

RESEARCH PERSPECTIVES ON PUBLIC PROCUREMENT: CONTENT ANALYSIS OF 14 YEARS OF PUBLICATIONS IN THE JOURNAL OF PUBLIC PROCUREMENT

Andrea Stefano Patrucco, Davide Luzzini, and Stefano Ronchi*

ABSTRACT. The paper aims to evaluate the state of the literature on public procurement through examination of the works published in the Journal of Public Procurement from 2001 to 2014. 231 research outputs were collected and analyzed (with regard to, e.g., the background theory used, research method, and content of the papers), providing a structured overview of prior research topics and findings and identifying main gaps in the existing literature. This type of study is unique, as a broad literature review related to public procurement does not currently exist; therefore, the work has been designed with the intention to a) synthesize the prior research on public procurement; b) provide researchers with a structural framework in which future research on public procurement topics may be oriented; c) identify promising and active areas for future research.

INTRODUCTION

The paper aims to assess the current state of the art and trends of Purchasing and Supply Management in Public Administration (also known as “public procurement”) by conducting a structured examination of the publications issued by the Journal of Public

* *Andrea Patrucco, Ph.D., is a Lecturer, Department of Ingegneria Gestionale Politecnico di Milano. His main research interests are in the field of purchasing and supply management (public procurement and supplier collaboration management) and innovation in management education teaching. Davide Luzzini, Ph.D., is an Associate Professor, MIT Saragoza Logistic center His research interests are in the field of purchasing and supply management. Stefano Ronchi, Ph.D., is a Full Professor, Department of Ingegneria Gestionale Politecnico di Milano. His research interest is in purchasing and supply management with a particular focus on e-procurement, spend management and purchasing organization.*

procurement (JoPP), which can be considered the most technical and focused journal in the field.

The term “public procurement” can be defined as the “overall process of acquiring goods, civil works and services, which includes all functions from the identification of needs, selection and solicitation of sources, preparation and award of contract, and all phases of contract administration through the end of a services’ contract or the useful life of an asset” (UNDP, 2010, p. 5). According to Harink (1999), public procurement “*involves more than the procurement process alone*”; being a powerful tool to increase government efficiency, decrease public expenditure and foster economies, its design must include components such as the strategy and policy of the organization, methods and procedures, personnel and organization, and information (Thai, 2009).

Traditionally, the focus on public procurement has been limited, lagging far behind the private sector in terms of research and accumulated knowledge, resulting in academic works that are usually in documentary form (explaining the situation in a certain country, e.g., the international section in the JoPP) or limited to a specific aspect (legal, e.g., Public procurement Law Review; or administrative, e.g., Journal of Public Budgeting, Accounting and Financial Management). However, the situation is changing. Public and academic interest in public sector management has intensified during the last decade, giving birth to the new public management discipline (Pollitt & Bouckaert, 2000) that is focused on how the public sector can be more effective. Therefore, due to its pervasive impact on the global and local economy, public procurement is emerging as a pivotal topic for academics and researchers and is continuing to evolve both conceptually and organizationally (Thai & Piga, 2007).

In this area, many researchers have attempted to design conceptual procurement models and frameworks suitable for approaching such a complex system; however, several authors have noted that this research has been widely unstructured: the field is fragmented in many sub-field and a more systematic approach to research on public procurement seems necessary (e.g., Araujo, 2004; Telgen, Harland, & Knight, 2007; Murray, 2009).

The lack of existing synthesis inhibits deriving at definite findings, which both disables the field to develop toward a mature state and

hampers practical application. To fill this gap, it seems useful to deepen the topic of public procurement by means of a systematic literature review, build around a detailed content analysis of research works published during the last decade. This type of research is unique, as only few scholars in this field have tried to use this approach to explore and systematize prior and actual public procurement knowledge.

Therefore, with the present article, we want to enrich the public procurement research field essentially in two ways. On one hand, by designing a structured conceptual framework for public procurement, we are able to give a detailed overview of the research status in this field, supporting scholars in positioning their works (methodologies used and public procurement topics addressed). On the other, by conducting a detailed content analysis of publications in the most important journal in the field, we fill a gap in existing research, as such a structured analysis is not present. So, giving evidence on most prominent subjects, research designs and study characteristics, we would like to design a synthesis of existing findings for each level of the framework, and build a research agenda that could inspire future works.

The article is structured as follows. The first section will give an overview of the actual state of public procurement research and its main concepts. Next, the approach used to deliver the literature review will be described. Then, an analysis of the database obtained will be presented, along with key statistics. Finally, we critically discuss the evidence provided by our analysis and present several conclusions and future research directions.

OVERVIEW OF PUBLIC PROCUREMENT RESEARCH

From a research perspective, private supply management (PSM) can hardly be considered an established and fully mature discipline (Murray, 2009; Spina, Caniato, Luzzini, & Ronchi, 2013), even though scholars are working hard to enhance its status in both the academic and business environments due to the increased relevance of PSM to companies in various industries. This has resulted in different reviews (more or less extensive), aim to analyze the research output; these literature reviews (LRs) are either generic or specific. Generic LRs consist of broad overviews of the discipline, focusing on a comprehensive set of subject areas. They answer the need for an

analysis of the main research topics and methods in the field in general (e.g., Giunipero et al., 2008) or of a single journal. Specific LRs are less of an issue because reviewing the existing research on a narrower subject is less problematic. For private PSM, some generic LRs have been designed with the aim of providing a comprehensive review of the PSM academic literature in terms of 1) theoretical foundations and contents (e.g., Zheng et al., 2007; Wynstra, 2010; Spina, Caniato, Luzzini, & Ronchi, 2013; 2015); and 2) the understatement of where PSM currently stands (e.g., Ellram & Carr, 1994; Spina et al., 2013).

If private PSM cannot be considered fully mature, public procurement must be considered even less so. Despite its pervasive impact on economies, public procurement has not been considered as a real academic discipline since early 2000s, when Thai (2001) first highlighted the low attention given by academics to this field. Also the “International Research study on Public Procurement”, carried out by several scholars around the world (and still ongoing), gave a great contribution to public procurement research, as it was able to compare international differences and similarities on tools and models for managing procurement in the public sector, also exploring in role in supporting economies and local enterprises (Knight et al., 2012; Harland, Telgen, & Callender, 2013).

Under this impulse, during the following years, public procurement has found more space in the management sciences, with growing prospective research and corporate training courses as well as greater attention paid by public administration to this operating area. In a period of crisis, public procurement has been considered an “internal” lever for domestic economic growth and job creation (Murray, 2009) as well as a means to achieve strategic objectives, such as economic development, social inclusion, and sustainability (McCrudden, 2007). Therefore, it is not surprising that, during last decade, we can find many research contributions touching different “pillars” of the public procurement systems, such as:

- How to design a sound procurement strategy and set relevant goals (e.g., Caldwell et al., 2005; Erridge & Henningan, 2006; Buxton & Radnor, 2012; Murray, Erridge, & Rimmer, 2012; Patrucco et al., 2016);
- How to organize resources and manage the activities of the procurement process (e.g., Fearon & Busch, 2006; Scothanaus &

Telgen, 2007; Kamann, 2007; Arlbjørn & Freytag, 2012)

- How to use general and specific procurement tools to support the execution of activities such as e-procurement (e.g., Malta & Gilbert, 2006), collaborative procurement (e.g., Walker et al., 2013), and public-private partnership (e.g., Essig & Bartran, 2005)

Despite this growing trend, public procurement still reveals high research fragmentation, most likely due to 1) an extensive and multi-faceted domain, which led authors to concentrate their efforts on specific aspects (e.g., centralization decisions, transparency, role of technology, sustainable public procurement), and 2) the relatively low status of the procurement department in the public sector (Murray, 2009).

In order to overcome this fragmentation, it may be suitable to sketch a picture of main contents and trajectory of the public procurement discipline, through a comprehensive content analysis. Three relevant contributions should be considered as a starting point.

The first one relates to Thai (2004), who selected and analyzed public procurement publications included in book chapters, dividing its sample into two groups: group A - including recent and important books on the topic, and group B - including older books and other secondary texts. In group A, the author identifies the procurement process, legal constraints and regulations as topics covered in all the selected texts; procurement organization as a topic addressed by five of texts; and ethics by three of them; only one book devotes a chapter to the socio-economic issues of procurement. For group B, the findings reveal that older books focus predominantly on the procurement process, meanwhile, current books pay greater attention on average to procurement organization and regulations.

