughout all of our results is the absence of effect heterogeneities between the different countries, socio-demographics, task, and office-level features. Neither the country, age group or other demographics, office size, nor task structure have any meaningful correlation with the size and direction of the estimated coefficients. This finding suggests that bureaucrats working in different public

procurement tasks and contexts may have some inherent "code of conduct" and intrinsic motivation driving their preferences in their choices about tender outcomes and thus about their work results. Among others, this result is consistent with Ash and MacLeod (2015), who find that judges are intrinsically motivated to provide high-quality decisions.

We believe that our findings are not only relevant for procurement practices in Finland and Germany but also in other similar countries with high public sector capacity (Bosio et al., 2020). Moreover, some of our findings provide insights into general public sector processes when bureaucrats face similar environments of low incentives and sufficient autonomy within comparable levels of public sector capacity. Several factors corroborate this conclusion. First, procurement is *per se* representative for a large share of bureaucrats, as the majority of public employees might be involved in it at some point or another during their career. Second, our experimental results are robust across countries, socio-demographics, job, and workplace characteristics (e.g., government tiers). Third, both participating procurement bureaucrats in Finland and Germany comprise a heterogeneous set of individual buyers across a broad range of individual tasks, demographic features, and office characteristics, which increases the applicability of our findings to other institutional settings. Fourth, by comparing our survey data to the universe of Finnish procurement contracts from administrative data sources, we find our survey to be representative regarding a range of descriptives, including regions, office types, contract procedures, awarding mechanisms, and the typical number of bidders.

Our paper contributes to various distinct strands of the literature. The overarching theme is the functioning of the public sector, and our paper's results refer to several aspects of the literature analyzing individual bureaucrats and their behavior. One broad set of approaches in this realm investigates how the public sector's organizational and design features influence economic outcomes. Important studies have evaluated the effectiveness of explicit incentive schemes (Bertrand et al., 2019; Khan et al., 2019; Burgess and Ratto, 2003; Prendergast, 2007) and studied the optimal level of discretion for bureaucrats (Bosio et al., 2020; Bandiera et al., 2020; Rasul and Rogger, 2018; Duflo et al., 2018). In a different approach, scholars have looked at the underlying fundamentals of individual bureaucrats and how these interact with the organizational design of the public sector. Important topics include the intrinsic motivation of public sector workers (Besley and Ghatak, 2005; Prendergast, 2007; Friebel et al., 2019), determinants of the bureaucratic selection process (Ashraf et al., 2020; Hanna and Wang, 2017; Xu, 2018; Colonnelli et al., 2020), and fundamentals such as risk aversion (Tepe and Prokop, 2018; Buurman et al., 2012) and pro-sociality (Gregg et al., 2011). Given the combination of intrinsic motivation – an idea firstly introduced to economics by Kreps (1997) –, low-powered incentives, and the high importance of selection into office, bureaucrats' underlying preferences are arguably the most important element guiding their choices. We therefore complement the literature by concisely measuring bureaucrats' preferences

regarding the most relevant and frequent choices in their work. Digging into these preferences, we gauge how bureaucrats trade-off risks and benefits attached to a given work objective and quantify the relative importance of multiple objectives in their work environment in an experimental set-up. Moreover, we analyze possible determinants of bureaucratic preferences such as demographics and workplace characteristics.

A further set of contributions engages with the literature on the economic analysis of public procurement markets. First, we speak to an emerging set of studies looking into competition in public procurement processes. Public procurement often suffers from an extremely low number of bids (e.g., Jääskeläinen and Tukiainen, 2019) and resulting high prices.[9] Hence, recent studies relate observed low levels of competition to procurement design and draw conclusions regarding procurers' tendency of raising entry barriers to improve supplier selection (Kang and Miller, 2020; Coviello et al., 2018a). Thanks to our conjoint design, in which we experimentally control for important features of bids (e.g., reputation, quality, price), we can isolate public procurers' unconfounded preferences for desired levels of competition. Based on our findings, POs' preferences *per se* are unlikely to be the key explanation for the lack of competition. Second, we contribute to the literature on the spatial allocation of contracting firms and procurement authorities. Empirically, procurement contracts are often allocated to firms in the proximity of the contracting authority (Jääskeläinen and Tukiainen, 2019; Kutlina-Dimitrova and Lakatos, 2016). To some degree, this reflects natural entry costs, but both stated policy goals of "buy local"[10] and potential political connections (Szucs, 2018; Baltrunaite, 2019; Baltrunaite et al., 2020; Ryan, 2020; Baranek and Titl, 2020) have been used as explanations. We provide direct evidence that public buyers do not exhibit strong preferences for local firms when controlling for key bid characteristics such as bid price, quality, and supplier reputation. Lastly, we contribute to recent studies on the interactions of potential judicial complaints raised by suppliers and procurement activity (Coviello et al., 2018b), including policy work highlighting how procurement practices are adapted to reduce litigation exposure risks (Halonen and Tukiainen, 2020). Our results suggest that bureaucrats dislike litigation events resulting from the awarding process, but the respective effect sizes are surprisingly small.

Lastly, our paper contributes to a set of recent studies on belief formation using tailor-made surveys with experimental components (see Haaland et al., 2020 for a review). Specifically, we employ the method of conjoint experiments that simultaneously randomizes hypothetical choice scenarios along with various choice attributes. We employ

[9] E.g., Hyytinen et al. (2018) show using instrumental variables estimation that entry elasticity of the winning bid is -0.55 in Swedish cleaning contracts.

[10] A famous example of a buy-local policy in public procurement is the "Buy American Act". See Rickard and Kono (2014) for a review of similar policies.

this method to unravel distinct choice aspects of bureaucrats and thereby elicit their latent preferences. By studying preferences of public buyers, we further relate to a number of papers studying beliefs among special samples such as politicians (Broockman and Skovron, 2018), academics (Andre et al., 2019; DellaVigna and Pope, 2018a,b), economic experts (Gründler and Potrafke, 2020) and firm managers (Coibion et al., 2018; Link et al., 2020). To the best of our knowledge, we are the first to conduct a tailor-made survey experiment among real-world procurement bureaucrats in the field.[11]

The remainder of the paper is structured as follows. Section 2 introduces our survey and the choice experiment and describes key summary statistics. Section 3 then provides descriptive evidence on the views of POs on their role in the procurement process before Section 4 discusses the experimental results and key sensitivity checks. In Section 5 we proceed with a discussion of the findings, and Section 6 concludes.

2 Survey Design and Conjoint Experiment

2.1 Sampling strategy

To study how bureaucrats form decisions about desirable tender outcomes and learn what environment they make these decisions in, we conducted detailed surveys to real-life POs in Finland and Germany. An online survey was fielded from September to November 2020 using a platform provided by Alchemer, a company specialized in survey software.[12] We used the respective native languages of the respondent (for Finland, both Finnish and Swedish). An English version was first fixed, which enabled us to achieve a standardized questionnaire across all countries involved. Translations from English into respective languages were done by the authors who are native speakers and the four eye-principle was used. Translations were also supported by several national procurement experts to improve the wording.[13] POs were invited via email to take part in our survey, which could be done by opening a unique web-link that allowed them to enter the survey platform. Bureaucrats' participation was entirely voluntary and was not incentivized in any way. In order to increase response rates, we also sent each invited individual two reminder emails. The survey was comprehensive (see Section 2.2 for a detailed structure

[11] Existing papers that use conjoint experiments with bureaucrats do not include contracting officers and can be found in the political science and public administration research (Oliveros and Schuster, 2018; Jankowski et al., 2020; Kao et al., 2020).

[12] We fielded a pilot for a small sample of Finnish POs in June 2020. The pilot contacted 100 POs working in 36 contracting authorities. Twenty-one responded. We randomly sampled these contracting authorities from the size group of having between 2-5 contact emails from their authority in Hilma. We do not use these responses or these authorities in the main survey. The pilot resulted in some changes in the follow-up questions after the conjoint.

[13] The authors especially acknowledge the help from Tim Bauckloh, Jan Buchholz, Max Jahnsson, and Emmi Silvo.

of the survey) and took a median response time of about 15 minutes. The attrition rate for the survey was about 20%, with 15% of the respondents quitting the survey during background questions and 5% during the conjoint experiment.

Although the samples in both countries cover a heterogeneous set of procurement bureaucrats (see Table A.1 and A.2 for related summary statistics on respondents across countries), the sampling of eligible participants differs somewhat across countries. For Finland, we draw from the universe of unique contracting bureau contacts in the Hansel Oy's Hilma database of public procurement notices, the sole provider of mandatory online public procurement in Finland.[14] Altogether, we contacted 1,353 POs and received 403 survey responses which amounts to a good response rate of 29.8%. Invitation emails were sent from the Finnish Competition and Consumer Authority (FCCA) institution indicating the survey contributes to their policy work. We also received support through an endorsement letter of the Minister of Local Government in Finland which was attached to the invitation mail to the Finnish bureaucrats.

To contact state procurers in Germany, we collaborated with *Deutsches Vergabenetzwerk* (DVNW), a leading web-platform for public procurers and related experts in the domain of procurement, to exchange information and experiences concerning procurement law and related news.[15] Although the network also includes private suppliers in the domain of state procurement, government experts, as well as related administrated of justice, only platform members, who explicitly belong to the public buyers domain, were invited to take part in our survey. Moreover, the survey includes several screening questions that asked respondents in both Finland and Germany for their task structure (see Section 2.2) to filter out subjects who actually result in not being involved in procurement-related tasks whatsoever. Overall, we invited 7,247 POs through DVNW and received 530 completed responses (7.3% response rate). While the Finnish sample targets the universe of all unique PO addresses, the German sample is not necessarily representative of all German public buyers. However, in both countries, we receive a diverse set of respondents with respect to demographics, task structures, and workplace characteristics (see Table A.1 and A.2 in the Appendix). For instance, we observe workers from all tiers of government, including publicly owned companies, various office sizes, hierarchy levels, experience levels, front-line or back-office workers, and typical work assignments (award mechanisms, litigations, or typical levels of experienced bid competition). A more detailed description of sample characteristic follows in Section 2.4.

[14] See Jääskeläinen and Tukiainen (2019) for more details.

[15] `https://www.dvnw.de/`

2.2 Survey Structure

The following section provides a brief description of the detailed survey structure. The exact wording of all questions is displayed in Section 7.1 of the Appendix. Participants enter the survey through the individual web-link and see a starting page (see Figure A.1 for a screenshot) which introduces the academic partners involved and explains the general purpose of the survey, namely identifying potential improvement possibilities in the respective national public procurement practices and policies in the eyes of POs. We assure participants that their survey answers are entirely voluntary and will be dealt with confidentially. We appeal to the subjects to answer honestly and state that the web-link can only be used once (i.e., once the survey has started, the respondent cannot take it over at a later stage and the link will expire). We then ask the participants whether or not they agree to these conditions and wish to take part in the survey. Upon agreeing to these conditions, the subjects then enter our survey module.

The survey comprises three distinct blocs of questions (*Bloc A–C*). Bloc A specifically surveys respondents about their individual background characteristics concerning socio-demographics and their place of work (*Bloc A.1*), their work and task structure and environment (*Bloc A.2*) as well as procurement practices in their work (*Bloc A.3*). By doing so, bloc A enables us to study the sample composition and estimate the influence of various individual traits on PO choices when coupled with the main results from the conjoint experiment. Bloc B proceeds with an attention check followed by our main conjoint experiment on PO choices with respect to tender outcomes (including a short explanation slide and six choice scenarios). Finally, bloc C presents some short follow-up questions after the experiment in order to disentangle the role of our treatment attributes with respect to PO preferences, stated day-to-day behavior as well as career concerns.

Bloc A: Background characteristics. The bloc is divided in three distinct parts labelled as A.1–A.3 which are described in the following in more detail.

Bloc A.1 - Socio-demographics. Specifically, *Bloc A.1* asks bureaucrats about their age, gender, education level and fields of study (if applicable), the government level they are working at, and the number of procurement officers working at their bureau. The corresponding questions in Section 7.1 of the Appendix are displayed as Q1–Q5.

Bloc A.2 - Work and task structure. *Bloc A.2* then elicits specifics about individual tasks and work features of public POs (please refer to Q6–Q13). In particular, we initially ask which step(s) of the procurement process apply to respondents' job. If participants state that their work is not directly related to public procurement, they are screened out and the survey ends for these respondents (Q6). Further questions survey whether respondents have personnel responsibilities (Q7), what purchase categories

they regularly perform (Q8), the stability of their work contract (Q9), and their job experience in public procurement at their current workplace (Q12) as well as in public procurement as a whole (Q13). Moreover, we ask to what degree they can influence purchasing decisions, and whether their workload (prior to the coronavirus pandemic) made it possible for them to carry out their required work activities, i.e. we survey perceived discretion at work and bureaucratic workloads (see Q10 and Q11 in Section 7.1 of the Appendix).[16]

Bloc A.3 - Procurement practices. *Bloc A.3* surveys detailed procurement practices of the individual procurement officers and their respective offices. Specifically, we ask what tendering procedure our respondents are typically working on (Q14), which awarding mechanism they regularly use (Q15), whether typical tender values are above or below EU regulatory thresholds[17] (Q16) and whether they think their bureau is equipped with the appropriate managerial capability, relevant knowledge, and the skills necessary to accomplish its intentions and goals of work (Q17).[18] Moreover, we elicit whether public buyers typically use secondary objectives and, if so, what type of secondary objectives they are confronted with (Q18a and b). Q19 then asks whether they perceive secondary objectives as an appropriate tool to improve public procurement outcomes. We also ask how many bids (on average per tender) respondents received in the previous year, how many tenders were challenged by litigations, and what their most recurrent cause was as well as their view on the biggest threat to the procurement process (please see the questions Q20, Q21a, and Q21b and Q22 in Section 7.1 of the Appendix, respectively).

Bloc B: Conjoint experiment. Bloc B represents the hypothetical choice experiment, i.e. the conjoint. The conjoint experiment is also preceded by a short attention flag (Q23) where we ask honest feedback of our respondents whether they have given the previous questions their full attention or not (see Figure A.2 in Section 7.1 for a screenshot of the respective item). If respondents do not agree, they are screened out

[16]Our survey was fielded during the COVID-19 pandemic, which has created unprecedented challenges for the governance of public procurement. We strongly believe that the long tenure of the surveyed POs in the sector (see Section 2.4) and the specific wording of questions (e.g., " [...] in the previous year [...]") make POs have "normal times" in their mindset while responding our questions. Nonetheless, we deem Q11 as particularly sensitive to the pandemic times as the circumstances might have dramatically affected daily schedules. Thus, we have been explicit and specified "before the onset of the COVID-19 pandemic" in the question.

[17]EU law sets out harmonized public procurement rules. These rules govern the way public authorities purchase goods, works, and services. They are transposed into national legislation and apply to tenders whose monetary value exceeds a certain amount, which depends on the category of procurement. For tenders of lower value, national rules apply.

[18]Decarolis et al. (2020b) show that a more competent bureaucracy contributes to better procurement outcomes, and we are interested in studying how the perceived quality of the office interacts with procurers decisions.

and do not proceed to the conjoint experiment. 2% of the respondents are disqualified this way. The conjoint experiment and the design of the six embedded randomized choice scenarios are explained in detail in the following subsection 2.3.

Bloc C: Follow-up questions. After presenting the randomized choice scenarios, we ask several follow-up questions to our participants which aim to disentangle the role of preferences, stated behavior, and career incentives with respect to our experimental attributes (see Q24-Q27 in Section 7.1 of the Appendix). Specifically, respondents can choose which attribute is the most as well as least important either for tender outcomes being desirable (Q24; for the wording, please see Figure A.4), to be reflected in their daily work as a measure of stated behavior (Q25; see FigureA.5) or to matter in terms of their individual career prospects (Q27; see Figure A.6). The order of these aspects is randomized in order to observe unprimed and unconfounded responses, respectively. The question regarding the role of experimental attributes for career prospects is always preceded by a question regarding whether tender outcomes can generally affect career prospects at all (Q26 in Section 7.1). Participants are screened out and do not proceed to Q27 if they do not deem tender outcomes at least somewhat important for their career.

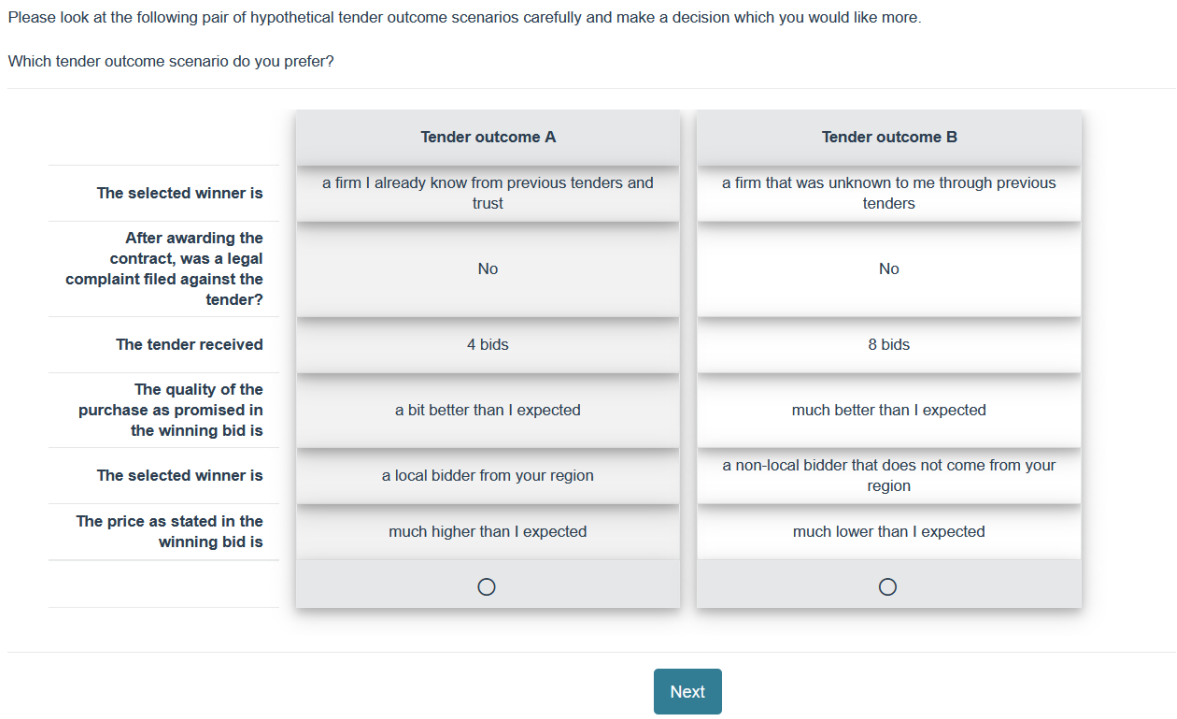
2.3 The Conjoint Experiment

Bloc B includes our main conjoint experiment, consisting of repeated hypothetical choice experiments. We ask the respondents to think of the typical purchase they are usually involved with in their work and make repeated choices between pairs of two fictitious tender outcome scenarios. These choice scenarios are fully randomized and differ in key attributes of the hypothetical tender outcomes (see below). Before deciding between hypothetical scenarios, participants are informed about the nature and timing of the decision scenario (see Figure A.3 of the Appendix). We explicitly frame the decision scenario such that the contract has just been awarded. Specifically, all bids have been placed and compared against one another, the winner is chosen, and losing bidders have had the time to litigate if they wished. However, the actual good or service has not yet been delivered. Respondents are asked to evaluate the tender outcomes based on the information contained in the selected bid.

