
CROSS-BORDER PUBLIC PROCUREMENT : A SYSTEMATIC LITERATURE REVIEW ON REGIONAL INTEGRATION, GOVERNANCE AND DIGITAL TRANSFORMATION

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ABSTRACT

This study examines the development of research on cross-border public procurement or border procurement through a Systematic Literature Review (SLR) combined with bibliometric analysis. The study aims to identify publication trends, dominant research themes, key variables, and future research opportunities related to border procurement. Data were collected from the Scopus database using the PRISMA framework, resulting in 39 selected articles published up to May 2026. Bibliometric analysis was conducted using VOSviewer software to map publication trends, country distribution, institutional contributions, author productivity, and keyword co-occurrence networks. The findings reveal that research on border procurement remains relatively limited and is predominantly concentrated in developed countries, particularly within the European context. The literature mainly focuses on themes such as regulation and governance, digital procurement and transparency, regional market integration, sustainability, healthcare procurement, and barriers to cross-border procurement implementation. Several dominant variables identified in the literature include digital procurement, transparency, regulation, market integration, administrative barriers, sustainability, and competitive procedures. The study also highlights significant research gaps related to border procurement in developing countries and border regions outside Europe, particularly in ASEAN contexts. The integration of SLR and bibliometric analysis contributes to a more comprehensive understanding of the intellectual structure and thematic evolution of border procurement research. Practically, the findings provide insights for policymakers and practitioners in improving procurement governance, regulatory harmonization, digital transformation, and cross-border cooperation. The study recommends future research to explore procurement governance, digital readiness, and institutional challenges in developing-country border regions.

Keywords : Cross-Border Public Procurement; Bibliometric Analysis; Systematic Literature Review

ABSTRAK

Penelitian ini mengkaji perkembangan riset mengenai pengadaan publik lintas batas (cross-border public procurement) atau border procurement melalui pendekatan Systematic Literature Review (SLR) yang dikombinasikan dengan analisis bibliometrik. Penelitian ini bertujuan untuk mengidentifikasi tren publikasi, tema penelitian dominan, variabel utama, serta peluang penelitian masa depan terkait border procurement. Data dikumpulkan dari basis data Scopus menggunakan kerangka PRISMA, sehingga diperoleh 39 artikel terpilih yang diterbitkan hingga Mei 2026. Analisis bibliometrik dilakukan menggunakan perangkat lunak VOSviewer untuk memetakan tren publikasi, distribusi negara, kontribusi institusi, produktivitas penulis, serta jaringan co-occurrence kata kunci. Hasil penelitian menunjukkan bahwa riset mengenai border procurement masih relatif terbatas dan sebagian besar terkonsentrasi di negara-negara maju, khususnya dalam konteks Eropa. Literatur yang ada terutama berfokus pada tema regulasi dan tata kelola, pengadaan digital dan transparansi, integrasi pasar regional, keberlanjutan, pengadaan sektor kesehatan, serta hambatan implementasi pengadaan lintas batas. Beberapa variabel dominan yang teridentifikasi dalam literatur meliputi pengadaan digital, transparansi, regulasi, integrasi pasar, hambatan

administratif, keberlanjutan, dan prosedur kompetitif. Penelitian ini juga menyoroti adanya kesenjangan penelitian yang signifikan terkait border procurement di negara berkembang dan wilayah perbatasan di luar Eropa, khususnya dalam konteks ASEAN. Integrasi antara SLR dan analisis bibliometrik memberikan kontribusi terhadap pemahaman yang lebih komprehensif mengenai struktur intelektual dan evolusi tematik penelitian border procurement. Secara praktis, temuan penelitian ini memberikan wawasan bagi pembuat kebijakan dan praktisi dalam meningkatkan tata kelola pengadaan, harmonisasi regulasi, transformasi digital, dan kerja sama lintas batas. Penelitian ini merekomendasikan agar studi selanjutnya mengeksplorasi tata kelola pengadaan, kesiapan digital, dan tantangan kelembagaan di wilayah perbatasan negara berkembang.

Kata Kunci : Pengadaan Publik Lintas Batas; Analisis Bibliometrik; Systematic Literature Review.

INTRODUCTION

Border procurement, or cross-border public procurement, can be understood as the procurement process of goods, services, or public works involving cross-border or cross-border interactions, whether through the participation of foreign suppliers, cooperation between public authorities from different countries, or the use of joint procurement mechanisms within a regional integration framework. A Systematic Literature Review (SLR) on border procurement or cross-border procurement has become increasingly important due to the rapid transformation of global trade, geopolitical tensions, supply chain disruptions, and the digitalization of procurement systems. Border procurement no longer refers merely to purchasing activities conducted across national boundaries; it has evolved into a multidimensional governance issue involving logistics, regulatory harmonization, emergency management, sustainability, public accountability, and geopolitical resilience.

First, the growing complexity of global supply chains has significantly increased the strategic importance of border procurement research. International procurement activities today operate within highly fragmented regulatory environments characterized by varying customs procedures, procurement laws, taxation systems, and institutional capacities. Recent studies demonstrate that organizations engaging in cross-border procurement face persistent challenges related to compliance heterogeneity, customs delays, political instability, and cost inefficiencies (Cecil, 2024). These complexities are especially relevant in border regions where procurement systems intersect with international trade corridors and transnational governance arrangements.

Second, recent geopolitical developments have fundamentally altered the dynamics of cross-border procurement. The COVID-19 pandemic exposed major vulnerabilities in international procurement systems, particularly in emergency procurement of medical supplies, pharmaceuticals, and strategic goods. Studies on procurement governance during crises show that procurement systems struggled to balance transparency, accountability, and rapid responsiveness under emergency conditions (Bandiera et al., 2021). Consequently, border

procurement has become closely associated with issues of resilience, national security, and crisis preparedness. This creates a strong academic justification for conducting an SLR to consolidate fragmented findings and identify emerging theoretical frameworks.

Third, border procurement research has become increasingly relevant because of the rise of digital procurement technologies and integrated supply chain systems. Emerging technologies such as blockchain, artificial intelligence, Internet of Things (IoT), and e-procurement platforms are transforming how organizations manage international procurement activities. Contemporary research highlights how digital integration improves visibility, supplier coordination, and procurement efficiency across borders (Cecil, 2024). However, the literature remains fragmented across disciplines including public procurement, supply chain management, logistics, international business, and governance studies. An SLR is therefore necessary to synthesize these interdisciplinary perspectives into a coherent body of knowledge.

Fourth, border procurement has become a critical issue in public sector governance and international policy coordination. International institutions increasingly emphasize harmonized procurement regulations through mechanisms such as the World Trade Organization Government Procurement Agreement (WTO-GPA), regional economic integration, and international procurement standards. Nevertheless, significant disparities remain between developed and developing countries regarding institutional capacity, enforcement mechanisms, and procurement transparency (Mutangili, 2025). Border procurement research is therefore not only operational but also political and institutional in nature. Conducting an SLR would help identify how procurement governance differs across regions, institutional settings, and economic systems.

Public procurement is one of the government's strategic instruments in supporting economic development, providing public services, and strengthening governance. In practice, public procurement is no longer limited to domestic activities but has evolved into a cross-border activity involving regional cooperation, the participation of foreign suppliers, and international market integration. This development has led to the emergence of the concept of cross-border public procurement, or border procurement, a mechanism for procuring public goods and services that involves activities across national borders and cooperation between public authorities in border areas.