The second contribution refers to Flynn and Davis (2014), who recently conducted a LR on articles published in the JoPP with the aim to analyze the background theories used in the papers (e.g., Theory of auctions and competitive bidding, Principal-agent theory, Contract theory, Transaction cost economic theory, General systems theory, Institutional theory, Organization behavior theory, and Supply chain management theory...). Their findings reveal that only 29% of the total 172 articles included in the review rely on a consolidated theory, confirming that public procurement as academic discipline is

progressing, even though lacking the sort of unifying perspective and value structure that “private” managerial theories possess.

The third contribution is Lange, Telgen, and Schotanus (2014) work, which analyses 378 papers published in peer-review journals during the time span 1997 - 2012, classifying them according to: 1) Research strategies; 2) Data collection method; 3) Topics included; 4) Industries and sectors addressed. Their findings reveal that empirical research strategies are predominant, the most frequently studied government level is the local one (especially with a focus in the construction industry), with procurement strategies and vendor selection approach as main topics. The authors thus conclude that the discipline is still in its infancy of development, suggesting researchers to start exploring public procurement from different angles (i.e. different research approaches, different topics).

We rather consider these publications as the point of connection with the present work, which aims to provide a clear overview of public procurement as a research field (which is a key first step in contributing to practice; (Crossan & Apaydin, 2010) by conducting a systematic content analysis of the publications during the last decade.

By showing which topics have been addressed until now (and to what extent), and providing researchers some tools to conduct syntheses of findings on understudied (or less mature) sub-fields, public procurement research can be developed to a new state of more clarity and unification. In particular, the review is grounded around a main research question: “How did research on public procurement evolve over the time period 2001 - 2014?”

This question can be split into three subquestions:

1. What are the main research arguments on public procurement, and how did they change over time?
2. What are the predominant study characteristics?
3. What are the main topics for future research on public procurement?

According to Cheon, Groven, and Sabherwal (1993), mature research fields are characterized by exploration of a variety of topics and application of complementary research methods, instead of narrowly focusing on few of them. So, giving evidence on influential

scientific literature published in the JoPP since its birth, may also help in assessing the state of public procurement as a research field, providing insight on its maturity.

More, a study of this type could be of interest not only for academics, but also for public procurement professionals, given the two-way communication that exists between research and practice in this field. Not by chance, many relevant publications, coming from the collaboration between governmental entities, public procurement professional associations and academics, exist (e.g. Edquist, Vonortas, Zabala-Iturriagoitia, & Edler, 2015); thus, by giving a clear understanding of where public procurement currently stands and evidence of past and current research, we also give practitioners an understanding of where research is focused, supporting them in identifying relevant arguments for practice.

RESEARCH METHODOLOGY

Synthesizing existing evidence in a systematic and transparent way is an effective tool in the building of knowledge and can be as important as conducting new research (Light & Pillemer, 1984). Generally, the methodology used in the literature review was developed with reference to the works of Reynolds, Simintiras, and Vlachou (2003); David and Han (2004) and Newbert (2007) and consists of four steps: (1) source identification, (2) source selection, (3) source evaluation, and (4) data analysis. As a preliminary step for such an analysis, the investigator should acquire some knowledge about the domain of interest. This allows the investigator to identify the correct perspective as well as the possible gaps or extensions to previous studies. Source selection consists of the scouting of data and corresponding sources (paper or electronic), which will be selected according to the objectives and views on the topic investigated. Once selected, sources should be classified and further evaluated. Data may be catalogued through technological tools such as databases (Mayring, 2000), which facilitate the recollection and analysis of information (Burgess et al., 2006). Classification dimensions should be found either inductively or deductively and possibly with a clear connection with the existing theory. Once collected, data may be processed and critically interpreted. Therefore, the last step of data analysis aims to organize data to obtain useful information. Because the LR is by definition the analysis of another author's contribution, it is extremely important to maintain a clear perspective throughout such an analysis.

The main purpose of a systematic review is to identify the key scientific contributions to a field or question, and its results are often descriptively presented and discussed.

Using the similar approach of Flynn and Davis (2014), we limited our research to publications in the JoPP, excluding articles published in other journals. This may represent a limitation; however, the single-journal approach has also been proposed by other studies in the field of private PSM (e.g., Carter & Ellram, 2003; Wynstra, 2010), and we can consider valid the considerations given by Flynn and Davis (2014), who recognize the JoPP as the only academic journal that is focused on public procurement research as well as the primary outlet for researchers interested in this field. More, using JoPP as unit of analysis, our findings can be easily integrated with Flynn and Davis (2014) review. Given this choice, the timespan of our review covers the period from 2001 (the first issue of the journal) to 2014, which can be considered appropriate for a literature review (e.g., Zheng et al., 2007); additionally, this period covers both the pre- and post-crisis years as well as the relevant changes that occurred in the public procurement EU directives (2004).

The JoPP volumes include five types of research works: 1) general editorials and president letters; 2) symposium introductions; 3) academic and practitioner corner articles; 4) U.S government reprints; and 5) book reviews. To give to our review the highest accuracy and originality, we excluded general editorials, president letters and book reviews; this resulted in a total of 207 academic and practitioners' corner articles, 8 symposia and 16 U.S. government reprints, which have been included and classified (when significant).

These 231 publications represent our unit of analysis: each of them was finally read completely to subject each to a descriptive and thematic analysis. The bibliographic information was coded, and the selected papers were classified with reference to the content categories of the analytical framework of this review (explained below in more detail). Each paper was categorized as addressing a maximum of three subject – areas; following suggestion by Wynstra (2010), three categories are sufficient to both capture the main subject focus of the article and the context against which is assessed.

To classify the papers, we adopted a two-stage approach. In the first one (the “double extraction” process), each article was examined

by two researchers, working independently of one another (Tranfield, Denyer, & Smart, 2003); in this phase, we obtain a reliability of 85% (i.e., cases in which the reviewers independently arrived at the same classification). In a second phase, the two researchers worked together on the small number of articles in which there were great differences in coding decisions or some element of uncertainty existed. This two-stage approach resulted in the coding of 231 articles along a number of dimensions, generating the dataset for our analysis.

CLASSIFICATION FRAMEWORK

Past academic works on public procurement inspired the design of the first-level dimensions of our classification framework. Araujo (2004) proposes a framework that consists of several elements, such as (1) a legal framework, (2) an institutional framework, (3) procurement execution capacity, (4) procurement procedures/tools, (5) a control system, (6) anticorruption initiatives, (7) private sector participation, (8) contract management, and (9) a system for addressing complaints.

In the United States, the Government Accountability Office (2005) suggested a conceptual framework for assessing the procurement function that is based on four “cornerstones”: organizational alignment and leadership, policies and processes, human capital, and knowledge and information management.

In 2006, the OECD (2006) developed a procurement assessment model based on indicators from the OECD-Development Assistance Committee/World Bank Round Table; the model consists of four “pillars,” including a legislative and regulatory framework, institutional framework and management capacity, procurement operations and market practices, and the integrity and transparency of the public procurement system.

Above all, the most diffused and accepted framework is the one developed by Thai (2008), who revised his previous versions (2001; 2007), describing the functioning of public procurement at two levels: 1) the public procurement system and 2) the government framework and the environment in which the procurement system operates. While the second part of the model tries to link procurement activities with the contingent factors that may affect them, the first level describes the “four pillars” of the management of public procurement: 1)

procurement organization, 2) procurement laws and regulations, 3) procurement workforce, and 4) procurement process and procedures.

The picture given by Thai (2008) has been considered our point of reference for the design of the classification framework; to organize the dimensions included, we also exploit the structure proposed by Spina et al. (2013) for their LR on private PSM, which isolates the “what” (i.e., PSM processes, such as portfolio management and network configuration), the “how” (i.e., PSM practices, organization, and relationship management), and the “why” (i.e., competitive priorities in relation to PSM). By combining the two, we jointly developed the resulting framework shown in Table 1, according to which all of the articles have been coded.

