

PANEL T04-P04 SESSION 1:

Public Procurement: Humdrum Bureaucratic Beast or Vital Instrument for Social Change

**MAPPING OUT PUBLIC PROCUREMENT RESEARCH:**

*A 2010-2018 Preliminary Descriptive Review of  
Theoretical, Empirical and Methodological Themes in the Field*

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## 1. INTRODUCTION

In the last few years, many scholars have surveyed the field of public procurement (PP) using various methods (Flynn & Davis, 2014; Koala & Steinfeld, 2018; Lange, Telgen, & Schotanus, 2014; Patrucco, Luzzini, & Ronchi, 2017). Their research provided significant insights about how PP had been studied until now. Except for Lange & al. (2014), these reviews were limited by methodological choices made consciously by the authors – specifically, the choice to analyze articles from only one journal. This paper is a descriptive review that seeks to map out the field of peer-reviewed research on PP across academic journals.

## 2. LITERATURE REVIEW

### 2.1 A Tri-Level Framework for Understanding PP

Procurement is essentially the implementation of an executive-branch decision to acquire good or services from the private sector. The British Association for Project Management defines procurement in this way:

*The process by which the resources (goods and services) required by a project are acquired. It includes development of the procurement strategy, preparation of contracts, selection and acquisition of suppliers, and management of the contracts.*

Procurement must therefore be understood as a process that extends beyond the contract's signature and that includes legal, administrative and political elements. It also brings together, through formal and informal links, many private and public sector actors (Roman, 2014).

When describing procurement systems, most research distinguishes between contextual elements (laws and regulation, institutions, market forces, political pressures, professionalization and ethics, etc.) and the actual process of procurement, which involves a series of steps aimed at converting executive-branch demands into acquired goods and services. Conceptually, procurement can be analyzed using this tri-level context/structure/process approach, where different contextual elements will affect the structure of the procurement framework and the way the procurement process is undertaken.

#### **Context**

For Thai (2001), the procurement environment is characterized by five elements:

1. Economic conditions where goods and services are exchanged on the private market, with the government acting as a buyer and the private sector acting as a supplier;
2. A legal environment where economic activities are subject to government regulation;
3. A political environment where governance is shared between democratic actors having different interests, influencing procurement decisions through formal and informal means;
4. A social environment where citizens and civil society institutions participate and provides oversight for

procurement decisions being made;

5. International trade agreements that constrain governments into opening up their markets.

### **Structure**

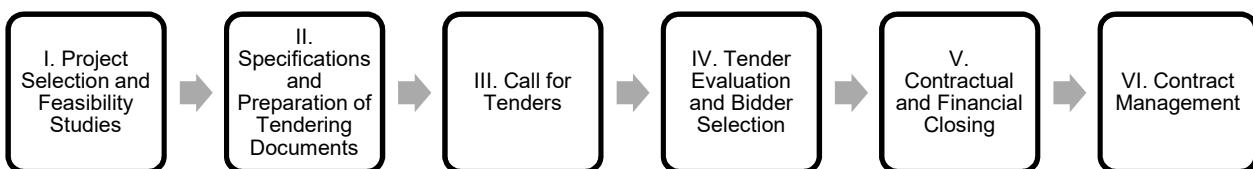
Thai (2001) also suggests that procurement systems are composed of four elements:

1. A set of procurement laws and regulations, generally aimed at ensuring due process;
2. Public procurement organizations centralizing procurement know-how and ensuring oversight of tenders;
3. A public procurement workforce, competent at undertaking procurement projects and managing contracts;
4. Processes and methods, aimed at systematizing the way procurement projects are undertaken.

### **Process**

With regards to the procurement process, Snider and Rendon (2008) use systems theory to describe the way in which a procurement process operates. Like any general system, a procurement system relies on an input/output/feedback loop design (Easton, 1953) that aims at converting executive-branch demands for goods and services into acquired goods and services. The steps (sub-systems) involved in procurement are generally standard across jurisdictions. They are shown in figure 1.

**Figure 1. The Public Procurement Process**



## **2.2 Overview of PP Research**

General overview contributions on PP field can be split in two different research phases: in the first phase, works focused on the definition of general concepts and boundaries of the field. During that phase, the objective was both practical (to clarify the proper role of PP practitioners) and scientific (to overcome the high fragmentation of PP research). The second research phase deals with works focused on evaluating the state of the literature, examining the role of theory in PP research and proving insights into the maturity of the field and future directions of research.

Thai's (2001) contribution laid out in the previous subsection is considered as a starting point. Thai's approach of PP as a "nested structure of systems within systems" (2001, p. 40) is still the predominant view of the current research in the field (see, for example, the PMBOK).

A second contribution in the first research phase was Prier & McCue's (2009) work. To address what the

authors considered the limitations of a muddled definition of PP and ill-defined boundaries, they proposed the following conceptual definition: “*PP is the designed legal authority to advise, plan, obtain, deliver, and evaluate a government's expenditures on goods and services that are used to fulfill stated objectives, obligations, and activities in pursuant of desired policy outcomes*” (p. 329). Furthermore, Prier & McCue proposed a conceptual framework to classify PP based on important elements: 1) the legal basis for practitioners' activities; 2) the organizational and structural boundaries of activities; and 3) the intended outcomes of the practice used in the pursuit of governmental obligations.

During the second research phase, a first contribution was Lange et al.'s (2014) work. The authors' purpose was to conduct a systematic review of the most influential literature in a highly fragmented field of PP, because “*a clear synthesis is still lacking, which in turn inhibits the establishment of a clear body of knowledge*” (p. 1). A second contribution was Flynn & Davis' (2014) work, who presented a systematic review to “*map and address the existing intellectual territory*” of PP research (p. 142). A third contribution by Patrucco et al. (2017) provided a structured review of research topics and identified the main gaps in the existing literature using content analysis. Table 1 presents a synthesis of the key contributions of the second research phase.

**Table 1. Key Contributions of Existing Systematic Reviews**

<b>Publication Status</b>	<ul style="list-style-type: none"> <li>The yearly number of publications has been constantly increasing since the end of 1990s, showing a higher relevance of the field;</li> <li>The high number of individual authors and the high number of journals in which the papers are published highlight the cross-disciplinary character of PP research.</li> </ul>
<b>Strategic Research and Methods</b>	<ul style="list-style-type: none"> <li>There is a relatively lack of theoretical underpinnings in PP research; but this finding should be nuanced by the fact that papers attempt to contribute to the theoretical enrichment;</li> <li>Empirical methodologies are predominant, particularly case studies and surveys; the highly practical nature of PP research is also revealed by the data sources (non-academic literature and survey methods are most prominent);</li> <li>Where a theoretical approach is used, the papers are most frequently conceptual; meta-analyses and literature studies are neglected, making it difficult to pool findings or to apply them to further analyses;</li> <li>Qualitative and quantitative methodologies are applied almost equally often.</li> </ul>
<b>Theories Used and Dominant Disciplines</b>	<ul style="list-style-type: none"> <li>Where articles were found to be theoretically grounded, the most popular theories were: theory of auctions and competitive bidding, principal-agent theory, contract theory, transaction cost economic theory and general systems theory – that is to say that economics are predominant;</li> <li>Apart from economics, the other disciplines on which PP research is based are: sociology, management and psychology; if economics still dominate, management theory is clearly increasing in use during the most recent years; findings showed that research in PP is theoretically eclectic and reflexive of input from across a diverse range of fields and disciplines.</li> </ul>
<b>Focus of PP Research</b>	<ul style="list-style-type: none"> <li>In terms of research topics, a high variability was observed; more than twenty topics have been addressed;</li> <li>It was shown that a large portion of articles reviewed focused on PP strategy &amp; goals, PP processes, and PP performance; a minor portion of articles focused on PP organizational design, PP procedures and tools and PP environment;</li> <li>A shift towards more specific themes is observed: topics such as ethics and sustainability, social, environmental and economic impacts of PP are attracting more researchers in recent years;</li> <li>With regards to PP processes, the more operational activities (supplier selection and bid evaluation criteria, negotiation and awarding, and contract management activities) have been deeply debated, and more strategic activities (budget and demand management, requirement definitions, and supplier scouting and bid design) are neglected; that seems to be coherent with the traditional operational perception of PP;</li> <li>E-procurement has been considered a “hot” topic since the early 2000;</li> </ul>