In recent decades, the issue of border procurement has received increasing attention, particularly in regions with high levels of economic integration such as the European Union. Cross-border procurement is seen as a crucial instrument for strengthening the single market, increasing market competition, expanding access to international suppliers, and promoting efficient use of public funds (Kutlina-Dimitrova & Lakatos, 2016)). Furthermore, cross-border

procurement is also part of modern regional integration strategies that link trade, investment, digital transformation, and sustainable development (Ghossein et al., 2021).

Advances in information technology have accelerated the transformation of cross-border public procurement through the implementation of e-procurement. Procurement digitization enables electronic tender publication, increased transparency, system interoperability, and expanded participation of foreign suppliers in the international procurement market (Alvarez et al., 2012; Bulut & Yen, 2013). In this context, cross-border procurement is understood not only as an administrative activity but also as a governance instrument that supports regional economic integration and market openness.

However, the implementation of border procurement still faces various challenges. Numerous studies indicate that differences in regulations between countries, lack of legal harmonization, complex administrative procedures, language barriers, and home-bias practices are key obstacles to cross-border procurement (Deltas & Evenett, 2025; Gelderman et al., 2010; Lombardi & Rossa, 2024). Furthermore, low transparency and limited interoperability of procurement systems also hinder the creation of a truly open and competitive procurement market.

The issue of cross-border procurement has grown since the COVID-19 pandemic. The global health crisis has demonstrated the importance of regional coordination and joint procurement in the procurement of medical devices, medicines, and other emergency needs. In crisis situations, cross-border procurement mechanisms become a crucial instrument for maintaining supply chain stability, accelerating the distribution of strategic goods, and increasing the effectiveness of government responses (Borges et al., 2025; Hanspach, 2023). This situation demonstrates that border procurement is not only related to economic efficiency but also to regional resilience and cross-border crisis management.

In addition to its development in the European Union, cross-border procurement is also gaining attention in various border regions of developing countries. Border regions have unique characteristics, such as geographic, social, and economic connectivity with neighboring countries, which often leads to cross-border interactions. However, research on border procurement in developing countries, particularly in the ASEAN border region, remains relatively limited compared to studies in Europe.

Based on this situation, a comprehensive study is needed to understand the development of research on border procurement, including aspects of regulation, governance, digitalization, market integration, and implementation challenges. Therefore, this study uses a Systematic Literature Review (SLR) approach to identify research trends, key variables, dominant themes, and research gaps related to border procurement. The results of this study are expected to

provide a deeper conceptual understanding of cross-border procurement and serve as a basis for developing research and public procurement policies in border areas.

The research questions posed are:

Research Question 1: Is the exploration of Procurement in Borders a subject of continuing significance for future scholarly research?

Research Question 2: How is the current allocation of research investigations related to procurement in borders?

Research Question 3: What are the theoretical and practical implications from a future research perspective?

This study addresses the three proposed research questions through the integration of a Systematic Literature Review (SLR) and bibliometric analysis approach. The SLR method is considered suitable for systematically synthesizing existing research findings in a transparent and structured manner. Moreover, this method provides evidence-based insights that may contribute to the advancement of policy formulation, practical implementation, and future research development. The application of the SLR approach also ensures that conclusions are derived from a broad and representative body of literature while simultaneously identifying research gaps and areas requiring further investigation (Snyder, 2019).

The study specifically focuses on publications related to border procurement obtained from various academic journals, encompassing articles published up to May 5, 2026. To strengthen the analysis, bibliometric techniques were employed using the Scopus database and VOSviewer software. The integration of SLR and bibliometric analysis enables a comprehensive mapping of the research landscape within the field of border procurement. This combined methodological approach facilitates a deeper understanding of the evolution of the literature, dominant research themes, intellectual structures, collaboration networks, and potential directions for future research.

LITERATURE REVIEW

In the context of European Union literature, cross-border procurement is defined as public procurement in which a government contract is awarded to a company or supplier from another country outside the domestic jurisdiction of the procurement authority (Kutlina-Dimitrova & Lakatos, 2016). This concept is closely related to efforts to create an open, competitive, and integrated public procurement market within a single market framework. Therefore, cross-border procurement is seen as an instrument to strengthen regional economic integration, increase market competition, and expand international suppliers' access to government tenders.

Several studies also emphasize that border procurement is not limited to cross-border procurement transactions but also encompasses forms of institutional cooperation between public authorities in joint procurement to collectively meet public needs. Lombardi & Rossa, (2024) explain that joint cross-border procurement is a legal instrument that allows several public authorities from different countries to conduct joint procurement to improve efficiency, regional solidarity, and the effectiveness of public services.

Furthermore, Alvarez et al., (2012) and Bulut & Yen (2013) expanded the concept of border procurement into a digital dimension through the use of cross-border e-procurement platforms. From this perspective, cross-border procurement is understood as a digital technology-based procurement system that enables tender publication, procurement data access, and supplier participation to be carried out electronically across countries.

In the context of border regions, border procurement also relates to procurement activities undertaken to meet the needs of border regions that have economic, social, and administrative connections with neighboring countries. Research by Essigmann et al., (2022) shows that cross-border procurement in border communities can occur due to limited domestic access to certain public services or goods, leading communities and government institutions to exploit geographic proximity to neighboring countries to obtain more accessible goods and services.

In general, based on 39 articles, border procurement can be defined as a public procurement mechanism involving cross-border procurement, regulation, market access, public procurement, joint cross-border procurement, and digital public procurement (see table 1).

METHODS AND ANALYSIS

Method is a method of work that can be used to obtain something. While the research method can be interpreted as a work procedure in the research process, both in searching for data or disclosing existing phenomena (Zulkarnaen, W., et al., 2020). This study integrates Systematic Literature Review (SLR) and bibliometric analysis to provide complementary insights into border procurement research. The SLR approach was employed to systematically identify, evaluate, and synthesize relevant literature, thereby enabling the development of thematic categories and research gaps. Meanwhile, bibliometric analysis was utilized to quantitatively map the intellectual structure of the field through publication patterns, author productivity, institutional affiliations, country distribution, and keyword co-occurrence networks. The integration of these approaches allows both qualitative synthesis and quantitative mapping, thereby providing a more comprehensive understanding of the evolution and structure of border procurement research (Snyder, 2019; Donthu et al., 2021).

The use of the SLR method is considered appropriate because it enables researchers to synthesize previous findings in a transparent, structured, and replicable manner (Snyder, 2019). In addition, bibliometric analysis supports the identification of influential authors, institutions, countries, journals, and dominant research themes through quantitative mapping techniques (Donthu et al., 2021). The combination of SLR and bibliometric approaches has increasingly been adopted in interdisciplinary studies due to its ability to provide both descriptive and analytical insights into a research field.

This study adopts the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework to ensure a transparent and systematic literature selection process (Moher et al., 2009). The PRISMA approach consists of four main stages: identification, screening, eligibility, and inclusion (see figure 1).

The data used in this study were collected from the Scopus database because it is recognized as one of the largest and most comprehensive international indexing databases for peer-reviewed scientific publications. Scopus was selected as the sole database because it is one of the largest abstract and citation databases of peer-reviewed literature and provides extensive coverage in economics, management, public administration, and governance studies. Previous review studies have highlighted that Scopus offers high-quality metadata suitable for bibliometric analysis and ensures consistency in citation indexing (Donthu et al., 2021). Using a single database also minimizes duplication and improves the transparency and replicability of the review process. The literature search was conducted on May 5, 2026, using keywords related to cross-border public procurement. The primary search string applied in Scopus was:

“Public Procurement” AND (“Border Region” OR “Cross-border” OR “Border Area”)

The search was limited to article titles, abstracts, and keywords. The initial search identified 176 documents. During the screening stage, duplicate and irrelevant documents were removed based on title relevance, abstract suitability, and thematic consistency with the research objectives. Additional filtering was conducted based on document type to ensure the inclusion of high-quality scientific publications. Documents categorized as conference papers, conference reviews, book chapters, books, notes, and short surveys were excluded from the analysis. After the filtering and eligibility assessment process, a final sample of 39 articles was included in the systematic review. The final sample of 39 articles reflects the relatively emerging nature of border procurement research. Rather than indicating insufficient evidence, this number demonstrates that the field remains specialized and underdeveloped compared with other public procurement domains. Similar sample sizes are common in systematic reviews focusing on niche research areas (Snyder, 2019).