TABLE 1
Classification Framework

Variables	Values
Methodology	Literature review, Case study, Survey, Simulation, Experiment, Delphi, Collaborative research, Conceptual
Type of research	Exploratory, Theory building, Theory testing
Approach	Theoretical, Empirical
Unit of analysis (Public institution)	Central Government, Local government, Type of country (Name, Development status)
Unit of analysis (Purchase type)	Professional services, Defense, Social Care, Transport and facility management, Environment, Construction and public works, Health, ICT & indirect spending, Education
Public procurement (PP) strategy content	Supply Environment, Political strategies, Make or buy decision/Outsourcing, General functional strategies, Supply Chain design strategy, Category strategy, Awarding strategies, Process strategies
PP strategic goals	Commercial goals (Efficiency, Effectiveness), Regulatory goals (Transparency, Corruption, Compliance), Socio-economic goals (green public procurement, social public procurement, local economic development, competition and fairness)
PP processes	Budget and demand management, Definition of requirements, Supplier scouting, Bid design, Bid evaluation/Supplier selection, Negotiation & awarding, Contract management, Order management, Supplier relationship management, Vendor rating
PP tools & procedures	Spending analysis, e-Purchasing technologies, Cooperative contracts, Reporting, Benchmarking, Risk management, Public Private Partnerships

TABLE 1 (Continued)

Variables	Values
PP organization	Macro-structure (Level of centralization, organizational design), Micro-structure (Competencies, Training program, Resource specialization, Knowledge management, Behavior/Trust, Corruption, Cross-functionality)
PP environment	Procurement regulation, Government regulation, Procurement reforms, Government reforms, Political/Government implication
PP performance	Cost, Quality, Time, Innovation, Compliance, Sustainability

First, the framework considers the research characteristics in terms of the methodology, type and approach used. Subsequently, the research is considered in terms of the unit of analysis, meaning the type of public institution explored (and eventually, the country) as well as the type of purchase on which the articles may be focused.

Then, we move to analyse the subject areas investigated in the paper, which can be distinguished in the design of the public procurement strategy and definition of related goals; the management of the activities of the public procurement process; the organizational design and the tools supporting this execution; the characteristics of the environment surrounding the public institution; and the assessment of the performance obtained through public procurement functioning.

DATA ANALYSIS AND RESULTS

Once collected, the data may be processed and critically interpreted. Therefore, the last step of the data analysis aims to organize the data to obtain useful information. We build a Microsoft Excel database that reflects the classification framework and includes data regarding all 231 publications (starting with descriptive details such as the year of publication, volume number, article title, and author details); then, we conduct several types of analyses (presented in the following sections), including calculations of the absolute cumulative number of papers for each topic, a longitudinal analysis of topic trends during the time span and a cross-sectional analysis of different topics.

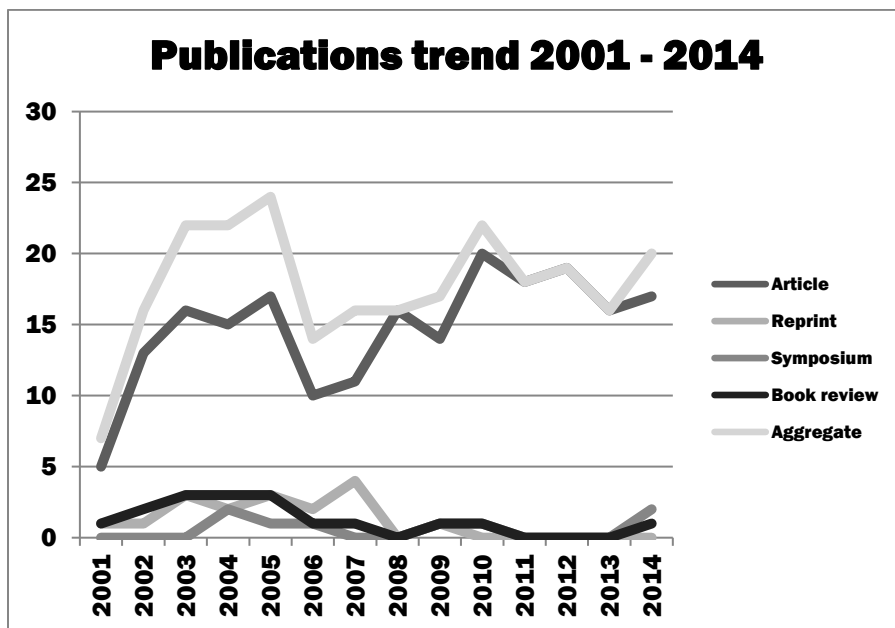
To give more significance and homogeneity to our results, the content analysis will be discussed including only academic and

practitioner papers (thus excluding symposia, reprints and book reviews).

Research Output over Time

In terms of overall research output during the time period studied, Figure 1 provides the trend in articles, reprints, symposia and book reviews in the period considered. Since 2001, yearly publications in the journal have doubled (from 7 to 16), mainly as a result of the increase in the number of papers (from 5 in 2011 to 17 in 2013, +300%); the growth in academic and practitioner articles is progressively reducing the space dedicated to other types of publications. The significant peak of publication during 2003-2005 are the tangible signal that the different initiatives launched by NIGP and FAU during those years succeeded in stimulating research activity, while the second boost (from 2009) may be attributable to the global financial crisis, putting public procurement at the centre of attention.

FIGURE 1
Trend in Public Procurement Articles over Time



As we can see, empirical methodologies are predominant, as almost 60% of the papers use this approach. In particular, case studies are the most often pursued research strategy (52.6%; 71 single, 38 multiple), followed by surveys (23) and data analysis (22). The predominance of empirical approaches is not surprising, as experts in the field recognize these methodologies as the most powerful for exploring public procurement topics (e.g., Telgen, Harland, & Knight, 2007). However, case studies are valuable in developing an understanding of one particular phenomenon or event holistically, as information are strongly embedded in the constructs of the unit of analysis.

Where a theoretical approach is used, the research is mainly grounded as conceptual; experimental and mathematical modeling is not as diffused (only 9 papers propose this methodology), even though it is particularly suitable for discussing some aspect of public procurement, such as procurement cost estimation (e.g., McDaniel & White, 2007), contract cost prediction (e.g., Salaverry & White, 2009) and macroeconomic variable evaluation (e.g., Callender & Mathews, 2002).

As discussed, generic literature reviews are not present, while there are some specific works (in 2002, McManus partially applies this methodology, focusing his review on the implementation of e-procurement in the public sector, to start the discussion around differences at the state and local levels; then we have the work by Flynn & Davis, 2014), and it is evident that some research methodologies remain underused (i.e., Delphi, focus groups, collaborative research).

Empirical approaches influence the nature of the results (Table 3): most of the papers are exploratory in nature or try to test the already

TABLE 3
Absolute Trend of Research Approaches

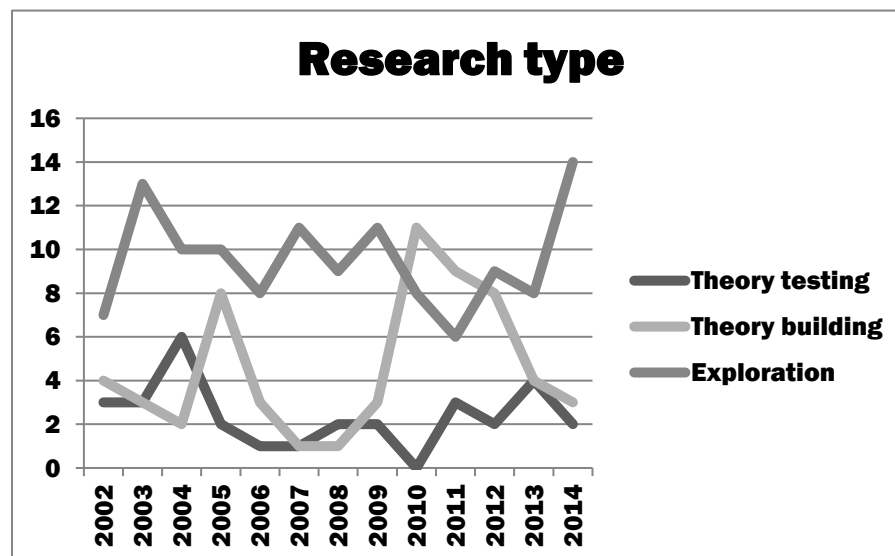
Research approach	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
Theoretical	1	5	4	3	10	5	4	6	10	11	9	8	5	6	87
Empirical	4	8	15	12	10	7	8	8	6	10	9	11	12	13	133

existing theory (for private and/or public procurement), giving fewer contributions in terms of theory building (e.g., Thai, 2001; Croom & Brandon-Jones, 2005; Schiele, 2005; Roman et al., 2012; McCue & Roman, 2012). However, it can be noted that the number of papers that have attempted to contribute to theory enrichment has grown during the last several years (of the 58 research works classified as “theory building,” 57% have been published in the 2010-2013 period; Table 4 and Figure 3).

