Advancing Green Purchasing in Czech Municipalities

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Please cite this report as follows:

Plaček, M., Rossel, J., Šumpíková, M., Fojtík, R., Hrušková, M., Darnall, N., Stritch, J.M., & Bretscheneider, S. 2024. Advancing Green Purchasing in Czech municipalities. Fakulta Sociálních Věd, Univerzita Karlova, Ambis, a.s., VŠB – Technická Univerzita Ostrava; Kogod School of Business and School of Public Affairs, American University, Sustainable Procurement Research Initiative.

Advancing Green Purchasing in Czech Municipalities

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Executive Summary

The Czech Republic spends approximately 12.5% of its GDP on public procurement. One of the main challenges of the public procurement system is transforming it from a mere instrument for securing purchases into a strategic component of public policies that aims to help society address today's grand challenges, such as global warming, energy crises, and post-COVID recovery.

Local governments play a crucial role in implementing green public procurement, especially in highly decentralized contexts like the Czech Republic, which has around 6,256 municipalities. So far, we know very little about how green public procurement is applied at the local level. Our study is a collaborative effort involving researchers from the Sustainable Procurement Research Initiative at the Kogod School of Business and the School of Public Affairs at American University, as well as Charles University, Ambis University, and the Technical University of Ostrava. The study aims to:

- *Identify facilitators and barriers to adopting and implementing green purchasing policies in Czech municipalities.*

- *Recommend actions for more effectively advancing green purchasing practices.*

We surveyed 304 politicians and directors from the finance, acquisitions, general administration, municipal public services, and solid waste management departments across 6,254 municipalities.

According to our results, only 33% of municipalities have implemented a green purchasing policy, and 58% of respondents consider this policy successful.

Our results confirm the importance of complementary policies, goal setting, top management approaches, organizational capacity, and central government support in implementing green purchasing policies. At the same time, they highlight that green purchasing criteria are rather complementary, and the emphasis on the lowest price still prevails. Regarding complementary sustainability policies that can facilitate green purchasing policies, we find a relatively large implementation gap among respondents. An organizational culture that is not oriented toward innovation also offers the potential for improvement.

To encourage central and local governments to implement green public procurement, we offer the following recommendations:

1. Recognize public procurement as a strategic public policy tool at all levels of the public sector.
2. Change the culture of the public sector.
3. Public procurement should be a key responsibility of top management.
4. Institutionalize green public procurement in strategies and policies.
5. Build capacity.
6. Allow flexible centralized and decentralized purchasing.
7. Integrate processes.
8. Foster dialogue and share experiences between public procurers, policymakers, regulators, police authorities, and prosecutors.
9. Promote interdisciplinary partnerships and dialogue.
10. Reduce complexity.
11. Implement benchmarking.
12. Provide education.
13. Ensure stakeholder involvement.

Acknowledgments

We would like to thank the Faculty of Social Sciences, Charles University, the Centre for Knowledge and Technology Transfer of Charles University and the Ministry for Regional Development of the Czech Republic for their support and valuable consultations.

We also appreciate the support of Ambis, a.s. and VŠB - Technical University in Ostrava. Special thanks to Mgr. Jitka Bílá Kosová for administrative support.

Research Collaboration

This report was developed in collaboration with researchers at the Faculty of Social Sciences, Charles University, Ambis University, a.s., VŠB Technical University, University of Girona, and the Sustainable Procurement Research Initiative of Kogod School of Business and School of Public Affairs, American University.

The Faculty of Social Sciences of Charles University, Prague, Czech Republic, is the leading research institute in the field of social sciences in the Czech Republic. The faculty consists of 5 institutes: Institute of Economic Studies, Institute of Communication Studies and Journalism, Institute of International Studies, Institute of Political Studies, and Institute of Sociological Studies. The faculty currently has 4000 students.

AMBIS Vysoká škola, a. s. is a Czech private non-university college based in Prague, specializing in banking, economics, information technology, marketing, human resources management, and others.

For more than 175 years, VŠB —Technical University of Ostrava has connected technical, economic, natural science, and art disciplines in modern study programs that respond to today's real problems. It carries out basic and applied research at the highest level. Thanks to its tradition and cooperation with industry and several domestic and foreign universities in a wide range of sectors, it provides innovative solutions in many fields.

The Sustainable Procurement Research Initiative is a cross-university collaboration among researchers in American University's Kogod School of Business and School of Public Affairs and more than 10 universities across the globe.

Please Share this Report

This report is designed to help municipalities integrate green purchasing into their procurement processes. Please share it widely among your professional networks. A physical copy of this report can be obtained via email:

Michal Plaček at michalplacek@seznam.cz

Additional Information

Please visit the American University's Sustainable Procurement Research Initiative (kogod.american.edu/sustainable-procurement-research-initiative-home) for additional information about green purchasing, best practices, project updates, and related research papers. To learn more about Faculty of Social Sciences at Charles University visit fsv.cuni.cz

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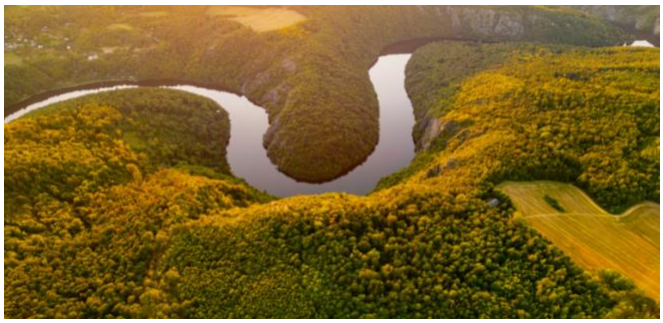

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Introduction

In 2023, the Czech Republic allocated approximately 12.5% of GDP through public procurement, the highest amount in absolute terms in the last 5 years (CZK 919 billion). At the same time, the system was undergoing some of the biggest changes in recent years. A new public procurement strategy was created to bring the Czech public procurement system closer to what is common in developed economies, i.e. an emphasis on value for money. Efforts to further digitalize the public procurement system were also continued. There has also been a slight reduction in the share of public procurement with a single bid, which is perceived as a negative phenomenon in the Czech context.

According to numerous studies, the current system heavily focuses on achieving trade-offs, which is related to the excessive use of the lowest price criteria (Plaček et al., 2019; Rossel et al., 2024). This approach is also characteristic of other CEE countries and constitutes one of the barriers to using public procurement as an effective public policy instrument.

Green public procurement is a typical example. Even though public sector activities cause approximately 40% of emissions globally (Berhawesh et al., 2022), the potential of green public procurement to reduce negative environmental impacts is not fully utilized in the Czech Republic.

The share of green public procurement within all public procurement cannot be accurately determined at present, as contracting authorities do not have a reporting obligation in this area. However, current studies, e.g. Rossel et al. (2024), suggest that estimates are very pessimistic and that the share of green public procurement is at around 2%. It is necessary to note that there is great heterogeneity among public procurers at the level of individual organizations; we can find real champions that can serve as examples of good practice, while others do not utilize this instrument at all (Špaček et al., 2024).

The Czech Republic is a member of the European Union, and according to EU documents and policies, public procurement is an essential tool for transforming towards sustainability (EU Commission, 2018). Green public procurement, therefore, not only aims to reduce negative environmental impacts but can also contribute significantly to creating new markets and stimulating innovation. Thus, it can be one of the factors ensuring the future economic prosperity of the Czech Republic.

To realize the full potential of green public procurement must be implemented at all levels of government. In the municipal environment, the Czech Republic faces specific challenges related to decentralization. The Czech Republic is often referred to as a champion of decentralization, as it has 6,254 municipalities, each with an average population of around 1,300 inhabitants.

Excessive decentralization indicates great heterogeneity among municipalities in the current state of implementation of green public procurement and its future potential. To give an idea, many small municipalities operate within a model where the political leadership (mayor) and one administrative staff member are in charge of the municipality's whole agenda. At the same time, there are large cities that have separate procurement departments, qualified staff, and officers dedicated to a strategic agenda focused on sustainability.

There is also currently no performance-based system focused on procurement and implementation of green public procurement that would allow us to better evaluate implementation. Ensuring equitable implementation of green public procurement in local government environments is one of the biggest challenges for the Czech Republic's public procurement system.

Project Goals

To enhance the potential of green purchasing in Czech municipalities, this report is guided by three project goals:

1. *Determine the facilitators and the barriers to the adoption and implementation of green purchasing policies in Czech municipalities.*

   To achieve this goal, we surveyed 304 politicians and directors of the departments of finance, acquisitions, general administration, municipal public services, and solid waste/environmental management from the 6,254 municipalities. These governments consisted of municipalities that had green purchasing policies in place and those that did not. We identified the factors related to municipalities' green purchasing policy adoption.

2. *Recommend actions for advancing green purchasing practices more effectively.*

   We applied statistical tools to the survey data to identify which factors are related to the successful implementation of municipal green purchasing policies.

3. *Encourage Czech municipalities that lack green purchasing policies to implement them within their jurisdictions.*

   We combined the results of project goals 1 and 2 to develop a list of best practices that facilitate the implementation success of green purchasing policies.

We are sharing our findings through the following outlets:

- Discussion and sharing of information with the Ministry of Regional Development
- Emails to professional organizations and international governance bodies that have agreed to distribute the report's findings to their network members
- Emails to relevant media outlets with direct links to the report

Additionally, we developed a project summary and professional articles that are posted to the Faculty of Social Sciences, Charles University, Ambis University, VŠB – Technical University Ostrava, and the Sustainable Procurement Research Initiative (kogod.american.edu/sustainable-procurement-research-initiative-home). These materials will be featured in social media posts via Twitter, Facebook, and LinkedIn.

Research Approach

To achieve our project goals, we reviewed existing research related to public green purchasing. We also developed our instrument based on the instrument applied in the United States (U.S.). The instrument was translated into the Czech language and adapted so it could be applied in the context of the Czech Republic. This is why some of the presented alternatives vary from the original U.S. instrument.*

Based on the survey of U.S. cities, the instrument applied in the Czech Republic addresses the following areas:

- Local government purchasing activities
- Local government environmental sustainability policies/practices
- Department-level policies/practices
- Department structure and culture
- Professional/personal information

Within these broader areas, questions covered topics including:

- The structure of purchasing decisions in a municipality
- Municipal-level purchasing policies and practices
- Department-level purchasing policies and practices
- Information on sustainable products
- Information on vendor relationships
- Influence of external groups (e.g. citizens, higher levels of government)

Prior to implementing the Czech Republic survey, we had in-depth interviews with several seasoned municipal workers responsible for public purchases for an administrative period of six years or more. We also interviewed the leaders of several informants from key stakeholder groups.

* Sources: Darnall, N., J.M. Stritch, S. Bretschneider, L. Hsueh , M. Duscha, J. Iles, W. No, J. Suarez, C. Burwell. 2017. *Advancing Green Purchasing in Local Governments*. Phoenix: Arizona State University, Center for Organization Research and Design, Sustainable Purchasing Research Initiative;

Darnall, N., J.M. Stritch, S. Bretschneider, L. Hsueh. 2017. *Local Government Green Purchasing Survey*. Phoenix: Arizona State University, Center for Organization Research and Design, Sustainable Purchasing Research Initiative.