The selected articles were analyzed using descriptive and bibliometric techniques. Descriptive analysis was conducted to identify publication trends, dominant variables, research themes, methodological approaches, and research gaps related to border procurement studies. Bibliometric analysis was performed to map the intellectual structure of the field through publication distribution, author collaboration, institutional contribution, country distribution, and keyword co-occurrence analysis.

To support the bibliometric analysis, VOSviewer software was used to visualize bibliometric networks and thematic relationships among keywords, authors, and institutions. VOSviewer enables the construction of network visualization, overlay visualization, and density visualization to identify research clusters and emerging themes in cross-border procurement studies. The bibliometric indicators analyzed in this study include:

- publication trends by year,
- documents by country,
- documents by institution,
- documents by source title,
- documents by author,
- keyword co-occurrence,
- thematic cluster analysis.

Furthermore, content analysis was employed to synthesize the findings from the selected articles. This process involved identifying key concepts, variables, dimensions, indicators, theoretical perspectives, and empirical findings associated with border procurement research. The synthesis process allowed the study to classify the literature into several major thematic categories, including:

1. regulation and governance,
2. digital procurement and transparency,
3. regional integration,
4. administrative barriers,
5. sustainability,
6. healthcare procurement,
7. cross-border cooperation.

The methodological combination of SLR and bibliometric analysis provides a robust framework for understanding the current state of research on border procurement while also identifying underexplored areas for future investigation. This approach contributes to the development of a more comprehensive conceptual understanding of cross-border public

procurement, particularly in the context of regional integration, digital governance, and public sector transformation.

RESULTS AND DISCUSSIONS

This study analyzes 39 articles related to border procurement retrieved from the Scopus database. The analysis encompasses several key dimensions, including publication volume, annual publication trends, and the major journals that have contributed to the dissemination of research within this field. Additionally, the study examines important factors shaping the development of border procurement research, such as author productivity, institutional affiliations, and the countries that have actively contributed to the scholarly discussion on the topic. Through this approach, the study provides a comprehensive understanding of the research landscape and the principal contributors influencing the evolution of border procurement studies.

Furthermore, the analysis provides a comprehensive overview of the intellectual landscape and publication patterns associated with border procurement studies. By mapping the contributions of authors, institutions, and countries, this study offers insights into the dominant actors and research networks shaping the development of the field. Consequently, the findings contribute to a broader understanding of the evolution of border procurement research and help identify potential directions for future academic investigation.

Research Question 1: Is the exploration of border procurement a subject of continuing significance for future scholarly research?

Based on data retrieved from the Scopus database, a total of 39 scientific publications related to border procurement were identified over the past four decades. This finding indicates that research on border procurement remains relatively limited and underdeveloped compared to other areas of public procurement research, as illustrated in Figure 1. The literature demonstrates that scholarly attention toward border procurement has gradually increased over time, with a more significant growth trend emerging particularly after 2020. This increase reflects the growing relevance of cross-border governance, regional integration, digital procurement systems, and international cooperation in public procurement practices.

The earliest identified study was conducted by (Cox & Furlong, 1997) entitled “*Cross-border Trade and Contract Awards: The Intellectual Myopia at the Heart of the EU Procurement Rules.*” This publication is considered one of the pioneering studies introducing the concept of cross-border procurement within the context of European Union procurement regulations. The study highlighted the limitations of existing procurement frameworks in facilitating cross-border trade and contract allocation among member states, thereby marking the early development of what is now widely recognized as border procurement research (see figure 2).

Since 1997, the literature on border procurement has remained limited due to the low number of studies published in reputable journals, opening up opportunities for future researchers to address this gap. This study is crucial for broadening our understanding of border procurement, its impact on individual behavior, and the development of a conceptual framework within the field. Therefore, this study can support a deeper understanding of the practical application and sustainability of border procurement across various industry sectors and disciplines.

Research Question 2: How is research investigation related to border procurement currently allocated?

A distribution analysis of border procurement research was conducted using 39 selected articles by classifying the publications according to several categories, including country, geographical region, institutional affiliation, publication source, and author contribution, with emphasis placed on the top ten entries within each category. This analysis provides a comprehensive overview of the development and concentration of border procurement studies across different academic and regional contexts.

The classification process enables the identification of dominant contributors, leading institutions, and major publication outlets within the field. In addition, the analysis highlights the geographical distribution of research activities and reveals disparities in research concentration between developed and developing countries. By mapping these publication patterns, the study offers a clearer understanding of the intellectual structure and research landscape surrounding border procurement.

This comprehensive allocation analysis is expected to provide valuable insights for both academics and practitioners in formulating future research agendas. Furthermore, the findings may support the sustainable development of the border procurement research paradigm by identifying underexplored areas, encouraging broader international collaboration, and promoting more diverse research perspectives in future studies.

Figure 3 shows the distribution of publications by country or region of origin for research on public procurement in border regions. Based on a search of the Scopus database, publications on this topic are dominated by several European countries, demonstrating the high academic interest in cross-border public procurement and border management in the region.

The United Kingdom was the country with the most publications, with 7 publications. Next in line was the undefined category with 6 publications, indicating articles that did not clearly state the author's country of origin or were not yet identified in the database system. Belgium, the Netherlands, and Spain each contributed 4 publications, demonstrating significant contributions to the development of research on public procurement in border regions.

Furthermore, the Czech Republic and Greece each produced 3 publications. Meanwhile, Germany, Norway, and the Russian Federation each had 2 publications. This distribution of publications demonstrates that research on public procurement in border regions is developing in countries with dynamic regional cooperation, economic integration, and intensive cross-border interactions, particularly in Europe.

The dominance of European countries in this publication can also be attributed to the existence of various regional integration policies, such as cross-border cooperation within the European Union, which has encouraged increased academic research on public procurement governance, intergovernmental collaboration, and the efficiency of public services in border regions. Thus, the distribution of publications' countries of origin indicates that public procurement in border regions is a topic that receives greater attention in countries with high levels of regional integration.

Researchers also analyzed the relationships among countries involved in border procurement research using VOSviewer software. This analysis is important for developing a systematic and forward-looking research agenda by identifying patterns of collaboration, research concentration, and international knowledge networks within the field of border procurement studies. Through bibliometric network visualization, VOSviewer enables the identification of countries that play dominant roles in the development of the literature, as well as the extent of connectivity and collaboration among researchers across different regions.

The findings generated through VOSviewer demonstrate that border procurement research exhibits varying levels of interconnection among countries (see Figure 4). The network visualization indicates that several countries, particularly those in developed regions such as Europe, occupy central positions within the research network, reflecting their significant contribution to the development of border procurement studies. In contrast, developing countries remain relatively underrepresented and show lower levels of research connectivity. This pattern suggests that the existing literature is still geographically concentrated and highlights the need for broader international collaboration and more inclusive research contributions from developing and border-region countries.