	<ul style="list-style-type: none"> <li>Surprisingly, not a great deal of literature on PP organizations and structures exists; only a few address the topics of centralization and organizational design activities directly</li> <li>Micro-organizational topics were more common: competences, training programs, resource specialization, behaviour &amp; trust, and knowledge management;</li> <li>More research on PP performance considered cost, quality and time; other related topics such innovation and sustainability were only partially studied.</li> </ul>
<b>Contextual Variables of Research</b>	<ul style="list-style-type: none"> <li>In general, research was very unspecific with respect to context variables; more than half of papers did not specify a jurisdictional level and a similar number were grouped into the polled categories of unspecified industries; only a third of the papers did mention of a specific type of product.</li> <li>Where contextual variables were specified, data showed that many aspects of PP may depend on the country, the sector or the type of public administration on which the research focuses;</li> <li>Consequently, many papers focused on a specific country or industry instead of adopting a comparative approach;</li> <li>Central governments prevailed in terms of research focus, but their proportional relevance decreased as the municipal level research increased over time;</li> <li>The most influential countries, both as producers and objects of research, were the USA and the UK, but their importance decreased with time as more countries, especially in Europe, have rapidly increased their research activities;</li> <li>Defense, construction and healthcare were the most studied industries and sectors, but important differences appear amongst reviews;</li> <li>Regarding regional focus, the American and British literature looked at the different levels of government level, while other literatures prefer to focus on central governments (Africa) or local institutions (Italy and Northern Europe).</li> </ul>
<b>Limitations</b>	<ul style="list-style-type: none"> <li>A general limitation in all these contributions is the exclusion of articles published in languages other than English, which may have yielded a language bias;</li> <li>Another important limitation is the exclusion of grey literature, despite its quantitative importance;</li> <li>Both Patrucco et al., (2017) and Flynn et al.'s (2014) recognized that "a one-journal literature review limits generalizability of the results to the whole landscape, even though the review considers the most important journal in the field" (Patrucco et al., p. 40);</li> <li>Literature review of papers published in other peer-reviewed academic journals may suggest other evidence;</li> <li>Regarding Lange et al., (2014) work, the only systematic review that considers several journals, it must be said that ten years (2001-2010) of publications from the JPP were missed because this journal was not included before 2010 in the Databases used in the review.</li> </ul>

## 2.3 Research Questions

As mentioned by Patrucco et al. (2017): "*the first suggestion should be to extend the scope of a review of this type, with scholars designing a different sample of journals and papers and then trying to compare the results with the findings provided by the present study*" (p. 40).

It is with this in mind that we undertake (another!) descriptive review of the field of PP, but on that is broader in scope and that includes articles from different journals. We start by identifying the research questions we felt need to be answered.

### General Research Question

- What is the current state of peer-reviewed research on PP?

### Specific Research Questions

- Which topics and themes are most/best represented in the academic literature?
- Who are the most important authors?

- What are the most important journals?
- Which disciplines and theoretical frameworks are most often used?
- Which empirical verification strategies are the most used?
- Which economic sectors and countries/regions are the most studied?
- How has the field evolved in recent years?
- What are the theoretical and empirical “holes” in the current research?

### 3. METHOD

In this section, we describe the method used in selecting which articles to review, in developing a code list and in coding and analyzing the data.

#### 3.1 Article Selection

A first list of articles used was compiled by running multiple queries on ProQuest and ScienceDirect databases in the months of December 2016 and January 2017. In order to make sure the descriptive review was as up to date as possible, a second list was generated in July 2018.

For both databases, only peer-reviewed articles published in English in academic journals between 2010 and 2018 were retained.

The list of keywords used is presented in Table 1. The query was limited only to the “title” and “abstract” fields, since searching for the keywords in the articles’ bodies led to too many responses.

**Table 2. List of Keywords Used**

• "defence procurement"	• "government purchase"	• "public purchases"
• "defense procurement"	• "health procurement"	• "public purchase"
• "education procurement"	• "infrastructure procurement"	• "electronic procurement"
• "government contracts"	• "municipal procurement"	• "e-procurement"
• "government procurement"	• "procurement theory"	• "public contracts"
• "government purchasing"	• "public procurement"	• "government contractors"
• "government purchases"	• "public purchasing"	• "public contractors"

A third list containing all the articles from the Journal of Public Procurement (JPP) –whether or not they met the keyword criteria– was compiled, up to July 2018. This was done because we assumed all the articles published in JPP were relevant to the descriptive review.

All three lists were combined into a single population of relevant articles. The combined list was then cleaned up by removing duplicates (which were numerous, due to the overlap between databases), articles

with no authors or anonymous authors, book reviews, editorials, “in memoriam” articles and introductions to special issues.

After a coding test run, it became obvious that many articles had to be removed because they did not concern PP directly – most of them were related to other topics and only mentioned PP as a peripheral element. A first pass, performed by systematically reading the abstracts, was performed to remove off-topic articles.

Finally, during the coding phase, in which two coders looked at the actual paper contents, some articles were also removed. Both coders identified articles for removal. When differences arose, they were settled through discussion.

By doing this, a final population of 743 articles was retained.

For each article, the number of Google Scholar citations was manually added in early February 2019 in order to compute impact factors.

### **3.2 Code Definition**

The initial list of codes was drafted using the authors’ personal knowledge about the field and following Thai’s (2001) overview of the field. The initial list was then sent to experts<sup>1</sup> in the field for review. Based on their responses a new code list was compiled.

A first coding dry run was performed on a small number of articles to verify if the code list was usable. This led to a streamlining of codes and categories. A second coding dry run was performed to verify if the updated list was usable. Two entire categories (1 and 2) were removed because they were deemed too general and some codes were merged or removed. Upon satisfactory results, the updated list was retained as the final code list. It is presented in Appendix 1.

### **3.3 Coding**

Coding was done blindly by two independent coders. When differences arose, they were settled through discussion. For each category, at least one code had to be selected, although that code could be “None/Does Not Apply (DNA)”. In some categories, codes could be added manually by selecting “Other” and by writing down a new word. The coding was finished in March 2019.

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<sup>1</sup> The authors would like to thank Khi V. Thai, Cliff McCue, Christopher Bovis, Anthony Flynn, Sue Arrowsmith, J. Gordon Murray and Alexandru V. Roman for their generous responses.

## 4. RESULTS

### 4.1 Descriptive Statistics of the Population

Table 3 presents a description of the population.

**Table 3. Population Characteristics**

Number of articles coded	743
Number of different journals	331
Number of different authors	1311
Total number of Google Scholar citations in the entire population	12775

### 4.2 Descriptive Statistic by Coding Category

Appendix 2 presents the detailed data by coding category.

The first coding category looked at which phase<sup>2</sup> of the procurement cycle articles were mostly concerned with. Just under a third (29%) of articles concerned the entire cycle, and 13% studied the bidding process. It is particularly noteworthy that no article in the entire population looked specifically at needs assessment and feasibility studies, and that risks assessment, negotiation and financial closing and procurement evaluation and learning were also almost completely absent. Contract management was the focus of a mere 2% of articles. This is coherent with findings from previous reviews, where the operational aspects of procurement were more important than the strategic issues.

Topical articles – i.e. those articles that focused on a subfield of PP such as e-procurement, green procurement, etc. – were particularly numerous. We could identify a specific theme for more than half the articles. Articles on corruption and collusion in PP were the most frequent (15%), followed by green and sustainable procurement (12%) and PP innovation (9%). Within the top 50 most cited articles, 82% were topical articles. As we were coding, another category of PP emerged: social procurement, which covered issues like minority-business suppliers, women-owned businesses and socially responsible procurement.

Roughly half of the articles explicitly mentioned implications for practitioners.

The most used theoretical frameworks were management/project management/accounting<sup>3</sup> (62%), followed by economics/finance (36%), political science/public policy (20%) and law (17%). Sociology/organizational theory as well as HR/OB/psychology was relatively absent from the population with only 8% and 3% of articles, respectively. In the top 50 most cited articles, articles vastly come from

<sup>2</sup> We define the procurement cycle as: 1) needs assessment, pre-feasibility, feasibility and technical studies, 2) risk assessment, 3) bids (selection, evaluation, solicitations methods), 4) negotiation and financial closing, 5) contract management, and 6) procurement project evaluation and learning.

<sup>3</sup> We had initially tried to treat these categories separately, but they were too difficult to distinguish in practice during the coding.

three theoretical perspectives (management/project management/accounting, 74%; economics/finance, 36%; and political science/public policy, 22%). Previous findings had shown that managerial theory was becoming more important in procurement research.

Over a third (36% and 38%, respectively) of articles are conceptual and quantitative papers, while 20% were qualitative articles and 19% were policy and legal analyses. In the top 50 most cited articles, the proportions of conceptual, quantitative and qualitative articles were higher (42%, 46% and 34% respectively), thus suggesting the most cited articles are more “traditional” in structure. Very few papers were comparative (5% of the entire population). Past systematic reviews had indicated that comparative analyses in PP research were very rare, even going as far as suggesting that PP was a highly “contextualized” field.