Survey recipients

In earlier sections of this report, we mentioned the considerable heterogeneity of Czech municipalities. This leads to significant differences in their organizational structure and the distribution of competencies in the field of sustainability and public procurement. This also indicates a notable difference from previous reports of the Sustainable Procurement Research Initiative, such as allowing politicians to respond to the survey.

The following protocol was used to obtain department contacts within the Czech municipalities:

1. We used the Czech census list of all municipalities.
2. In Google, we used search words (e.g., name of a municipality) to find each municipality's official webpage or obtained it from state government websites.
3. Once a municipality webpage was found, we identified the relevant municipal department's webpage.
4. If the department director's contact information was available, we recorded the director's name, email address, phone number, and mailing address.
5. If the department director's information was not available, we made calls to the municipality to identify the person most appropriate to answer our survey or use the general contact email address.

Survey administration

In total, we received responses from 304 respondents, of which 58.9% were politicians at the level of mayor and deputy mayor, and 41.1% were civil servants. The structure of the respondents among civil servants was as follows: 13% were office directors, 27.3% were department directors, and 59.7% held lower-level management positions (lawyers, economists, grant managers, etc.).

In terms of the size of the municipalities, the size structure of the respondents is as follows:

Municipality population (in habitants)	Size structure of the respondents (%)
Less than 200	0,60
200-499	4,27
500-999	12,10
1,000-1,999	17,08
2,000-4,999	18,51
5,000-9,999	22,06
10,000-19,999	11,74
20,000-49,999	6,41
50,000-99,999	3,56
More than 100,000	3,91

The final questionnaire had 38 questions and was distributed from September to December 2023. In the first phase of distribution in September, all municipalities in the Czech Republic were contacted. Due to the low return rate of the questionnaire in the first wave of outreach, we reached out to selected municipalities by telephone to obtain feedback. Based on this feedback, we improved the questionnaire's flow and clarified terminology that respondents found incomprehensible. We then proceeded with the next wave of distribution, which took place in October and November. The questionnaire closed for responses in February 2024.

The following documents provide further information about our research approach. All documents are available at kogod.american.edu/sustainable-procurement-research-initiative-home.

- The final Czech survey
- Introductory script used to contact directors
- Frequencies associated with each of the Czech survey questions
- Print materials

Measurement and Statistical Assessment

Consistent with the previous U.S. and Japan studies (Darnall et al. 2017, 2018), two survey questions formed the basis of our evaluation of the factors that impede or facilitate green purchasing within Czech municipalities. The first question examined green purchasing policy adoption and asked, “To the best of your knowledge, has your municipality implemented a formal policy pertaining to the following purchasing issues?” Department directors were provided a list of policies, one of which was “Environmentally friendly purchasing.” The following definition was provided:

> *Environmentally friendly purchasing is the set of activities undertaken by an organization to implement purchasing that reduces negative effects on the environment.*

Department directors who answered “Yes” to this question were identified as individuals working in municipalities that had a green purchasing policy in place. Those who answered “No” were identified as working in municipalities with no green purchasing policy.

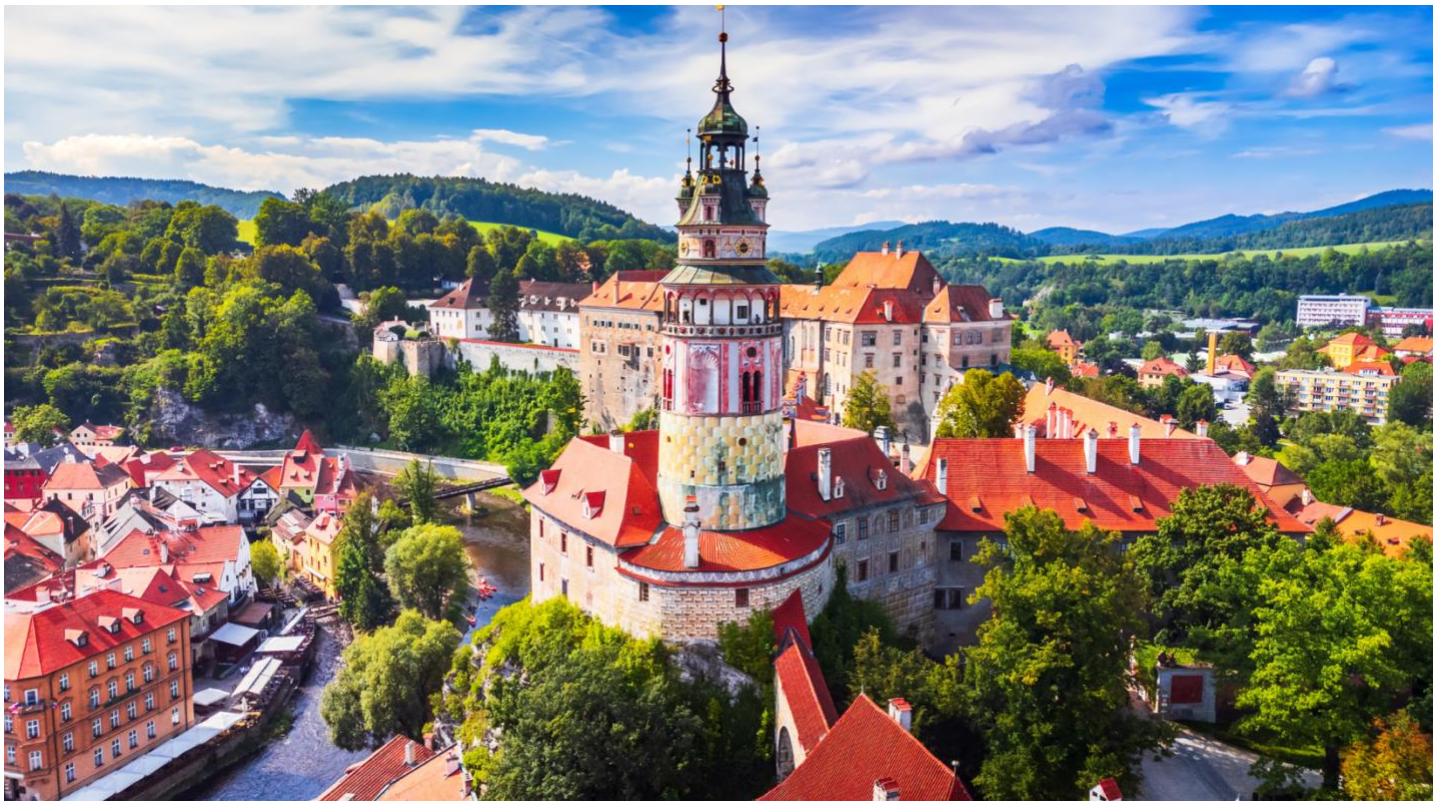
The second survey question that formed the basis of our evaluation assessed department directors' perceptions of the success of their green purchasing policies' implementation. For directors that responded "Yes" to the first question, we evaluated the success of implementation with the following question: "We are interested in your overall assessment of the implementation of your municipality's environmentally friendly purchasing policy. How would you assess your municipality's overall implementation of this policy?"

Department directors responded on an 11-point scale with 5 being "Very successful," 0 being "Neither successful nor unsuccessful" and -5 being "Very unsuccessful." For the purposes of this report, we identified municipalities as having a "Successful" green purchasing policy by combining responses of 1 through 5. We identified policies that were "Less than successful" by combining responses 0 through -5. This measure of success is perceptual and was used for several reasons. First, municipalities' green purchasing policies are extremely diverse. They vary based on their degree of formalization, scope, maturity, and other factors.

Responses to both questions were compared with all other survey responses using chi-square statistical tests. Our findings offer a preliminary assessment of the factors that facilitate the adoption of green purchasing policies and their implementation success.

We must also highlight the potential limitations of our study. Firstly, the representativeness of the sample of respondents. This representativeness can be observed from an organizational perspective, where there are 6,250 municipalities, and we obtained responses from 304. This sample is not representative. The second perspective is the representativeness of the population of persons responsible for public procurement at the municipal level. We do not have precise information on the size of this population, nor do we have information on the exact title of the functions and responsibilities, as these positions can be very heterogeneous. Our results are not intended to confirm causality.

We must highlight several possible biases. First, it may be self-selection bias. Representatives of municipalities that have a positive relationship with green public procurement may respond to surveys. The second type of bias may be social desirability bias, in which respondents choose options that they consider socially desirable.

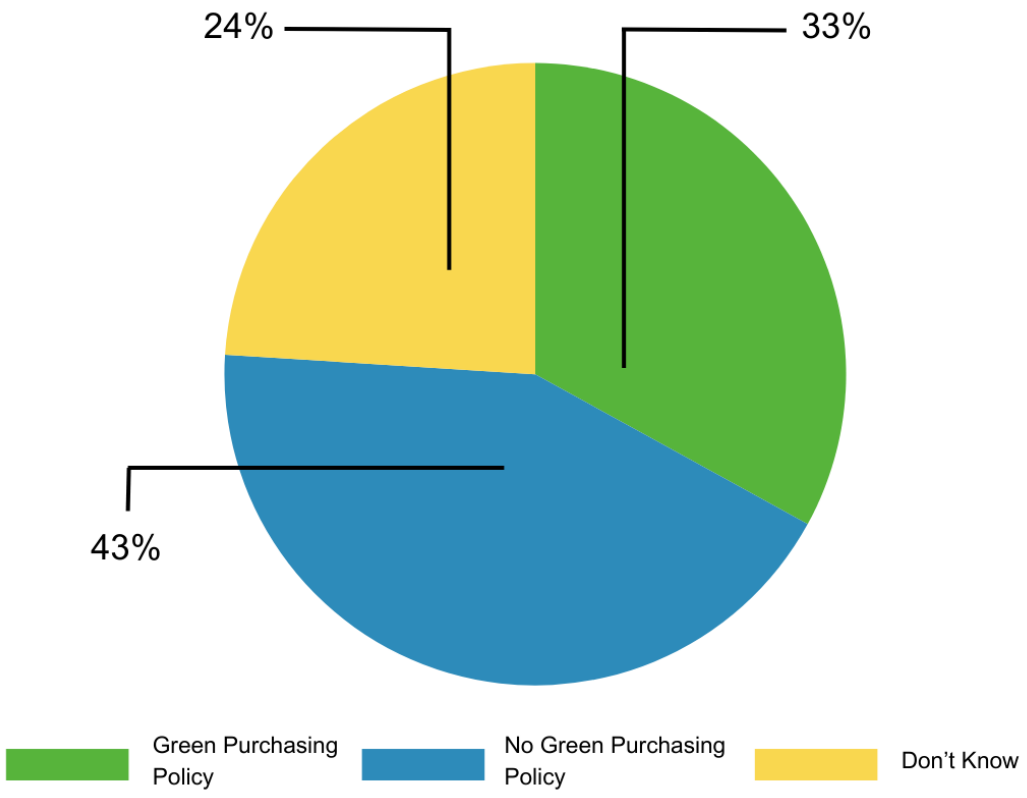


Green Purchasing in Czech Municipalities

Green purchasing policies consist of formal policies such as legal frameworks, ordinances, executive orders, resolutions, and administrative directives. They also include fewer formal approaches that involve adding green purchasing criteria to existing or complementary policies (e.g., a sustainability plan or an energy conservation policy).

