

Green public procurement as a research field in period 2005-2025

Marina Stojanov, Blaženka Knežević

ABSTRACT

Objective: The objective of the article is to identify the scope and development of green public procurement as a research field over the last two decades. The article aims to provide a conceptual structure of literature in the field through identifying elaboration of research sub-areas and key words occurring in published papers on the topic of green procurement. In addition, based on the findings, article aims to suggest certain future directions of research.

Research Design & Methods: Methods of bibliometric literature and co-occurrence network were applied to identify the most important topics and trends in green public procurement and discuss directions for further research in the field. In addition, primary pilot research was conducted using semi-structured interviews with public procurement managers to complement the theoretical part of the research and to emphasise areas of green public procurement which are important from the practical point of view.

Findings: Results of the bibliometric analysis show that scientific interest for the field of green public procurement is significantly growing over the past twenty years. Based on the bibliometric analysis, the main six topics occurring within the green public procurement field are: (1) sustainability, (2) public procurement policies and process, (3) life cycle, (4) supply chain management and decision making, (5) cost analysis and (6) supplier selection. While the pilot research reveals significant scope to add more specific topics into the future research in the field.

Implications & Recommendations: The literature review together with described bibliometric analysis results can serve as a reference for understanding how the field of green public procurement literature has recently evolved. Elaborated co-occurrence network of keywords indicates research gaps in the field. Based on that, we offer suggestions and recommendations for future research directions based on which academics in the field can develop and design their future research projects in the field of green public procurement. Moreover, based on practical insights into managers' opinions from the pilot research, academics can develop new questions for more complex quantitative research in the field.

Contribution & Value Added: This article addresses some limitations of previous bibliometric studies by broadening the period of research and by using a different bibliographic database as the data source: Scopus instead of Web of Science. Moreover, the article adds new practical knowledge based on the conducted pilot research on the sample of public procurement managers, which was suggested to be done in several previously published papers based only on bibliometric method. Both methods enabled recognition of new research gaps which can be investigated in future research in green public procurement field.

Article type: research article

Keywords: green public procurement; bibliometric analysis; co-occurrence; interview; public procurement managers

JEL codes: L32, H83, H57, Q01

Received: 3 April 2026

Revised: 23 June 2026

Accepted: 29 June 2026

Suggested citation:

Stojanov, M., & Knežević, B. (2026). Green public procurement as a research field in period 2005-2025. *International Entrepreneurship Review*, 12(3), 87-100. <https://doi.org/10.15678/IER.2026.1203.06>

INTRODUCTION

Green public procurement is defined as a procedure in which public administration bodies procure goods, works and services which have a lower impact on the environment during their lifetime than

goods, works and services with the same basic function that they would otherwise order (MEPZ, 2015). Green public procurement (GPP) can serve as a voluntary instrument that encourages environmental protection and sustainable consumption as well as production. International and European strategic documents emphasise GPP because it facilitates how contracting authorities seek to order goods, services, or works that have less impact on the environment during their life cycle but with the same basic function and quality that would otherwise be ordered (Kordos *et al.*, 2022). Moreover, considering the types of sustainable public procurement, GPP is one of the most frequently mentioned types of public procurement. Most studies in the field of sustainable public procurement examine sustainability factors only in the context of one type of sustainable public procurement – usually that of green procurement (Grandia & Voncken, 2019).

Furthermore, as a fiscal policy tool for environmental governance, GPP plays a crucial role in achieving sustainable production and consumption. Wang and Shen's (2025) findings reveal that green public procurement significantly improves firms' environmental, social, and governance (ESG) performance. Beyond its environmental impact, GPP matters economically thanks its contribution to supply chain management, life cycle and cost analysis.

A quick insight into the bibliographic database Scopus, shows that the first scientific article on this topic was published by Spence in 1981, in the USA. In 1993, Berman published the scientific article with 'green products' in the title, and since then, the research interest in topics of green procurement and green public procurement has grown to the present day. The current article focuses on the last two decades 2005-2025. The Scopus database held five relevant articles in 2005, 19 in 2015, and 129 in 2025 – all dealing with green public procurement as a subject of research. In addition, there is a notable prevalence of areas or approaches applied in the field. For instance, in the early 2000s, articles focused on environmental aspects, from 2015 to 2020 the common topics were life cycle and sustainability, and in past few years green public procurement appears mainly in the context of business operations, small and medium-sized enterprises, along with procurement practice and specific industries.

As research in GPP continues to evolve, bibliometric analysis provides a valuable tool for tracking progress, recognising field sub-topics, and shaping the trajectory of research (Bunescu & Serban, 2025). Scholarship recognises bibliometric analysis as the method for examining the structure and impact of research in a field by using metrics such as the number of publications, citations, and collaboration networks (Donthu *et al.*, 2021). This enables scholars to identify influential authors, high-impact journals, emerging topics, and future research directions (Zupic & Cater, 2015). Bibliometric methods are widely used to analyse scientific production, providing an objective perspective on the distribution of knowledge and academic networks (Aria & Cuccurullo, 2017). Bibliometric studies are applied in various fields, including public policy (Hussain *et al.*, 2024), environmental management (Letunovska *et al.*, 2021), and sustainability (Nobanee *et al.*, 2021), highlighting their usefulness in evaluating research trends (Bunescu & Serban, 2025). Therefore, we applied a bibliometric literature review to identify the most important topics and trends in green public procurement and to discuss the potential for further research.

For stronger confirmation and a practical insight into the research field, we supplemented theoretical analysis with qualitative research: a pilot study of semi-structural personal interviews with public procurement managers from different Croatian firms that are subject to public procurement. We asked public procurement managers to comment: How and how frequently they use GPP instruments in public procurement procedures? Is green public procurement something new for them? What are the advantages and disadvantages of green public procurement? And, which three words they associate with the term of green public procurement?

Therefore, the article describes the evolution and identifies key sub-topics of GPP over the last two decades. To that end, our study sought to answer the following research questions:

- RQ1:** How green public procurement evolves as a research field in period 2005-2025?
- RQ2:** Which countries are the most influential in the field of green public procurement?
- RQ3:** What are the dominant subtopics in the research field and are the subtopics interconnected?
- RQ4:** How practitioners perceive the importance and role of the green public procurement?