We chose this decision scenario because the situation is relatable and familiar to respondents, relevant for all types of public procurement, and comparable across different job tasks. This makes the elicited choice realistic and relevant. Asking to evaluate post-construction or delivery contract outcomes would have been challenging as the execution stage varies grandly across different types of goods and services. For example, some goods are delivered immediately, and promised price and quality are close to their realizations. On the other hand, some construction work may take many years to complete, and their quality is revealed even later, if at all. Alternatively, we could have made

the conjoint experiment about choices on the tender procedures and auction mechanisms. However, as they are only a means to an end, it is more useful to directly ask about outcome preferences. Besides mimicking reasonably well the day-to-day choices that the respondents face in their work, conjoint experiments have also been shown to reduce social desirability bias (Hainmueller et al., 2014; Bansak et al., 2019; Horiuchi et al., 2020). For example, it is difficult for participants to respond strategically such that they would expect what researchers may want to hear (i.e. give in to social desirability bias) given the randomization of multiple attributes across choice scenarios.

Figure 1: Example of Conjoint Scenario.



Notes: The figure illustrates the binary comparisons respondents considered in the randomized conjoint experiment.

The instructions also explicitly convey that subjects have to make six repeated choices between two hypothetical tender outcome scenarios, respectively.[19] After the instruction, subjects are then exposed consecutively to each of the six pairs of tender outcome scenarios. Participants have to make individual choices about which tender outcome scenario they would prefer, respectively, and were also forced to choose between them. Thus, each respective participant made decisions on 12 tender outcome scenarios. Each

[19]The number of choice tasks was chosen conservatively in order to be not cause respondent fatigue and more erroneous answer behavior with an increased number of choice tasks. Bansak et al. (2018) and Bansak et al. (2019) show that for standard online survey platforms response quality does not deteriorate for high numbers of choice tasks and can well be justified for up to 15 tasks.

scenario differs along six attribute dimensions. Figure 1 gives an example of one possible pair of cards that the respondent chooses over.[20] Each decision scenario of paired hypothetical tender outcomes was placed on separate screens. First, we fully randomized all attribute levels for each of the six attributes by which tender outcome scenarios differ. Second, we also randomized the order in which subjects see the attributes at the respondent-level in order to avoid primacy or recency effects.

Table 1 reports all the possible attribute levels relevant to our choice experiment. We include all the attributes that the public procurement experts we consulted considered to be relevant. These are price (5 levels), a generic quality (3 levels), quality arising from the type of winner in terms of familiarity (3 levels), whether the tender was litigated (2 levels), whether the winner is a local firm (to capture regional favoritism) (2 levels), and the amount of competition (4 levels). Altogether, we have 720 possible combinations in total. Importantly, we elicited attribute levels of price and familiarity (with respect to previous performance of the supplier) in a symmetric way in order to study whether POs value opportunities and risks similarly with respect to these attributes of hypothetical tender outcomes. Specifically, the price as stated in the winning bid can be either "much lower", "a bit lower" or similarly "much higher" or only "a bit higher" than they expected. The reference category is "what I expected".[21] Likewise, familiarity with respect to past-performance reputation of suppliers can be either indicated by the winning bidder to be "a firm I already knew from previous tenders and trusted" or "a firm that I already had a bad experience with" (as compared to "a firm that was unknown to me through previous tenders"). Other attributes are not explicitly designed to reflect symmetry of related potential attribute levels. Our set-up also allows to distinguish between three key quality dimensions: Quality of the good or service as promised in the bid, quality signals about past performance reputation, and the regionality of suppliers. Note that the first general quality attribute subsumes a range of potential relevant factors depending on the good or service provided (e.g. delivery time).[22]

All attribute levels are shown with equal probabilities. The only exception is litigation where "yes" is shown with 10% and "no" with 90% probability. This was done as we

[20] 6 attributes in the choice experiment are well in line with the recommendations from Bansak et al. (2019) in order not to overwhelm participants. We also chose the table format of the experiment according to Hainmueller et al. (2015) since it appears to outperform the text format of the choice experiment, i.e. so called vignettes. Also pairwise comparisons appear to represent real-world choice better than decisions which are solely based on a single hypothetical scenario (Hainmueller et al., 2015).

[21] We deliberately chose to define attribute levels in a very general way since we target a heterogeneous set of participants with potentially varying beliefs about price, quality and other tender aspects. Please note that since we repeatedly let subjects decide about our choice scenarios, we can account for heterogeneous beliefs about price or quality expectations at the individual (within) respondent-level.

[22] Please note that all combinations of attribute levels can be considered as realistic and possible (even though, potentially, at low odds) which increases the realism of our hypothetical choice scenarios. Therefore, we did not exclude any constellation of attribute levels ex ante from the choice set.

Table 1: Tender outcome attributes and levels for the conjoint experiment

Conjoint Experiment		
Attributes	Attribute Explanation	Possible Attribute Levels
Price	The price as stated in the winning bid is	much lower than I expected; a bit lower than I expected; what I expected; a bit higher than I expected; much higher than I expected
Quality	The quality of the purchase as promised in the winning bid is	as I expected; a bit better than I expected; much better than I expected
Number of bids	The tender received	1 bid; 2 bids; 4 bids; 8 bids
Familiarity	The selected winner is	is a firm that was unknown to me through previous tenders; is a firm I already knew from previous tenders and trusted; is a firm that I already had a bad experience with
Regionality	The selected winner is	a local bidder from your region; a non-local bidder that does not come from your region
Legal Complaints	After awarding the contract, ... legal complaint has been filed against the tender.	·····no····· [weighted probabilities of 90%]; ·····a····· [weighted probabilities of 10%]

Notes: The table shows the attributes and respective attribute levels used in the conjoint experiment.

were concerned ex-ante that litigation is such a powerful concern that having "yes" in half of the cards would make it more difficult to observe preferences for other attributes. Moreover, in reality litigation occurs among fewer than 10% of tenders.

2.4 Sample characteristics

Table A.1 and A.2 show the summary statistics for both countries with respect to socio-demographic and work-place characteristics of individual respondents, respectively. Thus, these figures inform us both about the background and the context of participating POs and related cross-country differences.

According to Table A.1, participants in our study predominantly belong to an older age group/age bracket, with the majority being 41 years of age or older with 29%, 36%, and 10% of all respondents being 41–50, 51–60 or above 60 years of age, respectively. Only 5% of respondents are in their twenties. About half of our respondents are female, and approximately half have a master's degree as their minimum education attainment. Accordingly, the share of subjects having at least a college education is relatively large (i.e, 71%). The specific educational background is very diverse (i.e., business administration, engineering, law, and public administration, among the most reported ones), in accordance with the multidisciplinarity typical of procurement activity and its need for officials with different skills and training. The education background varies somewhat across countries, with engineering and public administration being the most common form of study in Finland (42%) and Germany (37%). However, engineering is ranked second in Germany, with about 25% of subjects having at least a bachelor's degree.

We observe public buyers from very different workplaces, which are detailed in Table A.2.[23] In both countries, most POs work for municipal authorities, with 43% in Germany and 36% in Finland. In addition to this, around 18% work for federal states (or regions in Finland), 14% for federal offices, 18% for public companies, and the rest for other bureaus. While the distribution of public authorities is well comparable across the two countries, we observe different distributions in the size of contracting units our respondents work for. Except for offices where only one bureaucrat is working in the domain of public procurement (i.e., the respondent him/herself), which only account for 5% of answers in Germany, there is a relatively even distribution of size categories among German participants. 24, 21, 12, 22 and 16% work for offices with 2–4, 5–10, 11–19, 20–99 and more than 100 public buyers, respectively. The majority of Finnish respondents work in procurement offices with at most ten other procurement bureaucrats (11, 36, and 23% of only 1, 2–4 and 5–10 public buyers, respectively). The observed work contracts indicate high job stability levels since only 4% have temporary employment with limited contracts. Subjects also differ with respect to their managerial tasks, with 40% of all participants having personnel responsibilities. On average, participating bureaucrats are also relatively experienced, having collected about 8.5 years of experience in their current office and 11.6 years in public procurement in general. The difference with respect to these two types of experience suggests a shared pattern of substantial job mobility within the public sector on average. The majority of respondents is also confident in the competence of their own office in order to fulfill assigned tasks properly (69 and 63 of German and Finnish POs agree either strongly agree or at least agree with this notion).[24] While most responding POs typically use open tendering procedures (i.e., unrestricted call for bids), Finnish participants use them substantially more (81% vs. 55%). However, the use of awarding procedures is very similar between the two countries with scoring (best price-quality ratio, also known as "most economically advantageous tender") allocations slightly outranking the lowest price mechanisms. Slightly less than half of the contracts awarded by our respondents have contract values above the EU regulatory thresholds or are subject to secondary objectives (mostly additional environmental concerns or support to SMEs for contractor selection). The median number of

[23] According to Figure A.7 of the Appendix, there is also a large heterogeneity in terms of specific tasks participating procurement officers fulfill in different phases of the procurement process. Many state that they have in fact multiple tasks (up to 6 of the tasks listed).

[24] A high public sector competence as perceived by its members is not a prerogative of the countries under study, and it is also found in other high capacity settings. For instance, via its Federal Employee Viewpoint Survey, the US government annually inquires its employees about workplace conditions. One of these questions is similar in nature to our Q17 and relates to the capacity (as perceived by the respondent) of the working unit to accomplish its mission. In 2019, more than 80% of respondents reported a high assessment on this dimension across all government agencies. See: `https://www.opm.gov/fevs/`.

bids that our participants report to have received in the year before the survey was about 4 and is thus fairly high compared to data from the whole EU (i.e., 3 in the period 2007-2017) and the US federal procurement (i.e., 2 in the period 2008-2018).[25] On average, 39% of participants in both countries also managed tendering processes that were exposed to some litigation, mostly due to bid protests that challenged the choice of awarded firm.

3 Performance-related Views of Public Buyers

Now we discuss some descriptive evidence on the views of POs on their work environment before turning to the results of our choice experiment.

Perceived discretion. First, according to Figure A.8 a majority feel that they can influence tender outcomes through their own work *very much* or at least *somewhat*, i.e. have some decision autonomy or discretion in their work related to the procurement process. This is an important piece of evidence since the presence of some leeway in daily work for respondents is crucial for the purposes of this study to investigate bureaucrats' preferences and resulting choices. However, Finnish participants have somewhat more positive views on their autonomy to influence tender outcomes than their German counterparts with 82% compared to 50%. Moreover, the share of respondents from Germany stating that they have no influence on procurement outcomes whatsoever is higher than in Finland (4% vs. 15% of all answers).[26]

Career concerns. In contrast, public POs participating in our survey, however, do not seem to be motivated to achieve good procurement outcomes through individual career concerns. This is because a large majority (80% in Germany and 67% in Finland) states that tender outcomes are absolutely not or rather not important for their career prospects (see Figure A.9 of the Appendix). This is in line with the high job stability patterns of POs as shown in Section 2.4.

Perceived threats to the procurement process. Moreover, we asked contracting officials about aspects that typically create problems in the procurement process according to their personal experience. Figure A.10 illustrates the respective results and

[25]Figures on EU and US public procurement are sourced from Tenders Electronic Daily (https://ted.europa.eu/TED/main/HomePage.do) and USASpending (`https://www.usaspending.gov/`), respectively.

[26]We regress perceived discretion dummy on respondents' background characteristics. The results are presented in the first column of Table A.3 in the Appendix. Having influence over procurement outcomes does not correlate with any background characteristics other than respondent's country, where we see a large negative correlation for German respondents.

shows firstly that the biggest obstacle in the eyes of public buyers is too rigid regulation, which is seen as problematic by 38% of all respondents.[27] This finding, coupled with the average perception of sufficient discretion, shows the importance of discretion for public buyers to (perceived) procurement outcomes. This result speaks to the several recent empirical pieces of evidence stressing the manifold benefits of bureaucratic autonomy in public contracting.[28] The second biggest threat is that the contractor causes problems, which indicates how valuable reputation and trust in the procurement process with potential suppliers is. Budgetary constraints and litigation risks (15% and 9%, respectively) are less important to the procurement process in the respondents' eyes.[29]

4 Experimental Results

4.1 Empirical Method

As is standard in the conjoint experiment literature, we use the estimation procedure proposed by Hainmueller et al. (2014). We simply run an OLS regression where the unit of observation is a given card (or profile) $m = 1, ..., 12$ (as there are 6 pairs) presented to the respondent i. The outcome variable y_{im} is a dummy denoting whether card m was chosen by respondent i or not. This choice is predicted by dummy variables X_{imal} indicating for each attribute a whether a given possible level l of the attribute was randomly assigned to appear or not to appear in a given card. The regression leaves out one level dummy for each attribute to provide the baseline. We cluster the standard errors at the respondent level to deal with two types of potential error correlations: A mechanical correlation within each choice task (once card A is chosen, it is impossible to choose card B), and a second correlation regarding similar attribute valuation within the repeated choices of a given respondent. We estimate the following linear probability model in our analysis:

$$\mathrm{y}_{im} = \alpha + \sum_{al} \delta_{al} X_{imal} + \varepsilon_{im}. \tag{1}$$

Hainmueller et al. (2014) show that this regression approach (or simply comparing the share of cards chosen with a given attribute level on to the share chosen with baseline

[27] Multiple answers were allowed so that responses do not add up to shares of 100%.

[28] See Carril (2020) for a review.

[29] We also regress dummy variables for different perceived threats on respondents' background characteristics. The results are presented in columns 2-7 of Table A.3 in the Appendix. Most background characteristics do not have a statistically significant correlation with any of the perceived threats. Notably, German respondents perceive fewer threats to procurement outcomes, with own mistakes and issues with the winner having a statistically significant negative correlation.

level on) identifies its AMCE. This means that the marginal effect of an attribute level (i.e., its relative importance in the "card" choice) is averaged over the joint distribution of the remaining attributes. This enables the relative importance of an attribute compared to other attributes to be analyzed, and thus, we can study multiple decision trade-offs. Moreover, the effect should be interpreted as conditional on the other attributes.

Three assumptions are required for identification. First, the attributes' levels need to be randomly assigned to each profile. This is true by research design. Second, there cannot be carryover effects for the potential outcomes. This means that the potential outcomes remain stable across the choice tasks (i.e., no period effect) and that treatments given to a respondent in their other choice tasks do not affect their response in the current task. We test this assumption in Section 4.3. Third, we assume that there are no profile-order effects; that is, the ordering of profiles within a choice task does not affect responses. We address this concern by randomizing the order that the attributes are presented between candidates. However, the order remains the same within a respondent for all of her cards. Moreover, this assumption can also be tested (see again Section 4.3). To estimate heterogeneous treatment effects, we simply estimate conditional AMCEs, that is, the average effects of the attributes conditional on a respondent characteristic as measured in the survey by splitting the data into subsamples based on characteristic values.

4.2 Baseline Results

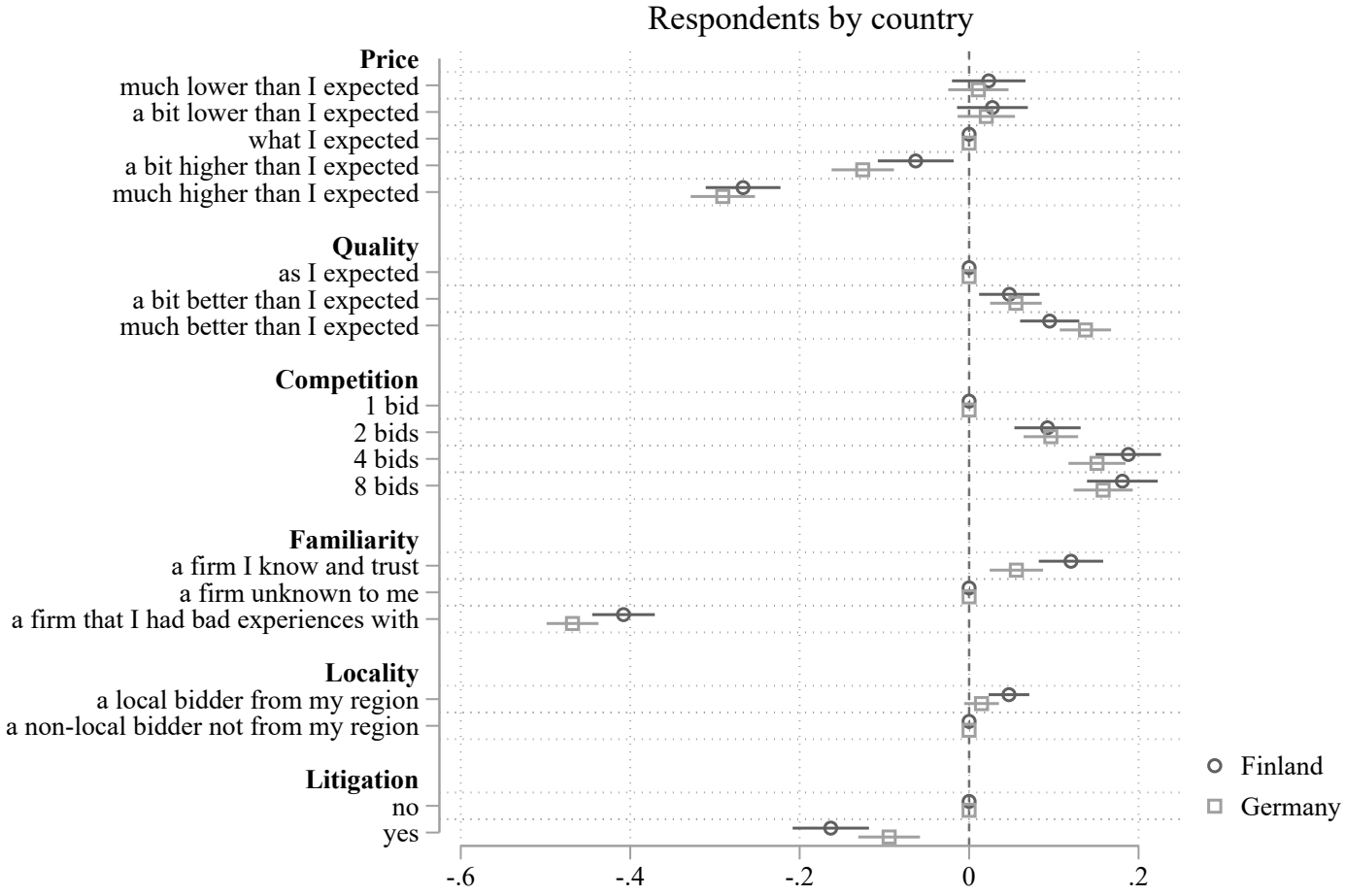
Figure 2 now illustrates the main experimental results across both countries. As previously mentioned, we estimate the average causal effect of treatment attribute levels compared to the baseline attribute level – say, much higher than expected prices as compared to prices as expected – on the probability of choosing a certain tender outcome profile, holding all treatments regarding other attributes equal.[30] The figure depicts the respective estimates of each experimental treatment variation of the attributes separately for each country and pools the estimation sample over all six choice tasks for each individual. Altogether, our estimates are based on 11,196 choices (4,836 for Finland and 6,360 for Germany) elicited by 403 and 530 distinct respondents, respectively.