In our sample of respondents (politicians and civil servants), 33% answered that their organization has some form of green purchasing policy (plans, procedures, etc.), 43% said that their organization does not have any, and 24% answered "I do not know" (see Figure 1). This answer may indicate that the organization also does not have a green purchasing policy because if one existed, we can assume that the responsible staff would be familiar with it.

Figure 1. Green Purchasing Policy Adoption in Czech Municipalities



Which Factors Impede or Facilitate Green Purchasing Policy Adoption?

Overall, the survey responses indicate that Czech municipalities that adopt green purchasing policies do not statistically significantly differ from municipalities without such policies in the following factors:

1. Complementary policies and practices
2. Purchasing criteria
3. Information access
4. Leadership, employees, and resources
5. Vendor roles

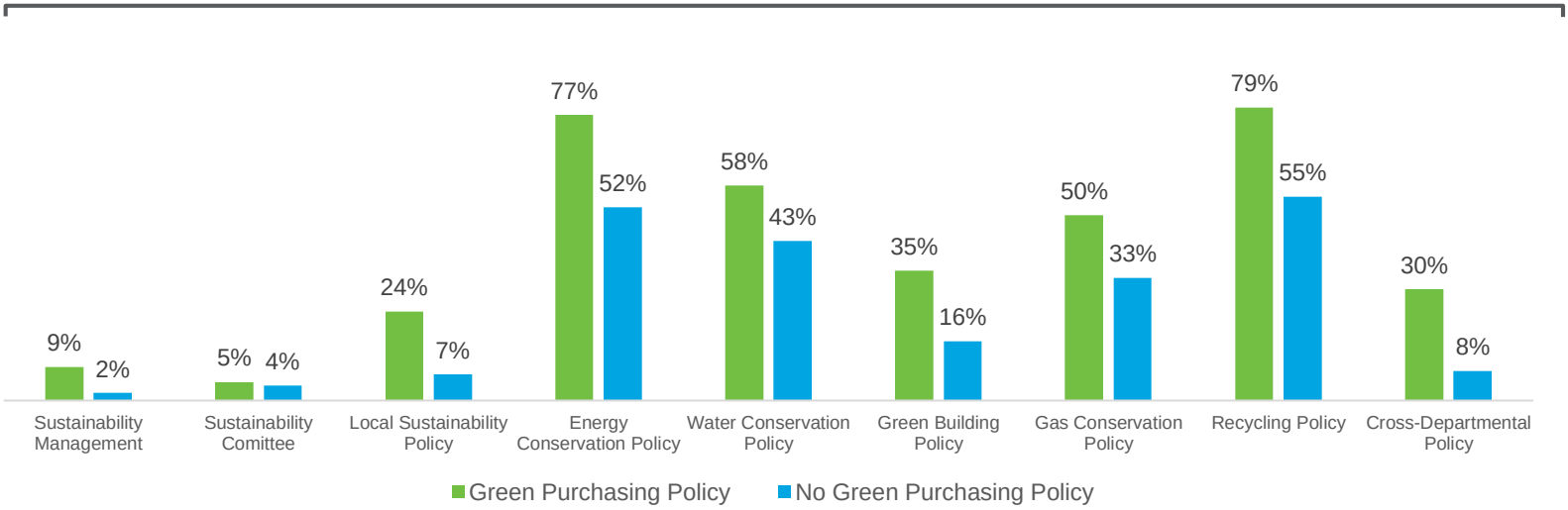
1. Complementary policies and practices

Complementary policies and practices are existing organizational activities that can support green purchasing. They can help reduce the costs of adopting green purchasing policies because organizations with complementary policies and practices already have a foundation to build green purchasing programs. Complementary policies and practices also help motivate management commitment and create shared vision around similar issues.

We asked department directors several questions about their municipality's complementary policies and practices, the first of which was, **"To the best of your knowledge, does your municipality have any of the following?"**

Respondents were presented with a list of complementary policies and practices. Figure 2 describes those found to be statistically significant in the survey.

Figure 2. Complementary Sustainability Policies and Practices



The results show statistically significant differences between municipalities with a green purchasing policy and those without a green purchasing policy in almost all areas, except for the local sustainability commission and sustainability management policy (lack of responses). Among municipalities with a green purchasing policy, 24% also have a local sustainability policy. Furthermore, 77% reported having an energy-saving policy, while 58% indicated they have a water-saving policy. Additionally, 35% of those with a green purchasing policy mentioned having green building policies. However, the representation of the above policies was significantly lower for municipalities without a green purchasing policy, with only 7% of respondents having a local sustainability policy, 52% having an energy-saving policy, 52% having a water-saving policy, and only 16% having a green building policy.

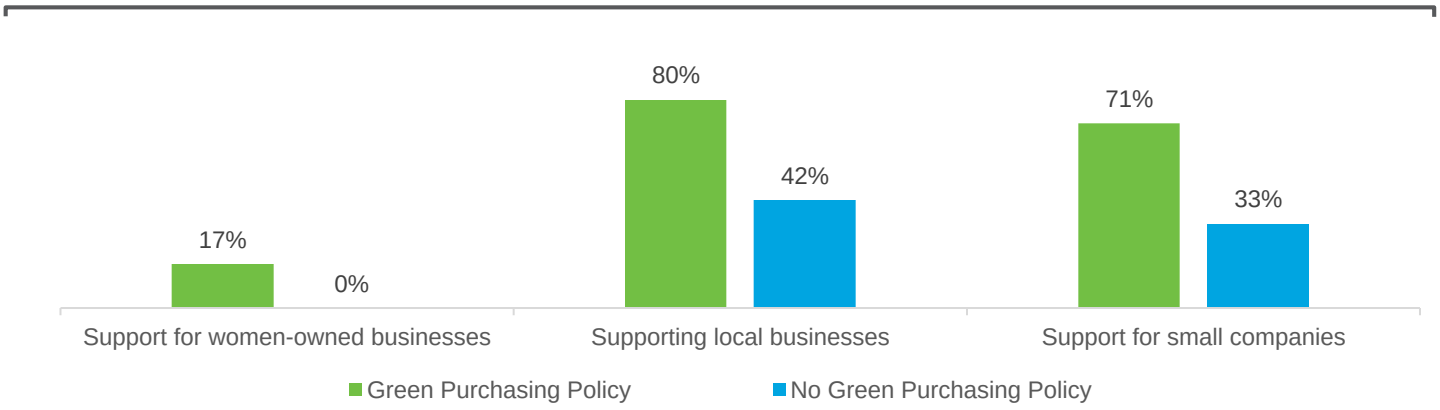
Similar results can be identified for other types of policies. Among municipalities with a green purchasing policy, 50% of respondents also have a gas-saving policy, 77% percent of respondents also have a recycling policy, and 30% of respondents with a green purchasing strategy also have policies that promote collaboration between different parts of the organization to achieve sustainability. In contrast, among respondents without a green purchasing policy, only 33% have a gas-saving policy. A much larger proportion of these respondents, 55%, have a recycling policy. However, policies aimed at collaboration to achieve sustainability are almost absent, with only 8% of respondents having such a policy.

To explore issues related to more socially oriented complementary policies, department directors were asked, **“To the best of your knowledge, has your municipality implemented a formal policy pertaining to any of the following purchasing issues?”**

Figure 3 shows statistically significant differences in all responses between respondents with and without a green purchasing policy.

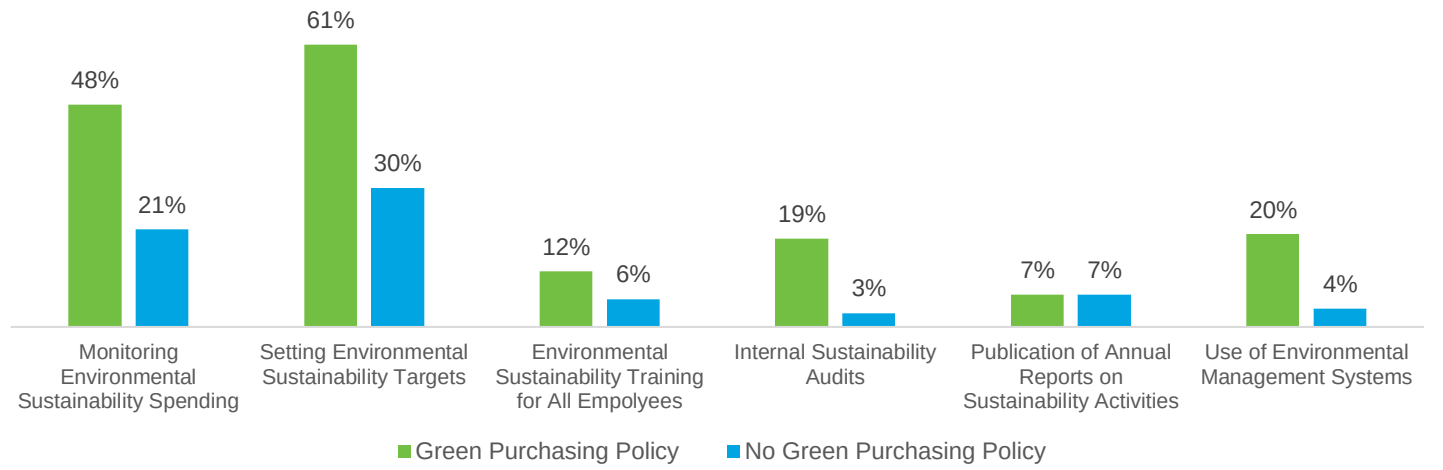
15% of respondents with a green purchasing policy support women-owned firms, while those without such a policy do not have it implemented. It should be noted that this type of policy has not yet been officially established in the Czech Republic. The most widespread policy focuses on supporting local companies, which is adopted by 80% of respondents with a green purchasing policy. In contrast, only 42% of respondents without a green purchasing policy implement this initiative. Additionally, a policy aimed at supporting small firms is adopted by 71% of respondents with a green purchasing policy, compared to 33% of those without.

Figure 3: Socially oriented complementary policies.



In addition to asking about complementary policies, we examined municipalities’ complementary environmental practices. Respondents were asked, **“Please indicate whether the following environmental practices have been implemented or adopted throughout your municipality.”** Our respondents were presented with a list of options. Figure 4 presents the results found to be statistically significant.

Figure 4: Environmental policies adopted by the Czech municipalities.



Statistically significant differences exist between respondents who reported that their organization had a green purchasing policy and those from organizations without such a policy regarding the following complementary policies: monitoring environmental spending, setting environmental sustainability targets, conducting internal sustainability audits, and using environmental management systems. Statistically insignificant differences were identified for these complementary policies: environmental sustainability training for all employees and publication of annual reports on sustainability activities.

