

Plaček, Michal et al.

Article — Published Version

Gender heterogeneity and politics in decision-making about green public procurement in the Czech Republic

Politics and Governance

Provided in Cooperation with:

Leibniz Institute of Agricultural Development in Transition Economies (IAMO), Halle (Saale)

Suggested Citation: Plaček, Michal et al. (2022) : Gender heterogeneity and politics in decision-making about green public procurement in the Czech Republic, Politics and Governance, ISSN 2183-2463, Cogitatio, Lisbon, Vol. 10, Iss. 3, pp. 239-250, <https://doi.org/10.17645/pag.v10i3.5408> , <https://www.cogitatiopress.com/politicsandgovernance/article/view/5408>

This Version is available at:

<https://hdl.handle.net/10419/264526>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/4.0>

Article

Gender Heterogeneity and Politics in Decision-Making About Green Public Procurement in the Czech Republic

Michal Plaček^{1,*}, Cristina del Campo², Vladislav Valentinov³, Gabriela Vaceková^{4,5}, Markéta Šumpíková⁵, and František Ochrana¹

¹ Faculty of Social Sciences, Charles University, Czech Republic

² Department of Financial and Actuarial Economics and Statistics, Complutense University of Madrid, Spain

³ Leibniz Institute of Agricultural Development in Transition Economies (IAMO), Germany

⁴ Faculty of Social Studies, Masaryk University, Czech Republic

⁵ Ambis University, Czech Republic

* Corresponding author (michalplacek@seznam.cz)

Submitted: 8 February 2022 | Accepted: 19 April 2022 | Published: 21 September 2022

Abstract

Green public procurement (GPP) is a widely recognized public policy tool that has attracted considerable scholarly research. However, much of this research has paid little attention to the nature of discretionary decision-making on the part of bureaucrats and local politicians; nor has it recognized that a crucial determinant of the implementation of GPP is the extent to which women hold administrative and political positions. While GPP tends to be discussed as a tool for promoting gender equality, we draw on feminist insights to argue that doing so may be a tool for enhancing the uptake and implementation of GPP. Utilizing the data from a large-N survey among local politicians and upper-echelon bureaucrats in the Czech Republic, we develop a path analysis model exploring the influence of gender on their decision-making. The results give credence to our overall argument that women are more likely to promote GPP. This argument not only breaks new ground by revealing the gendered nature of GPP but also generates straightforward policy implications.

Keywords

decision-making; gender; green public procurement

Issue

This article is part of the issue “Exploring Climate Policy Ambition” edited by Elina Brutschin (International Institute for Applied Systems Analysis) and Marina Andrijevic (International Institute for Applied Systems Analysis).

© 2022 by the author(s); licensee Cogitatio (Lisbon, Portugal). This article is licensed under a Creative Commons Attribution 4.0 International License (CC BY).

1. Introduction

Public procurement is an important public policy tool suitable for pursuing a wide range of policy goals, including those that are economic, social (Bassarab et al., 2019; Ortega & O'Brien, 2017), and environmental (McCrudden, 2004). According to Sarter (2020), public spending through procurement may be employed to promote regional development, create new jobs, and foster decent employment conditions and equal opportunities. A major form of public procurement is green public procurement (GPP), defined as “a process whereby public authorities seek to procure goods, services and

works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured” (Alhola et al., 2019, p. 97; see also Pacheco-Blanco & Bastante-Ceca, 2016). With the European Union spending more than 14% of its GDP through public procurement (Sönnichsen & Clement, 2020), GPP now presents one of the critical instruments of the Circular Economy Action Plan (European Union, 2020).

Unsurprisingly, GPP has attracted considerable scholarly research (Cheng et al., 2018), much of which foregrounds the issue of supplier selection (e.g., Cheng

et al., 2018; Igarashi et al., 2013; Jenssen & de Boer, 2019; Rainville, 2017; Tseng et al., 2019). Further issues explored in this literature pertain to GPP drivers and barriers, collaboration with supply chain partners, green supply chain management practices, GPP performance and impacts, policy, and regulation. Most papers dealing with GPP tend to be technically oriented and lay strong emphasis on the use of mathematical and other optimization models while showing relatively little interest in the nature of decision-making about GPP on the part of politicians and administrators. However, a crucial fact about this decision-making is that despite being highly formalized and regulated by European and national laws (Sarter, 2020), it retains a considerable discretionary component. This fact may not be unique to GPP and may be generally characteristic of public procurement as an area for which some of the most influential public sector positions are responsible (Ali et al., 2018). Nevertheless, there is little doubt that the nature of discretionary decision-making by politicians and administrators may account for the overall level of GPP implementation, especially in countries where this level is considered unsatisfactory.

A good example of such a country is the Czech Republic, which despite its membership in the European Union, exhibits one of the lowest levels of GPP implementation in global comparison (Yu et al., 2020). In the prior literature, the low GPP performance in the Czech Republic has been attributed to specific limiting factors pertaining to education, knowledgeability, and administrative capacity (Plaček, Valentinov et al., 2021). However, what has never been considered in the literature so far is that the low GPP performance in the Czech Republic and elsewhere may be due to the weak engagement of women in GPP positions of responsibility. This conjectural reason behind low GPP performance may be justified by both philosophical and empirical considerations.

On the philosophical level, feminist scholarship, such as feminist ethics of care, has long been aware that women may possess superior sensitivity to multifarious sustainability issues tendentiously neglected by neoliberal mindsets, not least in the new public management context (Nelson, 1995, 2006; Orser et al., 2021). On the empirical level, the evidence provided by the World Economic Forum (2021b) not only shows that female leadership competencies are superior to the respective male competencies on a number of dimensions, but also clearly links female leadership to enhanced pro-environmental outcomes. Furthermore, according to the Global Gender Gap Report, another publication of the World Economic Forum (2021a, p. 5), the current worldwide gender gap remains considerable (and will take over 135 years to be overcome). Putting these philosophical and empirical considerations together, we hypothesize that female engagement constitutes a crucial resource for promoting GPP, particularly in the context of the Czech Republic. We believe that this

hypothesis is a much-needed addition to the extant GPP literature that has examined how gender equality can be promoted through GPP, as it has not yet recognized that GPP itself can be promoted through fostering gender equality (e.g., Fazekas et al., 2020; Orser et al., 2021; Sarter & Thomson, 2020).