TABLE 4
Absolute Trend in Research Type

Research type	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
Theory testing	1	3	3	6	2	1	1	2	2	0	3	2	4	2	32
Theory building	1	4	3	2	8	3	1	1	3	11	9	8	4	3	61
Exploratory	3	7	13	10	10	8	11	9	11	8	6	9	8	14	127

FIGURE 3
Approaches Used In Public Procurement Research



These statistics are aligned and can be effectively integrated with the results provided by Flynn and Davis (2014) regarding the relative lack of theoretical underpinnings in public procurement articles.

Unit of Analysis: Public Institutions

According to Murray (2007; 2009), many aspects of public procurement (e.g., regulations, target, procedures and techniques, and organizational aspects) may depend on the country considered in the analysis as well as on the type of public institution on which the research focuses its attention (i.e., central or local government). Thus, it is not surprising that 79 papers consider a specific unit of analysis (instead of being general), and 72 have a focus on a particular country (Table 5 and 6).

TABLE 5
Top 10 Studied Countries

Country	Frequency	Percent
USA	20	29%
UK	6	9%
Uganda	5	7%
Asia	4	6%
Italy	4	6%
Spain	3	4%
Bangladesh	2	3%
Netherland	2	3%
Nigeria	2	3%
Russia	2	3%

TABLE 6
Absolute Trend of Public Institutions Typology

Government level	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
Governmental	2	7	4	0	1	3	7	1	3	10	7	8	2	5	60
Local/Municipal	0	2	3	1	1	0	1	1	1	1	3	2	1	2	19
No government level	3	4	9	14	15	7	3	14	10	9	8	9	13	10	128

Central governments prevail in terms of research attention, most likely because the findings in this context are more pervasive, and it is at this level that a contribution to the achievement of public goals is at its maximum. However, as they are complex systems, they are usually addressed with specific views, such as focus on some types of purchases (such as defense procurement (e.g., Jones, 2002) or construction procurement (e.g., Patil & Molenaar, 2011)), or initiatives, such as the impact and benefits of e-procurement implementation (e.g., Lee, 2010) or the design of public-private partnerships (e.g., Verma, 2010). Although less addressed, procurement in local governments has been explored for broader concepts, such as procurement organizational design (e.g., Glock & Broens, 2013; Lesniak & Zima, 2013), strategic procurement deployment (e.g., Gianakis & McCue, 2012) and general procurement practices (e.g., Qiao, Thai & Cumings, 2009).

Additionally, it is not surprising that many papers tend to focus their findings on a specific country level instead of adopting a comparative approach, as public procurement management strictly depends on country characteristics, and the results are hardly generalizable (Telgen, Harland, & Knight, 2007). USA and UK are the most diffused unit of analysis (38% of papers), probably because active in the field from very long time; however, other countries' relevance is increasing (e.g. developing countries whose public procurement practices can inspire reforms and changes in more bureaucratic countries (e.g., Verhage et al., 2002; Jones, 2002; Achua, 2011; Basheka, 2011)). Taking into consideration the country focus is extremely important, as approaches and topics may vary significantly; for example, USA and UK have a balanced approach in addressing the different government level, while others prefer to focus at central (e.g. Uganda) or local (e.g. Italy and Netherland) detail.

Unit of Analysis: Category Scope

Recalling general private PSM theories, we see that companies buy differently according to the different purchasing categories (i.e., a homogeneous group of items, often referred to as commodities, Luzzini et al., 2012), which is in line with the wealth of literature about portfolio management (e.g., Kraljic, 1983; Caniels & Gelderman, 2005). Even for procurement in the public sector, procedures, practices and approaches may vary according to product types and nature, so it is

relevant to track if some research has focused on specific types of purchases.

To identify the relevant package to explore this dimension, we also refer the International Research Study on Public Procurement (2003; 2005; 2007; 2008) and to the NIGP commodity list (2013). Table 7 provides an overview of the category unit of analysis found in the articles included in the review.

TABLE 7
Type of Purchases Considered in Public Procurement Research

Country	Frequency	Percent
Defence	21	10%
General & professional services	13	6%
Construction & public works	12	6%
Health	9	4%
ICT	3	1%
Transportation & facilities management	2	1%
Education purchasing	1	0%
Social care & welfare	0	0%
Environmental purchasing	0	0%
Total	61	29%

First of all, it is interesting to notice that only 61 out of 207 papers are focused on specific types of purchases (29%); defense purchasing is the most addressed, especially as an example of procurement practices at the central government level (e.g., Buchanan & Klingner, 2007; San Miguel et al., 2008; Roberts, 2010); then, with a similar number of papers, there are professional services (e.g., Schiele, 2009), construction (e.g., Patil & Molenaar, 2011) and health purchasing (e.g., Verhage et al., 2002).

Surprisingly, a spectrum of categories remained comparatively understudied: no article considers environment and social care purchasing, while ICT and indirect purchases (e.g., MRO), education purchasing and transport are rarely addressed (e.g., Deis et al., 2004; Sieverding, 2008; Leviäkangas, 2013). To increase practical relevance, research should adopt a more balance approach in including all types

of purchases, which are relevant to practice, and also by focusing more on them as contextualization is paramount for evidence - based management.

Overview of Research Topics

Before delving into each level of the classification framework, Table 8 and Figure 4 provide the general evolution of the research topics during the timespan considered. Drawing on the classification framework proposed by Spina et al. (2013) for private PSM, research production is presented with regard to 1) public procurement strategy and goals; 2) the structure of the public procurement processes; 3) public procurement organization, practices, and tools; 4) the performance obtained through public procurement activities 5) the role of external contingencies.

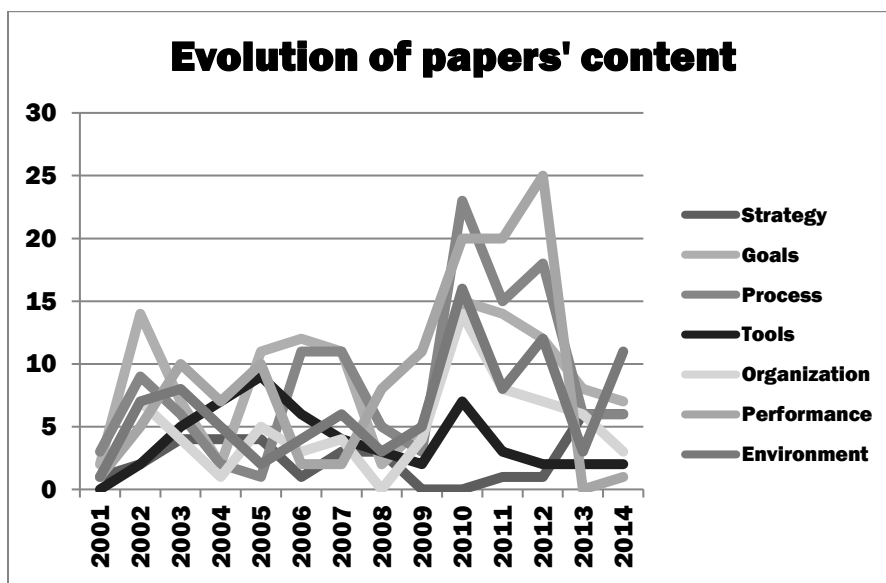
TABLE 8
Content of Articles

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Strategy content	1	2	4	4	4	1	3	3	0	0	1	1	6	6
Supply Environment	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Political strategies	0	0	1	0	0	0	0	0	0	0	0	0	2	1
Make or buy decision/Outsourcing	0	0	1	4	1	0	1	2	0	0	1	1	0	0
General functional strategies	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Organizational design strategy	0	0	1	0	0	0	0	0	0	0	0	0	2	0
Category strategy	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Awarding strategies	1	1	0	0	1	0	0	0	0	0	0	0	0	2
Process strategies	0	1	1	0	2	1	2	1	0	0	0	0	2	2
Goals	2	14	7	2	11	12	11	2	5	15	14	12	8	7
Efficiency	0	6	1	1	2	4	3	1	1	6	5	7	3	0
Effectiveness	0	0	0	0	3	2	0	0	0	0	0	0	1	0
Transparency	0	2	1	0	1	1	3	0	1	3	1	1	0	0
Corruption	0	1	1	1	0	0	2	0	0	1	3	2	0	0
Compliance	1	0	0	0	1	0	0	0	0	0	0	0	1	1
Social public procurement	0	3	2	0	1	2	1	0	1	1	1	0	2	1
Green public procurement	0	1	1	0	2	1	0	0	0	0	0	1	0	1
Local Economy Development	0	0	0	0	0	1	0	0	1	0	0	0	0	2
Competition and fairness	1	1	1	0	1	1	2	1	1	4	4	1	1	2