First and most important, the results indicate that public buyers care more about avoiding certain risks than grasping related opportunities when deciding which tender outcomes they deem desirable. In particular, both price and past-performance reputation attributes show large negative effects on the probability of supporting a given tender outcome profile for respective negative attribute levels ("price a bit higher than expected", "price much higher than expected" and "a firm that I had bad experiences with"), while symmetrically positive attribute levels are not similarly decisive. While

[30] In this example for price that includes quality, past-performance reputation, degree of competition, litigation risks and regional concerns.

positive price attribute levels (i.e., "price a bit lower than expected" and "price much lower than expected") do not have a meaningful or statistically significant effect at conventional levels, selecting a winner that one already knows from previous calls for tender and can trust has a significantly positive effect. However, this effect amounts to only 19% of the negative effect of being confronted with bad performing bidders in the tendering process. In other words, the disutility for negative realizations – benchmarking the expected realization as the reference point – is higher in absolute terms than the utility from equivalent positive realizations. This observation is robust across both countries and points towards loss-aversion of respondents at least in the case of price considerations.

Figure 2: Baseline results of Conjoint experiments



Notes: Estimated coefficients of tender outcome attributes on the probability of deciding in favor of a tender outcome. The horizontal lines indicate 95% cluster-robust confidence intervals. Points without these lines indicate the respective reference categories for the effects of the attributes. Point estimates are presented in Table A.4 in the Appendix. Conditional marginal means, which allow for a statistical comparison of estimates across countries, are presented in A.11 in the Appendix. We discuss the comparison of subgroups in section 5.1.

Second, distinct and robust patterns about the priorities of public buyers emerge from our experimental results. It appears that POs place the highest priority on avoiding bidders that they know from past experience and performed badly. When compared to the omitted category of awarding the tender to a firm unknown to the PO, POs select a given tender outcome, on average, 41 percentage points less often in Finland and 47 percentage points less often in Germany. The second priority of POs relates to avoiding unexpected price hikes, which decreases the support for a given tender outcome by 27 percentage points in Finland (29 percentage points for Germany) in the case of a much higher price than expected. Positive realizations of the quality attribute appear to have significant positive effects on support but account for only a fraction of negative price or reputation concerns.

Bureaucrats also seem to value a certain degree of competition in calls for tender. For instance, receiving two bids as compared to merely one increases the likelihood of support for a given tender profile by about 10 percentage points. Increasing the number of bidders per tender increases support again significantly to about 19 or 15 percentage points higher probability of a chosen profile (compared to one bidder only) for Finland and Germany, respectively. However, a higher degree of competition with eight bidders is statistically not distinguishable from being confronted with four bidders in the tendering process at conventional levels. These competition results are interesting because the effects should be interpreted as conditional on other attributes, that is while controlling for price and quality, which are the key instrumental benefits of competition. Therefore, assuming the respondents are able to condition on these mentally, these effects should be interpreted to relate to the intrinsic value of competition such as administrative costs or signal of procurement performance. Given administrative costs should lead to preferring less competition, the effects seem to indicate strong intrinsic valuation of competition in calls for tender, which is increasing in the number of bidders but saturates relatively quickly at a rather small amount of bidders (saturation at around four to eight bidders).

The results also show that being challenged by a complaint after awarding the contract significantly decreases support for a tender outcome in public buyers' eyes. It should be noted that we abstain from specifying litigation risks in our context as being either a bid protest or a solicitation challenge. Importantly, the choice scenarios communicate whether litigation has actually occurred after awarding the contract to a specific supplier. In turn, any negative effects of litigation on bureaucratic choices of such tender outcomes provide an upper bound of what can be expected in reality since, typically, POs are ex-ante not aware of whether litigation will occur with certainty but expect them with a certain probability. Therefore and also due to larger effects of avoiding reputation and price risks, we find that litigation risks (ex-post to awarding the contract) have only

small or moderate negative implications on bureaucratic support for hypothetical tender outcomes.[31]

Lastly, the choice scenarios also feature whether the winning firm comes from the respondent's region or not.[32] While there is a positive effect of a firm being labeled as *regional* which is statistically significant at conventional levels, the effect is economically benign and not meaningful. This suggests that bureaucrats do not have strong individual preferences for winning firms to be local *per se* despite recent evidence on the importance of political favoritism for procurement choices and outcomes. In turn, this indicates that strong regional ties in procurement may be either supply-driven (i.e., more local firms applying to public tenders, for example, due to lower production or entry costs, or a larger information set) or due to bureaucrats preferring local firms mainly because of strong past relationships (i.e., through the reputational channel of our experiment).

4.3 Robustness Checks

This section tests the main identification assumptions of the conjoint experiment and discusses our empirical specification and the plausibility of our main findings.

No carryover effects. An important identification assumption is the stability or the avoidance of carryover effects across different hypothetical choices in our experimental design. Non-stable effects across choice tasks would suggest that respondents value a particular degree of, say, competition in tender outcome scenarios in a certain task more or less depending on what type of profiles they have seen before or after that particular profile. While such effects are unlikely given the randomization of profiles across experimental rounds, we test for these types of spillovers in Figure A.12 in the Appendix by executing distinct regressions of respondent choices per individual choice task among tender outcomes. Our results are very similar across all rounds of choice tasks suggesting the absence of carryover effects across rounds.

No profile-order effects. Another concern would be whether respondents favor different tender outcome attributes due to the order in which they are presented to them

[31]This evidence might signal that the judicial system is perceived as efficient in both countries, and thus a judicial complaint usually does not considerably interfere with the tender outcome or slow down the beginning of contract execution. Field evidence shows how the degree of court efficiency impacts the delay in public contract executions Decarolis et al. (2020c), but there is no extant evidence on its impact on tender outcomes.

[32]Awards to regional firms may be composites of different individual effects. First, regional firms may have qualities that public buyers may be more aware of through performance in joint past tenders or other informal information channels. This effect is included in the reputation effect of our choice experiment. Please note that our regionalism treatment measures the *pure* effect of geographical proximity on the support of bureaucrats for such a tender, conditional on price and quality information conveyed in the bidding process as well as information on litigation, firm reputation, and competition.

in a given choice scenario. Although we randomize the ordering of components across profiles between respondents, we test whether the estimated treatment effects are similar across profiles depending on which order a certain attribute is placed in the conjoint table of a given choice task. In case of significant differences, respondents were subject to a so-called priming (or primacy) effect in which they only or mainly pay attention to features that are placed near the top of the choice task. We show in Figure A.13 in the Appendix that this is not the case by performing separate regressions of binary choices on each attribute, dummies at which position the respective attribute was placed in a given profile and choice task and the interactions of these variables. We find that the support for neither attribute (i.e., price, quality, competition, familiarity, regionalism, or litigation) is explained by its order across profiles.[33]

Specification checks. Table A.5 in the Appendix also checks the sensitivity of our results to the inclusion of various controls at the respondent level (socio-demographic and/or workplace characteristics) as well as different sets of fixed effects (no fixed effects, set and/or card-level fixed effects) as well as heteroscedasticity-robust standard errors instead of clustering at the respondent-level. It is important to note that our findings are also robust to alternative regression specifications, such as using a Logit model instead of a linear probability model (see Figure A.15 of the Appendix).

Plausibility checks. We also perform several plausibility checks for our results. First, we exploit the follow-up question on the most and least desired priorities of bureaucrats with respect to tendering outcomes. The respective results are presented in Figure A.16 and A.17 of the Appendix. It appears that the estimated marginal means of the presented attribute levels tend to coincide with personal priorities, as stated in the respective follow-up question.[34] For example, respondents who prioritize getting a high number of bids have lower marginal mean for "1 bid" attribute and slightly higher for "4 bids" and "8 bids" attributes than other respondents. Other personal priorities also have the expected sign of their respective attributes, while not necessarily being statistically significantly different. However, differences between the effects across these priority groups are not very large. This result suggests that while individual tastes for procurement outcomes contribute to our findings, our choice experiment indeed identifies a more general pattern of bureaucratic priorities when they trade-off individual risks and opportunities

[33]A related concern is that respondents are affected by order of profiles presented in a particular task, i.e. a profile being shown as card A or card B. According to Figure A.14, our results are not affected by such ordering effects, and we find very similar effects of our experimental attributes on bureaucrats' support irrespective of their presentation in profile A or B.

[34]We use marginal means instead of conditional AMCEs to compare sub-groups in accordance with Leeper et al. (2020). We discuss the reasoning further in Section 5.1.

of the tender process in the choice scenarios.[35] Moreover, we also check whether the type of awarding process predominantly used by the procurement officer affects the valuation of specific bid features. Figure A.19 shows that when bureaucrats typically select bids using a 'lowest price' allocation rule, they are particularly worried about paying prices that are too high. While we observe a difference for both realizations indicating higher prices, the difference is only statistically significant for the strongest realization of "much higher prices than expected". Please note that the measure for the type of awarding process rests on asking POs about their "typical" procedure, which could effectively be a weighted average of the two mechanisms.[36] Moreover, while the differences in marginal means are statistically significant, the observed difference in marginal means is again relatively small compared to mean effect sizes. Thus, we interpret our findings overall as observing preferences of bureaucrats as following an underlying "code of conduct" regarding tendering outcomes.

Multiple-hypothesis testing. We check whether our standard errors are robust to multiple-hypothesis testing when accounting for the multitude of treatments in our survey design. We follow the procedure proposed by Westfall and Young (1993). We treat each attribute (e.g. "much lower than I expected" and "a bit lower than I expected" for price) as separate treatments, resulting in one outcome and 13 treatments after accounting for baselines. The Westfall-Young procedure confirms that all statistically significant treatments retain their significance at conventional levels even when adjusting for multiple comparisons. The full results for the pooled analyses of all responses from both Germany and Finland with corrected standard errors after Westfall and Young (1993) are shown in Table A.6.

[35]Please see Figure A.18 of the Appendix for descriptive statistics on the follow-up question regarding the most and least important factor about desirable tender outcomes. Ensuring high-quality purchases and selecting a winner that one can trust are the most important factors here. This corresponds relatively well with our experimental findings, where participants have to trade-off the presented attributes when making choices about tender outcomes. High-quality promises from awarded bidders, however, become unlikely when coupled with a lack of trust due to experiences of bad past performance in the experiment, thus turning high-quality promises in bids less and reputation concerns more important in the main results when compared to the descriptive evidence from Figure A.18. Corresponding with the experimental results, ensuring a low price, a high number of bidders, avoiding litigation, and supporting the regionality of contracted firms are less important in the descriptive evidence. The follow-up question in career concerns is exploited in Section 5.1 when discussing potential mechanisms of the strikingly similar results of the experiment across various individual traits and workplace characteristics.

[36]In the descriptive analysis, more than 40% of respondents in both countries predominantly select bids according to "lowest price", while the remainder mostly uses scoring rules. Details in Table A.2.

5 Discussion

In the following section, we discuss the similarity of our findings across subgroups and provide a detailed discussion of the external validity of our results.

5.1 Similarity of findings

One of the central results of our study, as already highlighted in Section 4, is the striking similarity in results between the two countries Finland and Germany. This section documents that this similarity also extends to almost all observable differences between respondents and their organizations. Investigating such potential differences in responses to the treatments is particularly interesting since individual demographic characteristics (Decarolis et al., 2020b), task structures, and office-level features have been shown to affect bureaucratic performance (Decarolis et al., 2020b; Best et al., 2017). It remains unclear whether these factors also influence preference formation.

Our analysis investigates a large number of potential effect heterogeneities along with observable characteristics in terms of socio-demographics, task structures, and office-level characteristics. This part of our analysis is explorative in nature since we have no ex-ante expectations about potential differences in the direction or strength of the effects. There are three important caveats to this part of our analysis. First, the background characteristics are evidently not randomly assigned, which means that interpreting any given characteristic as having a causal effect on the difference in preferences could be problematic. Second, statistical power in sub-groups is a potential issue, although we usually have small confidence intervals around our estimates. Third, due to the large number of possible heterogeneities, we cannot completely rule out spurious differences arising due to multiple testing of hypotheses.

In our heterogeneity analysis, we generally split the sample into two or more groups depending on the source of variation. In the case of continuous variables, we split the sample according to the median value of the variable of interest (e.g., years of experience). In the case of categorical variables, we typically assign groups based on selected elicited categories (e.g., type of award mechanism). For these new sub-samples, we separately estimate the original regressions and assess whether the estimated effects differ. We conduct our analysis by comparing the marginal means of attributes in various subgroups in accordance with Leeper et al. (2020), who show that simply comparing AMCEs between subgroups can be problematic because there can be (otherwise unobserved) differences in how different subgroups value the baseline attribute. Thus, by following their procedure, we avoid the choice of reference groups influencing our sub-group analysis.[37]

[37]For example, in Figure 2, which shows conditional AMCEs for Finland and Germany, Finnish respondents seem to have slightly stronger preference for familiar firms than their German counterparts

We analyze the heterogeneities based on the respondent's country, age, gender, education level, education type, and work experience. Regarding the task structure, some of the heterogeneities we analyze include the type of purchase (i.e., goods, services, construction), prior litigation, typical awarding mechanism, use of secondary objectives, size of the typical contract, the typical number of bidders, perceived workload, job responsibilities, and perceived discretion. Moreover, we analyze heterogeneities concerning office competence, size, and government tier. Please refer to Appendix 7.4 for a detailed description of all heterogeneities we tested for in our sub-group analysis.

The results of these numerous heterogeneity analyses speak for themselves: The treatment effects are very stable across almost all sub-groups. This striking similarity across major socio-demographic, task, and office-related differences points to the existence of very robust priorities among procurement bureaucrats.[38] This observation enables us to conclude that the bureaucratic preferences regarding public procurement practices appear to follow an inherent code of conduct across our settings. Indeed, one could conclude that the choices of the public servants under study are mostly driven by intrinsic motivation.

However, for the conclusion of bureaucratic choices being driven by intrinsic motivation to hold, we need to rule out a key alternative explanation, which relates to the role of incentives and career concerns. It could be that the government (i.e., the "principal") employs highly efficient incentive schemes towards its bureaucrats, and since the fundamental goals of governments are similar across different settings, we observe similar results in terms of bureaucratic choices. For such incentives, both explicit pay-for-performance schemes or indirect forces such as career concerns (Bertrand et al., 2019) could be important. To address this issue, we study the incentives public sector workers face in our settings. In both countries, explicit monetary incentive schemes are essentially unavailable for bureaucrats to the best of our knowledge. Turning to career concerns, our descriptive evidence shows that only 26% of our respondents perceive tender outcomes to matter for their career prospects (20% in Germany and 33% in Finland). Importantly, when splitting the sample into subgroups depending on whether or not individuals view tender outcomes as important for their career prospects, we find no sizeable differences

compared to the baseline of having an unkown firm win. However, looking at marginal means in Figure A.11 we see that the relevant difference between the two subgroups is how they value the baseline attribute: Germans see unknown firms as slightly more preferable winners than Finns do. Nevertheless, the differences between subgroup are very small.

[38]For instance, it is interesting that bureaucratic aversion to negative levels of bid price or supplier reputation does not develop with experience or the specific workplace. While this does not exclude the fact that such preferences may be time-variant (e.g. in response to an external shock or additional work incentives; among others, see Einav et al. (2012) for evidence on time-variant risk preferences), our sub-group analysis with respect to bureaucrat experience show that individual seniority of public buyers may not play a substantial role when developing preferences about tender outcomes.

between the marginal means (Figure A.20). Even for very strong or very weak priors, we find no evidence for differences in marginal means (Figure A.21).

Nevertheless, our survey question regarding perceived career incentives might not capture all the indirect incentives individual bureaucrats face. One additional aspect of explicit or implicit incentives could be the relative job position already attained within the organization. As a proxy for such forces, we exploit information on whether a given bureaucrat carries personnel responsibility. A significant portion of the bureaucrats in our sample have some managerial responsibility for employees – 40% in total, 45% in Germany, and 33% in Finland. Nevertheless, this personnel responsibility is not a predictor of any of our results (Figure A.22). In sum, the bureaucrats in our sample exhibit high levels of perceived discretion and low perceived career concerns. Moreover, we find no evidence for incentives or career concerns driving any of our results. We therefore conclude that our experimental results indeed represent the underlying preferences of bureaucrats and are driven by strong levels of intrinsic motivation.

5.2 External Validity

We are confident that both our results and our sample composition speak for the external validity of our results. First, we not only see strikingly similar patterns among our main results across countries[39] but also across a wide range of individual demographic and job-related characteristics of respondents as well as office-level features stated in the survey (see Section 5.1). Moreover, and as explained in detail in Section 2.1, both samples of procurement bureaucrats in Finland and Germany comprise a heterogeneous set of individual buyers across a broad range of distinct tasks, demographic features, educational background, and office characteristics that increases the applicability of our findings likely also to other POs in other institutional settings (at least for of similar high-capacity countries in the context of public procurement, see Bosio et al., 2020). This is true even though we do not necessarily observe a representative sample of all public procurement agents in the respective sample countries, respectively.

Non-response analysis using administrative procurement data. To learn more about the structure of non-compliance, we conduct a non-response analysis for the case of

[39]We also fielded the same survey module, including the respective conjoint experiment, through a commercial provider among a large set of around 60 thousand public buyers in Italy in the Italian language. Figure A.24 of the Appendix shows the respective results of the experiment, which is, however, only based on 72 observations due to a very low response rate among Italian bureaucrats (overall response of 0.7% among those who were actually contacted). The results are again very similar to the Finnish and the German sample. Few exceptions, however, become apparent. Naturally, we observe generally larger confidence intervals due to the lack of observations, and we also observe essentially null effects for positive quality attributes. Section 7.3 of the Appendix also describes the sampling as well as the corresponding summary statistics of Italian subjects (see Table A.9 of the Appendix).