The practical and political significance of this hypothesis is anchored in its potential to illuminate the possibility of maximizing the contribution of GPP to attaining the goals of sustainability, especially in the context of the Czech Republic as a country whose GPP uptake and performance levels exhibit considerable potential for improvement (Plaček, Valentinov et al., 2021). This context is distinguished by a paradoxical combination of a heavy formalization and bureaucratization of GPP decision-making and its considerable discretionary component, which undermines the accountability impacts of formalization and bureaucratization and remains open-ended regarding its effect on GPP performance. As Finocchiaro Castro and Guccio (2021) argue, this component may result in either higher efficiency or higher corruption. The present article offers an empirical context for exploring how this component will actually play out insofar as it is interrelated with the gender dimension of GPP.

The data comes from a recent large-N survey carried out on local government politicians and administrators in charge of public procurement in the Czech Republic. In methodological terms, our study enriches the extant GPP scholarship by employing path analysis, which does not seem to have been used in this literature so far. But perhaps even more importantly, our study is unique because it offers the opportunity to explore the role of gender in discretionary decision-making on the part of politicians and administrators, a subject little explored not only in the GPP literature but also in the larger literature that deals with public procurement more generally.

2. Literature Review and Conceptualization of Assumptions

Climate change is currently one of the most important and highly researched topics and has attracted enormous scholarly attention (Kovaleva et al., 2021). We can deem gender issues as one of the subfields of climate change research that has been gradually evolving (Kovaleva et al., 2021). These dynamics started in 2008, and by 2019, about 500 papers had been published in journals indexed on the Web of Science (Kovaleva et al., 2021). Most of the research concentrates on gender equality in climate policy and its effects (Lau et al., 2021). According to Lau et al. (2021), the thinking about gender went through several paradigms: (1) gender blind; (2) women in development; (3) women, environment, and development; (4) gender and development; (5) women, culture, and development; and (6) transformation and development. Scholars also point out several sets of assumptions that essentialize women's and men's

characteristics and may ultimately lead to counterproductive results, strategies, and policies. These assumptions are the following: “women are caring and connected to the environment, women are a homogenous and vulnerable group, gender equality is a women’s issue and gender equality is a numbers game” (Lau et al., 2021, p. 186). Despite the aforementioned trends, we can see a lack of general literature dealing with the participation of women in decision-making and policy processes dealing with climate policy. Ergas and York (2012) focused on the connection between women’s political status and the emission of CO₂ per capita. They found that emission of CO₂ is lower in countries where women have higher political status. Frenova (2021) insists that women’s organizations—as one of the important nongovernmental players in climate financial decision-making led by the United Nations Framework Convention on Climate Change (UNFCCC)—are still limited and formalistic. Gay Antaki (2020) analyzed the Conference of the Parties (COP) of the UNFCCC in Paris 2015 from the point of view of feminist geography. According to Gay Antaki (2020) terms relating to gender, such as “gender balance,” dominate over others, such as “gender equality.”

Magnusdottir and Kronsell (2015) showed that in the case of Scandinavia, women and men are equally represented in climate policymaking, and in some cases, women are in the majority. This situation does not automatically result in gender-sensitive climate policymaking. These results contradict the assumption of critical mass theory (Magnusdottir & Kronsell, 2015).

There is also a stream of literature from the branch of corporate finance which connects the issue of boardroom diversity and a firm’s carbon emission footprint. Ben-Amar et al. (2017) prove that, based on the sample of publicly listed Canadian firms over the period 2008–2014, the likelihood of voluntary climate change disclosure is increased if there is a higher percentage of women on the board. This result is in line with critical mass theory. Nuber and Velte (2021) confirmed a similar result in the case of the environmental performance of non-financial firms in the European STOXX600 index over the 2009–2018 period. Regarding critical mass theory, the empirical results showed that at least two women directors need to be present. Similar results were obtained in the context of ecological innovation by Nadeem et al. (2020).

The role of gender in administrative and political decision-making processes seems to be a lacuna in the current state of the art of the empirical GPP literature. For example, gender is conspicuous by its absence from the authoritative review by Sönnichsen and Clement (2020), who developed an analytical, conceptual framework of GPP encompassing organizational aspects, individual behavior, and operational tools. In this framework, organizational aspects comprise three subcategories: (a) size, (b) strategy and top-level management, and (c) policies and quality of contracts. The aspects of individual behavior and practices refer to (a) agency and

cross-departmental management, and (b) beliefs, awareness, and individual guidance. The operational tools are distinguished along the lines of (a) process and prioritization; (b) carbon emissions, criteria settings, and evaluation; (c) standards, standardization, and legal aspects; and (d) supplier selection (Sönnichsen & Clement, 2020). The authors conclude that:

The most important factors [within the conceptual structure of GPP] seem to be awareness and knowledge of green public procurement attributes, based on circular policy and strategy implementation. They are essential for the conduct of circular public procurement. The procurer’s beliefs and values are highly relevant in a transformation towards circular public procurement—i.e., simply not going for the lowest price, but finding an optimum combination that includes risk, timeliness, and cost for the public institution on a life-cycle basis. (Sönnichsen & Clement, 2020, p. 15)

Obviously, this is an important conclusion foregrounding the significance of GPP’s discretionary component, which is, however, not seen in a gender context.

This conclusion is reinforced by a stream of empirical studies, such as those by Liu et al. (2019), who found that the knowledgeability of Chinese public procurement officials about the aims and effects of GPP policies, backed by appropriate training, are positively associated with GPP performance. Similarly, Nikolaou and Loizou (2015) found that the educational backgrounds of respondents influenced their preferences to adopt environmental management practices. Summarizing current theoretical approaches and using questionnaire surveys and structural equation modeling, Yang et al. (2019) likewise prove that subjective norms and perceived behavior control factors significantly influence developers’ green procurement behavior. Important as it is, all this work fails to consider GPP’s gender dimension, which remains missing in most GPP studies focusing on a single country, sector, or level of government (Cheng et al., 2018; Lindfors & Ammenberg, 2021).