RQ5: Based on the perceptions of public procurement managers, are any topics neglected in the available literature in the field of green public procurement?

LITERATURE REVIEW

As already mentioned in the introduction, research in GPP continues to evolve, and scientific interest has only grown over the last two decades. Moreover, consolidation and integration of green aspects into public procurement policies becomes increasingly frequent at the international level. Bunescu and Serban (2025) provide a bibliometric analysis of specialised literature related to green public procurement conducted using publications indexed in the Web of Science database, applying rigorous selection criteria and specialised tools such as CiteSpace and Bibliometrix.

The study by Rejeb *et al.* (2024a) showed that sustainable development, sustainability, green supply chain management, and GPP remain core topics related to green procurement. In addition, Rejeb *et al.* (2024b) conducted the bibliometric review to investigate the current state of public procurement research. The results indicate that public procurement research has increased significantly in recent years. The findings from keyword co-occurrence network reveal six main research themes including innovation, corruption, and GPP. By applying bibliographic coupling, Rejeb *et al.* (2024b) found that the focus of public procurement research revolves around seven thematic areas: GPP, corruption, the role of SMEs in public procurement, electronic public procurement, innovation, labour standards, and service acquisition.

Ortega Carrasco *et al.* (2025) prepared systematic literature review and bibliometric analysis of GPP research between 2003 and 2023 to identify key topics, trends and research gaps. A dataset of 201 documents retrieved from the Web of Science database was analysed using CitNetExplorer and VOSviewer. By analysing prior literature on the effect of GPP on achieving sustainable development, they found that (1) richer qualitative analysis on green public procurement is needed, (2) there is a gap in understanding localised factors influencing green public procurement in developing countries, and (3) the transformative role of digitalisation in promoting social and environmental outcomes in GPP is an essential factor.

Galán-Valdivieso *et al.* (2024) performed bibliometric analysis by Scopus documents from 1990 to November 2023 so as to find that the most influential journals are *Journal of Cleaner Production* and *Sustainability*. The latter is an open access journal while the former publishes through traditional subscription.

Masudin *et al.* (2022) used a structured literature study sample for 1994-2022. A total of 220 articles with the keywords green procurement and supplier selection were collected. The authors used Publish or Perish and VOSviewer to find journals, authors, citations, keywords, and word hierarchy maps. This bibliometric review is related to the implementation of green procurement.

Many authors research GPP in a specific country (Tan We *et al.*, 2025; Deschamps, 2025; Nguyen & Van Vu, 2025; Gao & Lu, 2025; Shanin *et al.*, 2025; Migone *et al.*, 2024; Ishak & Thirucelvam, 2024) or a specific industry (Bhandari *et al.*, 2025; Tim *et al.*, 2025; Aldenius *et al.*, 2022), while a significant number addresses the construction sector (Ahmed *et al.*, 2024; Gruber *et al.*, 2025; Hosseinpoor Azari *et al.*, 2024; Flores Lara *et al.*, 2025; Idir *et al.*, 2025). In future, artificial intelligence (AI) is expected to become a more prominent topic, Iders-Bankovs *et al.* (2025) wrote the article about public procurement in the age of AI and emphasised challenges and opportunities which AI brings to the field.

Most articles that applied bibliometric analysis to green procurement and GPP draw on data available in the Web of Science bibliographic database. Various analytical tools mapped the field, such as CiteSpace, Bibliometrix, CitNetExplorer, and VOSviewer. Our study employed data extracted from the Scopus bibliographic database because it provides more scientific journals from regions of Central and Southeastern Europe than the Web of Science database. Therefore, the results of our bibliometric analysis may differ from previous analyses.

Besides the differences in analysis of a different period (2005-2025), which includes most recent articles in the field, our bibliometric analysis included more papers published in languages other than English, which are available in Scopus but not in the Web of Science database. Moreover, Bunescu and Serban (2025) indicate that the qualitative studies that combine bibliometric analysis with interviews with field experts could provide a more nuanced perspective on the real impact of new practices and

technologies on the procurement process. Therefore, we firstly analysed Scopus documents with keywords, precisely the keyphrase ‘green public procurement’ in the ‘Article title, Abstract, Keywords’ in all available languages. Secondly, we conducted a pilot study by interviewing public procurement managers who provided a perspective on GPP in practice.

RESEARCH METHODOLOGY

Research was conducted in two phases: (1) a bibliometric analysis of articles published in 2005-2025, and (2) primary qualitative research on a sample of public procurement managers. The methodology for each phase is described in more detail below.

Phase 1: Bibliometric Analysis of Green Public Procurement as Research Field in 2005-2025

This study used bibliometric analysis paired with a graphical mapping technique. The aim was to investigate the existing scientific literature in the field of green public procurement and, consequently, recognise the research trends in the field and identify research gaps for further scientific work. Figure 1 presents the key steps of bibliometric analysis procedures.

In the first step, we used the phrase ‘green public procurement’ to perform a test search in the Scopus database. The test search returned a large pool of 918 documents with the keyword in the ‘Article title, Abstract, Keywords’ (see second research step). Therefore, ‘green public procurement’ was accepted as a suitable keyword on which further analysis would be based. A period from 2005 to 2025 was taken as a relevant period for research, since in the early 2000s a Scopus search on this topic returned only a few scientific papers and the field was still unexplored. Research step three shows that 872 of the 918 documents fall within this twenty-year period. These documents formed the basis for further analysis.