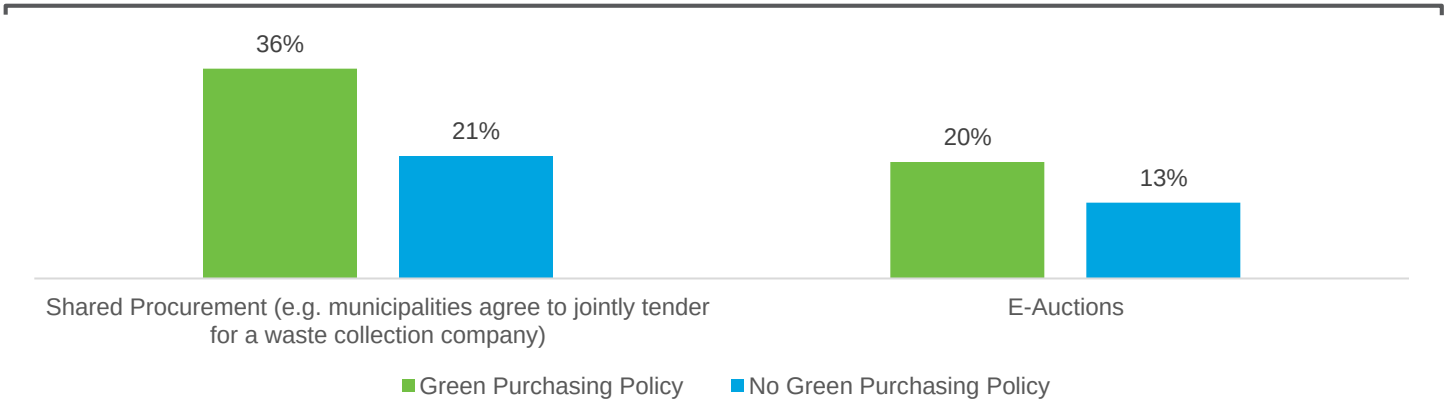
If we look at specific numbers, we find that 48% of respondents with a green purchasing policy also monitor their sustainability spending, 61% of respondents with a green purchasing policy also set measurable goals, and 19% of respondents in the same group conduct sustainability audits. In contrast, respondents without a green purchasing policy report that only 21% of organizations monitor their sustainability spending, 30% set measurable sustainability goals, and only 3% conduct sustainability audits.

We must also highlight the untapped potential of complementary environmental policies. For all areas, we can identify an implementation gap, which is particularly pronounced in the following policies: training employees on environmental sustainability, conducting internal sustainability audits, publishing annual reports on sustainability activities, and utilizing an environmental management system. Increasing the adoption of these policies across all types of organizations could facilitate sustainable procurement processes.

The final area we assessed focused on complementary policies and practices that were related to the more technical aspects of purchasing. Department directors were asked, **“To the best of your knowledge, has your municipality implemented the following purchasing activities?”**

According to our results, respondents who reported that their organization has a green purchasing policy are more likely to use shared procurement than those from organizations without such a policy. In contrast, we did not find statistically significant differences in the use of e-auctions between organizations with and without a green purchasing policy.

Figure 5: Implemented purchasing activities in the Czech municipalities



Surprisingly, the results show that respondents reported very low usage of e-auctions, despite their effectiveness in enhancing the efficiency of public procurement. This is very similar to shared procurement, which is still not widely used. However, in the context of small municipalities, where the lack of administrative capacity is problematic, it could serve as a tool to improve the quality of public procurement and help achieve economies of scale.

Our results confirm that municipalities with green purchasing policies implement more complementary sustainability policies than those without such policies. Implementing complementary sustainability policies can greatly assist the effectiveness of green purchasing policies and can significantly drive the efficiency of the entire purchasing chain. Current experience shows that for the successful implementation of green purchasing policies, it is advisable to adopt complementary sustainability policies throughout the organization. The results also indicate a significant implementation gap in this area. Organizations with green purchasing policies, as well as those without, apply complementary sustainability policies to a very limited extent. This gap is also very pronounced in international comparisons, for example, with the USA Mexico.

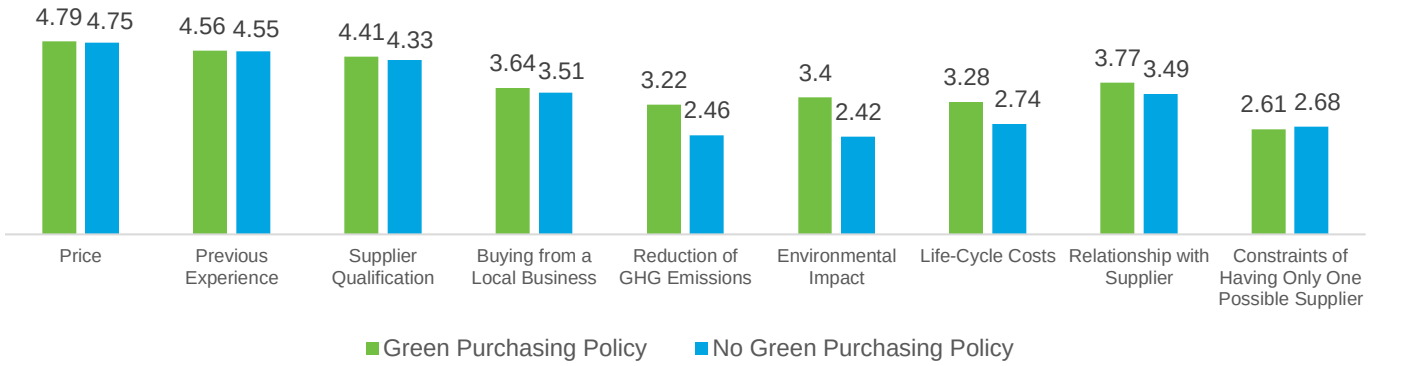
2. Purchasing criteria

Purchasing criteria are the factors individuals consider when deciding to buy a good or service. Department directors were asked, **"In thinking about your department's purchasing criteria, how important is each of the following characteristics of a product or service?"**

Respondents were given a sheet of criteria to rank from not important to critical (1 being the least important and 5 being very important). This approach allows us to compare the perceived importance of criteria among respondents who have or have not implemented a green purchasing policy, as well as to compare the importance of each criterion against others.

Statistically significant differences exist between respondents who indicated that their organization has a green purchasing policy and those who stated that their organization does not have such a policy. These differences arise in environmental criteria, such as the reduction of greenhouse gas emissions, environmental impact, and life cycle costs. Organizations with implemented green purchasing policies regard these criteria as more important than organizations without such policies.

Figure 6. Importance of Departments' Purchasing Criteria



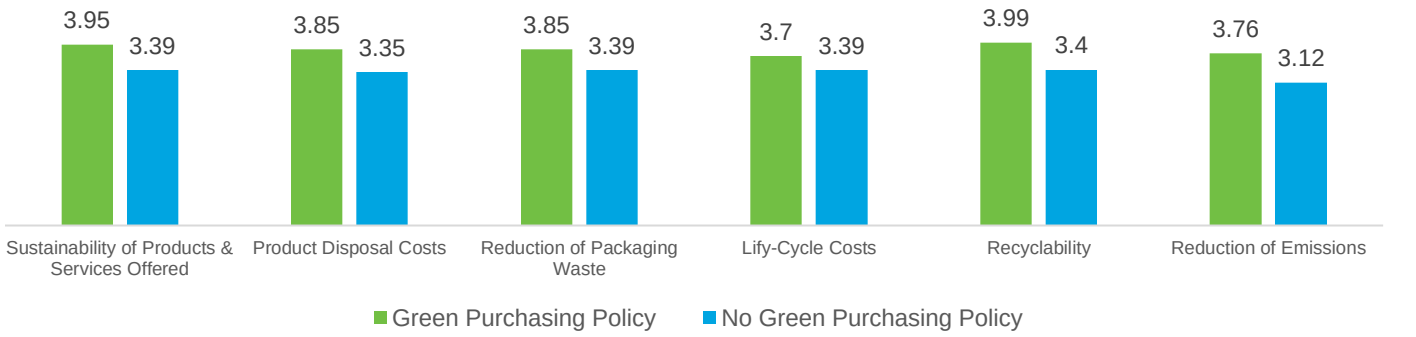
Respondents perceive environmental criteria as less important than other factors, such as price, previous experience with suppliers, buying from local suppliers, and supplier qualifications. We did not identify statistically significant differences in the perceived importance of these criteria between organizations with and without a green purchasing policy. It is important to emphasize that the preference for price over other purchasing criteria is particularly significant in the Czech Republic. Thus, contracting authorities still favor the lowest price criterion above others.

To understand the use of environmental criteria in more detail, we asked respondents the following question, ***"How important or not important are the following aspects in your purchasing decisions in your village/town?***"

Respondents received a list of environmental criteria to rate in order of importance, from least important (value 1) to most important (value 5). We identified statistically significant differences in the perceived importance of the following sustainability criteria between respondents who reported that their organization had implemented a green purchasing policy and those who did not: sustainability of products and services offered, product disposal costs, recyclability, and reduction of waste emissions.

There are statistically insignificant differences between organizations with and without a green purchasing policy regarding reduction of packaging waste and life cycle costs.

Figure 7. Importance of Environmental Criteria

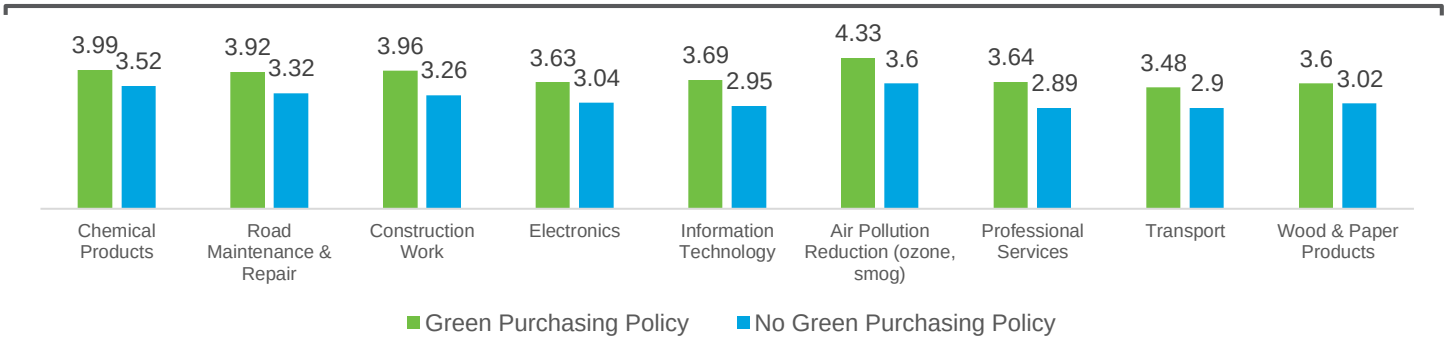


The differences in the perceived importance of individual items between respondents are very small. Respondents consider the sustainability of products and services offered the most important environmental criterion and lifecycle costs the least important.

To explore the importance of environmental concerns as they relate to specific purchasing categories, we asked department directors, **"Within your department, how important are environmental sustainability concerns to the purchasing of the following types of products and services?"**

Respondents were presented with a list of product and service categories. They rated the importance of environmental criteria on a scale of one to five, with 1 being the least important and 5 being the most important. Figure 8 displays all the statistically significant categories. Across all product categories except chemical products and transportation, respondents with green purchasing policies reported that environmental concerns were of greater importance than respondents in municipalities lacking these policies.