A further line of research envisages a potential gender dimension of GPP but does not consider this dimension to be a relevant GPP determinant. For example, examining the relationship between ability, motivation, opportunity, and sustainable procurement, Grandia and Voncken (2019) have found gender to be an insignificant variable. Drawing on quantitative analysis, Igarashi et al. (2017) found that public procurers are motivated by their beliefs which are independent of their gender and experience. However, the authors did acknowledge the knowledge gap regarding the role of gender in the public procurement literature. More recent studies likewise identify no association between gender and eco-friendly buying behavior, even though some earlier work was open to the idea that eco-friendly buying and gender might be linked, for example, because

of women's greater interest in ecological topics (Igarashi et al., 2017).

In conceptual terms, we argue that the prevalent understanding of the role of gender in GPP is framed and indeed subsumed by two theoretical standpoints well elaborated by Orser et al. (2018) and Orser et al. (2021). These are (a) feminist empiricism, which argues that women are disadvantaged; and (b) entrepreneurial feminism, which argues that women can overcome their disadvantage through their own entrepreneurial activity. Both standpoints are anchored in the vision of gender as a social outcome shaped by essentially contingent socialization processes (Orser et al., 2018). As a result of these processes, women may perceive that they do not fit in with masculine occupational role stereotypes and thus feel discouraged from participating in specific fields, such as STEM studies, small business, or specific industries such as defense (Orser et al., 2018). Some scholars argue that similar patterns are characteristic of public procurement insofar as women-owned businesses participating in competitive bidding are systematically having less success (Orser et al., 2021, p. 497). The standpoint of feminist empiricism helps here by pointing out that the limited success of such businesses may be caused by structural barriers and systemic exclusionary dynamics rather than by women's individual features, such as risk aversion or preference for financial caution. The standpoint of entrepreneurial feminism (Orser et al., 2021) concerns how this situation may be redressed. Building on the insight that entrepreneurial ecosystems are dynamic rather than static, entrepreneurial feminism encourages women to launch institutional and entrepreneurial innovations challenging the extant subjugation modalities.

While we agree with these standpoints as far as they go, we argue that they do not exhaust the full potential of feminist thought. The field of GPP may indeed provide a context where women are rightly portrayed as victims of precarious discrimination and exclusion regimes that deserve condemnation and abolition. But what may also be important for GPP, and what is not fully acknowledged by the two standpoints, is the possibility that women may be the carriers of unique capabilities for promoting GPP, especially in settings where the implementation of GPP tends to be weak. This possibility is made plausible by the public administration literature containing a number of arguments and evidence suggesting that women may be particularly capable and moral public administrators. In this line, Lapuente and Suzuki (2021) empirically prove that female managers are more result-oriented than rule-following and thus more effective in promoting societal interests; in addition, they are "more open to new ideas and creativity, and more willing to challenge the status quo" while being more prudent than male managers (Lapuente & Suzuki, 2021, p. 1345). Suzuki and Avellaneda (2018) report a similar experience in the case of local financial management by Japanese city-level governments. The authors find female repre-

sentation in these governments to be "positively correlated with risk-averse behavior in financial decisions" (Suzuki & Avellaneda, 2018, p. 1741). Other corroborative evidence is presented by Detkova et al. (2021), who found that women occupying public procurement positions in Russia, in contrast to men, have a negative attitude to corruption. The authors even suggest that gender equality measures within the public sector could be one element of the much-needed anti-corruption policies. Bauhr and Charron (2020) go even further and identify a gender difference not only in attitudes toward the severity of corruption but also in perceptions of the forms that corruption takes. According to their data, women and men differ in their perceptions of need and greed, such that women tend to perceive more need-induced corruption, while men tend to perceive it as induced by greed (Bauhr & Charron, 2020). Authors trace this gender difference back to role socialization, social status, and life experience.

A common implication of these empirical studies is that gender equality measures could improve the effectiveness of public administration. We argue that this implication potentially breaks new ground within the current research on GPP in the Czech Republic. Most research on GPP in this country has focused on sustainable procurement and its effects on saving (Džupka et al., 2020) and SME involvement (Nemec et al., 2021). These studies rightly consider GPP as a part of a wider sustainability agenda that pays attention to innovation and social aspects but has failed to emphasize the gender dimension. Thus, we contribute to the scholarly literature on GPP in the Czech Republic with the proposition that gender equality measures would lead to better uptake and implementation of GPP. Whereas the standpoints of feminist empiricism and entrepreneurial feminism seem to boil down to promoting gender equality through GPP, we enrich the literature by suggesting that GPP itself can be promoted by fostering greater gender equality. Our contribution seeks to sensitize the scholarly and public understanding of GPP in the Czech Republic to the role of gender, and to initiate the search for novel theoretical frameworks which enable this sensitivity.

Our empirical strategy rests on condensing the above argument into the four following assumptions.

Assumption 1: Gender is associated with public procurers' preference for GPP.

Feminist scholarship teaches us that women may exhibit superior sensitivity to multifarious sustainability issues yet be disadvantaged by the systemic imperatives of marginalization and exclusion (Nelson, 1995, 2006; Orser et al., 2021). Public procurement presents a key context where this disadvantage may be materialized. The reason is that the power to make decisions regarding the spending of public money is widely seen as the kind of privilege that, in repressive regimes, would be foreclosed or less accessible to women (cf. Bruns Ali et al.,

2018). Specific mechanisms facilitating male privilege and female disadvantage in the public procurement process have become ingrained within a plethora of formal and informal decision-making rules and heuristics and thus engender path dependencies (Ochrana et al., 2019; Plaček, Vaceková et al., 2021) which may also be characteristic of other areas, such as social policy or the legislative process (cf. Plaček et al., 2018). What is crucial is that these mechanisms shape the GPP preferences of politicians and administrators. If so, then it is reasonable to suppose that the increasing proportion of women entering politics or important public procurement positions may be able to break extant rules and thus improve GPP implementation.