Finland, for which we have relevant information for survey recipients and individual real-world tenders. The Hilma database provided us with information on contact information of public buyers as well as their region and type of office.[40] The recipients whose office name is known are further merged with Hilma and Cloudia Oy databases to obtain office level information. We observe the type of office and geographical region for all Finnish survey recipients, as well as average contract size, most commonly procured industry, award procedure, average number of bidders and award mechanism for subsets of survey recipients.[41] Unfortunately, we do not possess similar information for survey recipients or public procurement in general for Germany.

Table A.7 of the Appendix shows the differences between our respondents' organizations and those of the Finnish public procurement market as a whole. We compare the used contract procedures, institution types, and typical contract sizes to the universe of Finnish public procurement notices posted in 2019. We see that our respondents' typical answers and the national average in 2019 are very similar. For example, the share of open procedures was 81.6% and 79.3%, respectively. The difference in contract sizes (51% of contracts being above EU threshold in the survey vs. 30% in the Hilma data) might partially be explained by a large number of missing contract size information, which by design we do not have in the survey sample. This is because in practice, buyers do not need to post the engineer estimate for the contract size together with a call for tenders while all survey respondents were expected to declare the typical contract size.

In the second half of Table A.7, we compare survey responses to real-world information on the number of bidders as well as the award mechanisms used. We see that the survey sample has a very similar distribution of award mechanisms as in the real world with the best price-quality ratio being used in 55.3% and 53.5% of the time. The typical number of bidders differs slightly between the survey and real-world, with survey respondents reporting 0.78 more bidders on average than we observe in reality.

Furthermore, we find no difference when comparing the respondents and non-respondents (people who were sent the survey but either did not reply or replied only partially) when looking at their type of office. For example, municipal offices represent roughly 40% of the survey's recipients, while 36% of the respondents are affiliated with them.

Finally, we also regress the probability of responding to the survey on various characteristics of survey recipients using both OLS and Logit regression specificaitons. Results

[40]The Hilma database has information on all competitively procured public procurement contracts in Finland, as the Finnish law on public procurement requires that all tenders above national cutoffs (e.g. 60 000 euro for goods and most services and 150 000 euro for construction works) have to be posted there.

[41]Cloudia Oy is a major electronic procurement platform provider in Finland. The database contains all their customer's tender notices. The most recent sample we have covers approximately 20% of all public procurement notices in the year 2016.

can be seen in Table A.8 in the Appendix. We observe the type of office and regional location for all survey recipients, and we can observe typical contract size and typical award procedure used for their offices for 61% of the recipient data. Furthermore, we observe information on the average number of bidders and award mechanism used for 13% of the survey recipients. We perform both OLS and Logit regressions.

We find no correlation between survey recipients' office type and the response probability when looking at the whole sample of survey recipients. Furthermore, neither the typical contract size nor the typical award procedure used seems to correlate with the probability of responding. The respondent's region is associated with the probability of responding, but this correlation is statistically significant only in 1 to 5 (depending on regression specification) of the 16 regions of Finland.[42] No region has a statistically significant correlation with the response probability across six regressions. We find that recipients from offices receiving a higher number of bidders had a slightly lower probability of responding to the survey. Altogether, we find that survey participants seem to be fairly representative of the universe of Finnish public procurement contacts.

6 Conclusions

What are the priorities of bureaucrats? How do bureaucrats form decisions when performing complex work tasks? Our paper is the first to tackle these questions by fielding a unique survey experiment about public procurement practices to a large sample of real-world bureaucrats. The study includes randomized hypothetical choice scenarios to draw causal evidence on the importance of bid price and quality, the degree of competition, supplier reputation, the geographical proximity of winners, and litigation risks at the tender stage. Bureaucrats repeatedly decide (and thus, trade-off) between pairs of hypothetical tender outcomes, which differ randomly across these key tender features.

Our first and strongest finding is that procurement bureaucrats value avoiding negative risks concerning prices and supplier reputation more than grasping potential opportunities. This is consistent with either loss-averse public buyers, that is, successes being rewarded unequally, for example, by the media, politicians, or office culture. This is also in line with findings that exceeding the budget is bad but coming under the budget is not necessarily good (Liebman and Mahoney, 2017). Second, for POs it is more important to avoid bidders with bad past performance than to elude unexpectedly high prices. This result suggests that POs would welcome the possibility of reward or punishment during the selection process based on past performance as proposed by Decarolis et al. (2016) and Butler et al. (2020), but is often not implemented for transparency concerns. Third,

[42]We combined certain regions to ensure that there were enough respondents in each region to guarantee anonymity.

we show that POs value a certain degree of competition while litigation concerns and regional favoritism are rather secondary dimensions. This points to the supply side for the understanding of generally decreasing competition in public procurement markets.

Despite natural limitations to the representativeness of participating bureaucrats in our survey experiment, participants come from different countries and a large variety of demographic backgrounds, have various task structures as well as heterogeneous work practices. However, our main findings are strikingly similar across many such different contexts. This speaks for both the generalizability of our findings and the argument that procurement officers *latently* use a certain code of conduct along the lines of our estimated effects. Given the observed lack of career and pay incentives, these patterns provide compelling evidence for bureaucratic decision making based to a large extent on intrinsic motivation. The mere fact that contracting officers view (too) rigid regulation as the biggest threat to the procurement process suggests that they value autonomous decisions. This is in line with the finding of Bosio et al. (2020) that in countries with high public sector capacity, like the ones in our study, more rules are detrimental to procurement outcomes because they inhibit the optimal exercise of discretion.[43] We believe that our findings are relevant due to the prominent role of purchases for the general government budget and the representative nature of the procurement bureaucrats. Our findings can likely be applied to other similar countries with high public sector capacity (Bosio et al., 2020).

Our evidence further indicates that the lack of competition observed in many settings is unlikely to arise from the preferences of public buyers because public buyers appear to value more competition than is currently typically present in the real world. Thus, future research could address the relevant entry barriers for firms in public procurement markets and how they can be reduced. Potential mechanisms can relate, for example, to a lack of dialogue and other communication and information problems, as well as to substantial complexities in the procurement process and underlying market features.

Given the high relevance of preferences in driving bureaucratic choices, future research could also dig deeper into the roots of the intrinsinc motivation of public sector workers. Moreover, in tantamount settings of low extrinsic incentives and sizable bureaucratic discretion levels, it remains unclear how to change or influence bureaucratic behavior. In devising strategies to shape bureaucratic choices, future research and policy could explore non-standard approaches like focusing on management practices or addressing preferences of public sector workers directly, potentially via professional training.

[43] In a similar vein, Baránek (2020) shows in a structural model that frictions resulting from a moderately-low-quality governance setting such as the Czech Republic present a severe obstacle to the optimal utilization of discretion and lead to an annual waste of 2% of GDP.

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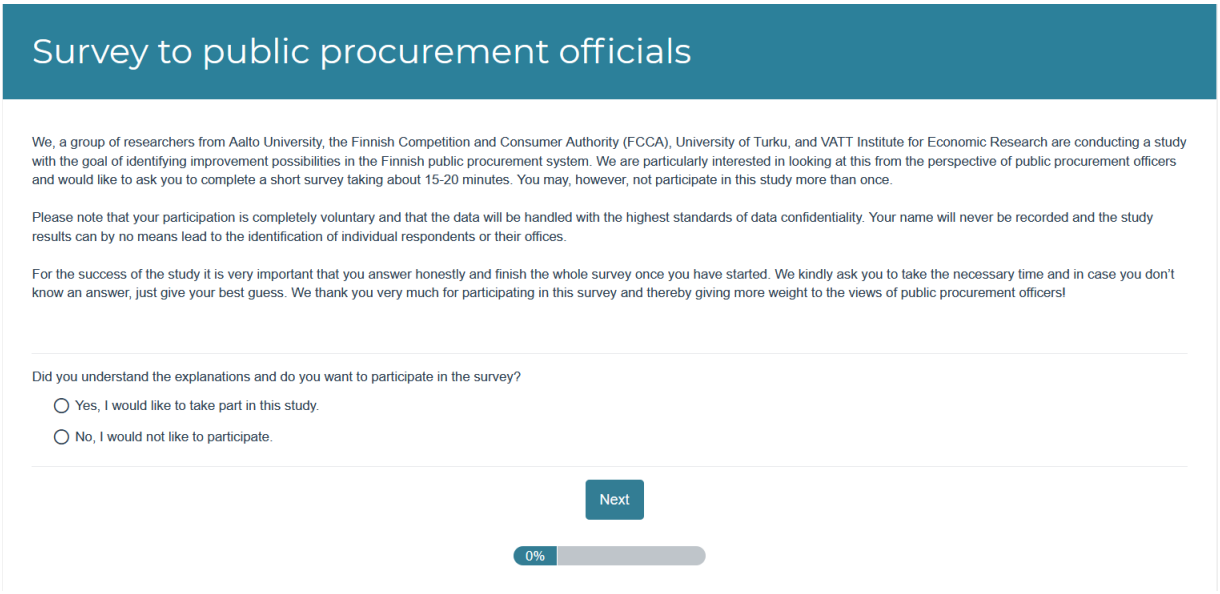
7 Appendix

7.1 Detailed Questionnaire

This Section presents the detailed wording of the questions in the survey module which is translated into English. The actual surveys were fielded in the respective native language (GER: German, FI: Finnish and Swedish, IT: Italian).

Figure A.1: Opener



Bloc A: Background characteristics.

- **Q1:** How old are you?
  under 20 years; *20-30 years*; *31-40 years*; *41-50 years*; *51-60 years*; *above 60 years*; *I would prefer not to tell*

- **Q2:** What is your gender?
  Male; *Female*; *Other*

- **Q3a:** Which category best describes your highest level of education? [if the highest level of education is superior to "High School" then move to Q3b]
  Primary education or less; *High School or Vocational School Diploma*; *Bachelor or Vocational College*; *Master Degree*; *Professional Degree (J.D., M.D., M.B.A., etc)*; *Doctorate*; *Other. Please specify (optional): [insert text]*; *I would prefer not to tell*

- **Q3b:** Which of the following options best describe the most relevant field of study of your highest degree?
  Accounting; *Public administration*; *Business administration*; *Economics*; *Finance*; *Engineering*; *Law*; *Other. Please specify (optional): [insert text]*

- **Q4:** Which of the following categories best describes the institution you are working for?
  Municipality; *State government*; *Federal government*; *Public company*; *Other. Please specify (optional): [insert text]*

- **Q5:** How many contracting employees does your procurement office currently employ?
  Just me; *2-4*; *5-10*; *11-19*; *20-99*; *More than 100*

- **Q6:** Which of these general steps of the procurement process apply to your job? Pick all that are relevant. [if the last option selected then survey ends]
  Management and strategic development (supervision of the procurement process and strategic planning); *Tender planning (identifying the specific purchase; determining the estimated cost of purchase; budgeting the purchase)*; *Tender setup (planning the tender timeline; determining tendering procedure and awarding mechanism; preparing the tender documents)*; *Marketing (doing market research and publicizing tender.)*; *Tender management (Bids' evaluation; after-bidding dialog; selecting winner; contract assignment)*; *Contract management (dialogue with contractors; renegotiation of contract terms; finalizing the contract; final assessment/audit)*; *Other work concerning public procurement (administration, research, legal work, education, training, etc.)*; *My work has nothing to do with public procurement*

- **Q7:** Do you have managerial responsibility for employees?
  Yes; *No*; *I would rather not tell*

- **Q8:** Which purchase category best describes the typical procurement process you are involved in?
  Construction; *Health care services or social services*; *Health care goods or social goods*; *Other services: Please specify (optional): [insert text]*; *Other goods: Please specify (optional): [insert text]*; *Other services. Please specify (optional): [insert text]*

- **Q9:** Which of the following descriptions best fits your current job?
  Temporary employment; *Unlimited employment*;*Civil servant*; *Other. Please specify (optional): [insert text]*; *I would prefer not to tell*

- **Q10:** How much do you think you can influence individual purchasing decisions in your work?
  Very much; *Somewhat*; *Rather not*; *Absolutely not*

- **Q11:** If you think of your daily work schedule (before the onset of the COVID-19 pandemic), do you think your workload allowed you to do your job properly and as intended?
  Yes, absolutely; *Yes, somewhat*; *No, rather not*; *No, absolutely not*

Please share your view on the following statements.

- **Q12:** I have worked in public-procurement-related tasks for my current employer for $\cdot \ldots \cdot$
  less than or equal to 1 year; *more than a year, specifically: [insert number]*

- **Q13:** I have worked in public-procurement-related tasks in my career in total for $\cdot \ldots \cdot$
  less than or equal to 1 year; *more than a year, specifically: [insert number]*

- **Q14:** What kind of tendering procedure is usually employed in the tenders you work on?
  Open (tendering is public, no preselection, everyone can submit a bid); *Restricted (tendering is public, only those who are preselected can submit a bid)*; *Negotiated (tendering is not public, potential contractors are invited to submit a bid)*; *Sole-source (i.e. direct negotiation with one supplier only)*; *Other. Please specify (optional): [insert text]*

- **Q15:** What kind of awarding mechanism is usually employed in the tenders you work on?
  Lowest price; *Most economically advantageous tender (i.e. best price/quality)*; *Other. Please specify (optional): [insert text]*

- **Q16:** Consider the typical procurement process you work on. Is the respective tender value above or below the European regulatory threshold for public procurement purchases?
  Above the threshold; *Below the threshold*; *I do not know*

- **Q17:** Do you agree with the following statement? My office has the appropriate managerial capability, relevant knowledge, and the skills necessary to accomplish its goals as required.
  Strongly disagree; *Disagree*; *Agree*; *Strongly agree*

- **Q18a:** Do your tenders usually involve secondary objectives (for example, minimum requirements for environmental considerations or for social employment)? [if answer is *No*, then skip directly to Q19]
  Yes; *No*

- **Q18b:** Which is the most recurrent type of secondary objectives which you encounter in your work?
  Environmental sustainability considerations; *SMEs (small and medium-sized enterprise) considerations*; *Social considerations or social employment targets*; *Innovation concerns*; *Other. Please specify (optional): [insert text]*

- **Q19b:** Do you think that secondary objectives are an appropriate tool to improve public procurement outcomes?
  Yes, very much; *Yes, somewhat*; *No, rather not*; *No, absolutely not*; *I do not know*

- **Q20:** How many bids (per tender) did you receive on average in all tenders that you were involved in during the previous year?
  About · . . . · bids

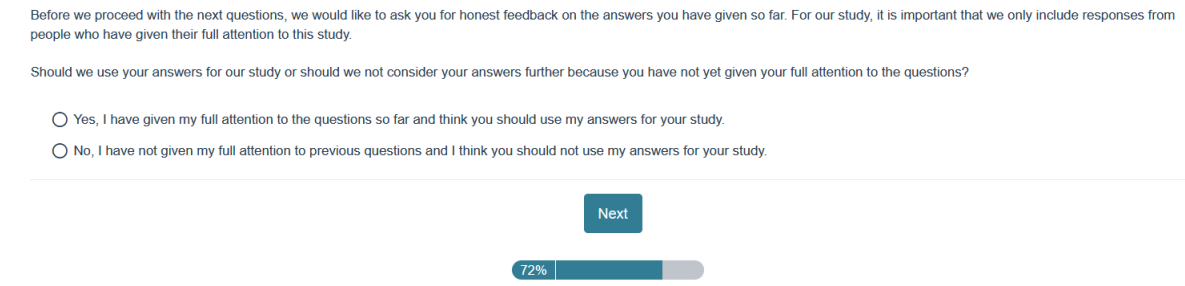
- **Q21a:** Of the tenders that I was personally involved in during the course of the last year, how many were challenged by a judicial complaint? [if zero, then skip to Q22]
  About [insert text]

- **Q21b:** What was the most recurrent cause of those litigations?
  A bid protest (i.e. a challenge to contract award); *A solicitation challenge (i.e. a challenge to the tender documents or the decision to exclude firms from bidding)*; *Other. Please specify (optional): [insert text]*

- **Q22:** According to your personal experience when working on public procurement purchases, which of the following aspects typically create problems with respect to the procurement process? Pick all that are relevant.
  Mistakes from my department in conducting the procurement process; *Budgetary constraints for me and my department from superior offices*; *The assigned firm did not work properly or created problems*; *The losing or potential bidder(s) challenged the tender*; *Rigid regulation*; *Something else. Please specify (optional): [insert text]*; *I do not know*

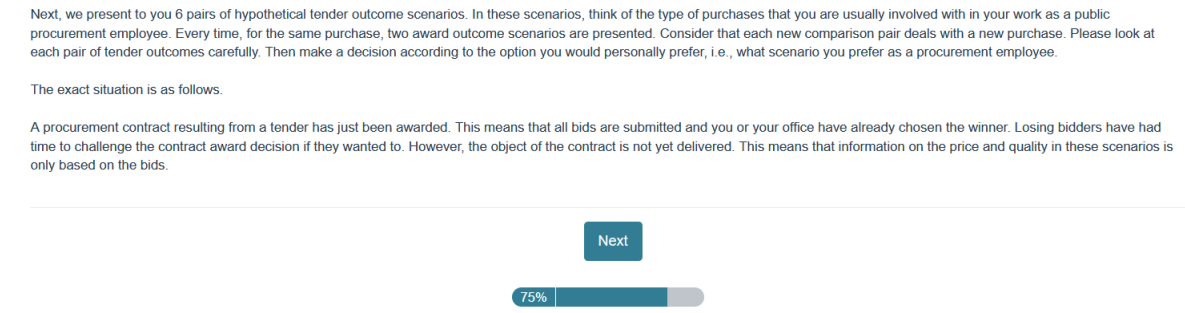
Bloc B: Conjoint experiment. The conjoint experiment is comprised of 6 repeated choice scenarios (for an example, see Figure 1 and for a detailed exposition of attribute levels, see Table 1 in the main text). The conjoint is preceded by the attention check (Q23).

Figure A.2: Attention check question (Q23)



Note: If second option is chosen, then the survey ends for the respondent.

Figure A.3: Short explanation of choice scenarios



End of Bloc B: Thank you very much for your answers so far! There are only a few questions remaining.

Bloc C: Follow-up questions. These are presented after completing the conjoint experiment.