TABLE 8 (Continued)

	200	200	200	200	200	200	200	200	200	200	201	201	201	201	201
Environment	1	7	8	5	2	4	6	3	5	16	8	12	3	11	
Procurement regulation	1	3	3	2	1	0	4	2	2	7	1	6	1	4	
Government regulation	0	1	0	0	0	0	1	0	0	1	3	1	0	1	
Procurement reforms	0	2	2	1	0	1	1	0	1	4	2	3	0	2	
Government reforms	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
Political/Government implication	0	1	3	2	1	2	0	1	2	4	2	2	2	3	

FIGURE 4
Evolution of Content Considered in Public Procurement Research



A large portion of the work is focused on strategy and goals (158 papers; 76% on the total); processes (119; 57%) and performance (122; 59%) have also been directly and indirectly addressed during the timespan considered; organizational design (67; 32%) and procurement tools and procedures (54; 26%) are instead less-explored topics, despite being more practical aspects. Also the role of contingencies finds some space in public procurement research (91; 44%), even though with a strong focus on regulation. The following

paragraph will be devoted to recall the contributions for each topic in greater detail.

Public Procurement Strategy and Goals

In defining the dimensions of the public procurement strategy, exogenous factors of the environment or the market (procurement environment) are differentiated from endogenous strategy dimensions within the public sector. Within the endogenous factors, five main pillars of the public procurement strategy have been identified. At the higher level, the make-or-buy decisions of the contracting authorities represent the main interface with the supply markets (Weiss, 1993). Then, the design of the supply chain structure for satisfying public institution's need (i.e. organizational design strategy; Kamann, 2007); the definition of purchasing category strategies (O'Brien, 2009); the process strategy (Miller, 1989; Ketchen et al., 1996); and the contract awarding strategy (Bergman and Lundberg, 2013), are other essential dimensions of the public procurement strategy reflected in the present approach.

All these levels should be aligned 1) horizontally, to the functional strategies of other departments in the institution; 2) vertically, to the broader political strategies and superordinate (political) goals, which can be achieved (also) through public procurement (Snider et al., 2010). In terms of contingency, the role and the characteristics of the supply environment must be considered, as they may influence directions and content of public procurement strategy (Caldwell et al., 2005).

Research publications that are specifically focused on public procurement strategy may be enriched, as only some dimensions are focal points, such as make-or-buy decisions (e.g., Padovani & Young, 2008; Johnson, 2008) and process strategies (e.g., Kural & Alsac, 2006; Basheka, 2008), while other dimensions remain largely untouched, such as development of category strategies, and strategy evolution according to the supply environment (Table 9).

Researchers have also tried to identify strategic goals and targets to be set for public procurement (e.g., Murray, 2007; Purchase et al., 2009). "*Commercial goals*" refer to all of the market aspects of public procurement and include efficiency and cost savings objectives as well

TABLE 9
Procurement Strategies Considered in Public Procurement Research

	Frequency	Percent
Supply Environment	0	0%
Political strategies	4	2%
Make or buy decision/Outsourcing	11	5%
General functional strategies	0	0%
Organizational design strategy	3	1%
Category strategy	1	0%
Awarding strategies	5	2%
Process strategies	12	6%
Total	36	17%

as effectiveness and value for money. Both of these dimensions can be achieved through suitable competition and competitive tendering design, closer relationships with suppliers, longer contracts and integrated services demand. “*Regulatory goals*” refer to all of the compliance dimensions of public procurement activities, for both internal procedures and transparency and external regulations. “*Socio-economic goals*” are also important and relate to competition and fairness, economic development and environmental policy.

Our classification shows that goals and strategic objectives are much more involved in academic research and publications, especially those that are more related to operational aspects (Table 10). Commercial goals have been the focus for many years, even recently (e.g., Lahdenpera, 2013; Ryan et al., 2013), but attention is shifting toward more specific aspects, such as ethics (i.e., transparency, competition enhancement and risk of corruption), and sustainability

TABLE 10
Procurement Goals Considered in Public Procurement Research

	Frequency	Percent
Commercial goals	46	22%
Regulatory and ethical goals	29	14%
Socio-economic goals	47	23%
Total	122	59%

(e.g., Bolton, 2006; Medina-Arnaiz, 2010; Gormly, 2014); in particular, the growing attention on social, environmental and economical impact of public procurement (30% of 2014 papers directly and indirectly address these type of goals) confirms the recent awareness that governments can foster the worldwide efforts to economies' ecological footprints and social development through public procurement.

Public Procurement Processes

The public procurement process is the “heart” of the procurement system in public institutions, as its activities are the main determinants of final performance and can support or hinder policy-level decisions. Even though similar in some aspects to activities carried out in private companies, public institutions are subject to public procurement law, which necessitates some activities to be applied to a very limited extent (e.g., international sourcing during the tendering stage and awarding). There are a variety of academic descriptions of the purchasing process (e.g., Robinson et al., 1967; Ford, 1980; Johnston & Lewin, 1996; Van Weele, 2005); in our perspective, we consider the process made by the following activities: budget and demand management (i.e., planning of procurement needs and specifications); definition of requirements (i.e., definition of the technical properties and characteristics of the product or service required); supplier scouting (e.g., scanning the supply market for available solutions and eventually qualifying suitable suppliers ready to fulfill the buying need); bid design (e.g., preparing and processing main procurement documents); bid evaluation and supplier selection (i.e., establishing choice criteria for evaluating the submitted bid and selecting the suitable supplier); negotiation and awarding (i.e., defining the contract awarding to the supplier and eventually a further discussion of terms and conditions); contract management (i.e., preparing the contract for execution, establishing a legal and binding agreement); order management (i.e., following activities related to the order-delivery cycle); supplier relationship management (i.e., managing interactions and interfaces with suppliers during the duration of the contract); vendor rating (i.e., evaluating supplier performance).

Considering the journal's publications, 57% of the articles are directly correlated with one or more process aspects (confirming its importance), although not with the same popularity (Table 11). First stages of the process (i.e. budget and demand management,

TABLE 11
Operational Stages of the Process Considered in Public Procurement Research

	Frequency	Percent
Budget and demand management	2	1%
Requirements definition	2	1%
Supplier scouting	1	0%
Bid design	2	1%
Bid evaluation/Supplier selection	39	19%
Negotiation & awarding	16	8%
Contract management	38	18%
Order management	0	0%
Supplier relationship management	12	6%
Vendor rating	7	3%
Total	119	57%

requirements definition, supplier scouting and bid design) rely on relatively few contributions, despite being less “normative-driven” than other activities and more strategic, and this is another consequence of the traditional operational perception of public procurement. Contributions refer to the use of demand management to implement a proactive procurement strategy in health purchasing (Cox et al., 2005), how users’ requirements are rationalized and integrated at the operational level (Kural & Alsac, 2006) and for specific type of purchases (such as IT; Leviakangas et al., 2013), and how procedures for supplier scouting and bid design are defined (Kural & Alsac, 2006).

The more operational activities of the process have been deeply debated, especially for supplier selection approach, bid evaluation criteria and contract management activities. Here, different topics have been analysed: how to select the “most economically advantageous” bid (e.g., Dimitri, 2013), how to consider the level of supplier expertise and capacity for innovation (e.g., Knight et al., 2005), and reduce risk associated to supplier selection and contract definition (e.g., Davison & Sebastian, 2011; Patil & Molenaar, 2011). Supplier relationship management has been less addressed, especially with the aim of defining the concepts of supplier “partnership” and “collaboration” in a public context (e.g., Buchanan & Klingner, 2007; Withey, 2011).

Order management and vendor rating seem really neglected areas of research. However, while for vendor rating, some indirect contributions can be found when dealing with contract definition activities (e.g., Qiao, Thai, & Cummings, 2003; Duren & Dorée, 2010; Mori & Doni, 2010), any significant research contribution can be identified for the order management cycle. This can be justified if we consider these activities to be the most mundane and repetitive part of the procurement process (limited to the clerical or computer-driven calling off of goods or services from the selected supplier), despite forgetting some critical implications that they may have on public procurement management, such as higher process costs or the so-called “maverick” buying phenomena (where suppliers are used but not validated by procurement procedures).