Assumption 2: In awarding public contracts, the public procurer's preference for the price rather than environmental criteria is not associated with gender.

At the core of the public procurement process is the public procurer's choice between alternative suppliers who may compete on economic costs and non-economic environmental criteria. This choice is also present in the GPP context (Plaček, Valentinov et al., 2021; Sönnichsen & Clement, 2020). Recent research on sustainable public procurement shows that public sector officials indeed state preferences for non-economic criteria, even though cost remains crucial (Lerusse & Van de Walle, 2021a). In a recent experimental study, politicians' consideration of criteria other than costs was found to be influenced by political and ideological reasoning (Lerusse & Van de Walle, 2021b). However, the feminist foundation of our argument implies that if public procurers happen to prioritize the lowest price criterion, this preference will not be related to gender.

Assumption 3: Gender will affect the decision-making of public procurers facing the trade-off between environmental impact and other social sustainability criteria.

Sustainable development can be judged by multiple and partly competing criteria, which may need to be traded off against each other by public procurers. For example, one possible trade-off could be between environmental and social goals, such as fostering local employment or subsidizing local firms. Drawing on feminist scholarship, we assume that women have a superior ability to recognize and differentiate multiple criteria of sustainable procurement (Nelson, 1995, 2006; Orser et al., 2018). As this ability may result in the perceptions of trade-offs among these criteria, it is plausible to assume that navigating these trade-offs will be influenced by gender.

Assumption 4: In the above-mentioned assumptions, public procurers' decision-making preferences are associated with women's positions in local politics or public procurement administration.

The assumption seeks to uncover position-related differences in women's behavior. Such differences were identified by scholars such as Detkova et al. (2021) and Igarashi et al. (2017), who showed that procurers' behavior varies according to their position. Namely, highly-positioned procurers have different approaches to information and risk. In our study, we distinguish between two positions that women can occupy: local politician and procurement administrator. We expect that, in their quality as local politicians, women bear a higher level of accountability pressures than those that are borne by female public procurement administrators. This difference may result in a greater risk aversion among female local politicians.

3. Data and Methods

We have obtained the data from a large-N survey that took place in the Czech Republic during the summer of 2020. We sent out an electronic questionnaire to the official e-mail addresses of all Czech municipalities, including a cover letter. Our target respondents were persons responsible for GPP implementation, including politicians at the level of mayors or vice-mayors and upper-level bureaucrats at the level of department head. The exact position of respondents depended on the size of the municipalities. From the 6,248 municipalities approached, we obtained 1,117 responses, a response rate of 17.88%. Some results have already been used (Plaček et al., 2021).

The questionnaire included seven questions probing the respondents' attitudes toward GPP. Six questions employed a Likert-type scale offering a range of five answers from "absolutely agree" to "absolutely disagree." One question had the binary form of yes/no, and another was a close-ended question. The questionnaire is enclosed in the Supplementary File. We also asked respondents their full names and e-mails, and we linked this information with education, gender, and position within the organization. With the help of these variables, we tried to explain respondents' answers to the three selected questions that introduced decision-making problems in GPP implementation within the given municipal organization.

Our methodological approach is path analysis, a generalization of multiple regression that allows us to estimate the strength and sign of directional relationships for causal schemes with multiple dependent and independent variables (Li, 1975). The critical difference between path analysis and multiple regression is that multiple regression assumes a simpler (direct) causal relationship with the dependent variable, while the path analysis model identifies a specific causal structure among the independent variables that determine the outcome variables. Importantly, path analysis variables are referred to as exogenous and endogenous rather than independent and dependent. This is because the causes of exogenous variables are determined outside

the model; the factors affecting the endogenous variables are respectively found within the model.

We develop a path model exploring whether different individual traits influence and transform GPP decision-making (see Figure 1).

As shown in Figure 1, the exogenous variables, or antecedents (*Female*, *Size*, *Higher Education*), influence the nature of opinions related to GPP, including the consideration of the social usefulness of awarding “green public contracts” (*Socially useful to award “green public contracts”* box in Figure 1); the preference for announcing tenders for cheaper contracts unburdened by environmental requirements (*Announce tender for a cheaper contract* box in Figure 1); and the consideration of the “ecological impact” as the most important criterion of public procurement (*Ecological impact most important criterion* box in Figure 1). In the path analysis methodology, there are two types of effects between any two variables. A direct effect is any direct connection between the variables, and a unidirectional arrow represents these. In our model, the direct effects flow from the set of exogenous variables (*Female*, *Size*, *Higher Education*) to the outcome variables (*Socially useful to award “green public contracts,”* *Announce tender for a cheaper contract*, and *Ecological impact most important criterion*). An indirect (or mediated) effect is any forward connection between an exogenous variable and an outcome that goes through an intermediate variable. In our model, there is an indirect effect of the exogenous variables on the outcome variables through an intervening or mediating variable (namely, *Politic*). The causal effect is the sum of the direct and indirect effects (Mitchell-Olds & Bergelson, 1990). Finally, as we believe that the exogenous variables are correlated, we have put double-headed arrows between them, although those correlations are not usually studied.

4. Results

A total of 766 males and 299 females completed the survey fully (28.08% female vs. 71.92% male). The other 52 respondents did not answer all the questions and were eliminated from the analysis. Eight hundred and forty-two (i.e., 79.06%) respondents were politicians, and 223 (20.94%) were bureaucrats. Approximately 57% of respondents indicated that they did not have a higher education degree, while a little over 43% indicated that they did. Almost half of the respondents (46.29%, $n = 493$) belonged to municipalities with up to 500 inhabitants, with only 15 respondents (1.41%) working in large municipalities. Table 1 groups these frequencies and percentages by gender.