Figure A.4: Role of experimental attributes for desirable tender outcomes (Q24)

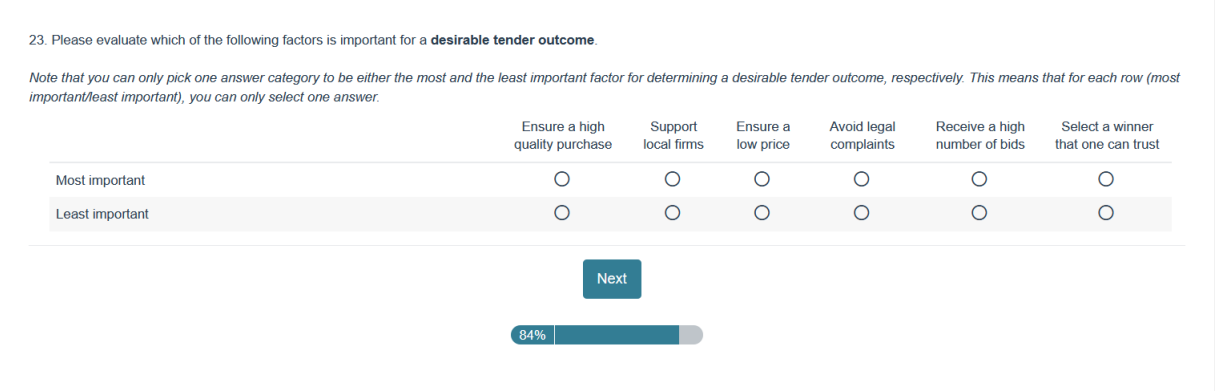
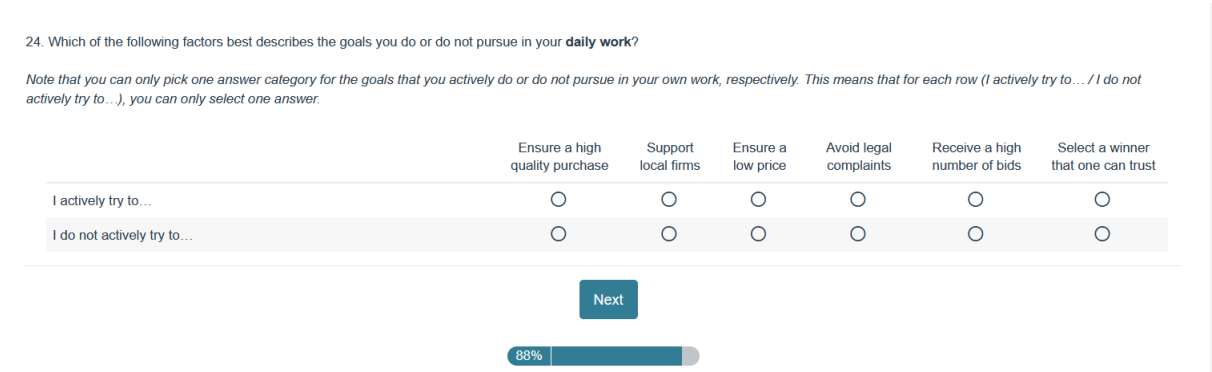
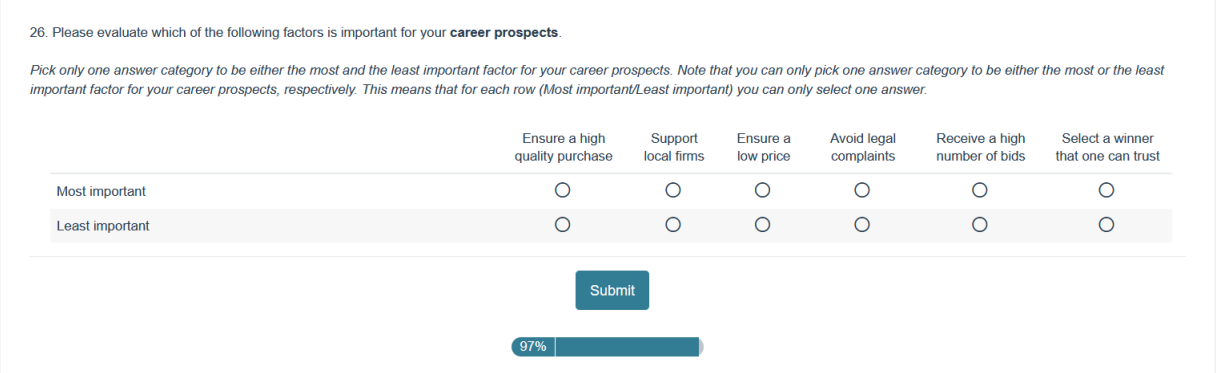


Figure A.5: Role of experimental attributes for stated behavior related to tender outcomes (Q25)



- **Q26:** Do you consider tender outcomes important for your career prospects? [if the last two answers are chosen, the survey ends for the respondent]
  Yes, absolutely; *Yes, somewhat*; *Rather not*; *No, absolutely not*

Figure A.6: Role of experimental attributes for career prospects (Q27)



Thank you very much for answering the survey!

7.2 Additional Tables and Figures

Table A.1: Socio-demographic characteristics of respondents

	Germany						Finland					
	n	Mean/Prop.	SD	Median	Min.	Max.	n	Mean/Prop.	SD	Median	Min.	Max.
Panel A: Socio-demographic characteristics												
Age group	517						398					
20-30 years		.06						.04				
31-40 years		.20						.19				
41-50 years		.28						.31				
51-60 years		.37						.34				
above 60 years		.08						.12				
Female	511	.50	.50	.00	.00	1.00	388	.49	.50	.00	.00	1.00
Master's degree	530	.49	.50	.00	.00	1.00	403	.49	.50	.00	.00	1.00
Education	327						355					
Accounting								.02				
Business administration		.15						.18				
Economics		.01						.03				
Engineering		.25						.42				
Finance		.01						.01				
Law		.17						.07				
Public administration		.37						.12				
Other		.05						.16				

Notes: This Table presents the socio-demographic characteristics for survey respondents for German and Finnish sample, respectively.

Table A.2: Workplace characteristics of respondents

	Germany						Finland					
	n	Mean/Prop.	SD	Median	Min.	Max.	n	Mean/Prop.	SD	Median	Min.	Max.
Panel B: Workplace characteristics												
Type of office	530						403					
Municipality		.43						.36				
State government		.21						.12				
Federal government		.10						.18				
Public company		.17						.19				
Other		.09						.13				
Organization size	530						403					
Just me		.05						.11				
2-4		.24						.36				
5-10		.21						.23				
11-19		.12						.10				
20-99		.22						.15				
More than 100		.16						.05				
Type of position	530						403					
Civil servant		.33						.28				
Temporary employment		.02						.07				
Unlimited employment		.62						.61				
Other or prefer not to tell		.02						.04				
Supervisor	517	.45	.50	.00	.00	1.00	400	.33	.47	.00	.00	1.00
Experience in current position (in years)	529	8.92	8.34	6.00	1.00	45.00	403	7.93	7.43	5.00	1.00	55.00
Experience in procurement (in years)	529	12.25	9.87	10.00	1.00	46.00	401	10.71	7.83	10.00	1.00	55.00
I am satisfied in competence of my own department	530						403					
Strongly agree		.10						.31				
Agree		.59						.33				
Disagree		.27						.29				
Strongly disagree		.04						.08				
Typical procedure used	530						403					
Negotiated		.19						.04				
Open		.55						.81				
Restricted		.15						.11				
Sole-source and other		.11						.03				
Typical award mechanism used	530						403					
Best price/quality		.57						.55				
Lowest price		.42						.43				
Other		.02						.02				
Share of contracts above EU threshold	525	.34	.47	.00	.00	1.00	398	.53	.50	1.00	.00	1.00
Has secondary objectives	530	.55	.50	1.00	.00	1.00	403	.39	.49	.00	.00	1.00
Typical # of bidders	530	18.87	223.43	4.00	.00	5000.00	403	19.05	182.78	4.00	.00	3500.00
Typical # of bidders (cencored at 500)	528	7.56	31.34	4.00	.00	500.00	401	7.87	24.23	4.00	.00	400.00
Litigations in previous year	530	1.76	4.72	.00	.00	50.00	403	.64	5.04	.00	.00	100.00
Most common reason for litigation	250						110					
A bid protest		.62						.55				
A solicitation challenge		.30						.42				
Other		.08						.04				

Notes: This Table presents the workplace characteristics for survey respondents for German and Finnish sample, respectively. We present a right censored statistic for typical number of bidders to tackle the possible issue of respondent's misunderstanding the question.

Table A.3: Analysis of perceived discretion and threats

	Perceived discretion	Perceived threats					
		Mistakes by procurer	Budgetary constraints	Issues with winner	Loser challenged	Rigid regulation	Other
Age: 20-30	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(0.0353)
Age: 31-40	0.0782	-0.0136	0.0417	-0.0917	-0.0846	-0.175	0.0463
	(0.0123)	(0.106)	(0.154)	(0.0872)	(0.121)	(0.171)	(0.0617)
Age: 41-50	0.0988	-0.0217	0.00439	-0.126	-0.0524	-0.0833	0.0346
	(0.0492)	(0.108)	(0.0905)	(0.0561)	(0.122)	(0.129)	(0.0965)
Age: 51-60	0.0349	-0.0342	0.0283	-0.174	-0.106	-0.120	0.0177
	(0.0104)	(0.0877)	(0.129)	(0.0901)	(0.101)	(0.209)	(0.136)
Age: above 60	0.0558	0.00836	0.130	-0.160*	-0.0483	-0.147	-0.0523
	(0.0563)	(0.148)	(0.200)	(0.00663)	(0.0821)	(0.136)	(0.127)
Age: I would prefer not to tell	0.0676	-0.0239	-0.132	0.0799	0.343	-0.178	0.383
	(0.0878)	(0.403)	(0.232)	(0.398)	(0.0312)	(0.136)	(0.0549)
Female	-0.00835	0.00801	0.0394	0.0145*	-0.0398	-0.0688	-0.0283
	(0.0605)	(0.000989)	(0.0456)	(0.000510)	(0.0318)	(0.0448)	(0.0194)
Has master's degree or equivalent	-0.0224	0.0240	-0.00326	-0.0179	0.0176	-0.00921	0.0215
	(0.0140)	(0.0122)	(0.0336)	(0.00725)	(0.0103)	(0.0391)	(0.00530)
Municipality	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(0.0353)
State government	0.00516	0.0233	-0.00516	0.0352	0.00792	-0.0231	-0.0415
	(0.00478)	(0.0135)	(0.0732)	(0.0118)	(0.00351)	(0.0211)	(0.0286)
Federal government	0.0288	0.0343	-0.0295	0.0339	-0.0205*	-0.0687	0.0674
	(0.0406)	(0.0151)	(0.0358)	(0.0503)	(0.000782)	(0.0266)	(0.0603)
Public company	0.0369	-0.0505	-0.0771	-0.0870	-0.0145	0.0973	0.00126
	(0.0403)	(0.0490)	(0.0564)	(0.0194)	(0.0347)	(0.0226)	(0.0473)
Other	-0.0406	-0.0869	-0.131	0.00404	0.0169	0.0152	-0.0655
	(0.0723)	(0.120)	(0.0170)	(0.0718)	(0.0107)	(0.0440)	(0.0618)
Organization size: Just me	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)
Organization size: 2-4	-0.00125	0.0149	-0.0199	0.0939	0.00540	-0.0574	-0.0403
	(0.0137)	(0.0481)	(0.0564)	(0.0765)	(0.0171)	(0.0503)	(0.0294)
Organization size: 5-10	-0.0183	0.0485	-0.0262	0.0564	0.0207	-0.0722	0.0520
	(0.0849)	(0.00895)	(0.00732)	(0.0173)	(0.0409)	(0.0900)	(0.0151)
Organization size: 11-19	-0.0576	0.138	-0.00724	0.146*	-0.00407	-0.0613	-0.0236
	(0.00957)	(0.0160)	(0.0107)	(0.00840)	(0.0170)	(0.0274)	(0.0124)
Organization size: 20-99	-0.106	0.0852	-0.0569	0.0972	0.00724	0.0150	-0.0160
	(0.0659)	(0.0408)	(0.0478)	(0.0481)	(0.00155)	(0.0992)	(0.0648)
Organization size: More than 100	-0.0240	0.107	-0.0467	0.121	0.00190	0.0620	0.0348
	(0.0113)	(0.0541)	(0.0530)	(0.0697)	(0.0167)	(0.0791)	(0.0416)
Supervisor	0.0349	0.00693	-0.0151	0.0346	-0.0172	-0.00280	0.0194
	(0.0739)	(0.0222)	(0.0501)	(0.00381)	(0.0198)	(0.0421)	(0.0859)
Experience in current position	-0.000855	-0.00672	0.00388	0.000466*	0.000700	-0.00332	0.00189
	(0.00228)	(0.00222)	(0.00244)	(0.0000289)	(0.00286)	(0.00546)	(0.00217)
Overall experience	0.00257	0.00100	-0.00261	0.000630	0.00188	0.00167	0.0000442
	(0.000822)	(0.00116)	(0.00340)	(0.00298)	(0.00237)	(0.00247)	(0.00440)
Award mechanism: best price/quality	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)
Award mechanism: lowest price -0.130	0.0208	0.0371*	0.0745	-0.0183	-0.0584	-0.0478	
	(0.0480)	(0.0700)	(0.00204)	(0.0284)	(0.0160)	(0.0219)	(0.00548)
Contract size above EU threshold	-0.00449	-0.0291	-0.0270	0.0314	0.0698	-0.0811	0.00438
	(0.0199)	(0.0590)	(0.0541)	(0.0127)	(0.0162)	(0.0119)	(0.0154)
Uses secondary objectives	0.0452	-0.00580	0.00179	0.00634	0.0336	0.0263	-0.00465
	(0.0121)	(0.00917)	(0.00244)	(0.00377)	(0.0238)	(0.00923)	(0.0659)
Typical # of bidders	0.000421	-0.000595	0.000209	0.000712	0.000124	-0.000591	-0.0000246
	(0.0000538)	(0.000288)	(0.000206)	(0.000133)	(0.000544)	(0.000156)	(0.000263)
Litigated in previous year	0.0489	0.0653	-0.0289	0.0624*	0.249	-0.0420	0.0300
	(0.0714)	(0.0984)	(0.0321)	(0.00313)	(0.0733)	(0.00616)	(0.0365)
Country: Finland	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)
Country: Germany	-0.325*	-0.136	-0.0436	-0.113*	-0.133	-0.0108	0.0991*
	(0.00603)	(0.0109)	(0.00767)	(0.00856)	(0.0246)	(0.00784)	(0.00158)
Constant	0.787**	0.346	0.246**	0.403	0.155	0.688	0.203
	(0.00229)	(0.0923)	(0.00187)	(0.117)	(0.100)	(0.0658)	(0.0790)
Observations	869	869	869	869	869	869	869
R^2	0.147	0.051	0.042	0.046	0.163	0.046	0.051

Notes: This Table presents results from OLS regressions on the perceived discretion and perceived threats to the procurement process. Dependent variable is a binary variable with a value of 1 if a person perceived to have discretion or perceived a given threat to be an issue for successful procurement, and a value of 0 otherwise. Each respondent was able to acknowledge several threats. Heteroskedasticity-robust standard errors are in parenthesis.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.4: Main results

	Joint	Germany	Finland
much lower than I expected	0.0160	0.0109	0.0232
	(0.0141)	(0.0181)	(0.0221)
a bit lower than I expected	0.0235	0.0203	0.0275
	(0.0134)	(0.0172)	(0.0213)
what I expected	0	0	0
	(.)	(.)	(.)
a bit higher than I expected	-0.0982***	-0.126***	-0.0630**
	(0.0145)	(0.0187)	(0.0228)
much higher than I expected	-0.280***	-0.291***	-0.267***
	(0.0147)	(0.0193)	(0.0224)
as I expected	0	0	0
	(.)	(.)	(.)
a bit better than I expected	0.0529***	0.0553***	0.0475**
	(0.0118)	(0.0155)	(0.0182)
much better than I expected	0.121***	0.137***	0.0951***
	(0.0117)	(0.0154)	(0.0178)
1 bid	0	0	0
	(.)	(.)	(.)
2 bids	0.0956***	0.0965***	0.0925***
	(0.0127)	(0.0164)	(0.0199)
4 bids	0.166***	0.151***	0.188***
	(0.0130)	(0.0171)	(0.0196)
8 bids	0.168***	0.158***	0.181***
	(0.0137)	(0.0178)	(0.0212)
a firm I know and trust	0.0841***	0.0558***	0.120***
	(0.0124)	(0.0160)	(0.0193)
a firm unknown to me	0	0	0
	(.)	(.)	(.)
a firm that I had bad experiences with	-0.442***	-0.468***	-0.408***
	(0.0120)	(0.0156)	(0.0188)
a local bidder from my region	0.0288***	0.0147	0.0471***
	(0.00795)	(0.0104)	(0.0122)
a non-local bidder not from my region	0	0	0
	(.)	(.)	(.)
no	0	0	0
	(.)	(.)	(.)
yes	-0.124***	-0.0944***	-0.163***
	(0.0145)	(0.0185)	(0.0229)
Constant	0.520***	0.552***	0.481***
	(0.0162)	(0.0205)	(0.0256)
Observations	11196	6360	4836
R^2	0.29	0.31	0.27

Notes: This Table presents effects of tender outcome attributes on the probability of deciding in favor of a tender outcome. Dependent variable is a binary variable with a value of 1 if profile was chosen and a value of 0 otherwise. Standard errors are in parenthesis. Effects are estimated using OLS and standard errors are clustered at respondent level. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.5: Robustness of estimated coefficients