Public Procurement Tools and Procedures

The list of practices has been designed considering both general studies on private purchasing and supply management (e.g., Van Weele, 2009; Monczka et al., 2010) and focused reports on public procurement (e.g., Thai, 2010; NIGP, 2010), and includes data mining tools (spend analysis), technological tools (e-procurement solutions), accountability tools (reporting and benchmarking), centralization tools (cooperative purchasing), relational tools (public – private partnerships) and assessment tools (risk management approaches). Unfortunately, not all of them have found the same space in academic research (Table 12)

TABLE 12
Procurement Tools and Procedures Considered in Public Procurement Research

	Frequency	Percent
Spend analysis	2	1%
ePurchasing technologies	37	18%
Cooperative purchasing	0	0%
Reporting	0	0%
Benchmarking	4	2%
Risk management	5	2%
Public Private Partnerships	6	3%
Total	54	26%

Data shows the predominance of e-purchasing technologies as academic topics when dealing with tools and procedures that support the execution of public procurement activities (18% of total papers). The two symposia promoted by the journal in 2005 and 2006 clearly stimulated research on this area, despite the perception of e-purchasing technologies as a “hot spot” topic since early 2000s. Different facets were explored, such as effective integration with procurement activities (e.g., Lee, 2010), driving and enabling factors (e.g., Dooley and Purchase, 2006), and practical experiences (e.g., Barbieri & Zanoni, 2005; Alsac, 2007).

Many of the other relevant tools remain quite unexplored, such as the benefits and potentialities offered by the use of cooperative purchasing (i.e., the combination of requirements of two or more public procurement entities to leverage the benefits of volume purchases, delivery and supply chain advantages, best practices, and the reduction of administrative time and expenses) and advanced analytics (i.e., spend analysis), relationship risk management, and the execution of benchmarking and reporting activities.

Public Procurement Organization

How to organize the Procurement Department represents a critical decision in the private context, and design choices can be differentiated at macro and micro levels (Kamann, 2007; Leenders et al., 2006). Because the procurement process in the public sector is subject to a different legal framework than private purchases are, and because public institutions typically pursue a different set of goals than private companies, it is reasonable to assume that different principles in the organisation of the Procurement Department should exist. Despite this, while there is a great deal of literature on purchasing organisation for private PSM, a same breadth of research seems not present in public management research (Table 13)

First, it is interesting to note that 32% of articles are linked to organizational topics, but the number of papers that address micro-organizational design is twice the number of those on macro-organizational design. In particular, research on micro-organizational topics has experienced a peak during the last several years, especially concerning “ideal” skills and competencies for an efficient and effective functioning of public procurement (e.g., Large et al., 2009;

TABLE 13
Procurement Organization Aspects Considered in Public Procurement Research

	Frequency	Percent
Macro Organization	21	10%
Level of centralization	9	4%
Organizational design	12	6%
Micro Organization	46	22%
Competencies	20	10%
Training program	7	3%
Resource specialization	2	1%
Knowledge management	3	1%
Behavior and Trust	13	6%
Corruption	0	0%
Cross-functionality	1	0%
Total	67	32%

Hawkins & Muir, 2014) as well as ethics and compliance in human resource behavior (e.g., Hunsaker, 2009; Ntayi et al., 2010). Research on other aspects is instead quite poor, especially those referring to integration with other Departments, work specialization and knowledge management.

Focusing the attention on macro-level organizations, research is particularly rich in terms of practical organizational design cases: during the years studied, different authors have tried to deepen the knowledge on this aspect by studying procurement organization with different perspectives, such as developing countries (e.g., Verhage et al., 2002), the comparison with private sector principles (e.g., Leenders et al., 2003), governance models (e.g., Snider, 2006) and organization at different government levels (e.g., Glock & Broens, 2013).

Public Procurement Performance

Procurement performances in public institutions are the most tangible aspect of public procurement system functioning (Verbeteen, 2007). Considering contributions specifically focused on the design of procurement PMS, the approaches proposed by Luzzini et al. (2012)

and OECD (2013) are essential to consolidate main performance areas for public procurement (i.e. Cost, Quality, Time, Compliance, Innovation, Sustainability) as well as their level of measurement (i.e. Procurement performance, Internal processes, Suppliers). However, not all of them are equally covered by past research (Table 14).

TABLE 14
Procurement Performance Considered in Public Procurement Research

	Frequency	Percent
Cost	51	25%
Quality	29	14%
Time	23	11%
Compliance	0	0%
Innovation	13	6%
Sustainability	6	3%
Total	122	59%

With similar considerations made to research contributions on goals, the pressures on public sector spending give a primary role to the cost dimension: concepts as savings, cost reduction, and their measurements (e.g., Dew, 2008; Ancarani et al., 2009) are thus largely covered. However, if the role and added value of procurement can mainly be communicated in terms of cost savings, procurement will thus be viewed as such and will not be seen in light of its potential role in wider system objectives. Partially smoothing this vision, quality and time measures are also included in a relevant number of articles, especially when specific types of purchases are considered as units of analysis (e.g., Ibrahim et al., 2010; Romero et al., 2014) and the need to build more structured relationships arises (e.g., Waterman & McCue, 2011). While compliance performance are never (explicitly) mentioned in the 207 papers considered (most likely because of the already-existing external mandatory directives), few contributions can be found when dealing with innovation and sustainability performance (9% of all papers). For sustainability, in particular, even though not so widely addressed, the limited research has been able to clearly characterise the main dimensions (i.e., green public procurement; social and ethical public procurement; public procurement for economic development)

and specific performance indicators for measuring initiatives in this field, such as biodiversity, air/water emission, energy and water consumption, chemical consumption, waste generation, creation of employment opportunities, promotion of decent work, support of social inclusion, promotion of social economy organisation, promotion of SMEs, wider voluntary adherence to CSR (e.g., Van Valkenburg & Nagelkerke, 2006).

Public Procurement Environment

Finally, EU public procurement directives and regulations also influence countries in the European Union when the procurement represents a value above a certain threshold. These rules apply to purchases made on local, regional—state or county—and central government levels. Additionally, public procurement lines of action can be influenced and driven by superior government intervention and reforms. These contingencies are only marginally considered by operations and public management research, most likely because they are legislative-related (European commission, 2011). Data confirm this statement (Table 15), and most of the papers use procurement regulations and directives as a starting point to orient improvements in the functioning of public procurement.

Most of these papers (57 papers, almost 27% in total) focus on the impact of EU procurement directives and procurement reforms in organizing the procurement system and activities in the public sector (e.g., Heijboer & Telgen, 2002; Soudry, 2004; Albano & Sparro, 2008). Government influence and the potential impact of procurement decisions at this level are also considered with specific aspects (e.g., Wang & Bunn, 2004; Arrowsmith, 2010; Schnitzer, 2010).

TABLE 15
Contingencies Considered in Public Procurement Research

	Frequency	Percent
Procurement regulation	37	18%
Government regulation	8	4%
Procurement reforms	19	9%
Government reforms	2	1%
Political and Government implication	25	12%
Total	91	44%

CONCLUSIONS AND FUTURE DEVELOPMENTS FOR RESEARCH IN PUBLIC PROCUREMENT

The paper conducted an extensive review of publications in the JoPP since its first issue. Even though it was limited to a single journal, the examination of the 231 works published during these years may help to orient future research in the field of public procurement. Such a study was conceived first for a specialized academic audience, but it could also be useful for practitioners and public procurement professionals, who will be given an understanding of research directions and a list of the main relevant topics for their practice.

We start this work with the deep aim of providing answer to the following research question: “How did research on public procurement evolve over the time period 2001 – 2014?”

The analysis of JoPP publications certainly confirms our initial statement: public procurement is increasingly attracting the attention of scholars around the world, with the potential to become a real “hot spot” topic for future research as a result of its theoretical underpinnings and practical implications. While first addressed by USA and UK authors in early 2000s, more countries have entered the field over the course of time, especially in Europe, where research activities in the last years have rapidly increased; the trend of publications supports this observation. If this trend is continued, they could become even more knowledgeable on the field, and public procurement research could mature to a state where phenomena are studied against more versatile backgrounds. We also have to observe that as an academic discipline, public procurement seems to be far from full maturity: in accordance with Thai (2008) and Telgen, Harland, and Knight, (2007), public procurement seems to follow the path of procurement in public institutions, attempting to shift its perception from an operational role to more strategic and value-adding department. We can position it in the initial exploration stage (and the predominant diffusion of empirical research methods confirms this), with the perspective of evolving and maturing to a higher status in the near future.