Table 1 also includes the results of the Chi-square test intended to check whether gender and *Higher Education*, being a *Politician* or a *Bureaucrat*, or the *size of the city* are related. The table reports two cases where the p-value is smaller than the significance level of 0.05. Hence we can reject the null hypothesis of independence between gender and being a *Politician* or a *Bureaucrat*, as well as between gender and the *size of the city*. In these two cases, the variables are definitely dependent on one another.

The path analysis undertaken in our study included testing the fit between the data and the model illustrated in Figure 1. For each variable, we estimated standardized coefficients as well as the standard errors (Std. Err), test statistics (z-values), and p-values ($P(>|z|)$). We explored direct effects, indirect effects (by multiplying the path coefficients connecting the causal variable to the outcomes [Tarling, 2008]), and total effects (by summing direct and indirect effects). All the effects coefficients are shown in Table 2. Also, our model is just-identified or saturated ($df = 0$); hence it perfectly fits the data.

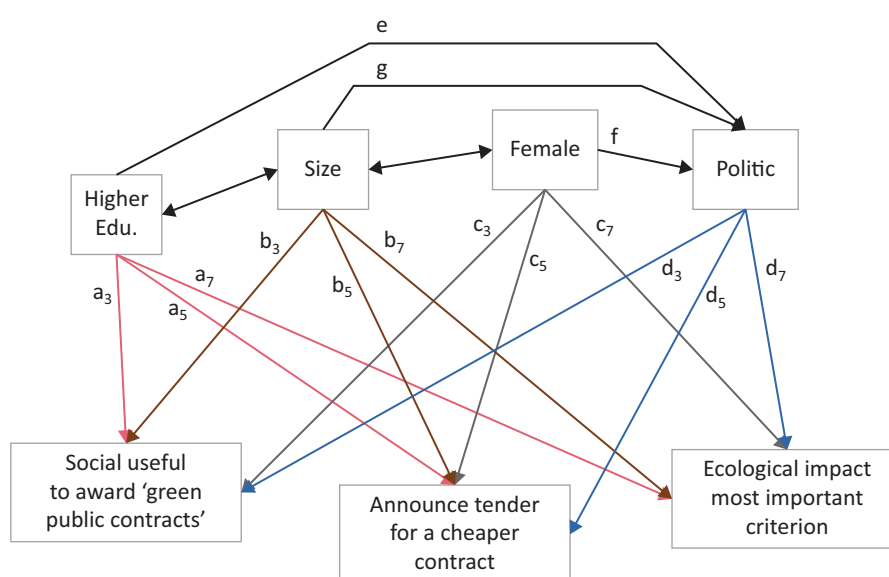


Table 1. Respondents' characteristics. Frequencies and percentages by gender.

	Female	Male	Total	Female Percentage	Male Percentage	Pearson's Chi-squared test	
						X-squared	p-value
Higher Education Degree							
No	163 (54.52%)	440 (57.44%)	603 (56.62%)	27.03%	72.97%	0.74972	0.38660
Yes	136 (45.48%)	326 (42.56%)	462 (43.38%)	29.44%	70.56%		
Politic							
No	40 (13.38%)	183 (23.89%)	223 (20.94%)	17.94%	82.06%	14.35600	0.00015 ***
Yes	259 (86.62%)	583 (76.11%)	842 (79.06%)	30.76%	69.24%		
Size category of municipality							
50,000 and more	2 (0.67%)	13 (1.70%)	15 (1.41%)	13.33%	86.67%	10.15700	0.03787 *
10,000–49,999	6 (2.01%)	32 (4.18%)	38 (3.57%)	15.79%	84.21%		
1,000–9,999	68 (22.74%)	221 (28.85%)	289 (27.14%)	23.53%	76.47%		
501–999	71 (23.75%)	159 (20.76%)	230 (21.60%)	30.87%	69.13%		
Up to 500	152 (50.84%)	341 (44.52%)	493 (46.29%)	30.83%	69.17%		
Total	299	766	1065	28.08%	71.92%		

Note: Signif. codes: 0 "****" 0.001 "***" 0.01 "**" 0.05 "." 0.1

Our findings allow the following interpretation of the validity of the proposed assumptions.

Assumption 1: Gender is associated with public procurers' preference for GPP.

The assumption is confirmed. *Female* (c_3) is a significant variable directly affecting the responses received. However, neither *Size* nor *Higher Education* turned out to be significant.

Assumption 2: In awarding public contracts, the public procurer's preference for the price criterion rather than for environmental criteria is not associated with gender.

The assumption is confirmed because the relationship between *Female* and the preference for the price criterion over environmental impact (c_5) is not significant.

Assumption 3: Gender will affect the decision-making of public procurers facing the trade-off between environmental impact and other social sustainability criteria.

The assumption was confirmed because we found gender directly affected the responses related to public procurers' choice of environmental criteria versus other social sustainability criteria (c_7).

Assumption 4: In the above-mentioned assumptions, public procurers' decision-making preferences are associated with women's positions in local politics or public procurement administration.

The assumption is confirmed because the relationship between *Female* and *Politic* (f) is found to be significant and positive.

Regarding the mediating effect of the *Politic* variable, the findings in Table 2 reveal that *Female*Politic* has an insignificant influence on assumptions 1 and 2 (i.e., both $e*d_3$ and $e*d_7$ are insignificant). Thus we can conclude that *Politic* fails to moderate the relationship between *Female* and *Socially useful to award "green public contracts"* on the one hand, and *Female* and *Ecological impact most important criterion*, on the other. However, the $e*d_5$ coefficient is significant and positive, thus suggesting that *Politic* mediates the impact of gender on decision-making concerned with the choice between the environmental and alternative social criteria.

Table 2. Results of path analysis.