Moreover, the country network analysis provides insights into potential opportunities for future collaborative research, particularly in addressing cross-border procurement challenges within different institutional and regional contexts. Strengthening international research collaboration is expected to support the development of more comprehensive and globally representative border procurement studies.

These findings further reinforce the notion that border procurement is a significant concern in developed countries like the United Kingdom and Belgium, but remains underfunded in developing countries.

Research funding on border procurement involves academic institutions and organizations that have made the most significant contributions to the development of studies related to cross-border public procurement and border governance. Figure 5 shows that Hasselt University has the highest number of publications, with three publications. This finding indicates that the university has a relatively strong focus on public procurement and cross-border cooperation, particularly in the context of regional governance in Europe.

Furthermore, several institutions have a relatively similar number of publications, with two publications each. These institutions include the Universitat de València, Harokopio University of Athens, Prague University of Economics and Business, Maastricht University, University of Birmingham, Open University, and the European Commission. The dominance of European institutions demonstrates that research on public procurement in border regions is developing strongly within the academic and institutional environment within the European Union's regional integration system.

The involvement of the European Commission, an affiliate with a significant number of publications, demonstrates that cross-border public procurement issues are not only of concern to academics but also to supranational institutions involved in regional policymaking. This indicates that public procurement in border regions is closely linked to regulatory harmonization, market integration, and strengthening interregional cooperation.

Furthermore, the National Technological Institute and the Ministry of Health each contributed one document. Although relatively small in number, the presence of government institutions and technical institutions in this publication demonstrates that research related to public procurement in border regions also has a practical and applicable dimension, particularly in public services and strategic sector management.

Overall, the distribution of author affiliations indicates that studies on public procurement in border regions are dominated by academic institutions and organizations in the European region. This reflects the high level of attention paid to cross-border collaboration, regional integration, and effective public procurement governance in supporting border region development.

Third, questions on border procurement are allocated based on the journal sources or publication media used in the research on public procurement in border regions. This analysis is crucial for identifying the journals that contribute most to the development of the literature on cross-border public procurement and border region governance (see Figure 6).

Based on Figure 6, the European Procurement and Public Private Partnership Law Review is the most dominant publication source, with four articles. This dominance of journals indicates that public procurement issues in border regions are extensively studied from the perspectives of public procurement law, public-private partnerships, and cross-border cooperation regulations. This reflects the importance of legal and institutional aspects in the implementation of public procurement in border regions. Furthermore, the Public Procurement Law Review ranks second with two articles. The presence of this journal reinforces the indication that research on public procurement in border regions has a strong focus on regulatory aspects, governance, transparency, and legal mechanisms in cross-border procurement processes.

Meanwhile, several other journals and institutions each contributed one article: Agricultural Economics, Chr. Michelsen Institute, and Economic Research – Ekonomska Istrazivanja. This diversity of publication sources indicates that the study of public procurement in border regions is not only discussed within the legal discipline, but also develops within the fields of economics, regional development, and public policy research.

This diversity of publication sources indicates that the topic of public procurement in border regions is multidisciplinary. In addition to regulations and governance, research in this field also relates to aspects of regional economic development, market integration, public service efficiency, and cross-border cooperation between countries.

Overall, the distribution of publication sources indicates that the literature on public procurement in border regions is dominated by journals focusing on public procurement law and regional policy. This situation demonstrates that regulatory and governance issues are a primary focus in the development of research related to public procurement in border regions.

Fourth, the distribution of research related to border procurement by author does not show a clear dominance. This analysis aims to identify the most active authors and those who have made the greatest contributions to the development of the literature on cross-border public procurement (see Figure 7).

Based on the data presented, Nikou, V., and Schoenmaekers, S., are the authors with the highest number of publications, with two papers each. These two authors' contributions demonstrate a fairly consistent academic focus on public procurement issues, particularly in the context of cross-border cooperation, regional governance, and public procurement regulation. Meanwhile, several other authors each have one paper, namely A.L. Sheyab, M.S.A., Abramo, C.W., Alibekov, S., Allen, B., Alor-Hernandez, G., Alvarez, J.M., Antoniou, I.E., and Badenes-Olmedo, C. The relatively even distribution of authors indicates that research on public

procurement in border regions is still developing and has not yet been concentrated in a single group of researchers.

The diversity of authors from various academic and geographic backgrounds indicates that the topic of public procurement in border regions is multidisciplinary and cross-regional. Research in this area is not only concerned with aspects of public administration and procurement law, but also encompasses dimensions of regional economics, technology, cross-border integration, and governance.

Research Question 3: What are the theoretical and practical implications from a future research perspective?

This study analyzed 39 publications indexed in the Scopus database using VOSviewer software to identify the potential theoretical and practical implications of future research on border procurement. The bibliometric analysis provides a systematic overview of the intellectual structure, research development, and thematic evolution within the field. Through metadata visualization and network mapping, the analysis enables researchers and practitioners to better understand the dominant assumptions, research patterns, and emerging issues related to border procurement.

From a theoretical perspective, the findings help identify both extensively studied and underexplored variables within the border procurement literature. The analysis reveals that themes such as digital procurement, transparency, regulation, market integration, sustainability, administrative barriers, and competitive procedures have received considerable scholarly attention. However, several areas remain insufficiently explored, particularly studies focusing on developing countries, border-region governance, institutional capacity, and cross-border procurement practices in emerging economies. These gaps provide opportunities for future studies to expand theoretical perspectives and develop more comprehensive conceptual frameworks related to border procurement.

In addition, the bibliometric mapping contributes to the development of interdisciplinary research by integrating perspectives from public administration, governance, regional integration, digital transformation, and sustainability studies. The findings also suggest the need for future research employing diverse methodological approaches, including empirical studies, comparative analyses, case studies, and mixed-method research designs, in order to strengthen the theoretical foundation of border procurement research.

From a practical perspective, the results of this study provide useful insights for policymakers, public institutions, and procurement practitioners. Mapping research trends and identifying key variables can support the formulation of more effective procurement policies, particularly in cross-border and border-region contexts. The findings may also assist

governments in improving procurement transparency, strengthening regulatory harmonization, enhancing digital procurement systems, and reducing administrative barriers that hinder cross-border procurement implementation.

Furthermore, the analysis highlights the importance of integrating digital technologies and governance mechanisms to improve procurement efficiency, accountability, and market accessibility. Understanding the dominant themes and emerging challenges in border procurement can support the development of better monitoring systems, risk mitigation strategies, and institutional coordination frameworks. Consequently, practitioners and policymakers may adopt more proactive and evidence-based approaches to strengthening cross-border procurement systems and promoting regional cooperation through transparent, competitive, and sustainable procurement practices.

From Figure 8, the appearance of keywords public procurements (8), smes (5), cross-border public procurement (3), e-commerce (3), international trade (3), barriers (2), blockchain (2), e-government (2), e-procurement (2), EU law (1).

Based on the mapping and evaluation of prior studies, a significant research gap was identified in the existing literature, which remains predominantly concentrated in developed countries (see Figures 3 and 5). In contrast, studies examining border procurement within developing countries are still relatively limited. This imbalance indicates the need for further investigation in developing-country contexts in order to provide a broader and more balanced understanding of border procurement practices across different institutional and regional settings.

Future research is therefore encouraged to explore border procurement issues in developing countries, particularly in border regions characterized by administrative constraints, infrastructure limitations, and varying governance capacities. Such studies are expected to enrich the existing body of knowledge and provide a more comprehensive understanding of border procurement dynamics. In addition, future research may contribute to the identification and development of relevant indicators and dimensions associated with border procurement practices. These variables, synthesized from various previous studies, are summarized and illustrated in Figure 9.