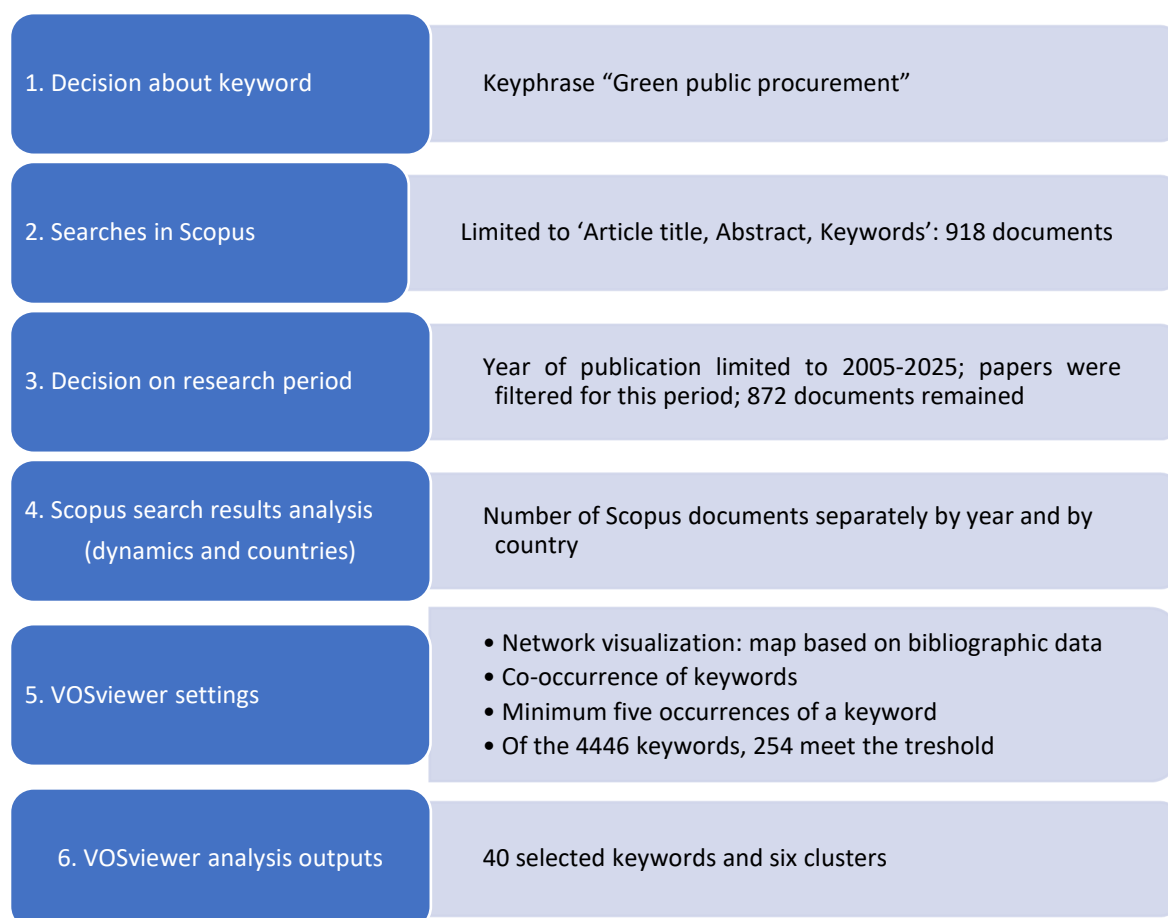


Figure 1. Steps of the bibliometric research procedure

Source: own elaboration.

In the fourth step, we scrutinised the data by year of publication and country of origin to describe the development trend in the field and to identify the countries where the topic is most represented. Then, in step five, we entered Scopus data into VOSviewer, a software tool for constructing and visualising bibliometric networks, and calibrated the settings as shown in Figure 1. We chose co-occurrence as the analysis type, with a minimum of five keyword occurrences. Results show that out of the 4 446 keywords, 254 met the threshold. Finally, 40 keywords were selected, and based on given preconditions, VOSviewer analysis provided six clusters whose description leads to valuable conclusions about key topics, trends, gaps and space for further investigation in the field of green public procurement.

Phase 2: Methodology of a Primary Qualitative Pilot Research on a Sample of Procurement Managers

In addition to the bibliometric analysis, semi-structured interviews on green public procurement were conducted with public procurement managers to practically confirm that the abovementioned terminology and the discovered relationships between concepts are suitable as a research subject for a broader primary quantitative study. Table 1 shows the profile of the ten public managers involved in the pilot study conducted in Croatia from late December 2025 to early February 2026.

Table 1. Qualitative pilot research sample structure

MANAGER CODE	GENDER (M/F)	SECTOR / INDUSTRY	INSTITUTION/COMPANY SIZE (according to number of employees)
M1	F	Healthcare	large
M2	M	Healthcare	large
M3	F	Healthcare	large
M4	F	Education	medium
M5	F	Education	large
M6	F	Local government	medium
M7	M	Local government	medium
M8	F	Local government	small
M9	F	Government	large
M10	F	Wood processing industry	large

Source: own study.

Table 1 shows that out of the 10 interviewed managers, three come from the health sector, two from the education sector, three from the local government, one from the government sector, one from the wood industry. Notably, the sample included eight women and two men. Regarding the size of institution or public company: six worked in large (with more than 250 employees), three in medium-sized (with 50-250 employees), and only one manager in small institution (with less than 50 employees). All companies and institutions were located in Croatia, mostly in the capital city Zagreb (7 out of 10), while three in other Croatian cities.

RESULTS AND DISCUSSION

Discussion on Field Dynamics and Dominant Originating Countries

Our review of the literature available in the Scopus database shows that in 2005 only five articles were published about GPP (Baidz, 2005; Berdegue, 2005; Faith-Ell, 2005; Valko, 2005; Green, 2005), in 2015 – 19 articles (such as: Igarashi *et al.*, 2015; Lunberg *et al.*, 2015; Nikolaou & Loizou, 2015; Uttam & Le Lann Roos, 2015; Guevara Ortega Carrasco, 2015; Yan, 2015; etc.), and in 2025 the number of articles rose to 129. In 2015 there even appeared the book *Public Procurement Policy* (Piga & Tatrai, 2015). Over the last ten years (2015-2025), publications related to green public procurement revealed a significant growth (Figure 2). Green public procurement has become increasingly popular among researchers in recent years. Because the number of available papers has risen rapidly since 2023, we expect further growth in the near future.