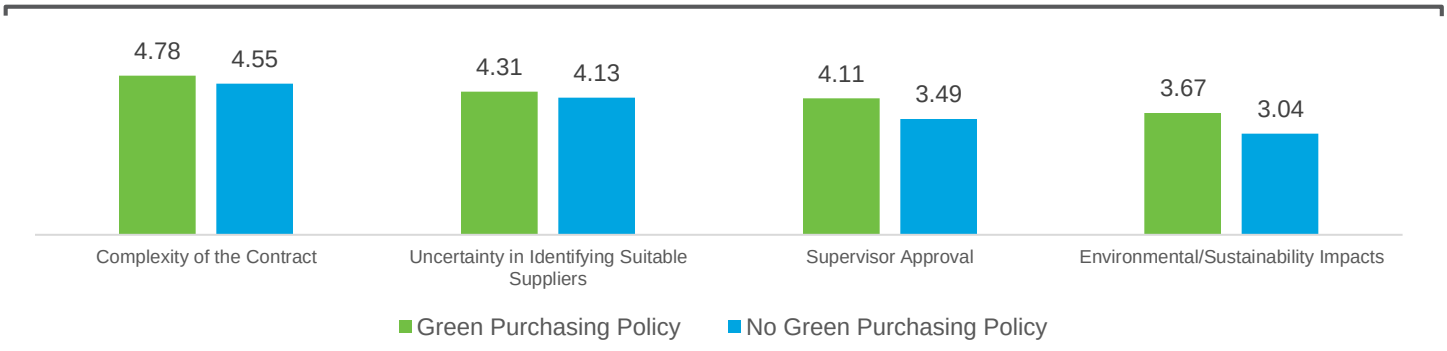
Figure 8. Importance of Environmental Concerns on Specific Products



When examining the importance of environmental criteria for individual products, we find that these criteria are most significant for air pollution reduction products. Conversely, they are least important for transportation, which is surprising given that we expected the opposite outcome for transportation.

In the next question, we focused on the importance of the technical specifications of the contract. We asked respondents the following question: ***How important is the technical specification of the subject matter of the contract when you are dealing with the following situations?*** Respondents rated the importance of technical specifications in various situations, scoring from least important (1) to very important (5). We found statistically significant differences in how organizations with a green purchasing policy perceived the importance of technical specifications compared to those without, particularly regarding order complexity, supervisor approvals, and environmental sustainability impacts. However, the differences in determining suitable suppliers were statistically insignificant.

Figure 9. Importance of Technical Specification



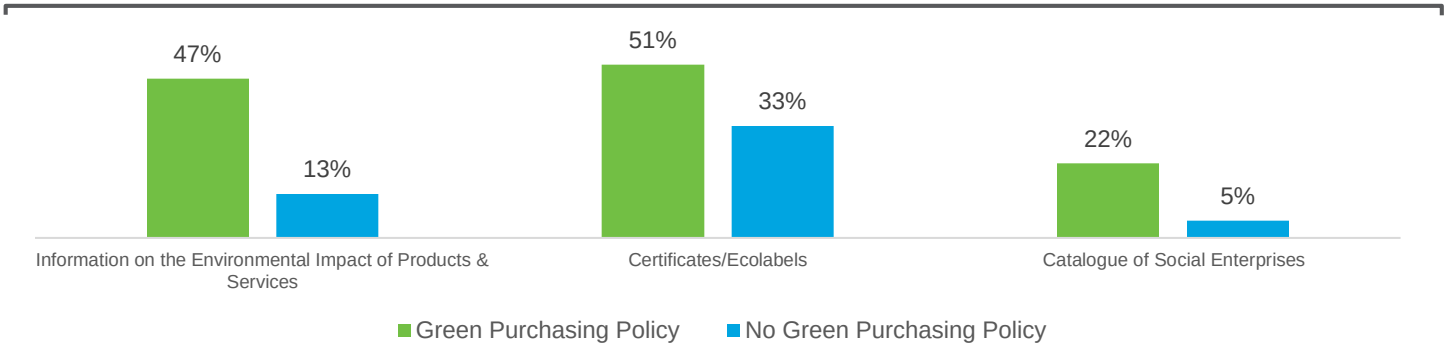
The results show that all groups of respondents consider technical specifications to be most important when purchasing complex products, whereas they consider technical specifications to be least important when considering environmental and sustainability impacts.

3. *Information access*

Information can influence purchasing decisions and outcomes. For this reason, we asked department directors about their access to specific information sources: **"Departments may use different sources when making purchases. Please indicate whether each of the following information sources is available to your department when making purchasing decisions."**

Statistically significant differences between respondents who declare that their organization has a green purchasing policy and respondents whose organization does not can be found in the use of information on the environmental impacts of products and services and the use of information from the catalog of social enterprises. 47% of respondents from organizations with a green purchasing policy utilize information on the environmental impacts of products and services, while 22% of respondents from this group access information from the catalog of social enterprises. In contrast, respondents from municipalities without a green purchasing policy use this information minimally. Only 13% of respondents use information on the environmental impacts of products, and only 5% of respondents draw from the catalog of social enterprises. The most used sources of information in both groups are ecolabels and certificates. Ecolabels and certificates were utilized by 51% of respondents with a green purchasing policy and 33% of respondents without it. The differences between the two groups are not statistically significant.

Figure 10. Information Sources Available to Departments When Making Purchasing Decisions

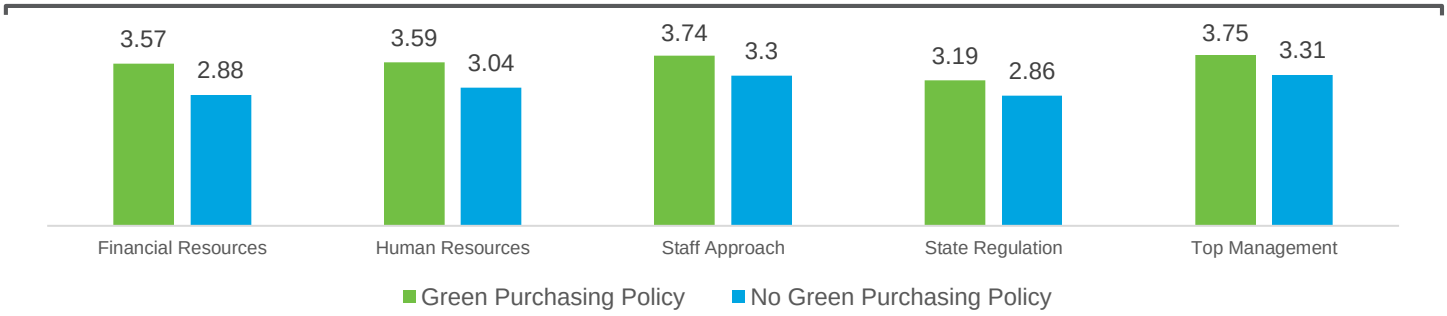


4. *Leadership, employees, and resources*

Leadership, employees, and resources are often cited as critical elements in the adoption of organizational policies. Respondents were asked, **"In your view, to what extent does each of the following either constrain or facilitate your department's ability to implement environmentally sustainable purchasing?"** Respondents were asked to rate each factor in order of importance, assigning a score of 1 to the least important factor and a score of 5 to the most important factor.

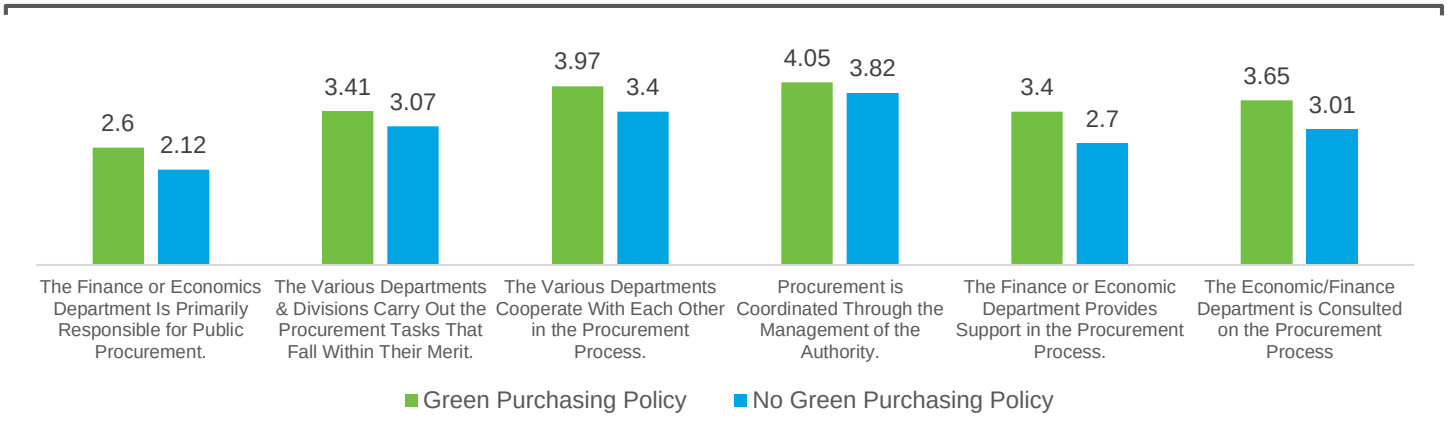
Statistically significant differences between the groups of respondents with and without a green purchasing policy can be found in the following factors: financial resources, human resources, and staff approach. Respondents whose organizations have implemented a green purchasing policy consider these factors more important. On the other hand, we did not identify any statistically significant differences between the two groups regarding state regulation and top management practices.

Figure 11. Facilitators of Departments' Ability to Implement Green Purchasing



If we compare the factors in order of importance, we find that top management and staff approach are the most important factors. On the other hand, government regulation is considered the least important factor. This suggests that green public procurement is mainly implemented by organizations that consider it important, and this decision is supported by top management and employees. Statistically significant differences exist in the level of agreement with the statements between respondents whose organizations have implemented a green purchasing policy and those whose organizations have not.

Figure 12. Internal Organization of the Purchasing Process

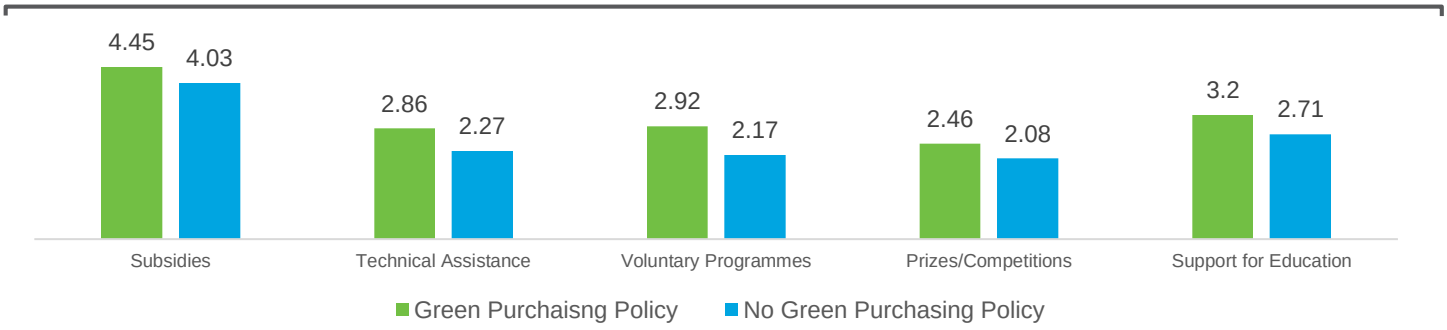


To get more details about the internal organization of purchasing processes, we asked respondents the following question: **"There are several ways in which cities and municipalities purchase goods and services. Please rate your agreement on the following scale - strongly agree - strongly disagree."** Respondents expressed the highest level of agreement with the statement regarding the coordination of purchasing with management, and the lowest level of agreement regarding purchasing management by the finance department. We identified a statistically significant difference between organizations with a green purchasing policy and those without it in their perception of the roles of the finance department and interdepartmental collaboration within the office. In contrast, we did not identify statistically significant differences between the two groups concerning their agreement with the statement that purchases are coordinated by management and that purchases are managed by the department under whose responsibility the purchase falls.