Large sample analyses ( $n \geq 30$ ) were the most common (45% of articles), followed by sporadic illustrations (28%) and case studies (19%). Virtually all articles used secondary sources and documents, while interviews and questionnaires were used by 22% and 22% of articles, respectively, thus suggesting that field work, in the social sciences sense of the term, is not very common in PP research.

Forty-two percent of articles looked at public entities (i.e. the demand side of PP), while 29% looked at the private sector (i.e. the supply side). Articles focusing on PP’s environment (policy makers, auditors, regulators, tribunals) accounted for less than 10% of articles.

Thirty-seven percent of articles had the EU or EU countries<sup>4</sup> as a focus, while 17% concentrated on the USA. Sub-Saharan Africa was fairly well represented with 8% of articles, followed by the UK with 7%. The EU, the USA and the UK represented respectively 32%, 20% and 14% of the top 50 most cited articles. Seventy percent of articles focused on national governments, while articles looking at the local, regional and supranational levels accounted for 21%, 16% and 18% respectively. This suggest a gap in the empirical literature concerning non-national levels of governments, especially in highly decentralized countries.

Finally, just under 50% of articles looked at specific sectors. Within these, the sectoral focus was extremely fragmented: 10% focused on multiple ( $\geq 2$ ) sectors, 8% focused on general building construction, 7% on services, 7% on transportation, 5% on military and 5% on health.

### 4.3 Most Important Journals

#### ***Most Frequent and Most Cited Journals***

Appendix 3 and 4 present the most important journals by number of articles and number of Google Scholar citations, respectively.

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<sup>4</sup> In this category (11), an article looking at PP in Italy would have been coded “EU”, just like one looking at the European Union’s procurement reforms. Category 12 (jurisdiction) distinguishes between local, regional, national and supranational levels of government.

Apart from the Journal of Public Procurement (JPP), it should be noted that the journal that supplied the most article to our population was a PP publication, the Public Contract Law Journal (PCLJ) published by the American Bar Association. Except for JPP and PCLJ, virtually all other journals (with the International Journal of Procurement Management being the notable exception) are generalists journal in their own fields.

When one looks at citations, the unconsolidated nature of the field is even more apparent. Except for the JPP, the 10 most cited journals are generalist journals from the field of economics, operations management, public management or urban studies.

### ***Most Important Articles***

Appendix 5 and 6 present the top 50 most cited articles, by total number of citations (i.e. those that had 60 or more Google Scholar citations in February of 2019) and by average number of citations per year.

A few elements distinguish these top papers.

Perhaps the most significant difference between the top 50 articles and the rest is the high propensity to focus on specific topics. Indeed, only 18% of the top articles could not be classified in either of the “trending” topics we had identified (coding category 4). The most popular topics were green and sustainable procurement (26% of articles), innovation (20%), corruption and collusion (20%) and E-procurement (14%). This could also explain *why* these articles are more cited, as they tend to be published in journals in their topical field (which attract greater readership) than in PP, public administration or project management journals. Theoretical frameworks inspired from management, project management and accounting were significantly more represented in the top 50 articles.

Another important difference is that the top 50 articles tend to be more classical in their structure, either presenting conceptual frameworks or empirical verifications of theories. 42% of the top articles were conceptual, theoretical or methodological, and 82% could be classified in one of the three empirical categories (quantitative, qualitative or mixed). Conversely, very few were discussion papers, policy analyses for legal analyses. The use of interviews as a data collection method was also more frequent in the top 50 papers.

The top 50 articles were also significantly more biased toward the main actors of the principal-relationship (i.e: the public buyers and the private suppliers) as opposed to other peripheral actors such as policy makers, regulators, tribunals, etc. Geographic focus is much more Anglo-Saxon and Asian in the top 50 articles than in the entire population. 36% focused on either the USA, the UK, Canada, Australia or New Zealand compared to 27% in the original population of articles. Asia was twice as represented (20% vs. 10%). Surprisingly, none of the top 50 articles concerned military procurement, despite it being generally considered the epistemological ancestor of PP.

### ***Representativeness of the Journal of Public Procurement***

We also verified if the articles published in the Journal of Public Procurement (JPP) were representative of the research in the field as a whole. The last two double columns of the tables in Appendix 2 give interesting insights on how representative the JPP is of the whole field for the years we looked at. Globally, the JPP is very representative of the entire population of article but focused more frequently on the USA. It also included more articles studying military procurement, which is hardly surprising as it correlates with a more American focus. JPP's articles were also less cited than other journals in the field, coming in only at the 117<sup>th</sup> rank out of 331 journals in terms of average Google Scholar citations per article.

More important differences arose when one compared JPP articles to the 50 most cited articles. Almost 60% of JPP articles did not focus on a specific topic (green procurement, procurement innovation, corruption, etc.), while only 18% of the top 50 articles did not. Unsurprisingly, it could be said that JPP is a "generalist" PP journal. Also, while 82% of the top 50 articles could be classified as empirical (either, qualitative, quantitative or mixed methods), only 66% of JPP's articles could. Inversely, only 6% of the top 50 articles were discussion, policy analyses and legal analyses, while those types of papers accounted for 17% of JPP's articles. This suggests a lesser methodological concern in JPP articles than in the field's top articles. As a matter of fact, the JPP only contributed two articles to the top 50, despite being the only journal focused solely on PP.

#### **4.4 Most Important Authors**

Appendix 7 and 8 presents the top 100 most cited authors, by total number of citation (i.e. those that had 74 or more Google Scholar citations in February of 2019), and the top 41 most frequent authors, by total number articles (i.e. those that had 4 or more articles in the population).

A preliminary analysis shows the 8 of the top authors tend to cluster around three topics: innovation (Uyarra, Edler & Yeow), green procurement (Brammer & Walker), and political connections (Goldman, Rocholl & So). Further analysis, perhaps using social network analysis, could be used to identify wider networks and clusters of authors and themes.

#### **4.5 Contingency Tables**

[Forthcoming]

Cross tabulated data is available but has not be analyzed in full yet. A coding category (3 to 13) can be crossed with any other one. For example, the table below crosses theories (category 6) with types of paper (category 7).

**Table 4. Types of Papers by Theoretical Framework**

n	Conceptual/ Theoretical/ Methodological	Empirical - All or mostly quantitative	Empirical - All or mostly qualitative	Empirical - Mixed methods	Comparative	Discussion/ Policy Analysis/ Legal Analysis	Exploratory	Case study	Total	# of articles per category
Economics/Finance	132	147	23	15	10	24	5	14	370	265
Management/Project Management/ Accounting	173	173	129	50	29	44	28	41	667	462
Sociology/Organization Theory	29	24	19	7	2	3	5	5	94	58
Political Science/Public Policy	38	36	43	11	11	36	9	16	200	152
Law	14	10	13	1	9	94	1	10	152	127
HR/ Organizational Behaviour/ Psychology	4	11	5	3	1	2	1	0	27	21
Atheoretical	3	1	2	1	1	1	0	1	10	8
%	Conceptual/ Theoretical/ Methodological	Empirical - All or mostly quantitative	Empirical - All or mostly qualitative	Empirical - Mixed methods	Comparative	Discussion/ Policy Analysis/ Legal Analysis	Exploratory	Case study		
Economics/Finance	50%	55%	9%	6%	4%	9%	2%	5%		
Management/Project Management/ Accounting	37%	37%	28%	11%	6%	10%	6%	9%		
Sociology/Organization Theory	50%	41%	33%	12%	3%	5%	9%	9%		
Political Science/Public Policy	25%	24%	28%	7%	7%	24%	6%	11%		
Law	11%	8%	10%	1%	7%	74%	1%	8%		
HR/ Organizational Behaviour/ Psychology	19%	52%	24%	14%	5%	10%	5%	0%		
Atheoretical	38%	13%	25%	13%	13%	13%	0%	13%		

## 5. DISCUSSION AND CONCLUSION

### 5.1 Contribution

Globally, our preliminary results paint a lukewarm portrait of PP research. What we observe is a highly fragmented field that, perhaps, has not fully matured yet.

As specific research objects, some admittedly important themes – such as feasibility studies, risk assessments, contract negotiations, contract management, *post hoc* evaluations and HR – are almost ignored by the academic literature, despite being extensively studied in the grey literature. Furthermore, the most cited work concerning PP concerns very specific subtopics of procurement research that, epistemologically, could feel equally at home in other fields such as environmental studies, innovation or criminology. This research is also published in journals that have very little to do with PP. For the moment, the field of PP thus looks, at best, like a subfield of public administration, operations research or project management and, at worst, like an empirical object in contract theory or public policy.