Figure 9 illustrates a synthesis of the most dominant key variables in the literature on public procurement in border regions based on the results of a systematic literature review. These variables form an integrated conceptual relationship in explaining the dynamics of cross-border public procurement, particularly in the context of regional integration, governance, and digital transformation.

Digital procurement

Digital procurement variables have become a dominant theme in research on public procurement in border regions. Digitizing public procurement through the implementation of e-procurement, electronic tendering, and cross-border digital platforms is seen as capable of improving administrative efficiency, data interoperability, and expanding provider access to international tender information. Alvarez et al. (2012) emphasized that the development of a pan-European e-procurement platform based on linked open data can improve the integration of cross-border procurement systems and facilitate the participation of MSMEs in international tenders. Bulut and Yen (2013) also showed that e-procurement implementation increases the transparency, efficiency, and effectiveness of public sector procurement administration. Furthermore, Begzhan et al. (2025) emphasized the importance of harmonizing electronic standards and digital transformation to support the integration of public procurement markets in the European Union.

Transparency

Transparency is a crucial aspect of cross-border public procurement governance. Transparency relates to the disclosure of tender information, access to contract documents, and the publication of procurement evaluation processes. The literature shows that low transparency increases the risk of discrimination, corruption, and home-bias practices in public tenders. Ghossein et al. (2021) explain that transparency in Belt and Road Initiative projects is necessary to ensure value for money and enhance regional integration. Meanwhile, Nikou (2025) found that low transparency in public procurement contributes to an increased ecological footprint and creates cross-border spillover effects. Begzhan et al. (2025) also identified the lack of transparency and tender data reporting as major obstacles to the implementation of EU public procurement regulations.

Regulation

The regulation variable demonstrates the importance of the legal framework in governing cross-border public procurement processes. Regulations determine tender procedures, competition standards, oversight mechanisms, and the principle of equity in procurement. Gelderman et al. (2010) explain that the level of compliance with European Union procurement directives is influenced by organizational pressure and the perceived benefits of regulatory compliance. Furthermore, Begzhan et al. (2025) show that regulatory harmonization and the implementation of Directives 2014/24/EU and 2014/25/EU are important factors in strengthening public procurement market integration. Lombardi and Rossa (2024) also highlight that the complexity of joint cross-border procurement regulations often hinders the implementation of cross-border procurement cooperation.

Market integration

The market integration variable indicates that public procurement serves as a strategic instrument in strengthening regional economic integration. Cross-border procurement can increase market competition, expand access for foreign suppliers, and reduce domestic protectionism. Kutlina-Dimitrova and Lakatos (2016) found that the level of trade openness, GDP per capita, and low market barriers positively influence cross-border public procurement in European Union countries. Ghossein et al. (2021) also explain that public procurement within the Belt and Road Initiative plays a role in supporting regional integration and developing connectivity between countries. Furthermore, Kurochkin (2019) shows that administrative and legal barriers within the Eurasian Economic Union hamper the formation of a cross-border research services market.

Sustainability

Sustainability variables have become a growing theme in modern public procurement research. Public procurement is not only oriented towards cost efficiency but also directed towards achieving sustainable development goals. Nikou (2025) explains that public procurement that supports a circular economy and sustainable agricultural practices can reduce ecological impacts across countries. Begzhan et al. (2025) also emphasize the importance of green procurement as part of the European Union's strategy to achieve a 75% sustainability target by 2030. In this context, public procurement is seen as a strategic policy instrument to support resource efficiency, environmental protection, and sustainable economic development.

Administrative barriers

The administrative barriers variable indicates that administrative barriers remain a major obstacle in implementing cross-border public procurement. These barriers include bureaucratic complexity, differences in procedures between countries, language barriers, and the high administrative costs of international tenders. Deltas and Evenett (2025) found that the use of English in tender documents increases the chances of foreign companies winning public contracts, making language barriers a significant factor in cross-border procurement. Fayos et al. (2022) also showed that limited networking capacity and administrative barriers are key obstacles for MSMEs to participate in international tenders. Furthermore, Lombardi and Rossa (2024) explained that the complexity of joint cross-border procurement procedures leads many public authorities to prefer domestic procurement procedures over cross-border cooperation.

Competitive procedure

The competitive procedure variable relates to the level of competition in the public procurement process. The use of competitive procedures is considered capable of improving efficiency, the quality of procurement outcomes, and accountability in the use of public funds.

Gelderman et al. (2010) show that compliance with competitive procedures remains a challenge in the implementation of the European Union procurement directive. Kutlina-Dimitrova and Lakatos (2016) found that the number of bids and the level of tender competition influence the probability of cross-border contracts. Furthermore, Hanspach (2023) showed that during the COVID-19 pandemic crisis, increasing the flexibility of procurement procedures can increase cross-border procurement activity and reduce home bias against domestic suppliers.

Research on cross-border public procurement and public procurement in border regions generally focuses on the following broad themes (see table 2). Across the articles, several research patterns emerge. First, the majority of studies position cross-border public procurement as a crucial instrument in supporting regional integration. This focus is particularly evident in the context of the European Union, where public procurement is viewed not only as a government administrative activity but also as a strategic tool for strengthening the single market and enhancing economic connectivity between member states. Through cross-border procurement, governments can open broader market access for foreign companies, increase business competition, and reduce domestic protectionist practices that have historically hindered regional market integration.

Second, regulatory issues are a dominant theme in research on cross-border public procurement. Many studies highlight that differences in regulations between countries, lack of legal harmonization, and the complexity of procurement procedures are key obstacles to implementing cross-border procurement. Each country generally has a different legal system, administrative standards, tender mechanisms, and contract provisions, creating legal uncertainty for foreign suppliers wishing to participate in international tenders. These differences not only increase compliance and administrative costs but also increase the risk of contract failure and cross-jurisdictional disputes.

Third, research on cross-border public procurement also frequently discusses the importance of transparency and digitalization in improving the effectiveness of cross-border public procurement. Transparency is seen as a key element in creating an accountable, competitive, and discriminatory procurement system. Open tender information, publication of contract documents, access to procurement data, and clarity of the evaluation process are considered capable of increasing market confidence and expanding supplier participation, including foreign suppliers. In the context of cross-border procurement, transparency becomes even more crucial because differences in legal and administrative systems between countries often create information asymmetries for international business actors.

Research on cross-border public procurement has highlighted significant concerns about various barriers to cross-border procurement implementation. These barriers include language

barriers, bureaucracy, administrative complexity, a tendency toward home bias, and low participation of foreign suppliers in public tender processes. Language barriers are a crucial factor, as the limited use of international languages in tender documents can limit the access and participation of foreign companies in cross-border public procurement. Furthermore, lengthy bureaucratic processes and differences in administrative procedures between countries are also major obstacles, increasing transaction costs and making it difficult for foreign suppliers to participate in international tenders. The complexity of cross-border procurement regulations and mechanisms further exacerbates implementation barriers, particularly in joint procurement between public authorities. Furthermore, several studies have found home bias, a tendency for governments or procurement authorities to favor domestic suppliers over foreign ones, despite formal regulations emphasizing the principles of open competition and non-discrimination. This ultimately leads to low participation of foreign suppliers in cross-border public procurement and hinders the creation of more competitive and open procurement market integration.

Fifth, since the COVID-19 pandemic, research on cross-border healthcare procurement has experienced rapid development. Much research has focused on the procurement of medical devices, emergency procurement, joint procurement, and regional coordination in crisis situations. The pandemic has demonstrated that domestic procurement capacity is often unable to meet the surge in demand for medical devices, medicines, vaccines, and other medical supplies, leading to increased cross-border procurement activity. In emergencies, governments across the globe have accelerated procurement processes through emergency procurement mechanisms, which allow for procedural flexibility, direct procurement, and simplified tendering rules to ensure the rapid availability of healthcare supplies.