These preliminary considerations may help us in deep more into the analysis of the research strategies. In terms of predominant study characteristics, public procurement is mainly practice-oriented, manifesting itself both through employed research approaches (i.e. case studies and survey researches) and utilized data sources. More,

the absence of meta-analysis and structured literature studies disable the field from deriving at definite findings, which can be applied by practitioners. Also the unit of analysis should be defined with more specification, as only 38% of papers target its findings on a specific government level, and 29% has a focus on a particular type of purchases.

In terms of research arguments, following the consideration that publications have been focused on more practical methodologies and operational research topics, most of the research relate to the definition of traditional procurement goals (i.e., efficiency) and performance (i.e., cost), and the management of more operational procurement activities (bid evaluation, supplier selection, contract management). This evidence gives us the opportunity to conclude with some suggestions for the evolution of public procurement research in the future.

The main objective of a journal that specializes in a particular academic field should be to enhance the status of this discipline as much as possible; so, in the near future, publications (at least in JoPP) should be focused on filling the actual lack of use of certain methodologies and units of analysis, as well as attention to certain topics. Therefore, future research should introduce advanced research approaches and/or combine different approaches within the same study (considering also the underpinning theories used, exploiting evidence provided by Flynn and Davis, 2014).

In terms of category scope, while some purchasing groups are quite covered and considered in their specificities (e.g., construction works, healthcare purchasing, as also provided by Lange, Telgen, and Schotanus, 2014), others are not considered, or are just marginally addressed (e.g., education purchasing, ICT, MRO), verifying the need for a research approach tailored by category. This is the same gap present in the content analysis of the strategy: despite its practical importance (Lange, Telgen, & Schotanus, 2014), the category management approach and definition of category strategy are unexplored topics, in contrast with basic portfolio theories that dominate the private purchasing literature (e.g., Kralijc, 1983). This is most likely due to the regulatory nature of public procurement, with directives already giving strict guidelines independent from the category. However, the development of the tailored category strategy could also be useful for procurement in the public sector and could

help understand which tools (e.g., PPPs) are more likely to be implemented according to the specific category. Similarly, interaction and integration with other departmental strategies seems to be a relevant aspect to be explored, especially in the case of centralised procurement configurations (Karjalainen, 2011). In contrast, good findings and contributions can be found in terms of strategic guidelines for taking outsourcing decisions and definitions of process structure and responsibilities and awarding mechanisms.

Instead, there remains a lack on the organisational side at both the strategic and operational levels: “organisational archetypes”, use of cross-functional team, category management approach, impact of public procurement law on the structure of Procurement Department, and definition of organisational roles and responsibilities are all topics which are actually under-researched.

At the process level, most of the activities have been extensively addressed (especially sourcing ones); surprisingly, poor considerations have been proposed on most operational aspects, such as order management and vendor ratings, which can hide potential sources of inefficiency and money waste. Therefore, attractive areas of research could be the analysis of “best practices” in order management to avoid maverick buying phenomena, speed up the request-delivery lifecycle and optimise process performance as well as the approach used to measure supplier performance once expected output and conditions were formalised through the contract.

Similarly, in terms of tools and policy, although basic aspects have been very well-developed (analysis of PPP configuration, the definition of cooperative purchasing models, analysis and assessment of relational risks), more “advanced” concepts remain untouched; therefore, future research could focus attention on defining, for example, the potential benefits of the use of spending analysis tools and models (e.g., for specific categories) or possible approaches when conducting public procurement benchmarking.

Finally, we have to highlight the potential gap on the performance side. In private PSM, the impact of supply management on the firm’s performance has been the centre of many discussions in the past (e.g. Chen et al., 2004; Bernardes & Zsidisin 2008). This is not as diffused for the public sector, as we note that the performance impact of the public procurement system has been studied only infrequently thus far; additionally, the papers that deal with this aspect often consider it with

a general and not integrated approach (e.g., limited to one or two performance areas). Therefore, we first suggest that researchers address the issues of operationalization and the measurement of public procurement performance in each of the identified areas. Second, authors should concentrate on studying the contingency relationships between public procurement strategies, public procurement goals, and public procurement performance, to identify which of the three goal strands is more related to dimensions of the procurement strategy, and which key performance indicators can be more suitable to measure if a certain goal has been achieved. Third, a focus on the impact of contextual variables on procurement systems would shift the debate from 'good performance vs. poor performance' to one of 'performance under certain conditions'. Table 16 summarises suggest some relevant topics to be addressed in the near future.

TABLE 16
Identified Topics for Future Research on Public Procurement

Area	Research gaps and suggestions for future research
Research approach	<ul style="list-style-type: none"> - Introduce a broader set of research approaches, including less adopted methodologies (e.g., collaborative research) - Exploit mixed-methods for the same research
Public institution	<ul style="list-style-type: none"> - Provide specific findings for the each unit of analysis - Discuss the generalizability of findings depending to the type of public institution
Category scope	<ul style="list-style-type: none"> - Adopt a category perspective, investigating the procurement system according to the different types of purchasing categories
Public Procurement strategy content	<ul style="list-style-type: none"> - Explore the deployment of category management for public sector procurement - Explore if and how procurement strategies are aligned with the government and other Departments strategies
Public Procurement goals	<ul style="list-style-type: none"> - Associate specific metrics to each public procurement goal (commercial, regulatory, socio-economic)

TABLE 16

Area	Research gaps and suggestions for future research
Public Procurement processes	<ul style="list-style-type: none"> - Discuss potential best practices for order management activities to limit undesired behaviour - Develop a more comprehensive understanding of vendor qualification, selection and evaluation activities in public institutions
Public Procurement tools & procedures	<ul style="list-style-type: none"> - Assess the tools suitability for different categories - Explore the use and impact of advanced tools and procedures for supporting procurement activities (i.e., spending analysis, benchmarking, reporting)
Public Procurement organisation	<ul style="list-style-type: none"> - Design the potential general archetype for organising the Procurement Department in public institutions - Compare the organisation of Procurement Department in different public institutions - Define in detail communication and integration mechanisms between Procurement and external Departments - Focus on the impact of public procurement law on the structure of Procurement Department
Public Procurement environment	<ul style="list-style-type: none"> - Explore in greater detail the role of the central/local government in limiting procurement decisions
Public Procurement performance	<ul style="list-style-type: none"> - Advance the operationalization and measurement of public procurement performance with respect to all of the relevant dimensions - Explore how the configuration of some dimensions of the framework (e.g., goals to be reached; type of organisation; tools supporting activities) impact public procurement performance

In conclusion, we cannot exclude the limitations of the present work. First of all, the conceptual framework has been designed by integrating different contributions from both private and public procurement; thus, some of its elements can be argued in terms of positioning and coding (e.g., other types of categories may be identified as well as types of public institutions). Additionally, the framework has been presented using a static approach, as the potential links between the different levels are not highlighted or discussed (e.g., strategy definition and organizational design; goal statements and performance measurements; organizational characteristics and process structures), even if they are likely to exist.

Finally, it is evident that a one-journal literature review limits the generalizability of the results to the whole academic landscape, even though the review considers the most important journal in the field. A content analysis of the papers published in other peer-reviewed academic journals, non-peer-reviewed journals, books and non-English publications may suggest other evidence (e.g. Lange, Telgen, & Schotanus, 2014). Therefore, 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.

REFERENCES

- Araujo, A. (2004). "Procurement Capacity Building in Developing Countries." Paper presented at the International Public Procurement Conference, October 21–23, Fort Lauderdale, Florida, United States.
- Arlbjørn, J.S. & Freytag, P.V. (2012). "Public Procurement Vs Private Purchasing: Is There Any Foundation for Comparing And Learning Across The Sectors?" *International Journal of Public Sector Management*, 25(3): 203–220.
- Bernardes, E. S., & Zsidisin, G. A. (2008). "An Examination of Strategic Supply Management Benefits and Performance Implications." *Journal of Purchasing and Supply Management*, 14(4): 209-219.
- Burgess, K., Singh, P. J., & Koroglu, R. (2006). Supply chain management: a structured literature review and implications for future research. *International Journal of Operations & Production Management*, 26(7): 703-729.
- Buxton, R.C. & Radnor, Z., 2012. "How Do They Do It? Understanding Back Office Efficiency Savings Made by English Councils." *International Journal of Public Sector Management*, 25(2): 118–132.
- Caldwell, N., Walker, H., Harland, C., Knight, L., Zheng, J., & Wakeley, T. (2005). "Promoting Competitive Markets: The Role of Public Procurement." *Journal of Purchasing and Supply Management*, 11(5): 242-251.