	Estimate	Std.Err	z-value	P(> z)
Socially useful to award “green public contracts” ~				
Higher Edu. (a ₃)	0.087	0.053	1.649	0.099 .
Size (b ₃)	0.033	0.028	1.169	0.242
Female (c ₃)	0.111	0.055	2.015	0.044 *
Politic (d ₃)	-0.003	0.065	-0.039	0.969
Announce tender for a cheaper contract ~				
Higher Edu. (a ₅)	-0.111	0.064	-1.730	0.084 .
Size (b ₅)	-0.077	0.034	-2.294	0.022 *
Female (c ₅)	-0.101	0.067	-1.511	0.131
Politic (d ₅)	0.233	0.079	2.953	0.003 **
Ecological impact most important criterion ~				
Higher Edu. (a ₇)	-0.235	0.064	-3.686	0.000 ***
Size (b ₇)	-0.058	0.034	-1.722	0.085 .
Female (c ₇)	0.143	0.067	2.146	0.032 *
Politic (d ₇)	-0.008	0.078	-0.106	0.916
Politic ~				
Higher Edu. (e)	-0.010	0.025	-0.418	0.676
Female (f)	0.077	0.026	2.982	0.003 ***
Size (g)	-0.141	0.012	-11.418	0.000 ***
Defined Parameters				
e*d ₃	0.000	0.001	0.039	0.969
f*d ₃	-0.000	0.005	-0.039	0.969
g*d ₃	0.000	0.009	0.039	0.969
total3	0.228	0.099	2.316	0.021 *
e*d ₅	-0.002	0.006	-0.414	0.679
f*d ₅	0.018	0.009	2.098	0.036 *
g*d ₅	-0.033	0.012	-2.859	0.004 **
total5	-0.074	0.120	-0.617	0.538
e*d ₇	0.000	0.001	0.102	0.918
f*d ₇	-0.001	0.006	-0.11	0.916
g*d ₇	0.001	0.011	0.106	0.916
total7	-0.157	0.119	-1.319	0.187

Note: Signif. codes: 0 “***” 0.001 “**” 0.01 “*” 0.05 “.” 0.1.

5. Concluding remarks

The empirical results reported in the present article break new ground in the scholarship on GPP in the Czech Republic. Our central finding is that gender is associated with public procurers’ preference for GPP. We also found that the relationship between the *Female* variable and the preference for the price criterion over environmental impact is not significant. We have shown the *Female* variable to directly affect the public procurers’ choice of environmental criteria versus other social sustainability criteria. We have proven that public procurers’ decision-making preferences are associated with women’s positions in local politics or public procurement administration. These results confirm our feminist standpoint about the superior sensitivity of women to sustain-

ability issues, and about female engagement being a crucial resource for promoting GPP in the Czech Republic. We have used this empirical basis to argue that gender equality is not only a political goal in its own right but also a valuable political instrument for achieving GPP goals.

These results open up a new research program exploring the impact of gender on GPP. First of all, we still lack a systematic understanding of the behavior of public procurers and politicians responsible for public procurement. One dimension of this behavior is the availability of goodwill and intrinsic motivation. We suggest that in the GPP context, goodwill and intrinsic motivation may be at least partly associated with gender, and thus add new nuance to Lapuente and Suzuki’s (2021) argument that the behavior of public procurers can be approached from two different perspectives: demographic (focusing

on personal factors such as gender, education, and socioeconomic base) and structural (focusing on organizational factors). Further research is needed to clarify the extent to which the relative importance of these perspectives is influenced by acknowledging the role of gender in GPP decision-making.

On a methodological note, we call for further research to undertake external validity checks of our study. We are aware that our case might be country-specific and could be affected by specific administrative traditions, the level of economic development and perceived corruption, current regulation, or other contingent factors. Thus it is important to test country-level associations. We are also aware of the methodological problems of using survey-based data in political science. Ansolabehere and Hersh (2013) rightly point out that using surveys for capturing relationships between demographic variables, such as gender and political behavior, is potentially subject to survey biases and nonlinear effects of variables. Our results are based on a perception-based survey. Thus, in detecting the statistically significant effect of gender on the preference for GPP, we cannot deny the possibility of bias, but we did not observe the same pattern in the case of the willingness to pay a higher price for GPP contracts. This leads us to call for further research which would more explicitly contrast the claims made by politicians and administrators with their actual behavior in reality (see Badell & Rosell, 2021; Rosell & Allen, 2020).

Conflict of Interests

The authors declare no conflict of interest.

Supplementary Material

Supplementary material for this article is available online in the format provided by the author (unedited).

References

- Alhola, K., Ryding, S. O., Salmenperä, H., & Busch, N. J. (2019). Exploiting the potential of public procurement: Opportunities for circular economy. *Journal of Industrial Ecology*, 23(1), 96–109.
- Ali, S. B., Bishu, S., & Alkadry, M. (2018). Why men and women want to leave? Turnover intent among public procurement officers. *The American Review of Public Administration*, 48(7), 668–684.
- Ansolabehere, S., & Hersh, E. (2013). Gender, race, age and voting: A research note. *Politics and Governance*, 1(2), 132–137.
- Badell, D., & Rosell, J. (2021). Are EU Institutions still green actors? An empirical study of green public procurement. *JCMS: Journal of Common Market Studies*, 59(6), 1555–1572.
- Bauhr, M., & Charron, N. (2020). Do men and women perceive corruption differently? Gender differences in perception of need and greed corruption. *Politics and Governance*, 8(2), 92–102.
- Bassarab, K., Clark, K., Santo, R., & Palmer, A. (2019). Finding our way to food democracy: Lesson from US policy council governance. *Politics and Governance*, 7(4), 32–47.
- Ben-Amar, W., Chang, M., & McIlkenny, P. (2017). Board gender diversity and corporate response to sustainability initiatives: Evidence from the carbon disclosure project. *Journal of Business Ethics*, 142, 369–383.
- Cheng, W., Appolloni, A., D'Amato, A., & Zhu, Q. (2018). Green public procurement missing concepts and future trends—A critical review. *Journal of cleaner production*, 176, 770–784.
- Detkova, P., Tkachenko, A., & Yakovlev, A. (2021). Gender heterogeneity of bureaucrats in attitude to corruption: Evidence from list experiment. *Journal of Economic Behavior & Organization*, 189, 217–233.
- Džupka, P., Kubák, M., & Nemec, P. (2020). Sustainable public procurement in Central European countries. Can it also bring savings? *Sustainability*, 12(21), Article 9241.
- Ergas, C., & York, R. (2012). Women's status and carbon dioxide emissions: A quantitative cross-national analysis. *Social Science Research*, 41(4), 965–976.
- European Union. (2020). *Circular economy action plan*. https://ec.europa.eu/environment/strategy/circular-economy-action-plan_cs
- Fazekas, M., Kazmina, Y., & Wachs, J. (2020). *Gender in European public procurement: Extent, distribution, and impacts*. European Bank for Reconstruction and Development. <http://www.govtransparency.eu/gender-in-european-public-procurement-extent-distribution-and-impacts>
- Finocchiario Castro, M., & Guccio, C. (2021). *Does greater discretion improve the performance in the execution of public works? Evidence from the reform of discretionary thresholds in Italy*. SSRN. <https://doi.org/10.2139/ssrn.3984189>
- Frenova, S. (2021). Orchestrating the participation of women organizations in the UNFCCC led climate finance decision making. *Climate*, 9(9), Article 135.
- Gay Antaki, M. (2020). Feminist geographies of climate change: Negotiating gender at climate talks. *Geoforum*, 115, 1–10.
- Grandia, J., & Voncken, D. (2019). Sustainable public procurement: The impact of ability, motivation, and opportunity on the implementation of different types of sustainable public procurement. *Sustainability*, 11(19), Article 5215.
- Igarashi, M., de Boer, L., & Fet, A. (2013). What is required for greener supplier selection? A literature review and conceptual model development. *Journal of Purchasing and Supply Management*, 19(4), 247–263.
- Igarashi, M., de Boer, L., & Pfuhl, G. (2017). Analyzing buyer behavior when selecting green criteria in