Furthermore, the pandemic has demonstrated the importance of joint procurement between countries as a strategy to increase efficiency, strengthen bargaining power, and reduce competition between countries in acquiring limited medical devices. In the context of the European Union, joint procurement mechanisms have been used to support a more equitable distribution of medical devices and vaccines among member states. Research has also shown that the pandemic crisis has exposed the strong interconnectedness between countries, making regional coordination a crucial factor in maintaining the stability of healthcare supply chains and the effectiveness of government responses. Therefore, cross-border healthcare procurement is no longer viewed simply as an administrative activity but as part of regional health resilience strategies and global crisis management.

If simplified, the research focus of the 39 articles can be grouped into 6 main clusters (see figure 10). Of all these themes, there remains relatively open research space, particularly in the context of developing countries and non-European border regions, for example:

- public procurement on the Indonesia-Malaysia border,
- cross-border procurement in underdeveloped regions,
- procurement governance in ASEAN border regions,
- political connections in border-area procurement,
- digital procurement readiness in border regions,
- the effectiveness of public procurement in border-area economic development.

CONCLUSION

This study examined 39 scholarly articles indexed in the Scopus database and generated several important findings regarding the development of border procurement research. First, research on border procurement remains relatively limited, despite having emerged since 1997. The existing body of literature indicates that this topic has not yet developed as extensively as other areas within public procurement studies. Second, the reviewed studies are distributed across different countries and regions, each reflecting distinct research contexts, priorities, and thematic orientations. Third, the literature is still predominantly concentrated in developed countries, particularly within the European context, while studies conducted in developing countries remain comparatively scarce. This imbalance suggests the need for broader geographical representation in future research.

Furthermore, the review identified several variables that are frequently discussed in border procurement studies, including digital procurement, transparency, regulation, market integration, sustainability, administrative barriers, and competitive procedures. In addition, the dominant research themes identified in the literature include regulation and governance, procurement digitalization and transparency, regional integration through cross-border cooperation, barriers and risks associated with cross-border procurement, sustainability and green procurement practices, as well as healthcare procurement and crisis-response mechanisms across borders.

Despite providing comprehensive insights, this study acknowledges several limitations. First, the analysis relied exclusively on publications indexed in the Scopus database, which may limit the overall coverage and generalizability of the findings. Future studies are therefore encouraged to integrate publications from additional databases, such as Web of Science, to provide a broader and more comprehensive understanding of the field. Second, future research may further explore underexamined themes and emerging issues related to border procurement in order to enrich the existing literature. Finally, although this study employed a systematic and

rigorous review process to reduce potential interpretation bias, future researchers are encouraged to apply complementary methodological approaches and advanced analytical techniques to strengthen and extend the findings of this study.

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TABEL

Table 1. Defining Border Procurement Elements

No	Procurement Terminology Used	Definition	References
1.	Pan-European e-procurement	Public procurement is defined as an integrated electronic system used to manage, publish, and search cross-border tender information through linked open data technologies.	(Alvarez et al., 2012)
2.	Public e-procurement	Public procurement refers to the electronic acquisition of goods and services by governments to improve efficiency, transparency, and accountability.	(Bulut & Yen, 2013)
3	Cross-border public procurement	Cross-border public procurement is defined as the awarding of government contracts to suppliers located outside the contracting authority’s domestic jurisdiction.	(Kutlina-Dimitrova & Lakatos, 2016)
4	Public procurement and regional	Public procurement is viewed as a strategic instrument for supporting regional integration, connectivity, and cross-border infrastructure development.	(Ghossein et al., 2021)

5	EU procurement and regional integration	Public procurement is understood as a government purchasing mechanism governed by principles of transparency, competition, and non-discrimination within the EU single market.	(Gelderman et al., 2010)
6	Cross-border procurement	Cross-border procurement refers to public purchasing activities involving foreign suppliers, particularly during emergencies and health crises.	(Hanspach, 2023); (Essigmann et al., 2022)
7	Joint cross-border procurement	Joint cross-border procurement is defined as a cooperative purchasing mechanism involving public authorities from different countries to collectively fulfill public needs.	(Lombardi & Rossa, 2024)
8	Digital public procurement	Digital procurement is defined as a technologically integrated procurement system aimed at improving transparency, interoperability, and cross-border cooperation.	(Begzhan et al., 2026)
9	Public procurement market access	Public procurement is considered a government market that becomes accessible to foreign suppliers when information and language barriers are reduced.	(Deltas & Evenett, 2025)
10	SMEs in cross-border public procurement	Public procurement is defined as an international market opportunity where SMEs compete through networking capabilities and cross-border collaboration.	(Fayos et al., 2022)

Table 2. Author Keywords

Rank	Keyword	Total link strength
1	Public procurements	8
2	smes	5
3	Cross-border public procurement	3
4	e-commerce	3
5	International trade	3
6	barriers	2
7	Blockchain	2
8	e-government	2
9	e-procurement	2
10	EU Law	1

Source: Output Vosviewer Software

Table 3. Research Focus of Border Procurement

Research Theme	Research Focus	References
Cross-border market integration	Public procurement as an instrument of regional economic integration and opening up international market access	(Kutlina-Dimitrova & Lakatos, 2016); (Ghossein et al., 2021); (Begzhan et al., 2026)
Regulation and legal harmonization	Harmonization of procurement regulations between countries, compliance with EU Directives, cross-border legal barriers	(Gelderman et al., 2010); (Begzhan et al., 2026); (Lombardi & Rossa, 2024.)
Digitalization of e-procurement,	Digitalization of e-procurement, system interoperability, linked open data, digital procurement platform	(Alvarez et al., 2012); (Bulut & Yen, 2013); (Begzhan et al., 2026)
Transparency and	Tender transparency, accountability,	(Nikou, 2025)(Ghossein et al.,

Research Theme	Research Focus	References
governance	monitoring, anti-corruption, governance quality	2021); (Begzhan et al., 2026)
Barriers to cross-border procurement	Language barriers, bureaucracy, administration, differences in legal systems, procedural complexity	(Deltas & Evenett, 2025); (Kurochkin, 2019)
Home bias and protectionism	Government preference for domestic suppliers over foreign suppliers	(Hanspach, 2023); (Kutlina-Dimitrova & Lakatos, 2016)
Tender competition	Competitive procedure, number of tender participants, access to foreign suppliers	(Gelderman et al., 2010); (Kutlina-Dimitrova & Lakatos, 2016)
SMES Participation	Obstacles and opportunities for SMES in international tenders	(Fayos et al., 2022); (Alvarez et al., 2012)
Regional cooperation	Joint procurement, cross-border cooperation, procurement collaboration	(Lombardi & Rossa, 2024.); (Ghossein et al., 2021)
Cross-border health sector procurement	Procurement of drugs, medical devices, pandemic response, cross-border health access	(Hanspach, 2023); (Essigmann et al., 2022); (Borges et al., 2025)
Sustainability and green procurement	Circular economy, ecological footprint, green procurement	(Nikou, 2025); (Begzhan et al., 2026)
Regional infrastructure and projects	Belt and Road Initiative, cross-border infrastructure projects	(Ghossein et al., 2021)
Innovation in procurement	Innovation procurement, intelligent transport systems, adaptive procurement	(Begzhan et al., 2026); (Soe, 2020)
Procurement efficiency	Value for money, administrative efficiency, cost efficiency	(Bulut & Yen, 2013); (Ghossein et al., 2021)
The impact of the crisis on procurement	COVID-19, emergency procurement, buyer discretion	(Hanspach, 2023); (Borges et al., 2025)