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
much lower than I expected	0.0160	0.0158	0.0138	0.0138	0.0138	0.0165	0.0134	0.0109
	(0.0141)	(0.0142)	(0.0145)	(0.0145)	(0.0131)	(0.0142)	(0.0170)	(0.0131)
a bit lower than I expected	0.0235	0.0204	0.0169	0.0169	0.0169	0.0247	0.0182	0.0116
	(0.0134)	(0.0137)	(0.0140)	(0.0140)	(0.0131)	(0.0136)	(0.00782)	(0.0133)
what I expected	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
a bit higher than I expected	-0.0982***	-0.0959***	-0.0992***	-0.0992***	-0.0992***	-0.0995***	-0.101**	-0.0960***
	(0.0145)	(0.0147)	(0.0150)	(0.0150)	(0.0134)	(0.0146)	(0.0211)	(0.0132)
much higher than I expected	-0.280***	-0.278***	-0.283***	-0.283***	-0.283***	-0.283***	-0.285***	-0.279***
	(0.0147)	(0.0150)	(0.0153)	(0.0153)	(0.0132)	(0.0149)	(0.0165)	(0.0133)
as I expected	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
a bit better than I expected	0.0529***	0.0554***	0.0529***	0.0529***	0.0529***	0.0554***	0.0522***	0.0541***
	(0.0118)	(0.0119)	(0.0122)	(0.0122)	(0.0104)	(0.0120)	(0.00759)	(0.0102)
much better than I expected	0.121***	0.122***	0.120***	0.120***	0.120***	0.124***	0.120***	0.122***
	(0.0117)	(0.0117)	(0.0120)	(0.0120)	(0.0102)	(0.0119)	(0.0107)	(0.0102)
1 bid	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
2 bids	0.0956***	0.101***	0.105***	0.105***	0.105***	0.0966***	0.104**	0.104***
	(0.0127)	(0.0129)	(0.0132)	(0.0132)	(0.0119)	(0.0128)	(0.0193)	(0.0117)
4 bids	0.166***	0.173***	0.175***	0.175***	0.175***	0.168***	0.178***	0.178***
	(0.0130)	(0.0132)	(0.0134)	(0.0134)	(0.0117)	(0.0131)	(0.0178)	(0.0118)
8 bids	0.168***	0.175***	0.174***	0.174***	0.174***	0.170***	0.177***	0.176***
	(0.0137)	(0.0139)	(0.0141)	(0.0142)	(0.0116)	(0.0138)	(0.0113)	(0.0117)
a firm I know and trust	0.0841***	0.0809***	0.0810***	0.0810***	0.0810***	0.0849***	0.0807*	0.0827***
	(0.0124)	(0.0127)	(0.0129)	(0.0129)	(0.0107)	(0.0126)	(0.0218)	(0.0102)
a firm unknown to me	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
a firm that I had bad experiences with	-0.442***	-0.449***	-0.449***	-0.449***	-0.449***	-0.450***	-0.450***	-0.448***
	(0.0120)	(0.0120)	(0.0122)	(0.0122)	(0.0101)	(0.0123)	(0.00703)	(0.0102)
a local bidder from my region	0.0288***	0.0240**	0.0243**	0.0242**	0.0242**	0.0336***	0.0241*	0.0238**
	(0.00795)	(0.00806)	(0.00825)	(0.00826)	(0.00825)	(0.00867)	(0.00738)	(0.00824)
a non-local bidder not from my region	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
no litigation	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
litigation	-0.124***	-0.122***	-0.122***	-0.122***	-0.122***	-0.128***	-0.122**	-0.125***
	(0.0145)	(0.0148)	(0.0151)	(0.0151)	(0.0142)	(0.0149)	(0.0206)	(0.0138)
Constant	0.520***	0.518***	0.524***	0.522***	0.522***	0.518***	0.522***	0.520***
	(0.0162)	(0.0183)	(0.0195)	(0.0199)	(0.0335)	(0.0165)	(0.0222)	(0.0329)
Observations	11196	10740	10392	10392	10392	11196	10392	10392
R^2	0.293	0.298	0.299	0.299	0.299	0.298	0.299	0.295
Controls	None	Socio-demographic	Workplace	All	All	None	All	All
Fixed Effects	No	No	No	No	No	Respondent	Set	Card
Standard errors	Clustered	Clustered	Clustered	Clustered	Robust	Robust	Robust	Robust

Notes: Dependent variable in each regression is a binary variable with a value of 1 if profile was chosen and a value of 0 otherwise. Standard errors are in parenthesis. Effects are estimated using OLS. Clustered standard errors are clustered at respondent level. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.6: Westfall-Young corrected p-values

	Full sample
much lower than I expected	0.0160
	(0.2546)
	[0.2551]
a bit lower than I expected	0.0235
	(0.0806)
	[0.1411]
what I expected	0
	(.)
	[.]
a bit higher than I expected	-0.0982***
	(0.0000)
	[0.0000]
much higher than I expected	-0.280***
	(0.0000)
	[0.0000]
as I expected	0
	(.)
	[.]
a bit better than I expected	0.0529***
	(0.0000)
	[0.0001]
much better than I expected	0.121***
	(0.0000)
	[0.0000]
1 bid	0
	(.)
	[.]
2 bids	0.0956***
	(0.0000)
	[0.0000]
4 bids	0.166***
	(0.0000)
	[0.0000]
8 bids	0.168***
	(0.0000)
	[0.0000]
a firm I know and trust	0.0841***
	(0.0000)
	[0.0000]
a firm unknown to me	0
	(.)
	[.]
a firm that I had bad experiences with	-0.442***
	(0.0000)
	[0.0000]
a local bidder from my region	0.0288***
	(0.0003)
	[0.0010]
a non-local bidder not from my region	0
	(.)
	[.]
no	0
	(.)
	[.]
yes	-0.124***
	(0.0000)
	[0.0000]
Constant	0.520***
	(0.0000)
Observations	11196

Notes: Dependent variable is a binary variable with a value of 1 if profile was chosen and a value of 0 otherwise. Effects are estimated using OLS and standard errors are clustered at respondent level. P-values are in parenthesis and Westfall-Young corrected p-values are in brackets. Stars refer to * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.7: Non-response analysis

	Survey	Real world
Contract procedure		
Open	81.6	79.3
Restricted	10.4	3.9
Negotiated	4.3	4.7
Sole-source, other or unkown	3.4	12.1
Institution type		
Municipality	37.0	33.0
State Government	12.1	8.9
Consortium of municipalities	18.4	23.4
Other	32.6	34.5
Contract size		
Above EU threshold	51.2	29.64
Below EU threshold	47.6	45.25
Unknown / not posted	1.2	25.11
Awarding mechanism		
Lowest price	42.3	46.5
Best price/quality	55.3	53.5
Other	2.4	
Typical number of bidders		
Mean	4.73	3.95
Median	4	3
SD	2.71	3.72

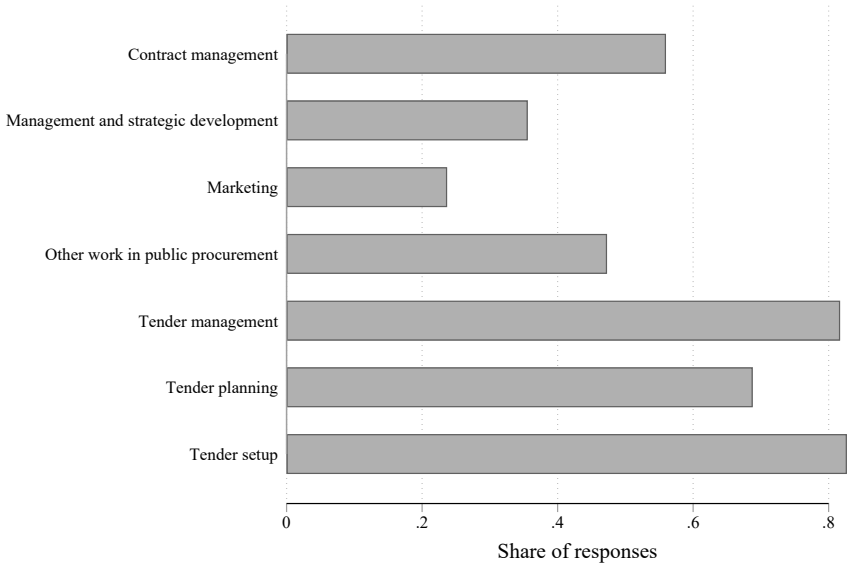
Notes: This Table presents a comparison between survey responses and real world data. Real world information on contract procedure, institution type and contract sizes are obtained from Hilma-database, where public buyers are obligated by law to post all procurement notices. Most recent available year, 2019, is used. Information on awarding mechanism and typical number of bidders are obtained from Cloudia database, which is a more detailed but comprehensive database, containing roughly 25% of procurement notices posted in 2016. When comparing the typical number of bidders, we trim the top 1% of bid amounts to combat the issue of outliers.

Table A.8: Analysis of the probability to respond to the survey, Finnish sample

	(1) OLS	(2) OLS	(3) OLS	(4) Logit	(5) Logit	(6) Logit
Federal government	0.0217	-0.0733	-0.150	0.106	-0.308	-0.842
	(0.0476)	(0.0625)	(0.151)	(0.210)	(0.267)	(0.731)
Government owned company	0.0302	0.00305	0.0253	0.146	0.0166	0.0153
	(0.0353)	(0.0507)	(0.231)	(0.164)	(0.219)	(1.289)
Municipality	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)
Other	0.0278	0.0196	-0.0799	0.135	0.0851	-0.683
	(0.0458)	(0.0695)	(0.250)	(0.208)	(0.290)	(1.172)
State government	0.0744	-0.00404	-0.650***	0.356	-0.00495	-4.189*
	(0.0430)	(0.0657)	(0.193)	(0.198)	(0.288)	(1.850)
Central Finland	-0.115	-0.0313	0.267	-0.546	-0.129	1.050
	(0.0653)	(0.114)	(0.191)	(0.341)	(0.476)	(0.885)
Central Ostrobothnia	-0.0465	-0.0984		-0.207	-0.435	
	(0.104)	(0.154)		(0.476)	(0.717)	
Häme	-0.0127	-0.0160	0.183	-0.0532	-0.0645	1.015
	(0.0673)	(0.0878)	(0.202)	(0.294)	(0.367)	(0.962)
Karelia & Kainuu	-0.0842	-0.0732	-0.100	-0.388	-0.318	-0.611
	(0.0630)	(0.0947)	(0.225)	(0.305)	(0.420)	(1.084)
Kymenlaakso	-0.0574	-0.0389	0.776**	-0.258	-0.182	0
	(0.0870)	(0.121)	(0.257)	(0.401)	(0.555)	(.)
Lapland	-0.181**	-0.190	0.384	-0.936*	-0.900	0
	(0.0654)	(0.106)	(0.271)	(0.410)	(0.590)	(.)
North Ostrobothnia	-0.163**	-0.130	0.203	-0.824**	-0.575	1.761
	(0.0525)	(0.110)	(0.212)	(0.304)	(0.509)	(1.700)
North Savo	-0.0525	-0.0739	0.361	-0.234	-0.317	1.854
	(0.0524)	(0.0683)	(0.204)	(0.239)	(0.298)	(1.406)
Ostrobothnia	-0.158*	-0.209*		-0.806	-1.023	
	(0.0717)	(0.0996)		(0.437)	(0.590)	
Pirkanmaa	0.00591	-0.0144	0.324	0.0273	-0.0587	2.182
	(0.0481)	(0.0633)	(0.193)	(0.205)	(0.263)	(1.342)
Satakunta	-0.152	-0.0576		-0.768	-0.243	
	(0.0945)	(0.165)		(0.574)	(0.731)	
South Ostrobothnia	-0.132*	-0.202*	0.235	-0.633	-0.996*	1.931
	(0.0644)	(0.0811)	(0.199)	(0.339)	(0.465)	(2.208)
South Savo	-0.0832	-0.0692	-0.279	-0.383	-0.297	-1.315
	(0.0841)	(0.117)	(0.427)	(0.410)	(0.510)	(1.641)
Southwest Finland & Åland	-0.108*	-0.0378	-0.0786	-0.510	-0.159	-0.338
	(0.0530)	(0.0755)	(0.165)	(0.265)	(0.319)	(0.710)
Unknown	0.109	-0.00904	-0.522**	0.446	-0.0342	-4.153**
	(0.0648)	(0.0999)	(0.172)	(0.262)	(0.419)	(1.525)
Uusimaa	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)
Avg. contract size		0.00000713	0.0000173*		0.0000302	0.000109*
		(0.00000441)	(0.00000749)		(0.0000213)	(0.0000494)
Most common industry: goods		0	0		0	0
		(.)	(.)		(.)	(.)
Most common industry: services		-0.0379	0.0519		-0.163	0.409
		(0.0560)	(0.159)		(0.239)	(0.878)
Most common industry: construction		-0.0723	0.154		-0.317	0.921
		(0.0608)	(0.209)		(0.263)	(1.109)
Award procedure: open		-0.0995	0.0567		-0.416	0.339
		(0.0558)	(0.236)		(0.229)	(1.224)
Award procedure: restriced, negotiated, other		0	0		0	0
		(.)	(.)		(.)	(.)
Avg. number of bidders			-0.0570*			-0.350*
			(0.0274)			(0.143)
Share of best price/quality award mechanisms			0.399			1.632
			(0.319)			(1.577)
Constant	0.345***	0.533***	0.367	-0.653***	0.152	-0.391
	(0.0307)	(0.0895)	(0.264)	(0.138)	(0.376)	(1.324)
Observations	1353	789	174	1353	789	171
R^2	0.027	0.027	0.188			
Pseudo R^2				0.022	0.021	0.152

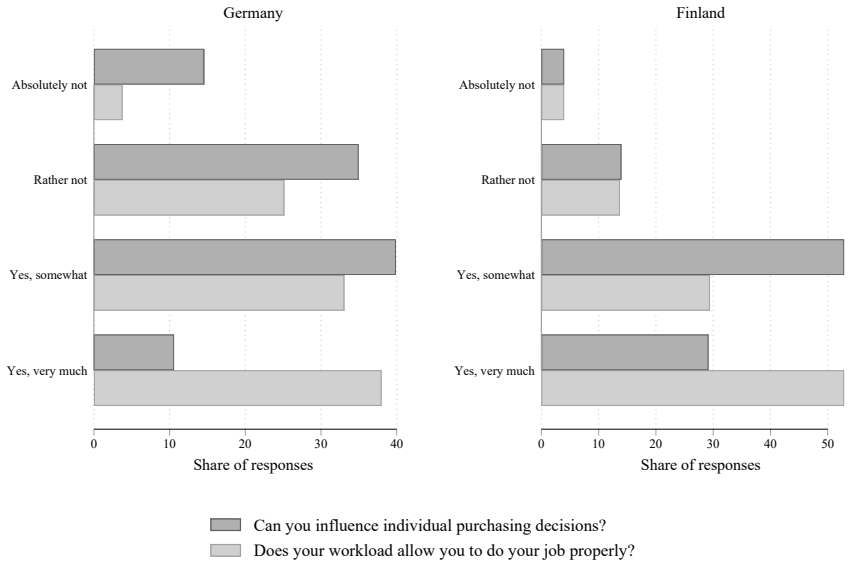
Notes: This Table presents results from OLS and logit regressions on the probability of responding to the survey. Dependent variable is a binary variable that gets a value of 1 if person completed the survey and a value of 0 otherwise. Partial, unfinished responses are treated as zeroes. Independent variables are office type, respondent's region, average contract size, most commonly procured industry, award procedure, average number of bidders and award mechanism. Number of observations is the number of individuals who received the survey. Regressions (1) and (4) include whole survey sample while regressions (2) and (4) include a sample merged with Hilma database. Regression (3) and (6) use a sample that is further merged with Cloudia database. Heteroskedasticity-robust standard errors are in parenthesis. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure A.7: Which steps of the procurement process apply to your job? (Q6)



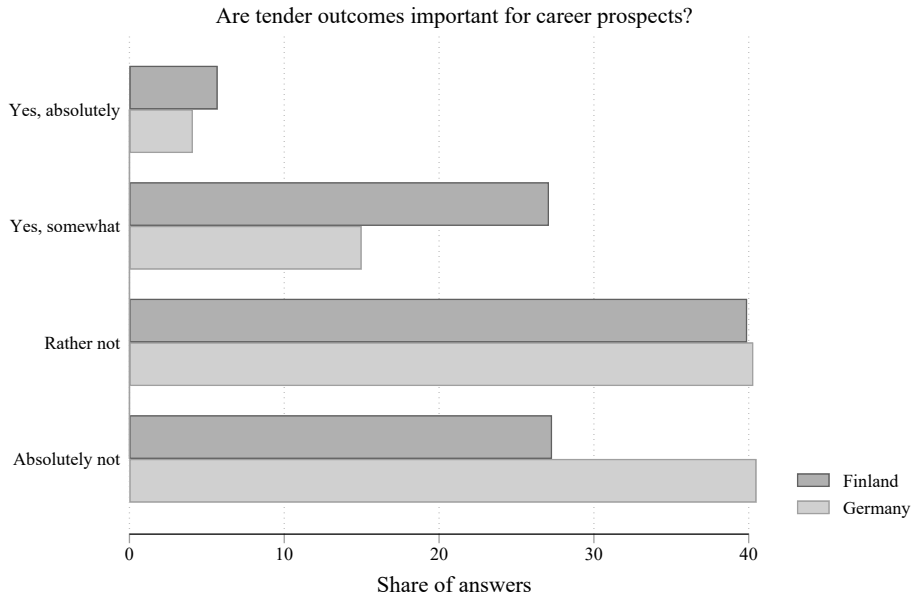
Notes: The Figure presents which tasks respondents work with. Respondents were allowed to choose multiple options.

Figure A.8: Distribution of perceived discretion and workload (Q10, Q11)



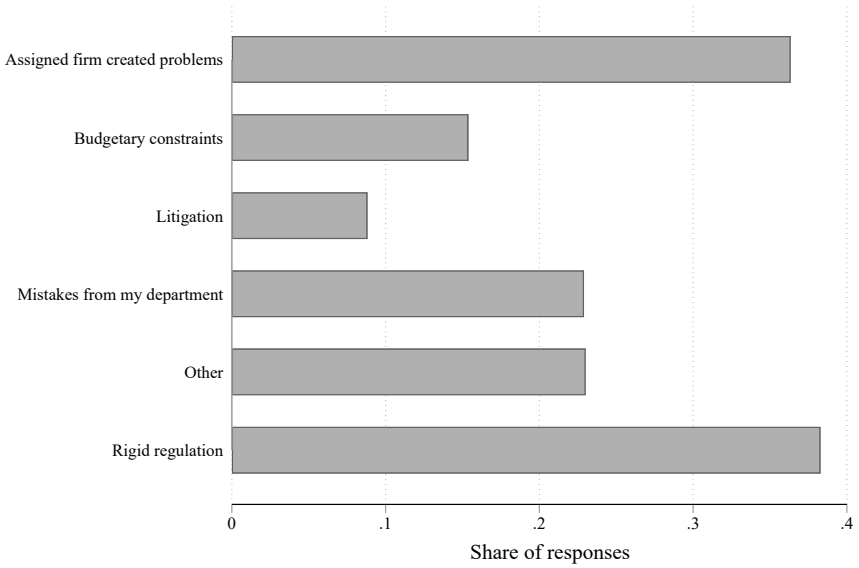
Notes: The Figure presents how respondents feel about being able to influence their work as well as their workload. Respondents were forced to pick only one option to either questions.