We believe this is linked to the fact that there is not dominant journal that serves as a vector of development around which the research community could cluster. Such a journal would be able to take on a more systematic approach to the analysis of PP, studying it horizontally (at each step of the procurement cycle) and vertically (focusing not only on the buyer-supplier relationship, but also on procurement policy, governance and institutions). Thai's (2001) introductory article in the JPP beautifully laid out a plan for such a systematic analysis. Nevertheless, despite its 19 years of existence and its wide and representative coverage of the main theoretical and empirical themes, the JPP simply does not manage to fulfill this role; it would need to attract more top-quality research in order to do so.

PP research could also benefit from a shift towards new analytical methods such as comparative analysis (inspired from the field of political science), program/policy/project evaluation, and institutional analysis.

Finally, we hope that this paper constitutes a call to action for public procurement researchers to structure the field in such a way that it becomes a *bona fide* discipline within public administration research. This

requires leadership from one or more journal or conferences to push for a systematic research agenda, as well as the use of various theoretical perspectives and analytical methods

## 5.2 Limitations

We are aware of some limitations to our analysis, which need to be considered when interpreting the results.

The first one is that coding, in and of itself, can be problematic: a very deliberate choice was made to code only articles that talk mainly or significantly about the coding elements. Articles that mentioned some categories tangentially were not coded as such. This probably contributed to our assessment that some topics were “ignored” by the literature, despite being mentioned in articles that used a higher level of analysis.

Two other deliberate methodological choices also constitute limitations. First, the fact that we only looked at articles published in English certainly influenced the geographic focus we observed but may also have skewed the results towards some theoretical frameworks and methodologies. Second, because we willingly overlooked the grey literature, some quasi-academic work, which could have covered some of gaps we identified, may have been ignored. In fact, we cannot but wonder if academic research in PP does not trail behind institutional research produced by organizations such of the OECD and the World Bank.

Finally, we realized too late in the coding phase that code 9a “Secondary Sources/Documents” was ambiguous, as it could combine many different categories such as other scientific papers, quantitative databases, policy and legal documents, grey literature, methods manuals, etc. Separating those secondary sources into more relevant subtypes could have produced greater insight on the types of analyses that were performed.

## 5.3 Further Work

We are aware that the results presented in the paper are preliminary and are too partial to be published yet. Further work will therefore concentrate on producing and analyzing contingency tables that cross the various variables, and on refining the conclusions.

We also hope that the considerable amount of work invested in coding 743 articles will serve as a basis for other, more focused, lower-level analyses. Social network analyses could be used to potentially identify clusters of authors and research themes. Furthermore, our database of articles could be the starting point of more specific systematic reviews of innovative procurement subtopics such as corruption in public procurement, green and sustainable procurement or social procurement.

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## APPENDIX 1. CODE LIST

Category	Code #	Codes
3. PROCUREMENT CYCLE PHASE	3a	Entire Cycle
	3b	Needs Assessment, Pre-Feasibility, Feasibility and Technical Studies
	3c	Risk Assessment
	3d	Bids (Selection, Evaluation, Solicitations Methods)
	3f	Negotiation and Financial Closing
	3g	Contract Management
	3h	Procurement Project Evaluation and Learning
	3y	Other: _____
	3z	None/Does Not Apply (DNA)
4. TRENDS/TOPICS	4a	E-Procurement
	4b	PPP
	4c	Corruption and Collusion
	4d	Green and Sustainable Procurement
	4e	Small and Medium Enterprises
	4f	Innovation
	4g	Procurement Reforms
	4y	Other: _____
	4z	None/DNA
5. IMPLICATIONS FOR PRACTITIONERS	5b	Implications are mentioned (YES/NO)
6. THEORY	6a	Economics/Finance
	6b	Management/Project Management/ Accounting
	6c	Sociology/Organization Theory
	6d	Political Science/Public Policy
	6e	Law
	6f	HR/ Organizational Behaviour/ Psychology
	6x	Specific theory if explicit in abstract: _____
	6y	Other: _____
	6z	Atheoretical
7. TYPE OF PAPER	7a	Conceptual/ Theoretical/Methodological
	7b	Empirical - All or Mostly Quantitative
	7c	Empirical - All or Mostly Qualitative
	7d	Empirical - Mixed Methods
	7e	Comparative
	7f	Discussion/Policy Analysis/Legal Analysis
	7g	Exploratory
	7h	Case Study
	7y	Other: _____

8. SAMPLE	8a	Large Sample Analysis (n>=30)
	8b	Small Sample Analysis (n<30)
	8c	Case studies
	8d	Descriptive/Sporadic Illustrations
	8x	If 8c = yes, specify how many: _____
	8y	Other: _____
	8z	None/DNA
9. DATA COLLECTION METHOD	9a	Secondary Sources/Documents
	9b	Observation/Unstructured Fieldwork
	9c	Interviews
	9d	Questionnaires
	9y	Other : _____
	9z	None/DNA
10. ACTORS	10a	Public Buyers/Other Public Sector Employees and Bodies
	10b	Suppliers/Private sector
	10c	Policy makers/Legislators/Elected representatives
	10d	Auditors/Regulators
	10e	Tribunals/Quasi-Legal entities
	10y	Other: _____
	10z	None/DNA
11. GEOGRAPHIC FOCUS	11a	USA
	11b	Canada
	11c	UK
	11d	EU
	11e	Non-EU European Countries (except UK)
	11f	Russia
	11g	Brazil
	11h	Latin America
	11i	Middle East & North Africa
	11j	Sub-Saharan Africa (except South Africa)
	11k	South Africa
	11l	Central Asia
	11m	East Asia/South East Asia (except China)
	11n	China
	11o	South Asia (India/Pakistan/Bangladesh/Nepal/Bhutan/Maldives)
12. JURISDICTION	11p	Australia/New Zealand
	11q	All
	11y	Other: _____
	11z	None/DNA
	12a	Supranational
	12b	National Government

13. SECTOR	12c	State/Provincial/Regional Government
	12d	Local/Municipal Government
	12y	Other: _____
	12z	None/DNA
	13a	General Supplies/Commodities
	13b	General Building Construction (Offices, Etc.)
	13c	Energy
	13d	Utilities
	13e	Health
	13f	Services
	13g	Education
	13h	Sports
	13i	Military
	13j	Transportation
	13k	Multiple
	13y	Other: _____
	13z	None/DNA/Not Specified

## APPENDIX 2. DETAILED DATA BY CODING CATEGORY

### NOTE

The following pages describe the article population by coding category:

- The **first column** presents the data for the entire population of 743 articles;
- The **second column** presents the data for the 315 articles that come from journals that have contributed more than 5 articles to the population;
- The **third column** presents the data for the top 50 most cited articles in the population (those that had 60 or more Google Scholar citations in February of 2019);
- The **fourth column** presents the data for all 138 articles that were published in the Journal of Public Procurement;
- The **fifth column** presents data for all other articles (the 605 articles that were published in different journals than the Journal of Public Procurement).

For each category and each column, the **percentages may add up to more than 100%** because more than one code could be used per article in a single category.