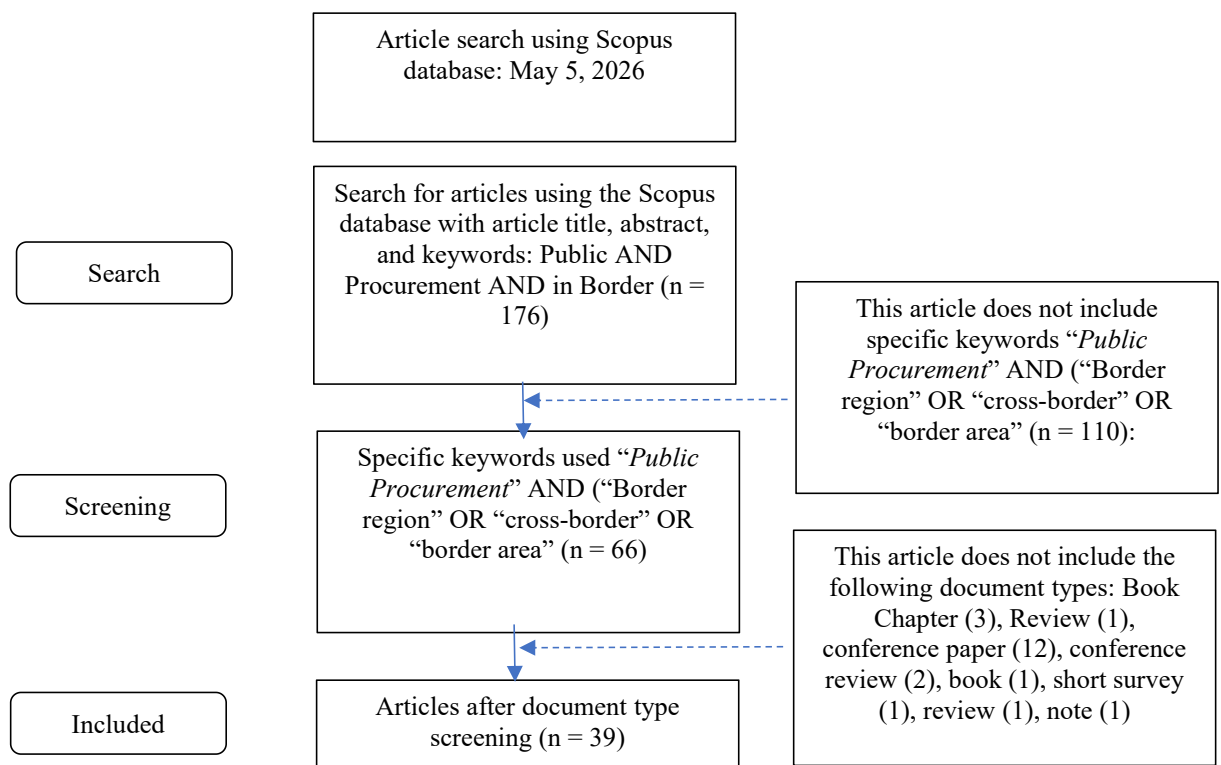


Figure 1. Systematic literature review information flow using PRISMA

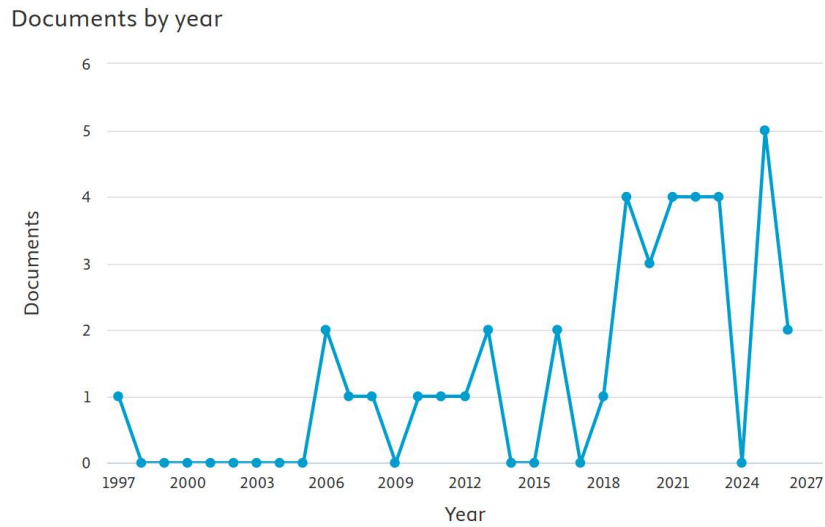


Figure 2. Number of Publications on Border Procurement
Source: Scopus Database

Documents by country or territory

Compare the document counts for up to 15 countries/territories.

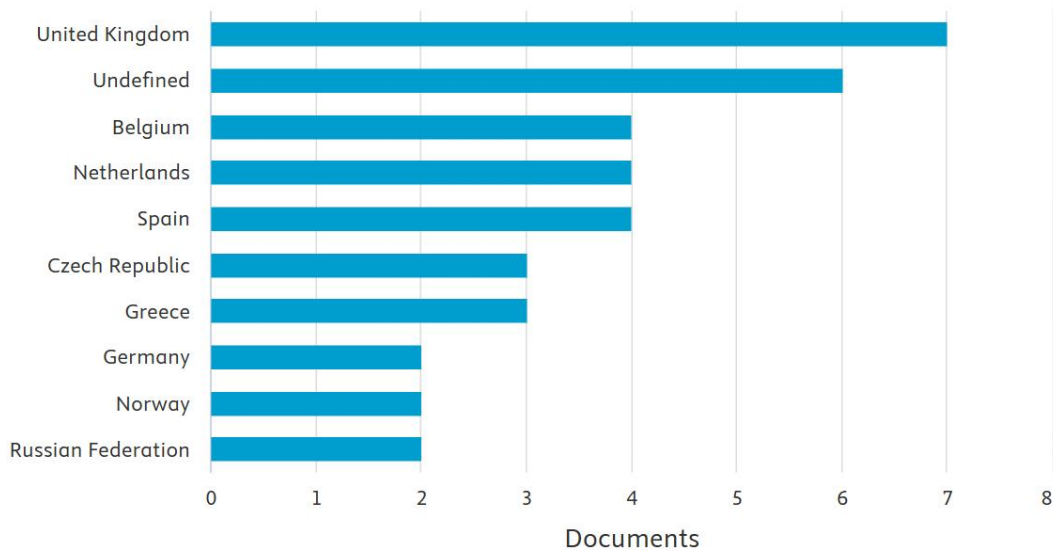


Figure 3. Number of Publications by Country
Source: Scopus Database

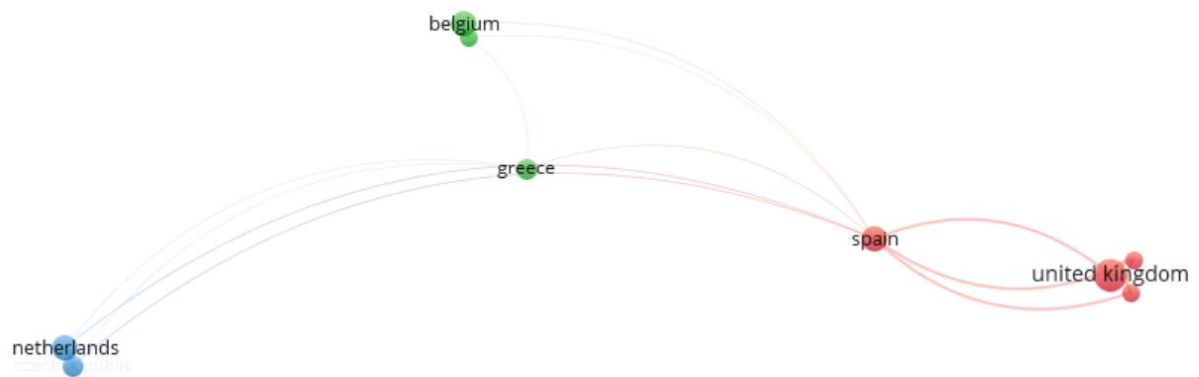


Figure 4. Visualization of the Network Between Countries
Source: Output VOSviewer software

Documents by affiliation

Compare the document counts for up to 15 affiliations.