- Chen, I. J., Paulraj, A., & Lado, A. A. (2004). "Strategic purchasing, supply management, and firm performance". *Journal of Operations Management*, 22(5): 505-523.
- Cheon, M. J., Groven, V., & Sabherwal, R. (1993). "The Evolution of Empirical Research in IS: A Study in IS maturity." *Information & Management*, 24(3): 107-119.
- Crossan, M. M., & Apaydin, M. (2010). "A Multi-Dimensional Framework of Organizational Innovation: A Systematic Review of the Literature." *Journal of Management Studies*, 47(6): 1154-1191.
- David, R. J., & Han, S. K. (2004). "A Systematic Assessment of the Empirical Support for Transaction Cost Economics." *Strategic Management Journal*, 25 (1): 39-58.
- Edquist, C., Vonortas, N. S., Zabala-Iturriagagoitia, J. M., & Edler, J. (Eds.). (2015). *Public Procurement for Innovation*. Camberley, UK: Edward Elgar Publishing.
- Ellram, L. M., & Carr, A. (1994). "Strategic Purchasing: A History and Review of the Literature." *Journal of Supply Chain Management*, 30(2): 9-19.
- Erridge, A., & Hennigan, S. (2006). "Public Procurement and Social Policy in Northern Ireland: The Unemployment Pilot Project." In P. Gustavo and K. V. Thai (Eds.), *Advancing Public Procurement: Practices, Innovation and Knowledge-Sharing* (pp. 280-303). Boca Raton, FL: PrAcademics Press.
- Essig, M. & Batran, A. (2005). "Public-Private Partnership—Development of Long-Term Relationships in Public Procurement in Germany". *Journal of Purchasing and Supply Management*, 11(5-6): 221-231.
- Fearon, G. & Busch, L.-A. (2006). "Auditing and Competitive Bidding in the Public Sector." *Journal of Public Economics*, 90(4-5): 657-678.
- Flynn, A., & Davis, P. (2014). "Theory in Public Procurement Research." *Journal of Public Procurement*, 14(21): 139-180.
- Giunipero, L. C., Hooker, R. E., Matthews, J. S., Yoon, T. E., & Brudvig, S. (2008). "A Decade of SCM Literature: Past, Present and Future Implications." *Journal of Supply Chain Management*, 44(4): 66-86.

- Harink, J.H.A. (1999). *Excelling with E-Procurement: The Electronic Highway to Competitive Advantage*. Alphen aan den Rijn, Holland: Samson.
- Harland, C., Telgen, J., & Callender, G. (2013), "International Research Study of Public Procurement." In Sage publishing (Ed.), *The SAGE Handbook of Strategic Supply Management* (pp. 372-399). London, UK: SAGE Publications Ltd.
- Kamann, D.-J.F. (2007). "Organizational design in public procurement: A stakeholder approach". *Journal of Purchasing and Supply Management*, 13(2), pp.127-136.
- Kraljic, P. (1983). "Purchasing Must Become Supply Management." *Harvard Business Review*, 61(5): 109-117.
- Karjalainen, K. (2011). "Estimating the Cost Effects of Purchasing Centralization—Empirical Evidence from Framework Agreements in the Public Sector." *Journal of Purchasing and Supply Management*, 17(2): 87-97.
- Knight, L., Harland, C., Telgen, J., Thai, K. V., Callender, G., & McKen, K. (Eds.). (2012). *Public Procurement: International Cases and Commentary*. New York: Routledge publication.
- Lange, S., Telgen, J., & Schotanus, F. (2014). "Systematic Review of 15 Years of Scientific Literature on Public Procurement". Proceedings of the 2014 International Public Procurement Conference.
- Light, R., & Pillemer, D. B. (1984). *Summing up*. London, UK: Harvard University Press.
- Mayring, P. (2000). "Qualitative Content Analysis." *Forum: Qualitative Social Research*, 1(2): Article 20.
- Murray, J. G. (2009). "Improving the Validity Of Public Procurement Research." *International Journal of Public Sector Management*, 22(2): 91-103.
- Murray, J.G., Erridge, A. & Rimmer, N. (2012). "International Lessons on Austerity Strategy." *International Journal of Public Sector Management*, 25(4): 248-259.
- Newbert, Scott L. (2007): "Empirical Research on the Resource-Based View of the Firm: An Assessment and Suggestions for Future Research." *Strategic Management Journal*, 28(2): 121-146.

- OECD-DAC (2006). *Methodology for Assessment of National Procurement Systems*. Paris, France: Author.
- OECD (2013). "Discussion Paper on PP Performance Measures." OECD Meeting of Leading Practitioners on PP. Paris, OECD Conference Centre.
- Patrucco, A. S., Luzzini, D., & Ronchi, S. (2016). "Evaluating the Effectiveness of Public Procurement Performance Management Systems in Local Governments." *Local Government Studies*, DOI: 10.1080/03003930.2016.1181059.
- Pollitt, C., & Bouckaert, G. (1999). *Public Management Reform: A Comparative Analysis: A Comparative Analysis*. Oxford, UK: Oxford University Press.
- Quintens, L., Pauwels, P., & Matthyssens, P. (2006). "Global Purchasing: State of The Art and Research Directions." *Journal of Purchasing and Supply Management*, 12(4): 170-181.
- Rendon, R. G., & Snider, K. F. (2010). "Supply Management in American Public Administration: Towards an Academic Discipline?" *Journal of Purchasing and Supply Management*, 16(2): 99-108.
- Reynolds, N., Simintiras, A., & Vlachou, E. (2003). "International Business Negotiations: Present Knowledge and Direction for Future Research." *International Marketing Review*, 20(3): 236-261.
- Schapper, P. R., Malta, J. V., & Gilbert, D. L. (2006). "An Analytical Framework for the Management and Reform of Public Procurement." *Journal of public procurement*, 6(1/2): 1-20.
- Schotanus, F., & Telgen, J. (2007). "Developing a Typology of Organisational Forms of Cooperative Purchasing." *Journal of Purchasing and Supply Management*, 13(1): 53-68.
- Spina, G., Caniato, F., Luzzini, D., & Ronchi, S. (2013). "Past, Present and Future Trends of Purchasing and Supply Management: An Extensive Literature Review." *Industrial Marketing Management*, 42(8): 1202-1212.
- Spina, G., Caniato, F., Luzzini, D., & Ronchi, S. (2015), "Assessing the Use of External Grand Theories in Purchasing and Supply

- Management Research.” *Journal of Purchasing and Supply Management*, 22(1): 18-30.
- Telgen, J., C. Harland, and L. Knight (2007). “Public Procurement in Perspective.” In Knight, L., Harland, C., Telgen, J., Thai, K. V., Callender, G., & McKen, K. (Eds.), *Public Procurement: International Cases and Commentary* (pp. 16–24). New York: Routledge Publications.
- Thai, K. V. (2001). “Public Procurement Re-Examined.” *Journal of Public Procurement*, 1(1): 9-50.
- Thai, K. V. (2004). *Introduction to Public Procurement*. Herndon, VA: National Institute of Governmental Purchasing.
- Thai, K. V. (2009). “International Public Procurement: Concepts And Practices.” In *International Handbook of Public Procurement* (pp. 2-24). Boca Raton, FL: CRC Press.
- Thai, K. V., & Piga, G. (2007). *Advancing Public Procurement: Practices, Innovation, and Knowledge Sharing*. Boca Raton, FL: PrAcademics Press.
- Tranfield, D., Denyer, D., & Smart, P. (2003). “Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review”. *British Journal of Management*, 14(3): 207–222.
- UNDP (2010). *Public Procurement Capacity Development Guide*. New York: United Nations Development Programme.
- Verhage, R., van de Gronden, J., Awanyo, K., & Boateng, S. (2002). Procurement reform in the Ghana health sector. *Journal of Public Procurement*, 2(2), 261.
- Walker, H., Schotanus, F., Bakker, E., & Harland, C. (2013). Collaborative procurement: a relational view of buyer–buyer relationships. *Public Administration Review*, 73(4): 588-598.
- Wynstra, F. (2010). “What Did We Do, Who Did It And Did It Matter? A Review of Fifteen Volumes of the (European) Journal of Purchasing and Supply Management.” *Journal of Purchasing and Supply Management*, 16(4): 279–292.
- Zheng, J., Knight, L., Harland, C., Humby, S., & James, K. (2007). “An Analysis of Research into the Future of Purchasing and Supply

Management." *Journal of Purchasing and Supply Management*,
13(1): 69–83.