	ALL ARTICLES	ONLY JOURNALS WITH 5 OR MORE ARTICLES	TOP 50 MOST CITED ARTICLES (GS >= 60)	ONLY JPP	EVERYTHING EXCEPT JPP
<b>3. PROCUREMENT CYCLE PHASE</b>	<b>n</b> <b>%</b>	<b>n</b> <b>%</b>	<b>n</b> <b>%</b>	<b>n</b> <b>%</b>	<b>n</b> <b>%</b>
Entire Cycle	212 29%	95 30%	18 36%	42 30%	170 28%
Needs Assessment, Pre-Feasibility, Feasibility and Technical Studies	0 0%	0 0%	0 0%	0 0%	0 0%
Risk Assessment	6 1%	4 1%	0 0%	2 1%	4 1%
Bids (Selection, Evaluation, Solicitations Methods)	99 13%	43 14%	8 16%	20 14%	79 13%
Negotiation and Financial Closing	1 0%	0 0%	0 0%	0 0%	1 0%
Contract Management	18 2%	9 3%	1 2%	6 4%	12 2%
Procurement Project Evaluation and Learning	1 0%	0 0%	0 0%	0 0%	1 0%
None/DNA	408 55%	164 52%	24 48%	68 49%	340 56%
Total number of articles	743 100%	315 100%	50 100%	138 100%	605 100%
<b>4. TRENDS</b>	<b>n</b> <b>%</b>	<b>n</b> <b>%</b>	<b>n</b> <b>%</b>	<b>n</b> <b>%</b>	<b>n</b> <b>%</b>
E-Procurement	59 8%	20 6%	7 14%	10 7%	49 8%
PPP	44 6%	23 7%	3 6%	7 5%	37 6%
Corruption and Collusion	110 15%	30 10%	10 20%	11 8%	99 16%
Green and Sustainable Procurement	89 12%	40 13%	13 26%	9 7%	80 13%
Small and Medium Enterprises	58 8%	27 9%	4 8%	9 7%	49 8%
Innovation	67 9%	35 11%	10 20%	8 6%	59 10%
Procurement Reforms	33 4%	15 5%	0 0%	9 7%	24 4%
None/DNA	339 46%	151 48%	9 18%	82 59%	257 42%
Total number of articles	743 100%	315 100%	50 100%	138 100%	605 100%
<b>5. IMPLICATIONS FOR PRACTITIONERS</b>	<b>n</b> <b>%</b>	<b>n</b> <b>%</b>	<b>n</b> <b>%</b>	<b>n</b> <b>%</b>	<b>n</b> <b>%</b>
Implications for practitioners are mentioned	367 49%	157 50%	30 60%	62 45%	305 50%
Total number of articles	743 100%	315 100%	50 100%	138 100%	605 100%
<b>6. THEORY</b>	<b>n</b> <b>%</b>	<b>n</b> <b>%</b>	<b>n</b> <b>%</b>	<b>n</b> <b>%</b>	<b>n</b> <b>%</b>
Economics/Finance	265 36%	86 27%	18 36%	48 35%	217 36%
Management/Project Management/ Accounting	462 62%	206 65%	37 74%	95 69%	367 61%
Sociology/Organization Theory	58 8%	32 10%	3 6%	8 6%	50 8%
Political Science/Public Policy	152 20%	52 17%	11 22%	25 18%	127 21%
Law	127 17%	59 19%	2 4%	16 12%	111 18%
HR/ Organizational Behaviour/ Psychology	21 3%	10 3%	1 2%	6 4%	15 2%
Atheoretical	8 1%	3 1%	1 2%	0 0%	8 1%
Total number of articles	743 100%	315 100%	50 100%	138 100%	605 100%

	ALL ARTICLES		ONLY JOURNALS WITH 5 OR MORE ARTICLES		TOP 50 MOST CITED ARTICLES (GS >= 60)		ONLY JPP		EVERYTHING EXCEPT JPP	
<b>7. TYPE OF PAPER</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>
Conceptual/ Theoretical/Methodological	270	36%	108	34%	21	42%	52	38%	218	36%
Empirical - All or Mostly Quantitative	280	38%	116	37%	23	46%	57	41%	223	37%
Empirical - All or Mostly Qualitative	146	20%	64	20%	17	34%	23	17%	123	20%
Empirical - Mixed Methods	59	8%	25	8%	1	2%	11	8%	48	8%
Comparative	39	5%	15	5%	5	10%	6	4%	33	5%
Discussion/Policy Analysis/Legal Analysis	144	19%	68	22%	3	6%	24	17%	120	20%
Exploratory	30	4%	21	7%	2	4%	11	8%	19	3%
Case Study	57	8%	25	8%	4	8%	10	7%	47	8%
Total number of articles	743	100%	315	100%	50	100%	138	100%	605	100%
<b>8. SAMPLE</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>
Large Sample Analysis (n>=30)	337	45%	144	46%	23	46%	70	51%	267	44%
Small Sample Analysis (n<30)	66	9%	28	9%	4	8%	9	7%	57	9%
Case studies	143	19%	62	20%	15	30%	24	17%	119	20%
Descriptive/Sporadic Illustrations	207	28%	83	26%	10	20%	36	26%	171	28%
None/DNA	12	2%	3	1%	0	0%	1	1%	11	2%
Total number of articles	743	100%	315	100%	50	100%	138	100%	605	100%
<b>9. DATA COLLECTION METHOD</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>
Secondary Sources/Documents	717	97%	307	97%	47	94%	135	98%	582	96%
Observation/Unstructured Fieldwork	23	3%	11	3%	5	10%	2	1%	21	3%
Interviews	167	22%	75	24%	15	30%	28	20%	139	23%
Questionnaires	162	22%	81	26%	11	22%	38	28%	124	20%
None/DNA	17	2%	4	1%	2	4%	1	1%	16	3%
Total number of articles	743	100%	315	100%	50	100%	138	100%	605	100%
<b>10. ACTORS</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>
Public Buyers/Other Public Sector Employees and Bodies	311	42%	146	46%	26	52%	60	43%	251	41%
Suppliers/Private sector	212	29%	95	30%	19	38%	37	27%	175	29%
Policy makers/Legislators/Elected representatives	43	6%	12	4%	5	10%	5	4%	38	6%
Auditors/Regulators	16	2%	3	1%	0	0%	3	2%	13	2%
Tribunals/Quasi-Legal entities	14	2%	7	2%	0	0%	0	0%	14	2%
None/DNA	334	45%	126	40%	15	30%	61	44%	273	45%
Total number of articles	743	100%	315	100%	50	100%	138	100%	605	100%

	ALL ARTICLES	ONLY JOURNALS WITH 5 OR MORE ARTICLES	TOP 50 MOST CITED ARTICLES (GS >= 60)	ONLY JPP	EVERYTHING EXCEPT JPP	
<b>11. GEOGRAPHIC FOCUS</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>
USA	125	17%	88	28%	10	20%
Canada	8	1%	2	1%	1	2%
UK	54	7%	29	9%	7	14%
EU	278	37%	102	32%	16	32%
Non-EU European Countries (except UK)	25	3%	8	3%	2	4%
Russia	18	2%	7	2%	1	2%
Brazil	12	2%	2	1%	1	2%
Latin America	12	2%	3	1%	2	4%
Middle East & North Africa	12	2%	6	2%	1	2%
Sub-Saharan Africa (except South Africa)	57	8%	24	8%	1	2%
South Africa	5	1%	0	0%	0	0%
Central Asia	0	0%	0	0%	0	0%
East Asia/South East Asia (except China)	36	5%	15	5%	5	10%
China	18	2%	4	1%	2	4%
South Asia (India/Pakistan/Bangladesh/Nepal/Bhutan/Maldives)	22	3%	9	3%	3	6%
Australia/New Zealand	16	2%	4	1%	0	0%
All	17	2%	6	2%	0	0%
None/DNA	76	10%	31	10%	8	16%
Total number of articles	743	100%	315	100%	50	100%
<b>12. JURISDICTION</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>
Supranational	135	18%	47	15%	8	16%
National Government	518	70%	223	71%	30	60%
State/Provincial/Regional Government	116	16%	52	17%	8	16%
Local/Municipal Government	155	21%	61	19%	14	28%
None/DNA	62	8%	26	8%	5	10%
Total number of articles	743	100%	315	100%	50	100%

	ALL ARTICLES		ONLY JOURNALS WITH 5 OR MORE ARTICLES		TOP 50 MOST CITED ARTICLES (GS >= 60)		ONLY JPP		EVERYTHING EXCEPT JPP	
<b>13. SECTOR</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>
General Supplies/Commodities	14	2%	3	1%	0	0%	1	1%	13	2%
General Building Construction (Offices, Etc.)	57	8%	25	8%	3	6%	5	4%	52	9%
Energy	13	2%	5	2%	0	0%	2	1%	11	2%
Utilities	5	1%	1	0%	0	0%	1	1%	4	1%
Health	38	5%	16	5%	4	8%	7	5%	31	5%
Services	49	7%	14	4%	2	4%	7	5%	42	7%
Education	8	1%	4	1%	0	0%	2	1%	6	1%
Sports	0	0%	0	0%	0	0%	0	0%	0	0%
Military	40	5%	24	8%	0	0%	17	12%	23	4%
Transportation	54	7%	18	6%	4	8%	8	6%	46	8%
Multiple	73	10%	34	11%	8	16%	15	11%	58	10%
None/DNA/Not Specified	393	53%	174	55%	28	56%	76	55%	317	52%
Total number of articles	743	100%	315	100%	50	100%	138	100%	605	100%

### APPENDIX 3. MOST FREQUENT JOURNALS

Publication Title	Articles
<i>Journal of Public Procurement</i> <sup>5</sup>	138
Public Contract Law Journal	35
The International Journal of Public Sector Management	21
Journal of Purchasing and Supply Management	16
Journal of Cleaner Production	15
Innovation	12
Public Money & Management	12
International Journal of Public Administration	12
International Journal of Procurement Management	10
Construction Management and Economics	6
Procedia Economics and Finance	6
International Journal of Industrial Organization	6
Procedia Engineering	6
European Procurement & Public Private Partnership Law Review	5
Research Policy	5
Review of Industrial Organization	5
International Journal of Project Management	5
Environment and Planning C: Politics and Space	4
Lex Localis	4
Critical Perspectives on Accounting	4
European Planning Studies	4
Industrial Marketing Management	4
European Journal of Operational Research	4

<sup>5</sup> Please note that the *Journal of Public Procurement* should be analyzed separately, as all its articles were included in the population whether they met the keywords criteria or not.