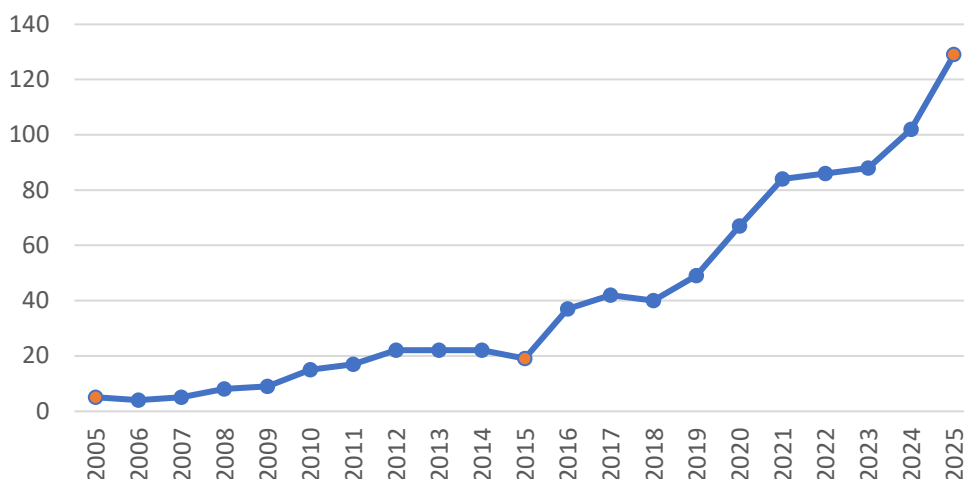


Figure 2. Evolution of publication on green public procurement

Note: Total of published papers over the last twenty years is 872.

Source: own elaboration based on number of papers in the Scopus database.

In total, 595 papers appeared over the last ten years. By far the most publications about GPP originated from Italy (115), and then Spain (83), China (80), the UK (65), the USA (54), Sweden (52), Germany (50), Poland (35), and France (31), while all other countries together account for 30 published scientific articles. These data reveal a strong concentration of papers from four countries because more than half of the published papers in the field originated from Italy – almost 20% of all published papers in last ten years – then Spain (14%), China (13%), and the UK (11%). This finding differs slightly from that by Bunescu and Serban (2025) and Ortega Carrasco *et al.* (2025) who do not mention Spain as one of the dominating countries in the field. Moreover, Poland ranks higher in our study as an originating country – represented with 35 papers – than in previous studies based on bibliometric analysis, which may confirm the assumption of better regional journal availability, namely presence in the Scopus database among journals for the Central and Eastern European region. Croatia has only two documents on this topic in the Scopus database in the given period. Stojic (2021) explores how four public incentives (regulation, taxes, subsidies, and procurement of eco-innovations) and two private incentives (demand incentives and reputational concerns) contribute to creating private and social benefits from green innovations in emerging Central European economies. The second article originating from Croatia by Böttge *et al.* (2023) emphasise that shifting green public procurement from voluntary application to legal obligation could push companies and organisations towards more strategic and outcome-oriented purchasing in various sectors in the EU.

Discussion on Keywords and Co-occurrence Network

As described earlier, by performing common keyword analysis within the VOSviewer (Figure 1), 40 keywords were isolated and co-occurrence analysis identified six clusters (for clusters, see Figure 3). Each cluster groups related keywords, revealing trends in green public procurement, under-investigated terms, and connections between topics.

Keyword co-occurrence network reveals six main research themes of green public procurement: (C1) sustainability (red cluster with nine keywords), (C2) public procurement policies and process (purple cluster with eight keywords), (C3) life cycle (blue cluster with seven keywords), (C4) supply chain management and decision making (yellow cluster with seven keywords), (C5) cost analysis (green cluster with six keywords) and (C6) supplier selection (light blue cluster with three keywords).

The red cluster (C1) shows GPP as the biggest bubble. The other bubbles in the given cluster are circular public procurement, ecolabels, green products, green procurement, procurement, procurement practices, sustainability, and sustainable public procurement. This cluster shows that scholarship often investigates GPP in relation to sustainability and sustainable public procurement

(Naveed *et al.*, 2025; Guarini *et al.*, 2025; Shahin *et al.*, 2025; Ayarkwa *et al.*, 2025; Tuffour *et al.*, 2024). This finding agrees with Bunescu and Serban (2025) who also foreground this aspect as a very important topic within the research field.