Figure 5. Visualization of Inter-University Network
Source: Scopus Database

Documents per year by source

Compare the document counts for up to 10 sources.

[Compare sources and view CiteScore, SJR, and SNIP data](#)



Figure 6. Number of Articles by Source (Top 5 Journals)
Source: Scopus Database

Documents by author

Compare the document counts for up to 15 authors.

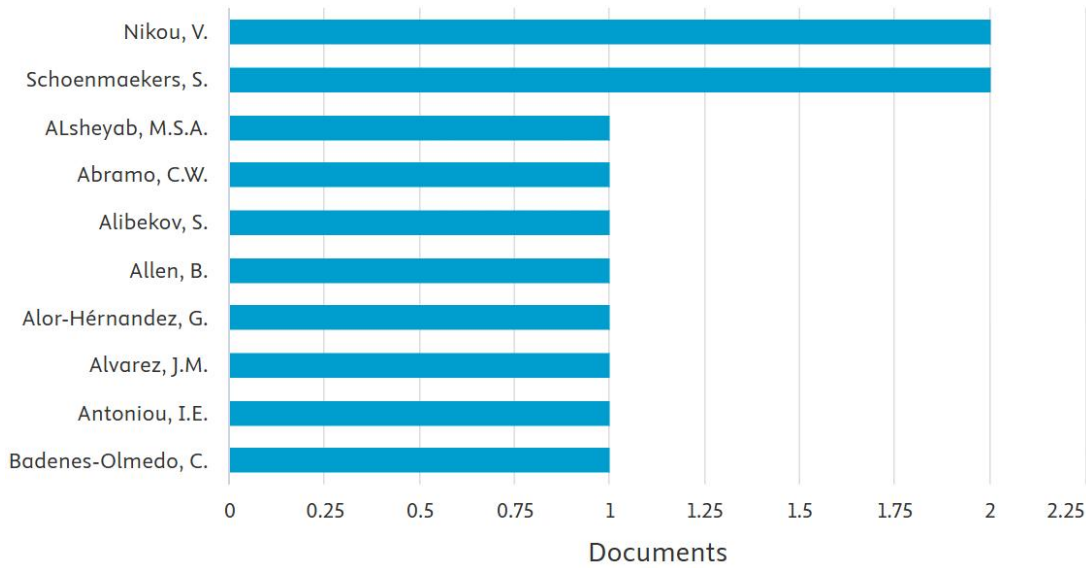


Figure 7. Number of Publications by Author (Top 10 Authors)
Source: Scopus Database

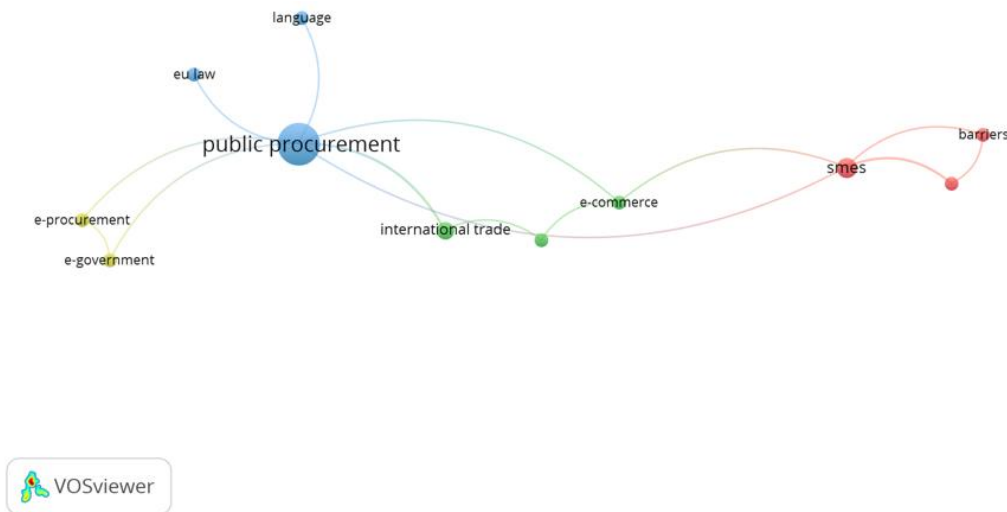


Figure 8. Keywords related to Border Procurement
Source: Output VOSviewer software

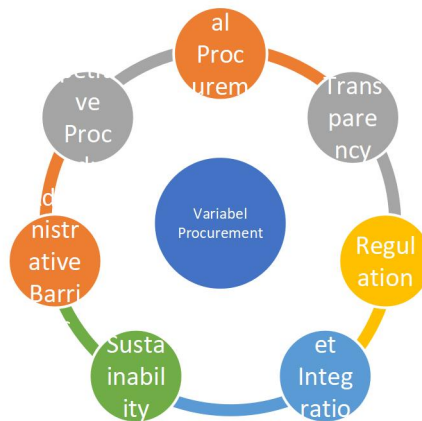


Figure 9. Variables Border Procurement

Source: Adoption from previous research (Begzhan et al., 2026), (Soe, 2020), (Kurochkin, 2019), (Fayos et al., 2022), (Nikou, 2025), (Schoenmaekers, 2021), (Alvarez et al., 2012), (Bulut & Yen, 2013), (Deltas & Evenett, 2025), (Gelderman et al., 2010), (Ghossein et al., 2021), (Begzhan et al., 2026), (Kutlina-Dimitrova & Lakatos, 2016), (Lombardi & Rossa, 2024)

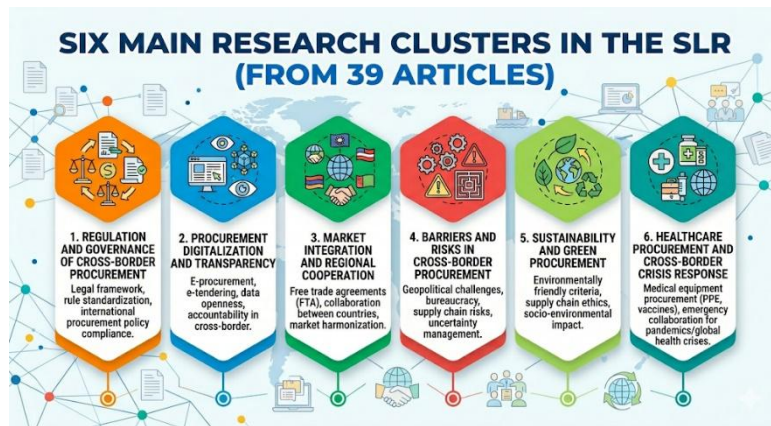


Figure 10. Main Research Clusters