## APPENDIX 4. MOST CITED JOURNALS

Publication Title	Google Scholar Citations
<i>Journal of Public Procurement</i> <sup>6</sup>	1405
The International Journal of Public Sector Management	613
Journal of Purchasing and Supply Management	471
Journal of Cleaner Production	467
Research Policy	411
Journal of Rural Studies	397
International Journal of Operations & Production Management	367
European Planning Studies	364
Review of Finance	362
International Journal of Industrial Organization	285
Innovation	230
The Quarterly Journal of Economics	219
Public Contract Law Journal	212
Technological Forecasting and Social Change	194
Construction Management and Economics	188
European Journal of Operational Research	187
Technovation	169
The Journal of Politics	161
Journal of Public Administration and Policy Research	154
Public Money & Management	146
International Journal of Production Economics	143
American Economic Journal: Economic Policy	143
Resources, Conservation and Recycling	140
International Journal of Managing Projects in Business	114
Ecological Economics	111
Transforming Government: People, Process and Policy	111
Critical Perspectives on Accounting	108
International Journal of Project Management	106
Food Policy	104
American Economic Journal. Economic Policy	101
American Economic Journal. Microeconomics	100

<sup>6</sup> Please note that the Journal of Public Procurement should be analyzed separately, as all its articles were included in the population whether they met the keywords criteria or not.

## APPENDIX 5. 50 MOST CITED ARTICLES (TOTAL)

Author	Date	Title	Publication Title	Volume	Issue	Pages	Google Scholar Citations
Brammer, Stephen; Walker, Helen	2011	Sustainable procurement in the public sector: an international comparative study	International Journal of Operations & Production Management	31	4	452–476	367
Goldman, Eitan; Rocholl, Jörg; So, Jongil	2013	Politically Connected Boards of Directors and The Allocation of Procurement Contracts	Review of Finance	17	5	1617	362
Uyarra, Elvira; Flanagan, Kieron	2010	Understanding the Innovation Impacts of Public Procurement	European Planning Studies	18	1	123	315
Mercado, Geovana; Hjortsø, Carsten Nico; Kledal, Paul Rye	2016	Public procurement for school breakfasts in the Bolivian Altiplan: Governance structures enabling smallholder inclusion	Journal of Rural Studies	44		63–76	308
Edquist, Charles; Zabala-Iturriagagoitia, Jon Mikel	2012	Public Procurement for Innovation as mission-oriented innovation policy	Research Policy	41	10	1757	296
Lewis, Gregory; Bajari, Patrick	2011	Procurement Contracting With Time Incentives: Theory and Evidence	The Quarterly Journal of Economics	126	3	1173	219
Wee Shu, Hui; Othman, Radiah; Normah Hj. Omar; Rashidah Abdul, Rahman; Haron, Nurul Husna	2011	Procurement issues in Malaysia	The International Journal of Public Sector Management	24	6	567–593	178
Georghiou, Luke; Edler, Jakob; Uyarra, Elvira; Yeow, Jillian	2014	Policy instruments for public procurement of innovation: Choice, design and assessment	Technological Forecasting and Social Change	86	-	1	172
Uyarra, Elvira; Edler, Jakob; Garcia-Estevez, Javier; Georghiou, Luke; Yeow, Jillian	2014	Barriers to innovation through public procurement: A supplier perspective	Technovation	34	10	631	159
Walker, Helen; Brammer, Stephen	2012	The relationship between sustainable procurement and e-procurement in the public sector	International Journal of Production Economics	140	1	256	143
Mahmood, Shakeel Ahmed Ibne	2010	Public procurement and corruption in Bangladesh confronting the challenges and opportunities	Journal of Public Administration and Policy Research	2	6	103–111	143
Falagario, Marco; Sciancalepore, Fabio; Costantino, Nicola; Pietroforte, Roberto	2012	Using a DEA-cross efficiency approach in public procurement tenders	European Journal of Operational Research	218	2	523	141
Witjes, Sjors; Lozano, Rodrigo	2016	Towards a more Circular Economy: Proposing a framework linking sustainable public procurement and sustainable business models	Resources, Conservation and Recycling	112		37–44	132

Tadelis, Steven	2012	Public procurement design: Lessons from the private sector	International Journal of Industrial Organization	30	3	297	130
Boas, Taylor C; Hidalgo, F Daniel; Richardson, Neal P	2014	The Spoils of Victory: Campaign Donations and Government Contracts in Brazil	The Journal of Politics	76	2	415	129
Bergman, Mats A; Lundberg, Sofia	2013	Tender evaluation and supplier selection methods in public procurement	Journal of Purchasing and Supply Management	19	2	73	125
Testa, Francesco; Iraldo, Fabio; Frey, Marco; Daddi, Tiberio	2012	What factors influence the uptake of GPP (green public procurement) practices? New evidence from an Italian survey	Ecological Economics	82		88–96	107
Arlbjørn, Jan Stentoft; Freytag, Per Vagn	2012	Public procurement vs private purchasing	The International Journal of Public Sector Management	25	3	203–220	105
Sonnino, Roberta; McWilliam, Susannah	2011	Food waste, catering practices and public procurement: A case study of hospital food systems in Wales	Food Policy	36	6	823	104
Lewis-Faupel, Sean; Neggers, Yusuf; Olken, Benjamin A; Pande, Rohini	2016	Can Electronic Procurement Improve Infrastructure Provision? Evidence from Public Works in India and Indonesia	American Economic Journal. Economic Policy	8	3	258–283	101
Athey, Susan; Coey, Dominic; Levin, Jonathan	2013	Set-Asides and Subsidies in Auctions	American Economic Journal. Microeconomics	5	1	1–27	100
Osei-Tutu, E; Badu, E; Owusu-Manu, D	2010	Exploring corruption practices in public procurement of infrastructural projects in Ghana	International Journal of Managing Projects in Business	3	2	236–256	100
Tarantini, Mario; Loprieno, Arianna Dominici; Porta, Pier Luigi	2011	A life cycle approach to Green Public Procurement of building materials and elements: A case study on windows	Energy	36	5	2473–2482	97
Lember, Veiko; Kalvet, Tarmo; Kattel, Rainer	2011	Urban Competitiveness and Public Procurement for Innovation	Urban Studies	48	7	1373	95
Bratt, Cecilia; Hallstedt, Sophie; Robèrt, K H; Broman, Göran; Oldmark, Jonas	2013	Assessment of criteria development for public procurement from a strategic sustainability perspective	Journal of Cleaner Production	52		309–316	94
Sambasivan, Murali; Wemyss, George Patrick; Raduan Che, Rose	2010	User acceptance of a G2B system: a case of electronic procurement system in Malaysia	Internet Research	20	2	169–187	93
Kattel, Rainer; Lember, Veiko	2010	PUBLIC PROCUREMENT AS AN INDUSTRIAL POLICY TOOL: AN OPTION FOR DEVELOPING COUNTRIES?	Journal of Public Procurement	10	3	368–404	91
Spagnolo, Giancarlo	2012	Reputation, competition, and entry in procurement	International Journal of Industrial Organization	30	3	291	89