Figure A.9: Distribution of perceived career incentives (Q26)



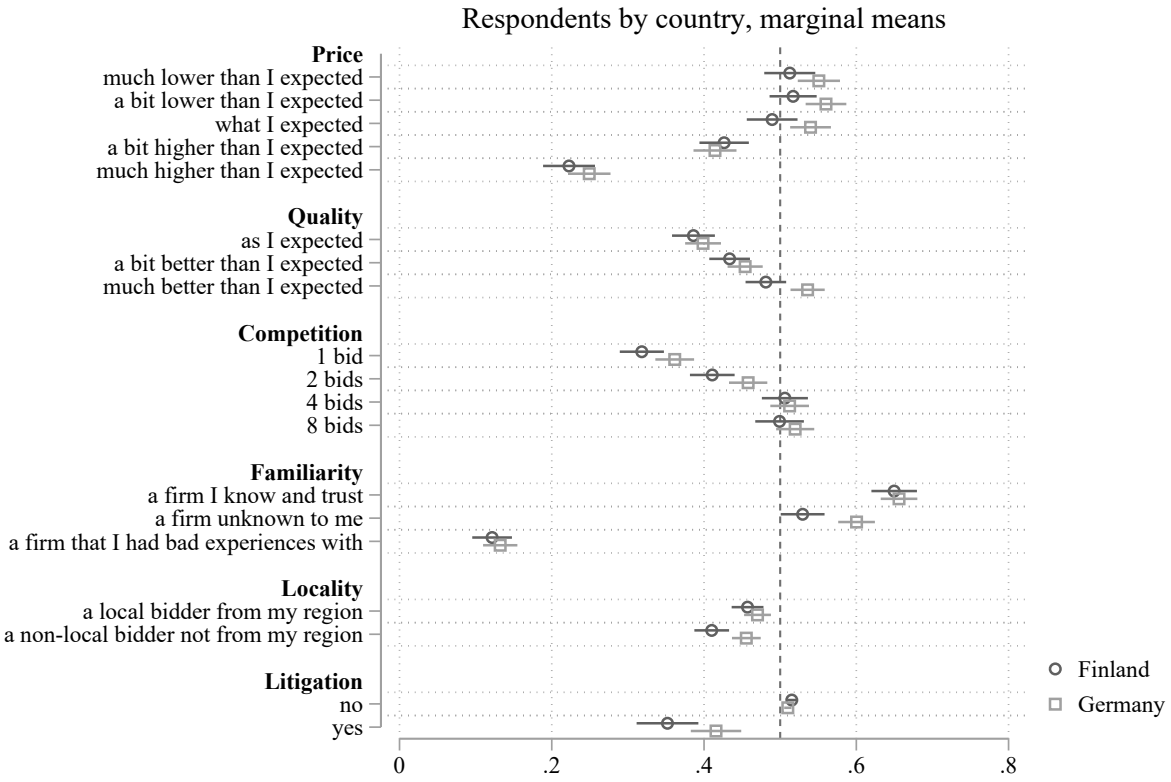
Notes: The Figure presents how respondents feel about career prospects. Respondents were forced to pick only one option.

Figure A.10: Distribution of perceived threats to the procurement process (Q22)



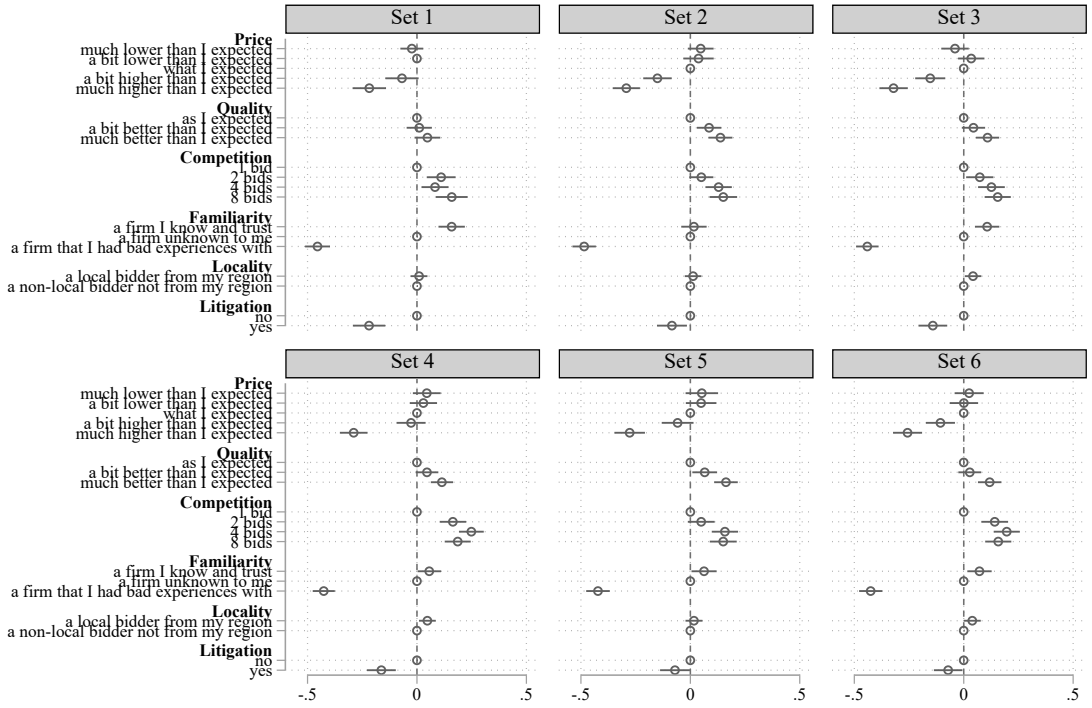
Notes: The Figure presents what respondents perceive as threats to procurement process. Respondents were allowed to choose multiple options.

Figure A.11: Baseline results of Conjoint experiment



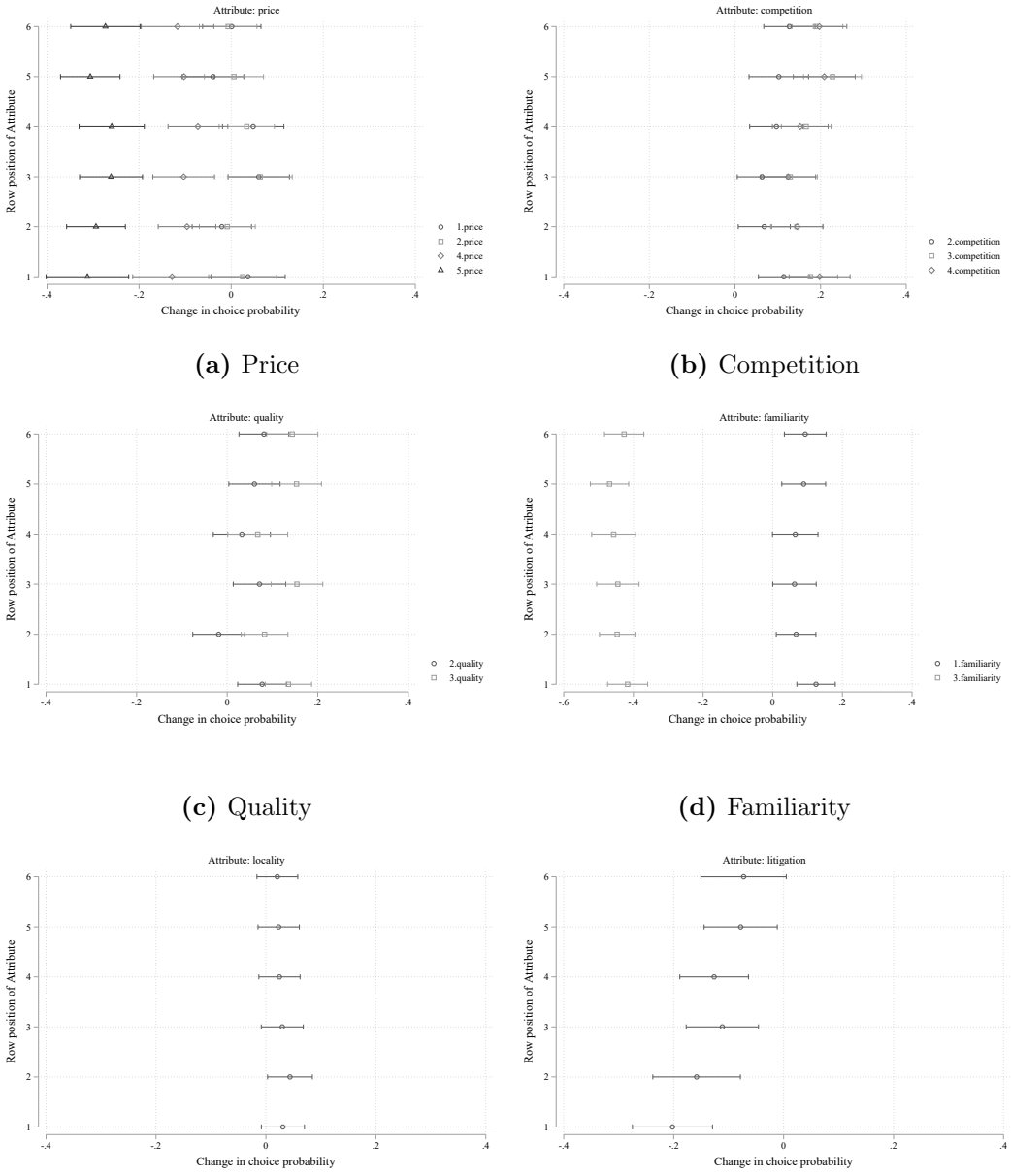
Notes: Marginal means of tender outcome attributes on the probability of deciding in favor of a tender outcome. The horizontal lines indicate 95% cluster-robust confidence intervals.

Figure A.12: Testing for carryover effects across profiles



Notes: This Figure presents the results from running the main regression separately for each choice set offered to the respondents. Set number refers to the ordinal number of choice set offered. The horizontal lines indicate 95% cluster-robust confidence intervals. Points without these lines indicate the respective reference categories for the effects of the attributes. Please note that there was a bug in the Alchemer survey software that caused price attribute *"what I expected"* to not be offered in set 1, hence a different baseline.

Figure A.13: Testing attribute order effects across attributes and profile order



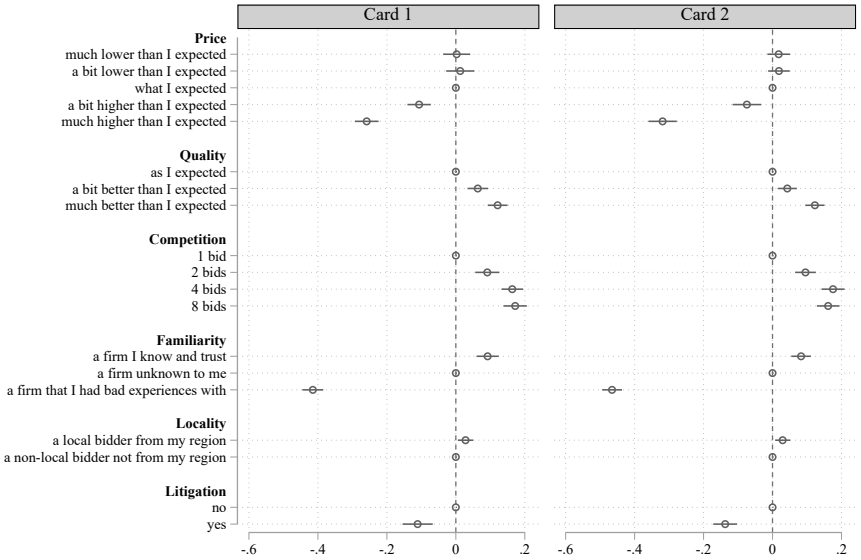
(a) Price **(b)** Competition

(c) Quality **(d)** Familiarity

(e) Regionalism **(f)** Litigation risk

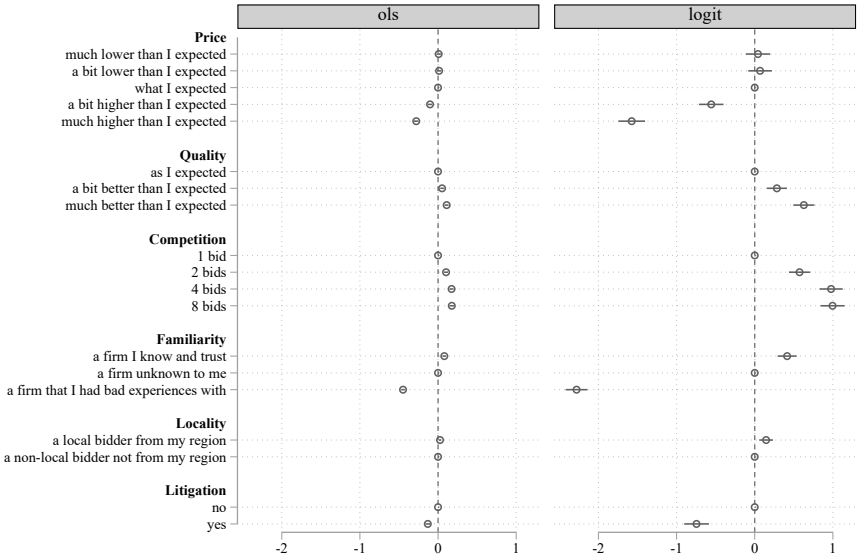
Notes: Figures present regression results for attribute order tests. The estimates are for the interaction coefficient of attribute and a dummy depicting its row position in the survey when regressed on the probability of choosing an outcome. The attribute row positions were randomized between respondents, but constant for each respondent. The horizontal lines indicate 95% cluster-robust confidence intervals.

Figure A.14: Testing for profile-order effects



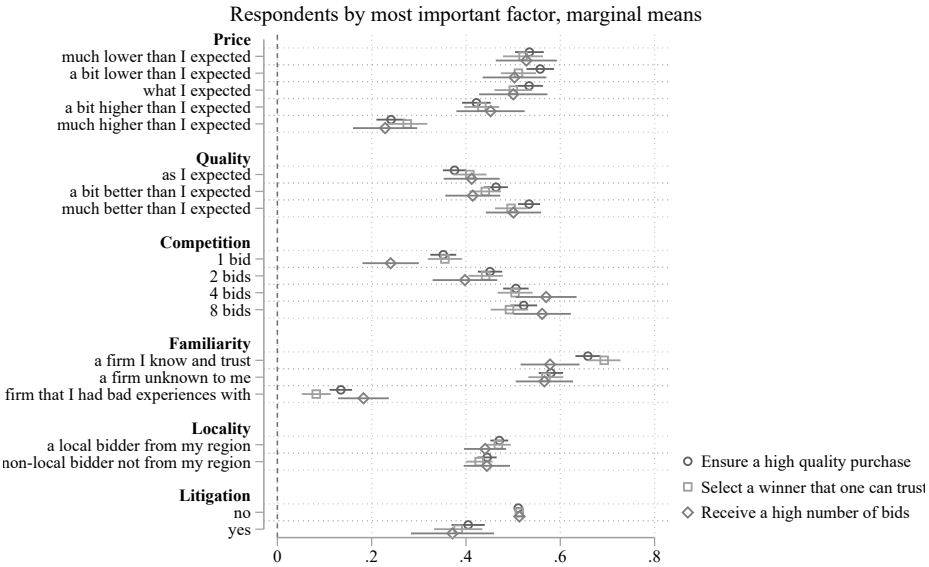
Notes: The Figure presents main regression results for each card (i.e. option) separately. The reason is to test whether the attributes would have different results when presented in the left as opposed to the right card. The horizontal lines indicate 95% cluster-robust confidence intervals.

Figure A.15: Alternative specifications



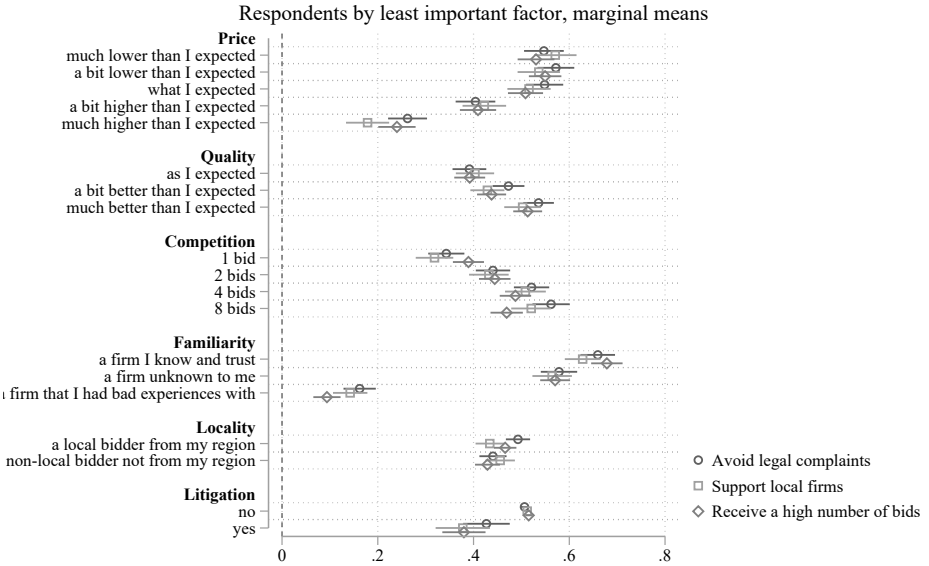
Notes: The Figure presents effects of tender outcome attributes on the probability of deciding in favor of a tender outcome using both OLS and logit specification. The horizontal lines indicate 95% cluster-robust confidence intervals. Points without these lines indicate the respective reference categories for the effects of the attributes.

Figure A.16: Role of most important factor for public buyer priorities



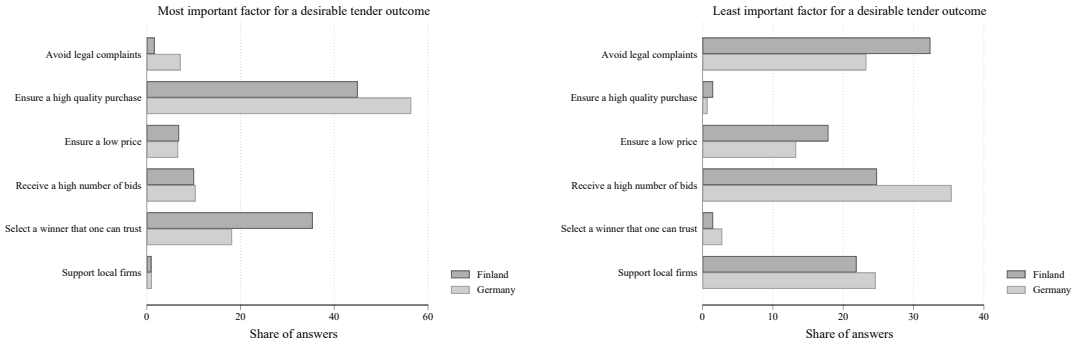
Notes: The Figure presents marginal means of tender outcome attributes on the probability of deciding in favor of a tender outcome conditional on what respondent considers to be the most important factor for public buyer priorities. The horizontal lines indicate 95% cluster-robust confidence intervals.

Figure A.17: Role of least important factor for public buyer priorities



Notes: The Figure presents marginal means of tender outcome attributes on the probability of deciding in favor of a tender outcome conditional on what respondent considers to be the least important factor for public buyer priorities. The horizontal lines indicate 95% cluster-robust confidence intervals.