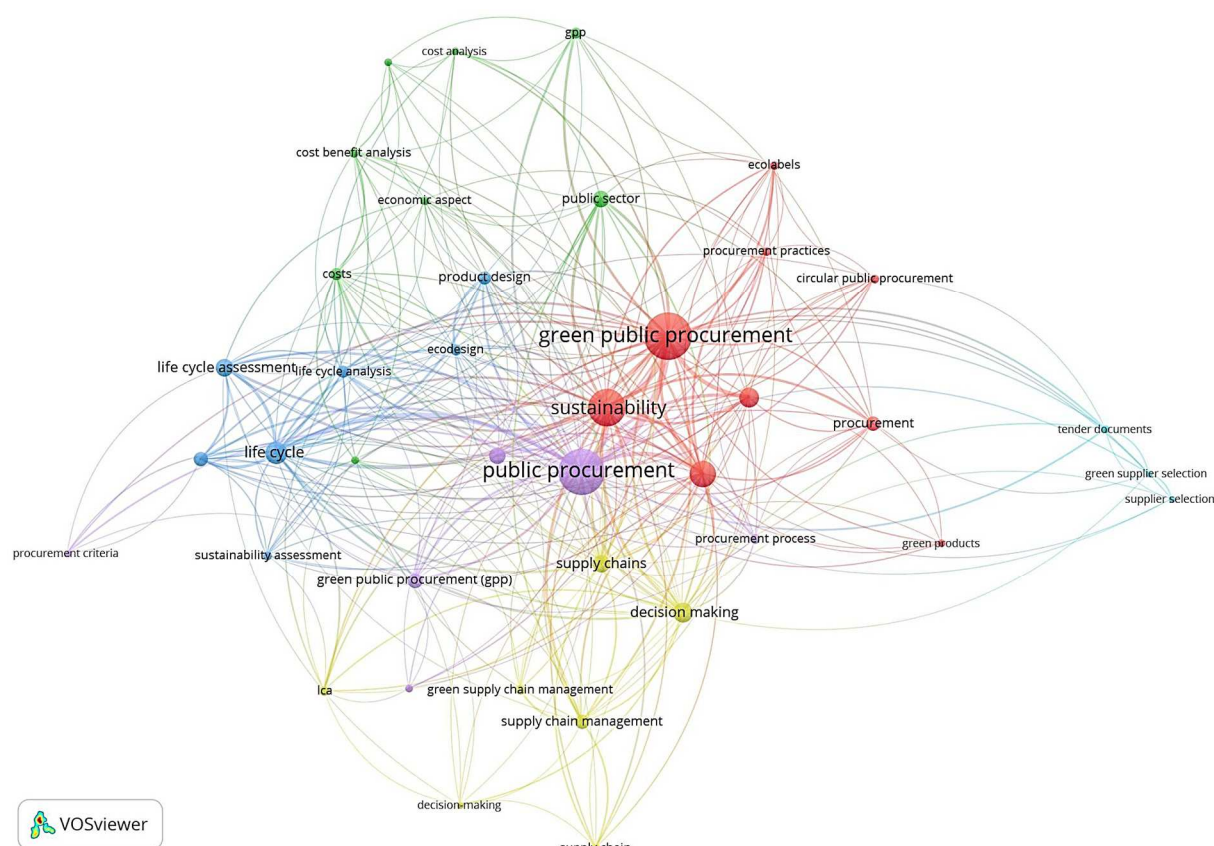


Figure 3. Co-occurrence network based on conducted bibliometric analysis

Source: own elaboration using VOSviewer software.

Sustainable public procurement links with all other clusters except for the light blue cluster (C6), which represents operative terms of public procurement. Nevertheless, procurement practices and ecolabels – also operative practices of GPP – are not strongly connected with other clusters. Therefore, scholars may investigate the implementation of procurement procedures and selection within the framework of managerial decisions and characteristics.

Public procurement from the purple cluster (C2) – as a wider term – is strongly interlinked with other clusters. In turn, the blue cluster (C3) appears strongly interlinked to green (public) procurement, which means managers often mentioned green procurement together with life cycle. These interlinkages show how keywords from different clusters relate to each other. When we set aside the direct procurement terms (green public procurement, green procurement, and public procurement), sustainability is the largest bubble and it is strongly linked with all other clusters, which makes it a trend to investigate in many fields.

In the light blue cluster (C6), the bubbles are of relatively similar size, and it is not highly linked to other clusters. The bubbles of green cluster (C5) are also relatively the same size. Decision-making from yellow cluster (C4) is interlinked to all other clusters, which makes it important and highlights the managerial component, which is not directly investigated in the field of green public procurement.

Pilot Research Results

The pilot research was conducted via interviews with a limited number of public procurement managers in Croatia as an exploratory and complementary add-on to bibliometric analysis. Figures 4 and

5 show the results of the content analysis, categorised and systematised according to the transcribed managers' answers in the conducted interviews.

Frequency and instruments of green public procurement	Trend of green public procurement	Advantages and disadvantages of green public procurement
• rarely or never • voluntarily • connected with products (e.g. Ecolabels, biodegradable products) • expect more instruments in the future (for instance suppliers' ISO certificates)	• new trend • EU trend • new in Croatia	ADVANTAGES • environmentally friendly • ecological • adding value DISADVANTAGES • expensive • decreasing competition • incompletely responding to consumer needs

Figure 4. Categories of managers' opinion on green public procurement

Source: own elaboration based on information from conducted interviews.

Figure 4 summarises findings from answers to the first three questions from interviews. Firstly, we asked public managers to describe how often they use green public procurement instruments in their public procurement procedures. Answers show that seven out of 10 managers use it rarely or never, and if they do sometimes use it, it is always oriented towards such products as ecolabels or biodegradable components – not suppliers. Nonetheless, eight out of 10 managers expected that supplier characteristics like ISO certificates will also be valued in GPP in the near future. As a reason for not implementing the GPP they stated that it is still voluntary (M1, M2), GPP requires more time and broader market investigation and they lack the people and time (M1, M2, M3), that they do not have enough education for it as well as that Croatian market is still undeveloped for it (M4, M5, M7), but they are nevertheless aware that GPP will be important the near future – maybe even changing from voluntary to obligatory in procurement procedures (M1, M2, M4, M5, M6, M7).

Secondly, managers were asked whether green procurement is a trend. All managers consider green public procurement a new trend that came from the EU and remains undeveloped in Croatia. Thirdly, managers were asked to emphasise advantages and disadvantages of green procurement as a concept and trend in the public procurement. Around half of managers were somewhat sceptical about green public procurement, as they consider it an instrument which is expensive (M1, M3, M4, M7, M9), which decreases competition (M4, M5, M6, M8, M9, M10), and which is not always compatible with the consumer needs (M2, M3, M7, M8, M10). However, most managers (eight out of 10) claim that a major advantage of green public procurement is a positive environmental and ecological impact, while half of them agreed that green procurement can contribute to added value in their company or organisation (M3, M5, M6, M8, M9). Therefore, we conclude that sustainability – especially its environmental and ecological aspects – and GPP are concepts strongly connected not only by the co-occurrence network of the bibliometric analysis but also by procurement managers. This finding supports Cheng *et al.* (2018), who claim that the policy environment is a primary factor that determines the extent of engagement in green public procurement.

Finally, each interviewed manager was asked to give three words, which associate them with green public procurement as a concept. In total, 26 words were extracted from the interview transcript, and four words were mentioned twice. In Figure 5, the extracted words are categorised into five aspects: products, specific products, environment and energy, economy in general, and other (uncategorised). This structural table shows that managers associate the term most with the product. The second column of Figure 5 shows that managers gave their associations based on their job and type of products they purchase. As expected, they regard green public procurement partly as an environmental matter and partly associate it with economic terms.

Notably, some of the words in Figure 5 were not found through the co-occurrence network within the bibliometric analysis such as 'biodegradable,' 'FSC certificate,' 'added value,' 'MEAT' (the most economically advantageous tender), 'warranty,' 'ISO certificates,' and all words from the specific products field. Therefore, based on both bibliometric research and pilot research we can conclude that green procurement is a suitable topic for future wider primary research, but in addition to aspects available in the literature – explained based on bibliometric research – there remains space to explore more specific fields of green public procurement, based on the pilot research. Moreover, this agrees with the suggested research direction by Cheng *et al.* (2018) and Ortega Carrasco *et al.* (2025) who claim that some qualitative research methodologies must be used to improve the evidence on this topic from managers' viewpoint and to promote more practices which are used in green public procurement.