Izumi, Betty T; Wright, Wynne D; Hamm, Michael W	2010	Market Diversification and Social Benefits: Motivations of Farmers Participating in Farm to School Programs	Journal of Rural Studies	26	4	374–382	89
Testa, Francesco; Annunziata, Eleonora; Iraldo, Fabio; Frey, Marco	2016	Drawbacks and opportunities of green public procurement: an effective tool for sustainable production	Journal of Cleaner Production	112, Part 3		1893–1900	86
Johnston, Jocelyn M; Girth, Amanda M	2012	Government Contracts and "Managing the Market": Exploring the Costs of Strategic Management Responses to Weak Vendor Competition	Administration & Society	44	1	3	83
Coviello, Decio; Mariniello, Mario	2014	Publicity requirements in public procurement: Evidence from a regression discontinuity design	Journal of Public Economics	109		76–100	81
Boardman, Anthony E; Vining, Aidan R	2012	THE POLITICAL ECONOMY OF PUBLIC-PRIVATE PARTNERSHIPS AND ANALYSIS OF THEIR SOCIAL VALUE*	Annals of Public and Cooperative Economics	83	2	117–141	80
Arrowsmith, Sue	2010	HORIZONTAL POLICIES IN PUBLIC PROCUREMENT: A TAXONOMY	Journal of Public Procurement	10	2	149–186	80
Zhu, Qinghua; Geng, Yong; Sarkis, Joseph	2013	Motivating green public procurement in China: An individual level perspective	Journal of Environmental Management	126		85-95	73
Laurie Kaye, Nijaki; Worrel, Gabriela	2012	Procurement for sustainable local economic development	The International Journal of Public Sector Management	25	2	133–153	73
Preuss, Lutz	2011	On the contribution of public procurement to entrepreneurship and small business policy	Entrepreneurship and Regional Development	23	42652	787	73
Oruezabala, Gwenaëlle; Rico, Jean-Charles	2012	The impact of sustainable public procurement on supplier management - The case of French public hospitals	Industrial Marketing Management	41	4	573	70
Mironov, Maxim; Zhuravskaya, Ekaterina	2016	Corruption in Procurement and the Political Cycle in Tunneling: Evidence from Financial Transactions Data	American Economic Journal: Economic Policy	8	2	287–321	69
Aman, Aini; Kasimin, Hasmiah	2011	E-procurement implementation: a case of Malaysia government	Transforming Government: People, Process and Policy	5	4	330–344	69
Coviello, Decio; Gagliarducci, Stefano	2017	Tenure in Office and Public Procurement	American Economic Journal: Economic Policy	9	3	59–105	68
Witesman, Eva M; Fernandez, Sergio	2013	Government Contracts With Private Organizations: Are There Differences Between Nonprofits and For-profits?	Nonprofit and Voluntary Sector Quarterly	42	4	689-715	65
Conley, Timothy G; Decarolis, Francesco	2016	Detecting Bidders Groups in Collusive Auctions	American Economic Journal: Microeconomics	8	2	1–38	63

Edler, Jakob; Yeow, Jillian	2016	Connecting demand and supply: The role of intermediation in public procurement of innovation	Research Policy	45	2	414	63
Witko, Christopher	2011	Campaign Contributions, Access, and Government Contracting	Journal of Public Administration Research and Theory	21	4	761	63
Amann, Markus; K. Roehrich, Jens; Eßig, Michael; Harland, Christine	2014	Driving sustainable supply chain management in the public sector	Supply Chain Management	19	3	351	62
Rolfstam, Max	2012	An institutional approach to research on public procurement of innovation	Innovation	25	3	303	61
Smith, Matthew L	2010	Building institutional trust through e-government trustworthiness cues	Information Technology & People	23	3	222–246	61
Chowdhury, Abu Naser; Chen, Po-Han; Tiong, Robert L K	2011	Analysing the structure of public-private partnership projects using network theory	Construction Management and Economics	29	3	247	60
Rolfstam, Max; Phillips, Wendy; Bakker, Elmer	2011	Public procurement of innovations, diffusion and endogenous institutions	The International Journal of Public Sector Management	24	5	452–468	60

## APPENDIX 6. 50 MOST CITED ARTICLES (AVERAGE PER YEAR)

Author	Date	Title	Publication Title	Volume	Issue	Pages	Average Google Scholar Cit./Year
Mercado, Geovana; Hjortsø, Carsten Nico; Kledal, Paul Rye	2016	Public procurement for school breakfasts in the Bolivian Altiplan: Governance structures enabling smallholder inclusion	Journal of Rural Studies	44		63–76	102,7
Goldman, Eitan; Rocholl, Jörg; So, Jongil	2013	Politically Connected Boards of Directors and The Allocation of Procurement Contracts	Review of Finance	17	5	1617	60,3
Brammer, Stephen; Walker, Helen	2011	Sustainable procurement in the public sector: an international comparative study	International Journal of Operations & Production Management	31	4	452–476	45,9
Witjes, Sjors; Lozano, Rodrigo	2016	Towards a more Circular Economy: Proposing a framework linking sustainable public procurement and sustainable business models	Resources, Conservation and Recycling	112		37–44	44,0
Edquist, Charles; Zabala-Iturriagagoitia, Jon Mikel	2012	Public Procurement for Innovation as mission-oriented innovation policy	Research Policy	41	10	1757	42,3
Zamboni, Yves; Litschig, Stephan	2018	Audit risk and rent extraction: Evidence from a randomized evaluation in Brazil	Journal of Development Economics	134		133–149	37,0
Uyarra, Elvira; Flanagan, Kieron	2010	Understanding the Innovation Impacts of Public Procurement	European Planning Studies	18	1	123	35,0
Georghiou, Luke; Edler, Jakob; Uyarra, Elvira; Yeow, Jillian	2014	Policy instruments for public procurement of innovation:: Choice, design and assessment	Technological Forecasting and Social Change	86	-	1	34,4
Coviello, Decio; Gagliarducci, Stefano	2017	Tenure in Office and Public Procurement	American Economic Journal: Economic Policy	9	3	59–105	34,0
Lewis-Faupel, Sean; Neggers, Yusuf; Olken, Benjamin A; Pande, Rohini	2016	Can Electronic Procurement Improve Infrastructure Provision? Evidence from Public Works in India and Indonesia	American Economic Journal. Economic Policy	8	3	258–283	33,7
Coviello, Decio; Moretti, Luigi; Spagnolo, Giancarlo; Valbonesi, Paola	2018	Court Efficiency and Procurement Performance	The Scandinavian Journal of Economics	120	3	826–858	32,0
Uyarra, Elvira; Edler, Jakob; Garcia-Estevez, Javier; Georghiou, Luke; Yeow, Jillian	2014	Barriers to innovation through public procurement: A supplier perspective	Technovation	34	10	631	31,8
Testa, Francesco; Annunziata, Leonora; Iraldo, Fabio; Frey, Marco	2016	Drawbacks and opportunities of green public procurement: an effective tool for sustainable production	Journal of Cleaner Production	112, Part 3		1893–1900	28,7
Lewis, Gregory; Bajari, Patrick	2011	Procurement Contracting With Time Incentives:	The Quarterly Journal of	126	3	1173	27,4

		Theory and Evidence	Economics				
Boas, Taylor C; Hidalgo, F Daniel; Richardson, Neal P	2014	The Spoils of Victory: Campaign Donations and Government Contracts in Brazil	The Journal of Politics	76	2	415	25,8
Mironov, Maxim; Zhuravskaya, Ekaterina	2016	Corruption in Procurement and the Political Cycle in Tunneling: Evidence from Financial Transactions Data	American Economic Journal: Economic Policy	8	2	287–321	23,0
Wee Shu, Hui; Othman, Radiah; Normah Hj, Omar; Rashidah Abdul, Rahman; Haron, Nurul Husna	2011	Procurement issues in Malaysia	The International Journal of Public Sector Management	24	6	567–593	22,3
Lehne, Jonathan; Shapiro, Jacob N; Eynde, Oliver Vanden	2018	Building connections: Political corruption and road construction in India	Journal of Development Economics	131		62–78	22,0
Conley, Timothy G; Decarolis, Francesco	2016	Detecting Bidders Groups in Collusive Auctions	American Economic Journal: Microeconomics	8	2	1–38	21,0
Edler, Jakob; Yeow, Jillian	2016	Connecting demand and supply: The role of intermediation in public procurement of innovation	Research Policy	45	2	414	21,0
Bergman, Mats A; Lundberg, Sofia	2013	Tender evaluation and supplier selection methods in public procurement	Journal of Purchasing and Supply Management	19	2	73	20,8
Walker, Helen; Brammer, Stephen	2012	The relationship between sustainable procurement and e-procurement in the public sector	International Journal of Production Economics	140	1	256	20,4
Falagario, Marco; Sciancalepore, Fabio; Costantino, Nicola; Pietroforte, Roberto	2012	Using a DEA-cross efficiency approach in public procurement tenders	European Journal of Operational Research	218	2	523	20,1
Tadelis, Steven	2012	Public procurement design: Lessons from the private sector	International Journal of Industrial Organization	30	3	297	18,6
Decarolis, Francesco	2018	Comparing Public Procurement Auctions	International Economic Review	59	2	391–419	17,0
Athey, Susan; Coey, Dominic; Levin, Jonathan	2013	Set-Asides and Subsidies in Auctions	American Economic Journal. Microeconomics	5	1	1–27	16,7
Coviello, Decio; Mariniello, Mario	2014	Publicity requirements in public procurement: Evidence from a regression discontinuity design	Journal of Public Economics	109		76–100	16,2
Charron, Nicholas; Dahlström, Carl; Fazekas, Mihaly; Lapuente, Victor	2017	Careers, Connections, and Corruption Risks: Investigating the Impact of Bureaucratic Meritocracy on Public Procurement Processes	The Journal of Politics	79	1	89	16,0
Mahmood, Shakeel Ahmed Ibne	2010	Public procurement and corruption in Bangladesh confronting the challenges and opportunities	Journal of Public Administration and Policy Research	2	6	103–111	15,9