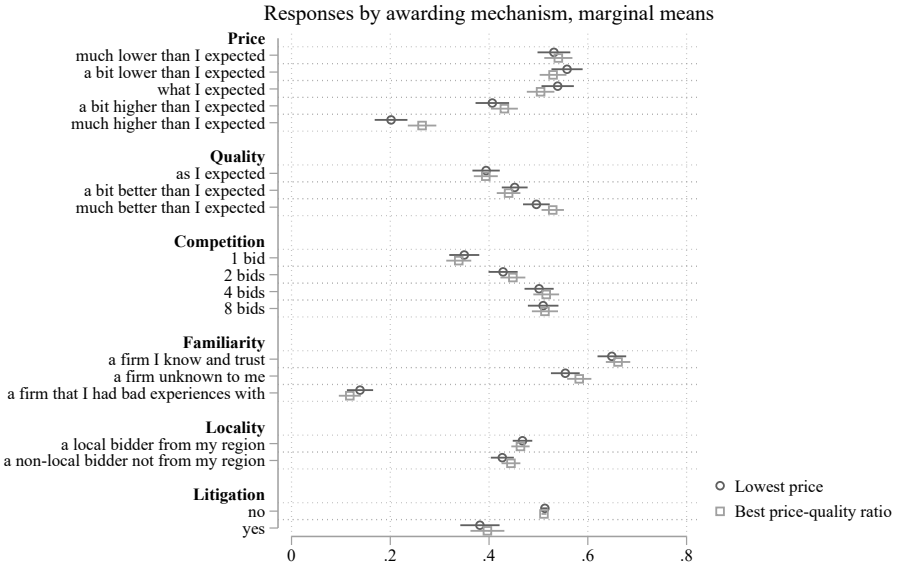
Figure A.18: Bureaucratic preferences over factors of tender outcomes (Q24)



(a) Most important factors **(b)** Least important factors

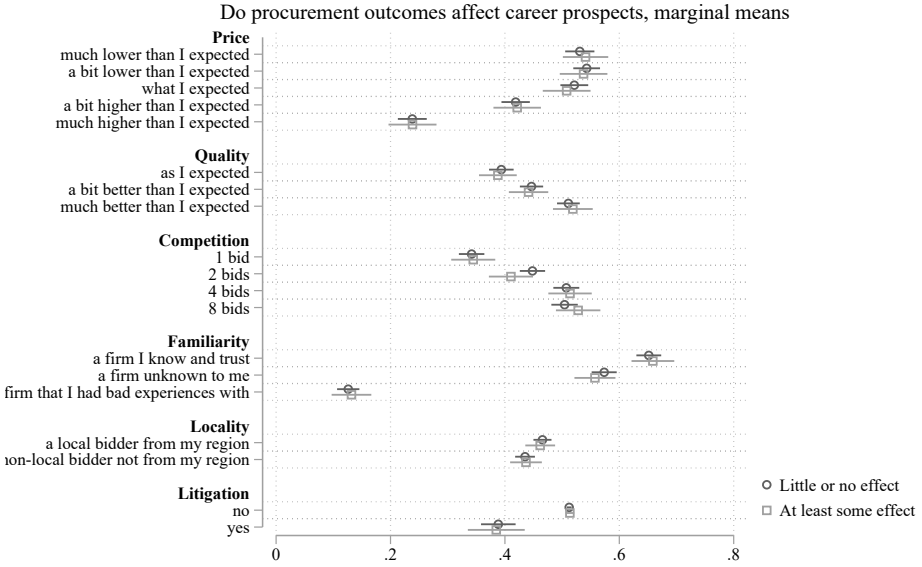
Notes: Figures present what respondents consider (a) most important factors and (b) least important factors for a desirable tender outcome. Respondents were forced to pick only one option in both questions.

Figure A.19: Role of award mechanisms for public buyer priorities



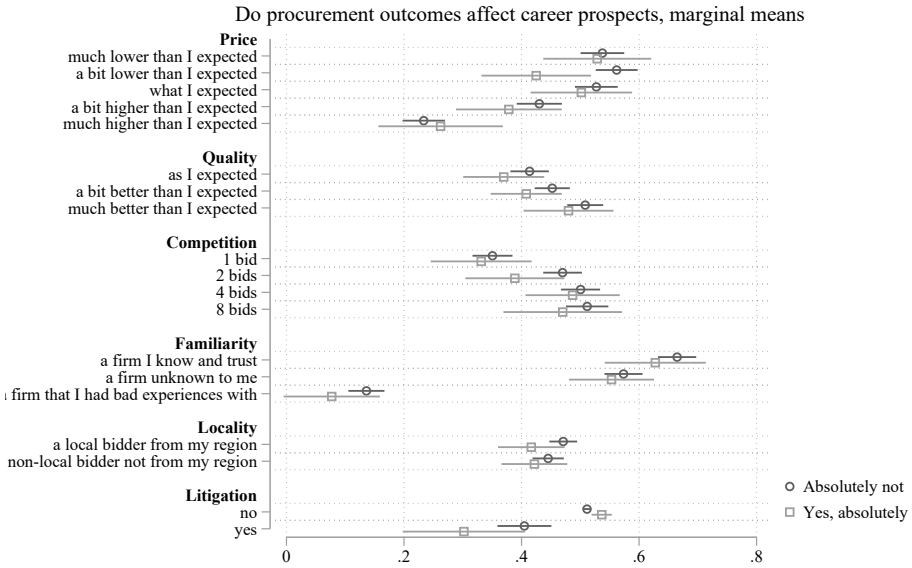
Notes: The Figure presents marginal means of tender outcome attributes on the probability of deciding in favor of a tender outcome conditional on what award mechanics respondent typically uses. The horizontal lines indicate 95% cluster-robust confidence intervals.

Figure A.20: Do tender outcomes matter for career prospects and what role does it play for buyer priorities?



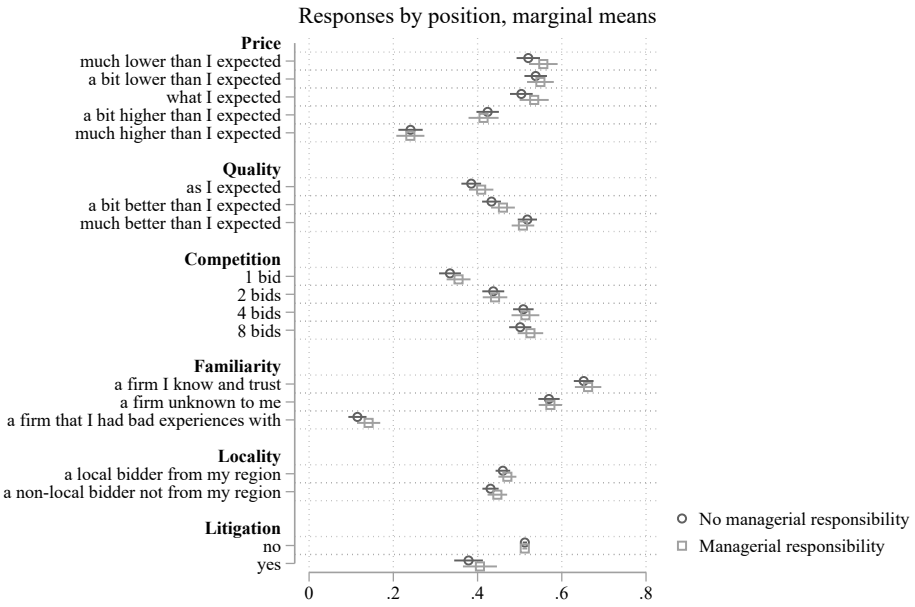
Notes: The Figure presents marginal means of tender outcome attributes on the probability of deciding in favor of a tender outcome conditional on respondent perception of procurement outcomes' effect on career prospects. The horizontal lines indicate 95% cluster-robust confidence intervals..

Figure A.21: Do tender outcomes matter for career prospects and what role does it play for buyer priorities? Endpoint comparisons of career concerns



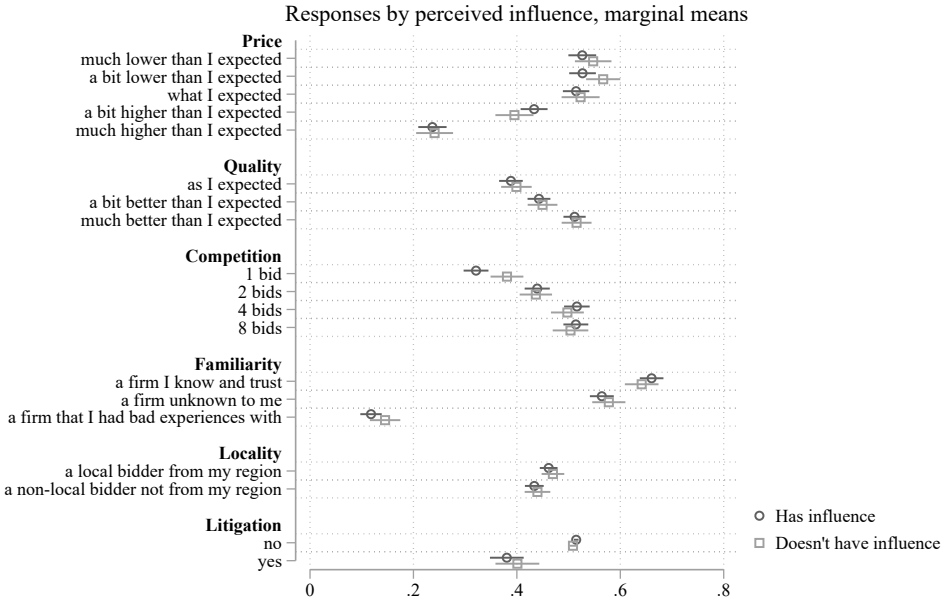
Notes: The Figure presents marginal means of tender outcome attributes on the probability of deciding in favor of a tender outcome conditional on respondent perception of procurement outcomes' effect on career prospects. Only extreme responses ("Absolutely not" and "Yes, absolutely" are included. The horizontal lines indicate 95% cluster-robust confidence intervals.

Figure A.22: What role does personnel responsibility play?



Notes: The Figure presents marginal means of tender outcome attributes on the probability of deciding in favor of a tender outcome conditional on respondent having managerial responsibility. The horizontal lines indicate 95% cluster-robust confidence intervals.

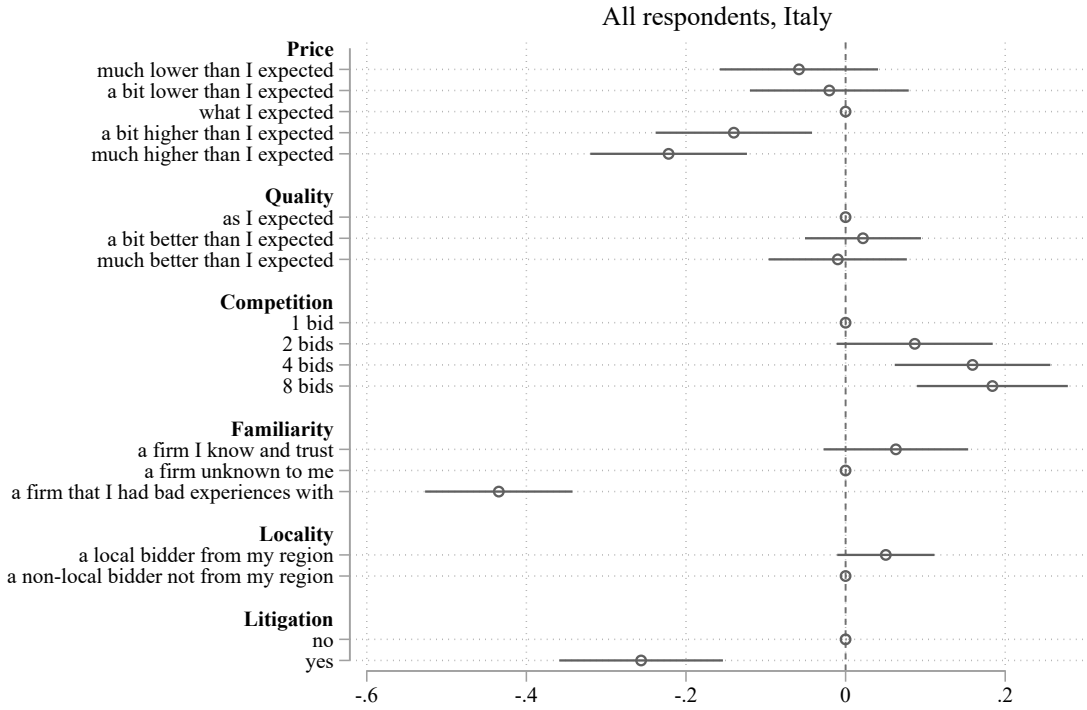
Figure A.23: Does perceived discretion matter for buyer priorities?



Notes: The Figure presents marginal means of tender outcome attributes on the probability of deciding in favor of a tender outcome conditional on perceiving to have influence on tender outcomes. The horizontal lines indicate 95% cluster-robust confidence intervals.

7.3 Cross-validating results for Italy

Figure A.24: Baseline results, Italy



Notes: Effects of tender outcome attributes on the probability of deciding in favor of a tender outcome. The horizontal lines indicate 95% cluster-robust confidence intervals. Points without these lines indicate the respective reference categories for the effects of the attributes.

Sampling strategy and composition of Italian POs. At the outset of this project, we intended to expand the sample of POs to Italy. According to the national regulation ("Codice degli Appalti"), a PO can be embodied by the "Responsabile Unico del Procedimento", the officer in charge of the tender process, plus other lower-level contracting employees that can provide support. Both professional figures are involved with different responsibilities and frequency in the public contracting process but are subject to the same regulation. Thus, both were eligible POs for this study. We contacted DBInformation S.p.A., a large private company that provides multimedia services to Italian companies to support their development. One of the core business activities provided is consultancy in the realm of public procurement. The dedicated corporate division is Telemat.[44] Since the 1980s, Telemat has been providing its clients daily information on public tenders through the constant monitoring of official sources, support to the under-

[44]https://www.telemat.it/

standing of regulations, plus professional training. Thanks to its business activity, which is unique in Italy, Telemat stores the email addresses of a vast number of active Italian POs. Thanks to the collaboration with Telemat, around 59,624 POs were contacted via email (plus two reminders) between September and October 2020 to participate in our survey.

The overall open rate of the invitation email was 15.6%. With the email came a presentation of the survey, and a link was provided to access it. Unfortunately, only about 1% of the email recipients clicked on the survey link. According to the survey structure, those who accessed the page had to agree on proceeding with the survey or not with 90 "clickers" decided to start the survey. Seventy-two of them completed all the survey blocks and can be included for a meaningful comparison of the baseline results with the Finnish and German counterparts. Please see Table A.9 for detailed summary statistics of the Italian sample.

Table A.9: Respondent characteristics Italy sample

		Italy				
	n	Mean/Prop.	SD	Median	Min.	Max.
Panel A: Socio-demographic characteristics						
Age group	72					
20-30 years		.06				
31-40 years		.25				
41-50 years		.50				
51-60 years		.19				
above 60 years		.00				
Female		.47	.50	.00	.00	1.00
Master's degree		.74	.44	1.00	.00	1.00
Education background	.56					
Accounting		.04				
Business administration		.05				
Economics		.25				
Engineering		.23				
Finance		.18				
Panel B: Workplace characteristics						
Type of office	72					
Municipality		.51				
State government		.10				
Federal government		.11				
Public company		.08				
Other		.19				
Organization size						
Just me		.21				
2-4		.40				
5-10		.25				
11-19		.06				
20-99		.07				
More than 100		.01				
Type of position	72					
Civil servant		1.00				
Supervisor		.40	.49	.00	.00	1.00
Experience in current position (in years)	72	14.50	9.62	15.00	1.00	38.00
Experience in procurement (in years)		16.89	10.01	19.50	1.00	40.00
I am satisfied in competence of my own department	72					
Strongly agree		.13				
Agree		.42				
Disagree		.36				
Strongly disagree		.10				
Type of procedure used	72					
Negotiated		.36				
Open		.26				
Restricted		.10				
Sole-source and other		.28				
Type of award mechanism used	72					
Best price/quality		.50				
Lowest price		.46				
Other		.04				
Share of contracts above EU thresholds		.11	.32	.00	.00	1.00
Has secondary objectives		.38	.49	.00	.00	1.00
Typical number of bidders		7.43	6.87	5.00	.00	35.00
Typical number of bidders (censored at 500)		7.43	6.87	5.00	.00	35.00
Litigated in previous year	72	.38	.76	.00	.00	3.00
Most common reason for litigation	17					
A bid protest		.59				
A solicitation challenge		.18				
Other		.24				

Notes: The Table presents the socio-demographic and workplace characteristics for survey respondents for the Italian sample. We present a right censored statistic for typical number of bidders to tackle the possible issue of respondent's misunderstanding the question.

7.4 Testing for Effect Heterogeneities

In our analysis, we asses the heterogeneity of our effects along a range of observable characteristics with respect to socio-demographics, task structures, and office-level features. Our approach consists in splitting the sample into two or more subgroups depending on the realization of the potential heterogeneity under study. We test the following sub-groups:

- *Socio-demographic characteristics* – Age groups (i.e., age 21–40 vs. > 41), gender (i.e., female yes vs. no), education level (i.e., bachelor vs. master), education type (i.e., business vs. engineering vs. other) as well as work experience in procurement (i.e., 10 or less years vs. above 10 years)

- *Task structure and features* – Typical type of purchases (i.e., construction vs. goods vs. services), prior litigation experienced (i.e., yes vs. no), typical awarding mechanism used (i.e., lowest price vs. best price-quality ratio), typical use of secondary objectives (i.e., yes vs. no), type of secondary objectives (i.e., environmental vs. SME support), typical size of a procurement contract (i.e., below vs. above EU threshold), typical number of bidders per contract in last year (i.e., less than 5 vs. 5 or more bidders) as well as perceived workload (i.e., too much vs. sufficient workload), type of job/phase of procurement process (i.e., tender set-up, planning and management vs. marketing vs. strategic development vs. contract management), perceived factors aspects which create problems in tendering process (i.e., mistakes by my department vs. budgetary constraints vs. litigation vs. assigned firm created problems vs. rigid regulation), perceived discretion: own influence on purchasing decisions (i.e., has influence vs. does not have influence) as well as typical tender procedures (i.e., open vs. negotiated vs. restricted vs. other)

- *Office-level characteristics* – Office competence (i.e., satisfactory vs. non-satisfactory) and organization size (i.e., less than 5 vs. 5 or more employees in procurement as well as fewer than 5 vs 11 or more contracting employees), government tier of office (i.e., federal vs. municipal vs. state–level vs. public company)

In our analysis, we estimated all specifications for all of these different subgroups and found no systematic differences, with the differences being insignificant in almost all instances. The detailed results are available from the authors upon request. We conclude from this heterogeneity analysis that the effects are extremely stable across observables.

EconPol Europe

EconPol Europe - The European Network for Economic and Fiscal Policy Research is a unique collaboration of policy-oriented university and non-university research institutes that will contribute their scientific expertise to the discussion of the future design of the European Union. In spring 2017, the network was founded by the ifo Institute together with eight other renowned European research institutes as a new voice for research in Europe. A further five associate partners were added to the network in January 2019.

The mission of EconPol Europe is to contribute its research findings to help solve the pressing economic and fiscal policy issues facing the European Union, and thus to anchor more deeply the European idea in the member states. Its tasks consist of joint interdisciplinary research in the following areas

1) sustainable growth and 'best practice',

2) reform of EU policies and the EU budget,

3) capital markets and the regulation of the financial sector and

4) governance and macroeconomic policy in the European Monetary Union.

Its task is also to transfer its research results to the relevant target groups in government, business and research as well as to the general public.