To further consider the role of financial resources, we asked respondents about the importance of external support in promoting their municipality's environmental programs in the following question: **"Over the last five years, how important has each of the following national government programs been in promoting environmental sustainability in your municipality?"** Respondents were presented with a list of options. Respondents assigned a value to each option according to perceived importance, with the least important given a value of 1 and the most important given a value of 5.

The analysis revealed statistically significant differences between respondents who declared the existence of a green purchasing policy and those who declared that their organization does not have a green purchasing policy in the following items: subsidies, technical assistance, voluntary programs, and prizes/competitions. These items are rated more important by respondents who implement green purchasing policies. We found no statistically significant differences between organizations with a green purchasing policy and those without one regarding support for education.

Figure 13. The importance of central government resources



Both groups of respondents consider subsidies and education to be the most important, while prizes and competitions are considered less significant.

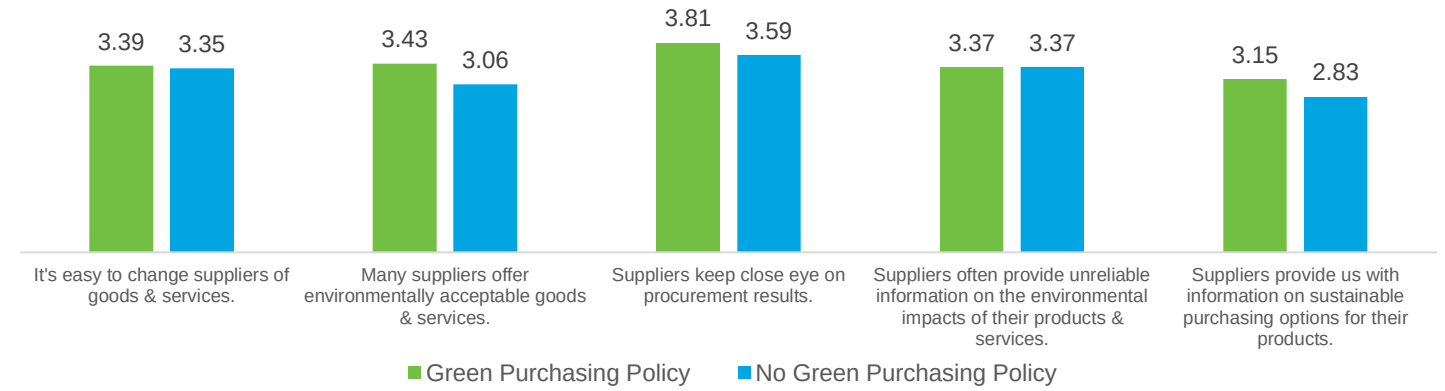
The results of this chapter underline the importance of local government capacity, which can be described in terms of financial resources and personnel. Local government capacity is crucial in highly decentralized contexts, such as the Czech Republic. Another important factor is management's willingness to adopt a green purchasing policy because they consider it important. The relationship between local and central governments is interesting, and respondents view subsidy programs as key. This may again relate to the lack of capacity of local governments, as reflected in budgets.

5. Vendor roles

"Vendor roles" refer to how municipalities engage with their vendors over time. We asked respondents about their department's vendor roles using the following survey question: **"In thinking about your relationships with vendors, to what extent do you disagree or agree with the following statements about procurement/purchasing in your department?"**

We asked respondents to express their level of agreement with each statement. The scale of agreement ranged from strongly agree, agree, don't know, disagree, and strongly disagree.

Figure 14. Vendor Roles



The only exception occurred in agreement with the statement that many suppliers offer environmentally friendly goods and services. The level of agreement is statistically significantly higher among respondents who declare that they have implemented green purchasing policies. In contrast, for other items such as ease of switching suppliers, suppliers' interest in procurement information, and the provision of correct or incorrect environmental information, we find no statistically significant differences between respondents who declare that they have implemented a green purchasing policy and respondents who have not.

Similarities between municipalities with and without green purchasing policies

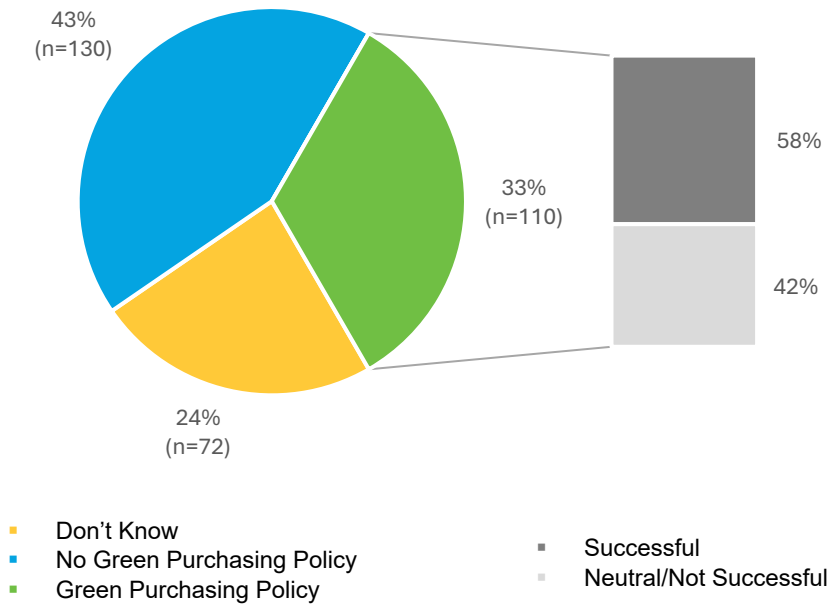
Related to their use of general purchasing criteria, respondents reported many similarities across municipalities, regardless of having a green purchasing policy.

- Purchases are coordinated by municipalities.
- Prevalent use of e-auctions.
- Environmental sustainability training for all employees.
- Publication of annual reports on sustainability activities.
- Use of certificates and ecolabels.
- The importance of price, previous experience, and local company support.
- The influence of actors inside and outside the organization on green purchasing policy implementation.
- Distributing the implementation of the green purchasing policy among different levels of employees.
- Emphasis on waste reduction.
- The influence of state regulation.

What Factors Influence Green Purchasing Implementation Success?

Adopting a green purchasing policy does not necessarily mean that its implementation is successful. 33% of our survey respondents said their organization had implemented a green purchasing policy (green color on the chart), 43% of respondents said they had not implemented a green purchasing policy (blue color), 24% of respondents said they did not know if their organization had implemented a green purchasing policy. In the next question, we asked respondents from organizations that had implemented a green purchasing policy to rate the success of the policy's implementation. Of the respondents, 58% stated they considered the implementation successful, and 42% could not judge its success or consider the implementation successful.

Figure 12. Green Purchasing Policy Adoption and Implementation Success



To determine the factors associated with the success of green purchasing policy implementation, we examined their presence in various activities and policies. From this analysis, we identified several key practices and activities linked to the likelihood of implementation success. Practices marked with (*) are connected to the successful implementation of green purchasing policy.

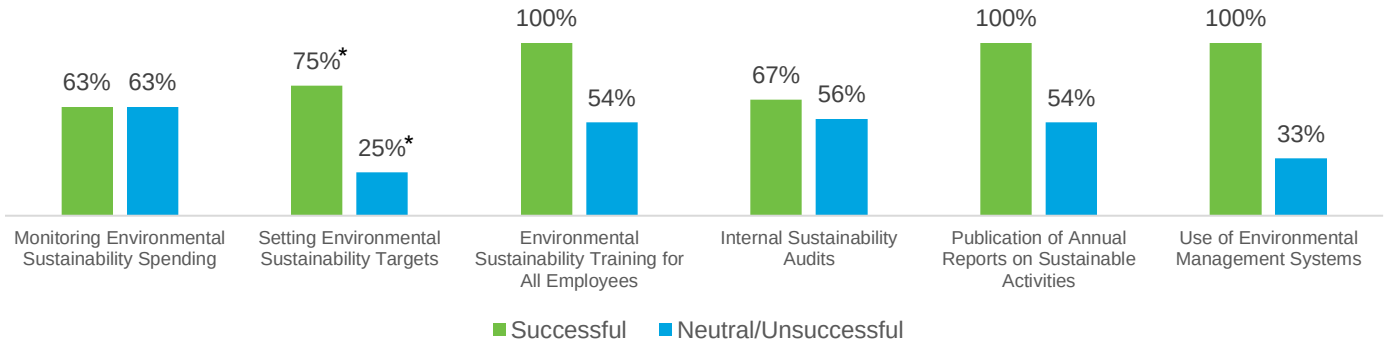
1. Complementary policies and practices
2. Information access
3. Leadership and implementation responsibilities
4. Vendor roles
5. Innovation culture

1. *Complementary Policies and Practices*

As discussed earlier, complementary policies and practices are formalized procedures that facilitate green purchasing and thus increase their likely success because similar internal capabilities are needed to manage both types of activities. They also create management commitment and shared vision around similar issues, thus embedding green purchasing deeper into a municipality's routine operations.

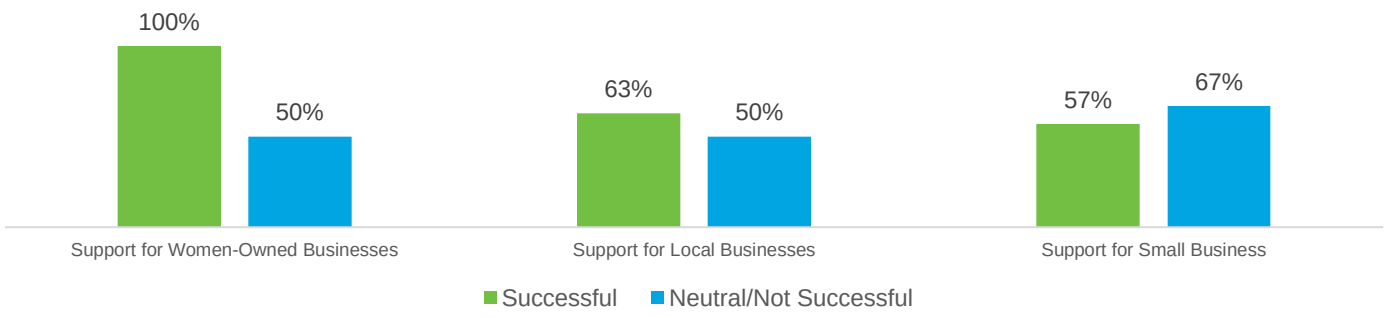
We first focused on complementary policies with the potential to facilitate the successful implementation of a green purchasing policy. We compared the responses of successful and unsuccessful green purchasing policy implementers. We identified statistically significant differences only in the target setting. Successful implementers are more likely to establish environmental sustainability targets. Differences also exist in employee training and environmental education, annual sustainability report publication, and environmental management systems. Negligible differences were found in the use of sustainability audits. The same results were obtained when monitoring sustainability spending. In general, successful implementers utilize more supportive environmental policies.