- public procurement. *Journal of Public Procurement*, 17(2), 141–186.
- Jenssen, M., & de Boer, L. (2019). Implementing life cycle assessment in green supplier selection: A systematic review and conceptual model. *Journal of Cleaner Production*, 229, 1198–1210.
- Kovaleva, M., Leal, W., & Borgemeister, C. (2021). Gender issues within climate change research: A bibliometric analysis. *Climate and Development*. Advance online publication. <https://doi.org/10.1080/17565529.2021.1980365>
- Lapuenta, V., & Suzuki, K. (2021). The prudent entrepreneurs: Women and public sector innovation. *Journal of European Public Policy*, 28(9), 1345–1371.
- Lau, J. D., Kleiber, D., Lawless, S., & Cohen, P. J. (2021). Gender equality in climate policy and practice hindered by assumptions. *Nature Climate Change*, 11(3), 186–192.
- Lerusse, A., & Van de Walle, S. (2021a). Local politicians' preferences in public procurement: Ideological or strategic reasoning? *Local Government Studies*. Advance online publication. <https://doi.org/10.1080/03003930.2020.1864332>
- Lerusse, A., & Van de Walle, S. (2021b). Public managers' valuation of secondary policy objectives in public procurement—Results from a discrete choice experiment. *Journal of Behavioral Public Administration*, 4(1). <https://doi.org/10.30636/jbpa.41.206>
- Li, C. C. (1975). *Path analysis. A primer*. Boxwood Press.
- Lindfors, A., & Ammenberg, J. (2021). Using national environmental objectives in green public procurement: Method development and application on transport procurement in Sweden. *Journal of Cleaner Production*, 280(2), Article 124821.
- Liu, J., Xue, J., Yang, L., & Shi, B. (2019). Enhancing green public procurement practices in local governments: Chinese evidence based on a new research framework. *Journal of Cleaner Production*, 211, 842–854.
- Magnusdottir, G. L., & Kronsell, A. (2015). The (in)visibility of gender in Scandinavian climate policy-making. *International Feminist Journal of Politics*, 17(2), 308–326.
- McCrudden, C. (2004). Using public procurement to achieve social outcomes. *Natural Resources Forum*, 28, 257–267.
- Mitchell-Olds, T., & Bergelson, J. (1990). Statistical genetics of an annual plant, *Impatiens capensis*. II. Natural selection. *Genetics*, 124(2), 416–421.
- Nadeem, M., Badahar, S., & Iqbal, U. (2020). Are women ecofriendly? Board gender diversity and environmental innovation. *Business Strategy and the Environment*, 29(8), 3146–3161.
- Nelson, J. A. (1995). Feminism and economics. *Journal of Economic Perspectives*, 9(2), 131–148.
- Nelson, J. A. (2006). Can we talk? Feminist economists in dialogue with social theorists. *Signs: Journal of Women in Culture and Society*, 31(4), 1051–1074.
- Nemec, P., Kubak, M., & Džupka, P. (2021). The transition of the Visegrad countries toward sustainable public procurement. *Eastern European Economics*, 59(5), 487–512.
- Nikolaou, E., & Loizou, C. (2015). The green public procurement in the midst of the economic crisis: Is it a suitable policy tool? *Journal of Integrative Environmental Sciences*, 12(1), 49–66.
- Nuber, C., & Velte, P. (2021). Board gender diversity and carbon emissions: European evidence on curvilinear relationships and critical mass. *Business Strategy and the Environment*, 30(4), 1958–1992.
- Ochrana, F., Plaček, M., & Krápek, M. (2019). Ministerial staff of the Czech Republic 25 years after the “Velvet Revolution.” *Teaching Public Administration*, 37(1), 46–66.
- Orser, B., Liao, X., Riding, A. L., Duong, Q., & Catimel, J. (2021). Gender-responsive public procurement: Strategies to support women-owned enterprises. *Journal of Public Procurement*, 21(3), 260–284.
- Orser, B., Riding, A., & Weeks, J. (2018). The efficacy of gender-based federal procurement policies in the United States. *International Journal of Gender and Entrepreneurship*, 11(1), 6–37.
- Ortega, O. M., & O'Brien, M. C. (2017). Advancing the respect for labour rights globally through public procurement. *Politics and Governance*, 5(4), 69–79.
- Pacheco-Blanco, B., & Bastante-Ceca, M. J. (2016). Green public procurement as an initiative for sustainable consumption. An exploratory study of Spanish public universities. *Journal of Cleaner Production*, 133, 648–656.
- Plaček, M., Ochrana, F., Půček, M., Nemec, J., & Krápek, M. (2018). Devolution in the Czech and Slovak institutions of cultural heritage. *Museum Management and Curatorship*, 33(6), 594–609.
- Plaček, M., Vaceková, G., Svidronova, M. M., Nemec, J., & Korimova, K. (2021). The evolutionary trajectory of social enterprises in the Czech Republic and Slovakia. *Public Management Review*, 23(5), 775–794.
- Plaček, M., Valentinov, V., del Campo, C., Vaceková, G., Ochrana, F., & Šumpíková, M. (2021). Stewardship and administrative capacity in green public procurement in the Czech Republic: Evidence from a large-N survey. *Environmental Sciences Europe*, 33(1), Article 94.
- R Core Team. (2021). *The R project for statistical computing*. <https://www.r-project.org>
- Rainville, A. (2017). Standards in green public procurement—A framework to enhance innovation. *Journal of Cleaner Production*, 167, 1029–1037.
- Rosell, J., & Allen, J. (2020). Test-riding the driverless bus: Determinants of satisfaction and reuse intention in eight test-track locations. *Transportation Research Part A: Policy and Practice*, 140, 166–189.
- Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. *Journal of Statistical Software*, 48(2), 1–36.