PRODUCT	SPECIFIC PRODUCTS	ENVIRONMENT & ENERGY	ECONOMY	OTHER
• ecolabel • product • extended product life • biodegradable • FSC certificate • life cycle • added values	• food packaging • ecological detergents • electric vehicles • solar panels	• renewable energy sources • use of recycled materials • recycle • environment • energetic efficiency	• costs • the most economically advantageous tender (MEAT) • warranty for defect removal • contract • suppliers • ISO certificates	• new • future • education • grass

Figure 5. Associations of interviewed managers regarding phrase 'green public procurement'

Source: own elaboration based on information from conducted interviews.

CONCLUSIONS

The study sought to answer five research questions. Here we summarise the answers, drawing on the results and discussion above.

Answer to RQ1: Green public procurement evolved rapidly over the period 2005-2025. Analysis of articles on this topic shows significant growth over the last two decades and research interest is increasing rapidly over the last five years. Therefore, we expect further growth of research interest in the field of green procurement in the near future.

Answer to RQ2: Four dominant countries of origin of papers have been identified, covering more than half of all available publications in the Scopus database: Italy, Spain, China, and the UK. Italy is by far the most represented country of origin, making up almost 20% of all the available articles.

Answer to RQ3: The bibliometric analysis identified that six main topics connected to green public procurement are: (1) sustainability, (2) public procurement policies and process, (3) life cycle, (4) supply chain management and decision making, (5) cost analysis and (6) supplier selection. The co-occurrence network isolated relationships among the six topics and some research gaps were described in the discussion section referring to this analysis.

Answer to RQ4: Even though managers recognise green public procurement as a new growing trend and even though they emphasise advantages that green procurement can bring to ecological and economic aspects of doing business, they still consider it voluntary and do not implement it into their everyday practice on a large scale. Even if it is implemented, they state that it is oriented mainly towards products, not supplier relationships, and the reasons are a lack of education, lack of resources and underdeveloped market conditions.

Answer to RQ5: For procurement managers, sustainability and GPP are strongly connected concepts – especially in their environmental and ecological aspects – which supports findings from bibliometric analysis. Some notions that emerged as important associations with green public procurement from managers' viewpoint were not found through the co-occurrence network within the bibliometric analysis, such as 'biodegradable,' 'FSC certificate,' 'added value,' 'the most economically advantageous tender,' 'warranty,' 'ISO certificates,' 'specific products in public procurement.' Therefore, there is significant scope to broaden future research in the six most represented sub-topics by adding some of the abovementioned specific topics recognised by practitioners.

Our study addressed some limitations of previous bibliometric studies by including the most recent articles in the field and by using the Scopus database instead of the Web of Science, not to mention – by performing interviews with public procurement managers. Nevertheless, our analysis also has limitations. Our bibliometric analysis relied only on keywords, whereas it could also draw on citation, co-citation, and co-authorship analysis. Moreover, the Scopus keyword search could be extended to more related terms to map the GPP field more precisely. The main limitation of the pilot research was the small sample, which included only 10 public procurement managers from Croatia (mostly women), so we recommend further interviews or even a quantitative survey with a larger sample of public procurement managers from a larger pool of countries, which would improve the generalisability of the results. Moreover, the pilot research interviewed only public procurement managers, so future research should include perspectives from managers of private companies who are involved in public procurement processes. It would be interesting to investigate and explain their viewpoint regarding the most important sub-topics.

REFERENCES

- Ahmed, M.Z., O'Donoghue, C., & McGetrick, P. (2024). Green public procurement in construction: A systematic view. *Cleaner and Responsible Consumption*, 15. <https://doi.org/10.1016/j.clrc.2024.100234>
- Aldenius, M., Tsaxiri, P., & Lidestam, H. (2022). The role of environmental requirements in Swedish public procurement of bus transports. *International Journal of Sustainable Transportation*, 16(5), 391-405. <https://doi.org/10.1080/15568318.2021.1879975>
- Aria, M., & Cuccurullo, C. (2017). Bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of Informetrics*, 11(4), 959-975. <https://doi.org/10.1016/j.joi.2017.08.007>
- Ayarkwa, J., Atanga, R.A., Osei-Asibey, D., Abu, I.M.A., & Osei-Tutu, S. (2025). Level of awareness and knowledge of procurement practitioners on green public procurement: a systematic review. *Journal of Public Procurement*, 25(2), 276-298. <https://doi.org/10.1108/JOPP-05-2024-0060>
- Baitz, M., Kreissig, J., & Makishi, C. (2005). Life cycle assessment of PVC in product optimisation and green procurement – Fact-based decisions towards sustainable solutions. *Plastics Rubber and Composites*, 34(3), 95-98. <https://doi.org/10.1179/174328905X55461>
- Berdegú, J.A., Balsevich, F., Flores, L., & Reardon, T. (2005). Central American supermarkets' private standards of quality and safety in procurement of fresh fruits and vegetables. *Food Policy*, 30(3), 254-269. <https://doi.org/10.1016/j.foodpol.2005.05.003>
- Berman, E. M. (1993). The market for green products and public policy. *Environments*, 22(1), 75-81.
- Bhandari, S., Lopes, M., & Pires, S.M. (2025). A systematic review of factors influencing green public procurement in higher education institutions. *Discover Sustainability*, 6(1), 720. <https://doi.org/10.1007/s43621-025-01562-6>
- Böttge, I., Kumpar Zidanič, H., & Tzamalikou, A. (2023). From Green Vision to Legal Obligation: The Case for Making Green Public Procurement Mandatory. *Croatian Yearbook of European Law & Policy*, 19(1), 249-280. <https://doi.org/10.3935/cyelp.19.2023.519>
- Bunescu, L., & Serban, A. (2025). Patterns in Worldwide Literature About Green Public Procurement: Bibliometric Analysis and Knowledge Mapping. *Studies in Business and Economics*, 20(3), 76-106. <https://doi.org/10.2478/sbe-2025-0045>
- 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. <https://doi.org/10.1016/j.jclepro.2017.12.027>
- Deschamps, A. (2025). Is green public procurement a deterrent for SMEs? Empirical evidence from France. *Small Business Economics*, 65(2), 1071-1094. <https://doi.org/10.1007/s11187-025-01034-1>

- Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W.M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, 133, 285-296. <https://doi.org/10.1016/j.jbusres.2021.04.070>
- Faith-Ell, C. (2005). The introduction of environmental requirements for trucks and construction vehicles used in road maintenance contracts in Sweden. *Corporate Social Responsibility and Environmental Management*, 12(2), 62-72. <https://doi.org/10.1002/csr.72>
- Flores Lara, J.C., El-Fadel, M., Rauf, A., & Khalfan, M.M.A. (2025). Insights and innovations in construction and demolition waste management: Strategic framework for circular market development. *Resources Conservation and Recycling Advances*, 28, 200288. <https://doi.org/10.1016/j.rcradv.2025.200288>
- Galán-Valdivieso, F., Alonso-Cañadas, J., Saraite-Sariene, L., & Caba-Perez, C. (2024). Green Public Procurement in open access and traditional journals: a comparative bibliometric analysis. *Journal of Public Procurement*, 24(1), 91-113. <https://doi.org/10.1108/JOPP-09-2023-0064>
- Gao, J., & Lu, F. (2025). Green public procurement, external pressures and enterprise green transition: Evidence from China. *Journal of Asian Economics*, 98. <https://doi.org/10.1016/j.asieco.2025.101936>
- 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), <https://doi.org/10.3390/su11195215>
- Green, R. (2005). Nicholas: the boy who saved thousands of lives. *Clinical Orthopaedics and Related Research*, 435, 8-10. <https://doi.org/10.1097/01.blo.0000165719.29782.c4>
- Gruber, V., Weigert, M., Raab, J., & Dollmann, M. (2025). Status quo on the application of ecological award criteria in infrastructure construction. *Proceedings of International Structural Engineering and Construction*, 12(1), [https://doi.org/10.14455/ISEC.2025.12\(1\).PRO-03](https://doi.org/10.14455/ISEC.2025.12(1).PRO-03)
- Guarini, M.R., Ghiani, G., & Sica, F. (2025). To What Extent Are the Green Public Procurement Criteria in National Policies and Action Plans? Commonalities Across European Countries for Environmentally Harmonized Valuations. *Land*, 14(6), 1215. <https://doi.org/10.3390/land14061215>
- Guevara Ortega, L.M., Rodríguez Urrego, L., Gómez Gutiérrez, D., & Chenet, J.G. (2015). Green procurement model using petri nets: A perspective developed from the models applied to the supply chain. *Wit Transactions on Ecology and the Environment*, 195, 267-277. <https://doi.org/10.2495/ESUS150231>
- Hosseinpoor Azari, M.H., Bangviwat, A., Bonnet, S., & Hasanbeigi, A. (2024). Assessing CO2 Emissions in the Thai Cement Industry and Possible Reductions Through Green Public Procurement. *Proceedings of the 2024 International Conference on Sustainable Energy Energy Transition and Net Zero Climate Future Icue 2024*. <https://doi.org/10.1109/ICUE63019.2024.10795566>
- Hussain, F., Tsang, D., & Rafique, Z. (2024). Policy advisory systems and public policy making: Bibliometric analysis, knowledge mapping, operationalization, and future research agenda. *Review of Policy Research*, 41, 713-739. <https://doi.org/10.1111/ropr.12564>
- Iders-Bankovs, M., Politika, V., Pundure, J., Jarvis, M., & Ziemelis, M. (2025). Public procurement in age of AI: challenges and opportunities. *Engineering for Rural Development*, 24, 968-975. <https://doi.org/10.22616/ER-Dev.2025.24.TF198>
- Idir, R., Djerbi, A., & Tazi, N. (2025). Optimising the Circular Economy for Construction and Demolition Waste Management in Europe: Best Practices, Innovations and Regulatory Avenues. *Sustainability Switzerland*, 17(8), 3586 <https://doi.org/10.3390/su17083586>
- Igarashi, M., De Boer, L., & Michelsen, O. (2015). Investigating the anatomy of supplier selection in green public procurement. *Journal of Cleaner Production*, 108, 442-450. <https://doi.org/10.1016/j.jclepro.2015.08.010>
- Ishak, N.F., & Thiruchelvam, V. (2024). Sustainable innovations in Malaysia's public procurement: strategic policy initiatives and coherences. *International Journal of Innovation Science*, 16(2), 338-372. <https://doi.org/10.1108/IJIS-08-2022-0144>
- Kordos, V., Golubovic, V., & Globocnik Zunac, A. (2022). *Green public procurement*. In L. Luic, I. Martincevic, & V. Sesar (Eds.), *Economic and Social Development: Book of Proceedings of the 83rd International Scientific Conference on Economic and Social Development – "Green Marketing"* (pp. 37-43). Varazdin Development and Entrepreneurship Agency; University North; Faculty of Management, University of Warsaw; Faculty of Law, Economics and Social Sciences, Mohammed V University in Rabat.