Figure 13. Probability of Successful Implementation of Green Purchasing Policy, Given Municipality Practices



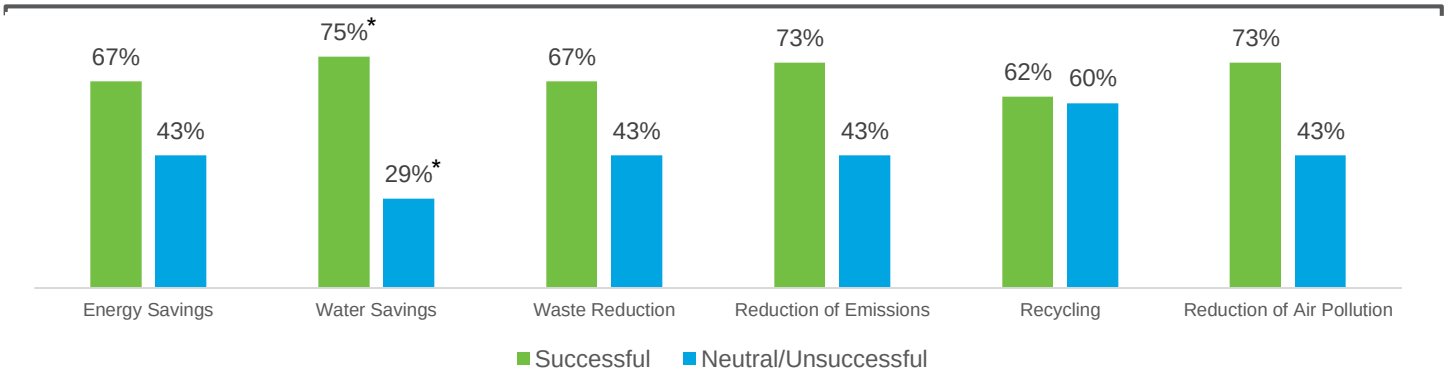
In the next question, we focused on the existence of socially oriented policies. We tested whether these policies can be associated with the successful or unsuccessful implementation of green purchasing policies. We asked our respondents if they were implementing policies to support women-owned businesses, local businesses, and small businesses. We did not identify any statistically significant differences between successful and unsuccessful green purchasing policy implementers. However, a larger percentage of successful green purchasing policy implementers also implement policies aimed at supporting women-owned firms and local businesses. In contrast, a larger proportion of unsuccessful implementers have policies to support small firms. These results are inconsistent because we expect that successful implementers would also support small firms.

Figure 14. Probability of Successful Implementation of Green Purchasing Policy, Given Municipality Policies



In the next question, we focus on the level of internal environmental priorities. We identified statistically significant differences between successful and unsuccessful implementers in their preference for water savings. In the other cases, such as energy savings, waste reduction, emission reduction, recycling, and air pollution reduction, we did not find statistically significant differences. We conclude that successful implementers perceive the importance of environmental aspects to a greater extent than unsuccessful implementers.

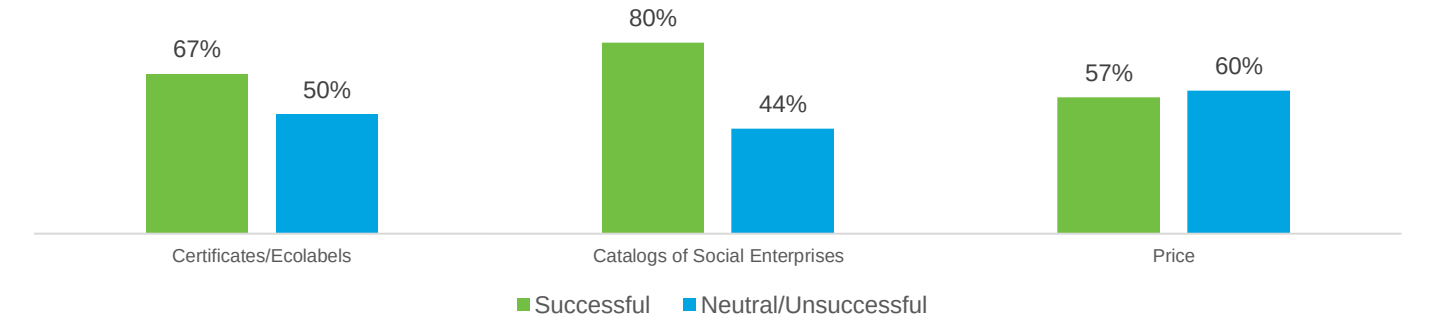
Figure 15. Probability of Successful Implementation of Green Purchasing Policy, Given Municipality Environmental Priorities



2. *Information Access*

Respondents were asked about the sources from which they drew information relevant to the purchase of products and services. They were given the following options: ecolabels/certificates, social enterprise catalogs, and price. We found no statistically significant differences between successful and unsuccessful implementers. Successful implementers make greater use of information on ecological impacts, such as certificates/ecolabels and social enterprise catalogs. Unsuccessful implementers rely more on price information.

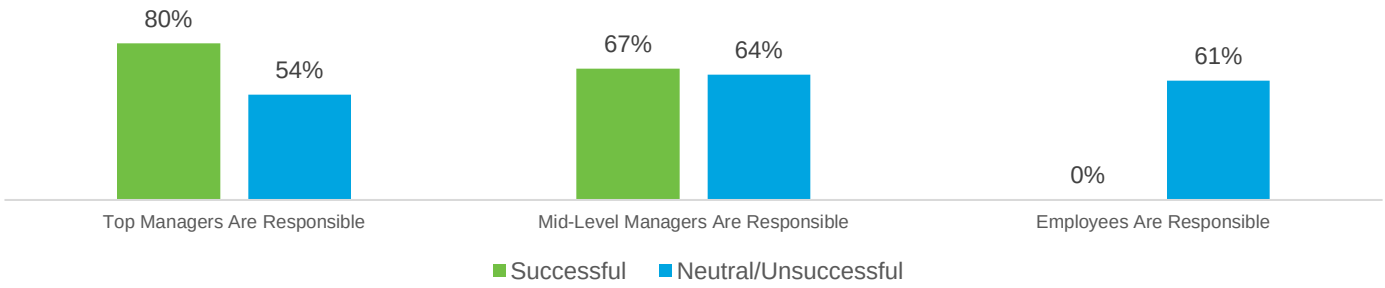
Figure 16. Probability of Successful Implementation of Green Purchasing Policy, Given Access to Types of Information



3. *Leadership and Implementation Responsibilities*

Studies on the implementation of green public procurement in the Czech context often undermine the role of top management. Organizations engage in green public procurement because top management deems it important. It is interesting to observe how the involvement of various management levels in an organization affects implementation success. We asked respondents about the importance of top management, middle management, and rank-and-file employees. We found no statistically significant differences between successful and unsuccessful green purchasing policy implementers. In general, a higher proportion of successful implementers recognize the significance of top management, whereas unsuccessful implementers emphasize the role of rank-and-file employees more than successful ones.

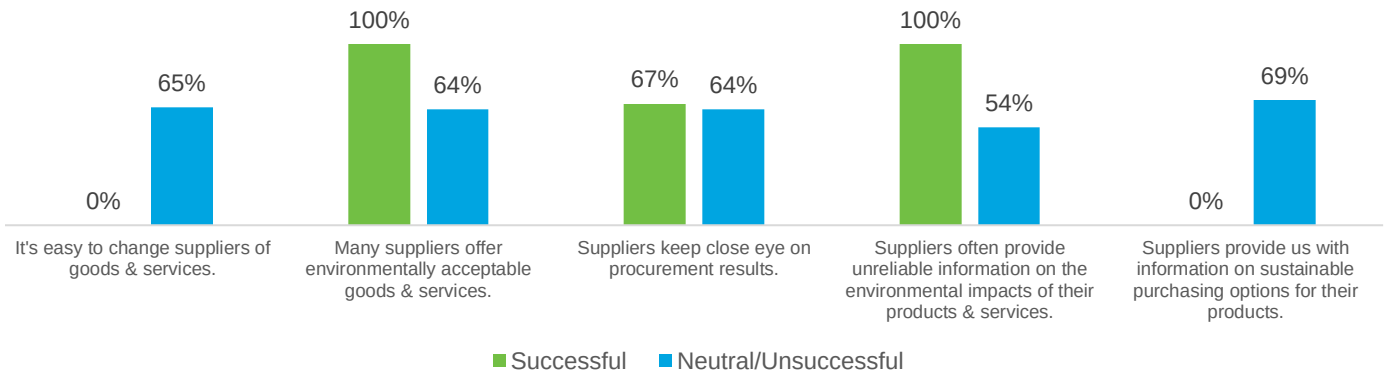
Figure 17. Probability of Successful Implementation of Green Purchasing Policy, Given Perceptions of Locus of Responsibility



4. *Vendor Roles*

The roles of vendors are crucial for a municipality's adoption and successful implementation of a green purchasing policy. We asked respondents to express their level of agreement or disagreement with statements regarding suppliers. We inquired whether it is easy to switch suppliers, whether suppliers provide enough environmentally friendly products, or if they offer information about the sustainability of their products. We were also interested in whether suppliers are proactive and monitor tender results. The results were surprising. Predictably, the difference arises in whether suppliers offer sustainable products. This was confirmed by 100% of successful implementers and 64% of unsuccessful ones. The difference in responses about whether suppliers provide unreliable information about their products and services was surprising. 100% of successful implementers agreed with this statement, while unsuccessful implementers agreed only 60% of the time. This difference can be explained by the fact that successful implementers are more likely to verify the sustainability information provided by their suppliers.