- Sarter, E. K. (2020). The development and implementation of gender equality considerations in public procurement in Germany. *Feminist Economics*, 26(3), 66–89.
- Sarter, E. K., & Thomson, E. (2020). Fulfilling its promise? Strategic public procurement and the impact of equality considerations on employers' behaviour in Scotland. *Public Money & Management*, 40(6), 437–445.
- Sönnichsen, S. D., & Clement, J. (2020). Review of green and sustainable public procurement: Towards circular public procurement. *Journal of Cleaner Production*, 245, Article 118901.
- Suzuki, K., & Avellaneda, C. N. (2018). Women and risk-taking behaviour in local public finance. *Public Management Review*, 20(12), 1741–1767.
- Tarling, R. (2008). *Statistical modelling for social researchers. Principles and practice*. Routledge.
- Tseng, M.-L., Islam, M. S., Karia, N., Fauzi, F. A., & Afrin, S. (2019). A literature review on green supply chain management: Trends and future challenges. *Resources, Conservation and Recycling*, 141, 145–162.
- World Economic Forum. (2021a). *Global gender gap report 2021*. <https://www.weforum.org/reports/global-gender-gap-report-2021>
- World Economic Forum. (2021b). *Why female leadership is crucial to tackle climate change and other crises*. <https://www.weforum.org/agenda/2021/11/why-female-leadership-is-crucial-to-tackle-climate-change>
- Yang, S., Su, Y., Wang, W., & Hua, K. (2019). Research on developers green procurement behavior based on the theory of planned behavior. *Sustainability*, 11(10), Article 2949.
- Yu, C., Morotomi, T., & Yu, H. (2020). What influences the adoption of green award criteria in a public contract? An empirical analysis of 2018 European public procurement contract award notices. *Sustainability*, 12(3), Article 1261.

About the Authors



Michal Plaček is an associate professor of public policy. His research is focused on public procurement, corruption, and efficiency. He has publications in high-ranking journals such as *Public Management Review*, *Waste Management*, *Public Money and Management*, *Journal of Comparative Policy Analysis*, *Journal of Public Procurement*, and *Public Works Policy and Management*. He won the award for the best comparative conference paper from the *Journal of Comparative Policy Analysis* in 2017.



Cristina del Campo is a tenured associate professor of decision sciences and statistics at the Faculty of Economics and Business, Universidad Complutense de Madrid (Spain). Prior to that, she worked at the Spanish National Institute for Aerospace Technology (INTA). Her main research areas are applied multivariate analysis, fuzzy implications, ICT use in education, and health economics.



Vladislav Valentinov is a senior researcher at the Leibniz Institute of Agricultural Development in Transition Economies in Halle (Germany) and an extraordinary professor at the Department of Law and Economics of the Martin Luther University in Halle. He is an expert on institutional economics and systems theory approaches to the third sector. He has published in the key journals of the field, such as *Nonprofit and Voluntary Sector Quarterly*, *Voluntas*, *Annals of Public and Cooperative Economics*, *Review of Social Economy*, and *International Journal of the Commons*. His third sector-related research outputs also appeared in *Journal of Institutional Economics*, *Journal of Evolutionary Economics*, *Cambridge Journal of Economics*, *Journal of Economic Issues*, *China Economic Review*, *Economic Systems*, *Scandinavian Journal of Management*, *Journal of Business Ethics*, *Administration & Society*, *Development and Change*, and *Regulation and Governance*. A large part of his third sector research activities was supported by the highly competitive Marie Curie Incoming International Fellowship of the European Commission and the Schumpeter Fellowship of the Volkswagen Foundation.



Gabriela Vaceková is an associate professor of public economics. Her research focus is third sector studies and public policy. She has published in *Public Management Review*, *Governance*, *Waste Management*, and *Voluntas*, among others. Her research and publication activities were honored with the Dean's Award in 2016, 2017, 2019, and 2020 at Masaryk University in Brno.



Markéta Šumpíková is an associate professor at Ambis University Prague. She has publications in important journals such as *Environmental Sciences Europe*, *Waste management*, and *Politics and Governance*. Her research focuses on public procurement, transaction costs, and regulatory issues. She has experience in basic and applied research.



František Ochrana is a senior researcher and full professor at Charles University. His research fields are public administration and the methodology of science. He is the author of two dozen monographs on public administration, public finance, and the methodology of science. He has published a number of scientific articles in high-ranking journals (e.g., *Governance*, *Environmental Sciences Europe*, *Waste Management*, and *Public Money & Management*, among others), several dozen books, and has been involved in numerous scientific projects. He regularly serves as an expert for several central government bodies and is a member of the International Institute of Public Finance.