Bratt, Cecilia; Hallstedt, Sophie; Robèrt, K H; Broman, Göran; Oldmark, Jonas	2013	Assessment of criteria development for public procurement from a strategic sustainability perspective	Journal of Cleaner Production	52		309–316	15,7
Auriol, Emmanuelle; Straub, Stéphane; Flochel, Thomas	2016	Public Procurement and Rent-Seeking: The Case of Paraguay	World Development	77		395	15,7
Testa, Francesco; Iraldo, Fabio; Frey, Marco; Daddi, Tiberio	2012	What factors influence the uptake of GPP (green public procurement) practices? New evidence from an Italian survey	Ecological Economics	82		88–96	15,3
Arlbjørn, Jan Stentoft; Freytag, Per Vagn	2012	Public procurement vs private purchasing	The International Journal of Public Sector Management	25	3	203–220	15,0
Rainville, Anne	2017	Standards in green public procurement – A framework to enhance innovation	Journal of Cleaner Production				14,5
Smith, Julie; Andersson, Gunilla; Gourlay, Robin; Karner, Sandra; Mikkelsen, Bent Egberg; Sonnino, Roberta; Barling, David	2016	Balancing competing policy demands: the case of sustainable public sector food procurement	Journal of Cleaner Production	112		249–256	14,3
Neu, Dean; Everett, Jeff; Rahaman, Abu Shiraz	2015	Preventing corruption within government procurement: Constructing the disciplined and ethical subject	Critical Perspectives on Accounting	28		49–61	13,3
Sonnino, Roberta; McWilliam, Susannah	2011	Food waste, catering practices and public procurement: A case study of hospital food systems in Wales	Food Policy	36	6	823	13,0
Hueskes, Marlies; Verhoest, Koen; Block, Thomas	2017	Governing public–private partnerships for sustainability: An analysis of procurement and governance practices of PPP infrastructure projects	International Journal of Project Management	35	6	1184–1195	13,0
Spagnolo, Giancarlo	2012	Reputation, competition, and entry in procurement	International Journal of Industrial Organization	30	3	291	12,7
Roman, Alexandru V	2017	Institutionalizing sustainability: A structural equation model of sustainable procurement in US public agencies	Journal of Cleaner Production	143		1048–1059	12,5
Amann, Markus; K. Roehrich, Jens; Eßig, Michael; Harland, Christine	2014	Driving sustainable supply chain management in the public sector	Supply Chain Management	19	3	351	12,4
Zhu, Qinghua; Geng, Yong; Sarkis, Joseph	2013	Motivating green public procurement in China: An individual level perspective	Journal of Environmental Management	126		85-95	12,2
Tarantini, Mario; Loprieno, Arianna Dominici; Porta, Pier Luigi	2011	A life cycle approach to Green Public Procurement of building materials and elements: A case study on windows	Energy	36	5	2473–2482	12,1
Lember, Veiko; Kalvet, Tarmo; Kattel, Rainer	2011	Urban Competitiveness and Public Procurement for Innovation	Urban Studies	48	7	1373	11,9

Johnston, Jocelyn M; Girth, Amanda M	2012	Government Contracts and "Managing the Market": Exploring the Costs of Strategic Management Responses to Weak Vendor Competition	Administration & Society	44	1	3	11,9
Uttam, Kedar; Le Lann Roos, Caroline	2015	Competitive dialogue procedure for sustainable public procurement	Journal of Cleaner Production	86		403–416	11,5
Boardman, Anthony E; Vining, Aidan R	2012	THE POLITICAL ECONOMY OF PUBLIC-PRIVATE PARTNERSHIPS AND ANALYSIS OF THEIR SOCIAL VALUE*	Annals of Public and Cooperative Economics	83	2	117–141	11,4
Reijonen, Helen; Tammi, Timo; Saastamoinen, Jani	2016	SMEs and public sector procurement: Does entrepreneurial orientation make a difference?	International Small Business Journal	34	4	468	11,3
Osei-Tutu, E; Badu, E; Owusu-Manu, D	2010	Exploring corruption practices in public procurement of infrastructural projects in Ghana	International Journal of Managing Projects in Business	3	2	236–256	11,1
Witesman, Eva M; Fernandez, Sergio	2013	Government Contracts With Private Organizations: Are There Differences Between Nonprofits and For-profits?	Nonprofit and Voluntary Sector Quarterly	42	4	689-715	10,8

## APPENDIX 7. MOST FREQUENT AUTHORS

Name	Number of Articles
McCue, C.	11
Davis, P.	11
Flynn, A.	9
Rendon, R.	7
Roman, A.	7
Lundberg, S.	7
Rizzo, I.	6
Ntayi, J.	6
Prier, E.	6
Fazekas, M.	6
Guccio, C.	6
Uyarra, E.	5
Tammi, T.	5
Saastamoinen, J.	5
Placek, M.	5
Reijonen, H.	5
McKevitt, D.	5
Kidalov, M.	5
Iraldo, F.	5
Spagnolo, G.	4
Yeow, J.	4
Wang, C.	4
Walker, H.	4
Testa, F.	4
Tkachenko, A.	4
Yakovlev, A.	4
Schmidt, M.	4
Ochrana, F.	4
Pucek, M.	4
Khan, S.	4
Khorana, S.	4
Lember, V.	4
Loader, K.	4
Mamavi, O.	4
Edler, J.	4
Hawkins, T.	4
limi, A.	4
Arai, K.	4
Decarolis, F.	4
Albano, G.	4
Basheka, B.	4

## APPENDIX 8. MOST CITED AUTHORS (TOTAL CITATIONS)

Name	Google Scholar Citations	Name	Google Scholar Citations
Uyarra, E.	677	Bergman, M.	125
Walker, H.	561	Rolfstam, M.	121
Brammer, S.	510	Decarolis, F.	114
Yeow, J.	435	Owusu-Manu, D.	113
Edler, J.	435	Harland, C.	113
So, J.	362	Bakker, E.	111
Rocholl, J.	362	Ntayi, J.	107
Goldman, E.	362	Daddi, T.	107
Georghiou, L.	338	Freytag, P.	105
Flanagan, K.	323	Arlbjørn, J.	105
Kledal, P.	308	Badu, E.	105
Mercado, G.	308	McWilliam, S.	104
Hjortsø, C.	308	Olken, B.	101
Zabala-Iturriagagoitia, J.	304	Pande, R.	101
Edquist, C.	296	Lewis-Faupel, S.	101
Lember, V.	248	Neggers, Y.	101
Iraldo, F.	224	Osei-Tutu, E.	100
Testa, F.	221	Levin, J.	100
Frey, M.	220	Coey, D.	100
Lewis, G.	219	Athey, S.	100
Bajari, P.	219	Tarantini, M.	97
Kattel, R.	207	Porta, P.	97
Falagario, M.	196	Loprieno, A.	97
Costantino, N.	196	Pignataro, G.	96
Lundberg, S.	190	Fazekas, M.	96
McCue, C.	184	Robèrt, K.	94
Sciancalepore, F.	181	Oldmark, J.	94
Coviello, D.	181	Hallstedt, S.	94
Wee Shu, H.	178	Broman, G.	94
Rashidah Abdul, R.	178	Bratt, C.	94
Normah Hj, O.	178	Wemyss, G.	93
Othman, R.	178	Sambasivan, M.	93
Haron, N.	178	Raduan Che, R.	93
Garcia-Estevez, J.	159	Kidalov, M.	90
Roman, A.	158	Wright, W.	89
Kalvet, T.	157	Tabish, S.	89
Mahmood, S.	154	Izumi, B.	89
Sonnino, R.	147	Jha, K.	89
Davis, P.	147	Hamm, M.	89
Pietroforte, R.	141	Annunziata, E.	86
Rizzo, I.	133	Flynn, A.	83
Guccio, C.	133	Johnston, J.	83
Witjes, S.	132	Girth, A.	83
Lozano, R.	132	Mariniello, M.	81
Tadelis, S.	130	Vining, A.	80
Richardson, N.	129	Arrowsmith, S.	80
Hidalgo, F.	129	Boardman, A.	80
Boas, T.	129	McKevitt, D.	79
Spagnolo, G.	127	Amann, M.	78
Rendon, R.	125	Loader, K.	74