- Letunovska, N., Lyulyov, O., Pimonenko, T., & Aleksandrov, V. (2021). Environmental management and social marketing: A bibliometric analysis. *E3S Web of Conferences*, 234, Article 00008. <https://doi.org/10.1051/e3sconf/202123400008>
- Lundberg, S., Marklund, P.-O., Strömbäck, E., & Sundström, D. (2015). Using public procurement to implement environmental policy: an empirical analysis. *Environmental Economics and Policy Studies*, 17(4), 487-520. <https://doi.org/10.1007/s10018-015-0102-9>
- Masudin, I., Umamy, S. Z., Al-Imron, C. N., & Restuputri, D. P. (2022). Green procurement implementation through supplier selection: A bibliometric review. *Cogent Engineering*, 9(1), 2119686. <https://doi.org/10.1080/23311916.2022.2119686>
- MEPZ – Ministry of Environmental Protection and Zoning (2015). National action plan for green public procurement 2015-2020 Retrieved from https://www.zelenanabava.hr/dokumenti/nacionalni_akcijski_plan_zajavnu_nabavu.pdf, on December 5, 2025.
- Migone, A., Howlett, M., & Howlett, A. (2024). Lessons from Canada for green procurement strategy design. *Discover Global Society*, 2(1), 49. <https://doi.org/10.1007/s44282-024-00068-2>
- Naveed, S., Siddique, N., Ul-Durar, S., & De Sisto, M. (2025). Navigating Sustainable Practices in Public Sector Organizations: Current Themes and Emerging Trends. *Public Administration Quarterly*, 49(3), 202-217. <https://doi.org/10.1177/07349149241296011>
- Nguyen, T.Q., & Van Vu, T. (2025). How Public Procurement Policies Influence Sustainable Development Goals in Developing Countries: A Case Study in Vietnam. *Lentera Hukum*, 12(2), 262-288. <https://doi.org/10.19184/ejlv.v12i2.53766>
- Nikolaou, I.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. <https://doi.org/10.1080/1943815X.2014.993657>
- Nobanee, H., Youssef Al Hamadi, F., Ali Abdulaziz, F., & Subhi Abukarsh, L. (2021). A Bibliometric Analysis of Sustainability and Risk Management. *Sustainability*, 13(6), 3277. <https://doi.org/10.3390/su13063277>
- Ortega Carrasco, P., Iannone, F., Ferrón Vélchez, V., & Testa, F. (2025). Green public procurement as an effective way for sustainable development: A systematic literature review and bibliometric analysis. *Sustainable Development*, 33(2), 2364-2391. <https://doi.org/10.1002/sd.3234>
- Piga, G., & Tátrai, T. (Eds.). (2015). *Public procurement policy*. Routledge. <https://doi.org/10.4324/9781315686356>
- Rejeb A., Rejeb, K., Appolloni, A., Kayikci, Y., Appolloni, A., & Treiblmaier, H. (2024a). Mapping the knowledge domain of green procurement: a review and bibliometric analysis. *Environment Development and Sustainability*, 26(12), 30027-30061. <https://doi.org/10.1007/s10668-023-03948-w>
- Rejeb A., Rejeb, K., Appolloni, A., Keogh, J.G., & Iranmanesh, M. (2024b). Uncovering the Green Procurement Knowledge Structure: a Systematic Citation Network Analysis. *Circular Economy and Sustainability*, 4, 287-316. <https://doi.org/10.1007/s43615-023-00287-w>
- Shahin, A., Polonsky, M. Wood, L.C., Presbitero, A., & Wijayasundara, M. (2025). Greening the procurement: a SMART evaluation of environmental sustainability in Australian government purchasing policies. *Asia Pacific Journal of Marketing and Logistics*, 37(4), 1027-1047. <https://doi.org/10.1108/APJML-03-2024-035026>
- Spence, M.W. (1981). Obsidian Production and the State in Teotihuacan. *American Antiquity*, 46(4), 769-788. <https://doi.org/10.2307/280105>
- Stojic, N. (2021). Social and private outcomes of green innovation incentives in European advancing economies. *Technovation*, 104, 102270. <https://doi.org/10.1016/j.technovation.2021.102270>
- Tan, W., Chen, X., Teng, M., An, W., & Wu, C. (2025). Navigating the green transition: assessing the impact of Chinese green public procurement on corporate pollution emissions. *International Journal of Climate Change Strategies and Management*, 17(2), 25-46. <https://doi.org/10.1108/IJCCSM-09-2024-0161>
- Timm, J.F.G., Leichter, M.Z., Dalmoro, J.M., & Passuello, A. (2025). Implementation of green public procurement in public transport: criteria analysis and proposals evaluation. *Clean Technologies and Environmental Policy*, 17(12), 8443-8460. <https://doi.org/10.1007/s10098-025-03330-6>
- Tuffour, P., Chen, G., Opoku-Mensah, E., Darko, P.A., & Adu Agyapong, R. (2024). Toward sustainable development: Developing a decision-making framework for cross-sectoral engagement in green procurement. *Sustainable Development*, 32(3), 2233-2252. <https://doi.org/10.1002/sd.2772>

- Uttam, K., & Le Lann Roos, C. (2015). Competitive dialogue procedure for sustainable public procurement. *Journal of Cleaner Production*, 86, 403-416. <https://doi.org/10.1016/j.jclepro.2014.08.031>
- Valkó, L., & Kiss, A. (2005). Eco-labels in Hungarian public procurement. *Periodica Polytechnica Social and Management Sciences*, 13(2), 107-120. <https://pp.bme.hu/so/article/view/1646>
- Wang, B., & Shen, Z. (2025). The impact of green public procurement on corporate ESG performance. *Journal of Environmental Management*, 391, 126394. <https://doi.org/10.1016/j.jenvman.2025.126394>
- Yan, M.-R. (2015). Project-based market competition and policy implications for sustainable developments in building and construction sectors. *Sustainability Switzerland*, 7(11), 15423-15448. <https://doi.org/10.3390/su71115423>
- Zupic, I., & Cater, T. (2015). Bibliometric methods in management and organization. *Organizational Research Methods*, 18(3), 429-472. <https://doi.org/10.1177/1094428114562629>

Authors

The contribution share of authors is equal and amounted to 50% for each of them.

BK – corresponding author, conceptualisation, discussion, MS – methodology, discussion, literature writing.

Marina Stojanov

Chief Executive Officer at Kemoboja-Dubrava Ltd., Croatia, and PhD candidate at the University of Zagreb, Faculty of Economics and Business, Croatia. Her research interests include public procurement and trade.

Correspondence to: Ms. Marina Stojanov, Kemoboja-Dubrava d.o.o., Dubrava 37, 10 040 Zagreb, Croatia, e-mail: marina.stojanov@kemoboja.hr

ORCID  <https://orcid.org/0009-0000-9671-9842>

Blaženka Knežević (corresponding author)

Full Professor at the Department of Trade and International Business at the Faculty of Economics and Business, University of Zagreb, Croatia. Her research interests include retail information systems, e-commerce, sustainability in distributive trade, procurement and supply management.

Correspondence to: Prof. Blaženka Knežević, University of Zagreb, Faculty of Economics and Business, Department of Trade and International Business, Trg J.F. Keneddy 6, 10 000 Zagreb, Croatia, e-mail: bknezevic@net.efzg.hr

ORCID  <https://orcid.org/0000-0003-1509-3126>

Acknowledgements and Financial Disclosure

Article was not supported by any foundation or association.

Use of Artificial Intelligence

Text is free of AI/GAI usage. VOSviewer was used as a digital tool for bibliometric analysis and visualisation of sub-topic co-occurrence.

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Copyright and License



This article is published under the terms of the Creative Commons Attribution (CC BY 4.0) License
<http://creativecommons.org/licenses/by/4.0/>

Published by Krakow University of Economics – Krakow, Poland