Figure 18. Probability of Successful Implementation of Green Purchasing Policy, Given Vendor Roles

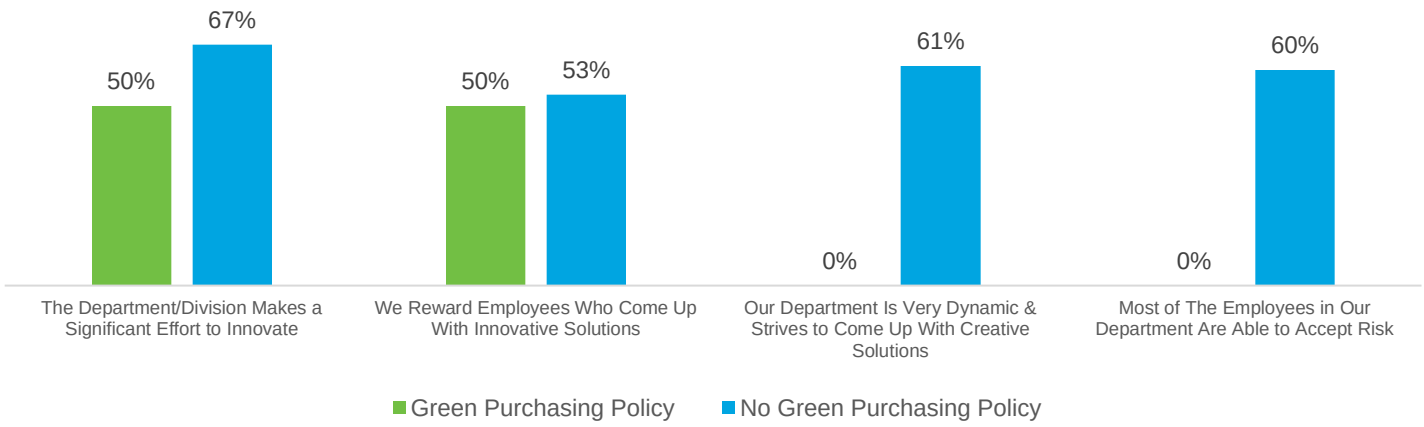


5. *Innovation Culture*

The section on innovation and culture within the organization yielded very interesting results. Respondents were asked about their level of agreement with the following characteristics of their department: a drive for innovation, rewarding innovative employees, the department's commitment to delivering creative solutions, and acceptance of risk. Regarding this question, we did not identify any statistically significant differences between successful and unsuccessful green purchasing policy implementers.

Paradoxically, unsuccessful implementers of green purchasing policies rate innovation and organizational culture more positively than their successful counterparts. The low percentage of affirmative responses from both groups regarding innovation, rewards, and risk-taking is worth noting. This phenomenon also appears in other studies focusing on the public sector in the Czech Republic (Plaček et al., 2024), a zero-error tolerance culture. This culture emphasizes identifying and punishing mistakes. The emphasis on compliance is key. In contrast, seeking creative solutions and thinking outside the box is discouraged because it carries the risk of errors.

Figure 19. Probability of Successful Implementation of Green Purchasing Policy, Given Perception of Innovation Culture



Similarities between municipalities with and without successful green purchasing policies

We identified several areas in which directors within municipalities with a green purchasing policy responded similarly to the successful implementation of their green purchasing policies. Similarities across municipalities related to general purchasing criteria, which are unrelated to implementation success, include the following:

- Price
- Performance requirements
- Pre-existing contract agreements
- Technical specifications for managing purchase complexity

13 actions to advance green public procurement in Czech municipalities

1. Recognition of public procurement as a strategic public policy tool at all levels of the public sector

Currently, public procurement serves as a tool for the public sector to acquire goods and services. However, it has the potential to encourage innovation, support small businesses, and improve environmental conditions. Unfortunately, this perception of public procurement is not prevalent in the Czech Republic. This strategy can enhance the credibility of green public purchasing among politicians, officials, the public, and other key stakeholder groups.

2. Changing the culture of the public sector

There is a need to shift cultures away from excessive emphasis on compliance and monitoring of inputs to prioritizing accountability in achieving targets. This shift is crucial for enhancing accountability, a vital element in reaching green public procurement objectives. Additionally, this tool can help decrease the zero-error tolerance in the public sector. Establishing transparency in target setting and accountability for reaching these targets is fundamental to effectively implementing green public procurement.

3. Public procurement should be one of the key responsibilities of top management

Green procurement is implemented because top management considers it important. Top managers can also play key advocacy roles in implementing green public procurement.

4. Institutionalizing green public procurement in strategies and policies

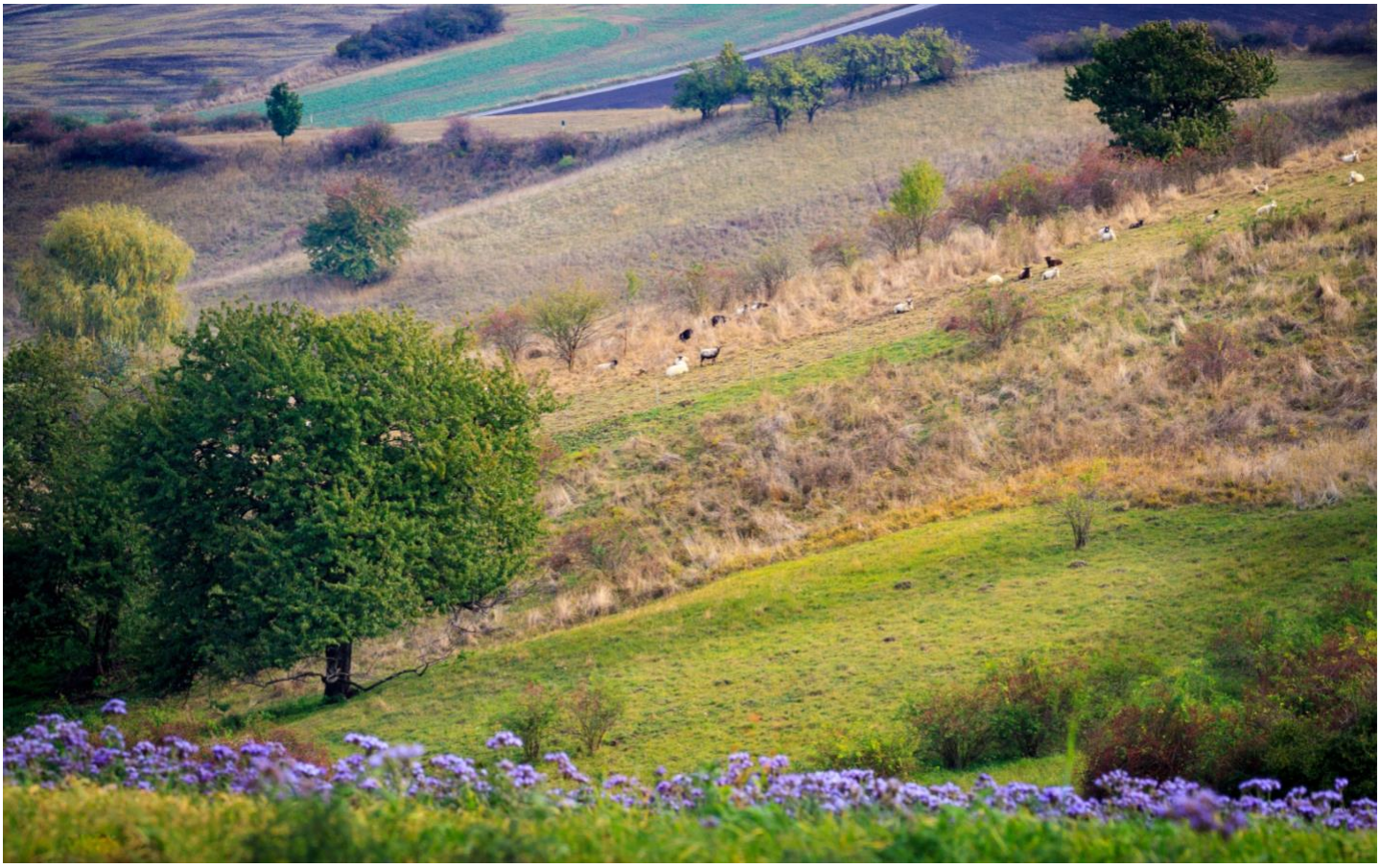
To implement GPP, it is necessary to incorporate a commitment to public procurement in the organization's key strategic documents and internal policies. It is also necessary to set quantifiable targets in these documents.

5. Capacity building

As mentioned, the Czech Republic is characterized by extensive decentralization, resulting in high heterogeneity in the implementation of green public procurement across individual municipalities. The size of the municipality plays a major role in this regard. We can assume that green public procurement is more complex than traditional public procurement; thus, its preparation requires more time and resources. Therefore, public sector organizations need qualified and adequately educated staff to manage green procurement. Various forms of inter-municipal cooperation and shared procurement tools enhance this capacity.

6. Flexible centralization and decentralization of purchasing

It is appropriate to identify the types of sustainable products that should be centralized and the types of products that are more efficient to purchase in a decentralized way.



7. Process integration

At first glance, green public procurement is perceived as more expensive than conventional procurement. In this consideration, however, we are only focusing on the purchase cost. There are examples of good practice that demonstrate that there is scope for great savings when we consider other parts of the chain as well. We can illustrate this with an example of sustainable food procurement from different catering facilities. Savings can be achieved by integrating various activities into one chain, from menu planning, food processing, food preparation, determining food demand, holding optimum stock levels, serving food, and waste disposal. There is a lot of discussion about e-procurement, but we must not forget the digitalization of other processes, such as consumption estimates as well.

8. Dialog and sharing of experiences between public procurers, policymakers, regulators, police authorities, and prosecutors

Public procurement is a complex process that can be interpreted differently by various actors in different situations and contexts. Harmonizing perceptions and understandings of these differing meanings, as well as the language used among various professional groups, is necessary.

9. Interdisciplinary partnership and dialog

This includes various forms of collaboration, such as public–private partnerships, public–nonprofit partnerships, and public–private partnerships. Public–sector institutions, nonprofits, and businesses should have a safe space for collaboration, dialog, and experimentation to find creative solutions and build trust.

10. Complexity reduction

Further work is required to develop effective and credible tools for determining the environmental impact of individual products and services. Certificates and eco-labels are included.

11. Implementation of benchmarking

Municipalities should be able to compare their performance with similarly sized municipalities and then share best practices and experiences with each other.

12. Education

Education in public procurement should not only focus on law but also reflect a broader interdisciplinary context, such as management, organizational psychology, economics, and environmental studies.

13. Stakeholders Involvement

To successfully implement green public procurement, it is also necessary to create public awareness of the benefits of green public procurement. Successful implementers, for example, organize field trips for schools and the public to show how not only sustainable products and technologies can be created and how these projects are created.

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- Slide decks
- Links to news articles about this research
- Links to other green purchasing resources

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Please cite this report as:

Plaček, M., Rossel, J., Šumpíková, M., Fojtík, R., Hrušková, M., Darnall, N., Stritch, J.M., & Bretscheneider, S. 2024. Advancing Green Purchasing in Czech municipalities. Fakulta Sociálních Věd, Univerzita Karlova, Ambis, a.s., VŠB – Technická Univerzita Ostrava; Kogod School of Business and School of Public Affairs, American University, Sustainable Procurement Research Initiative.

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We thank the TA CR CK04000199 for supporting this research.

Please cite this report as:

Plaček, M., Rossel, J., Šumpíková, M., Fojtík, R., Hrušková, M., Darnall, N., Stritch, J.M., & Bretscheneider, S. 2024. Advancing Green Purchasing in Czech municipalities. Fakulta Sociálních Věd, Univerzita Karlova, Ambis, a.s., VŠB – Technická Univerzita Ostrava; Kogod School of Business and School of Public Affairs, American University, Sustainable Procurement Research Initiative.