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Strategic public procurement aggregating value to public services

Patricia Guarnieri*a and Ricardo Corrêa Gomes^b

^aDepartment of Administration, Faculty of Economics, Administration, Accounting and Public Policies Management, University of Brasília, Brasília, Brazil, Address: Universidade de Brasília - Campus Universitário Darcy Ribeiro, Prédio da FACE, Sala 111-7, 1°. Andar, bloco A4, Asa Norte, CEP: 70.910-900 – Brasília/DF – Brasil, E-mail: profpatriciaunb@gmail.com

b a Department of Administration, Faculty of Economics, Administration, Accounting and Public Policies Management, University of Brasília, Brasília, Brazil, Address:

Campus Universitário Darcy Ribeiro, Prédio da FACE, Sala A1-93/4, 1°. Andar, bloco, Asa Norte, CEP: 70.910-900 – Brasília/DF – Brasil, E-mail: gomesric.rg@gmail.com

Abstract:

In the last years the interest of government on benefits of best procurement practices, similarly, with private sector practices, has increased. These practices can highly contribute with the creation of value in public service aligned with the concept of obtain "the best value for money". Thus, the purpose of this paper is to demonstrate how strategic public procurement can aggregate value to public services. In order to achieve this purpose it was conducted a systematic literature review (SLR) following the protocol from Pagani, Kovaleski and Resende (2015), called *Methodi Ordinatio*. It was analysed 68 full papers from Science Direct and Web of Science. The results were categorized according to: university of origin; countries involved in researches; partnerships between universities and other organizations; methods; objectives; main results; main concepts approached and, suggestions for future researches. Therefore, this paper contributes to synthesize the knowledge on strategic public procurement and demonstrating how this concept can aggregate value to public services.

Keywords: Best value for money; Public services; Strategic public procurement; Supplier Selection

1. Introduction

Erridge & Murray (1998) already highlighted that the perception of public purchasing as a clerical and order placing function can be considered the main barrier in order to improve and implement practices similar to those found in private companies. The main problems in public procurement are related to guarantee supplier's selection through transparent processes instead on the grounds of political, favouritism or fraud. In this sense, some problems related to poorly managed purchasing process contributes to the non-delivery of value in public services.

In general, the legislation regulating procurement imposes some restrictions on bidders (Gugler, Weichselbaumer, & Zulehner, 2015). It is important to emphasise that whether the quality of the good to be sold is not certain, price competition will provide the poorest types of goods. In the context of UK, Erridge & Murray (1998) already found

that there was an increased interest of government on benefits of best procurement practices, similarly, with private sector practices. These practices can highly contribute with the creation of value in public service aligned with the concept of obtain "the best value for money".

In this context, the objective of this paper is to demonstrate how strategic public procurement can aggregate value to public services. In order to achieve this purpose it was conducted a systematic literature review (SLR) following the protocol from Pagani, Kovaleski and Resende (2015), called Methodi Ordinatio.

This protocol was selected because it presents well defined steps and a rigorous procedure in order to select the papers for a SLR, which considers the year of publication of the paper, the number of citations obtained since its publication and the journal impact factor, in this case it was considered the Journal Citation Reports (JCR). These elements generates an index called InOrdinatio, which allows rank the papers by relevance.

The intent of the research was analyse the papers related to public procurement and strategic procurement, published in last five years. Two databases were selected for this SLR: Science Direct and Web of Science. The key words used in the search for papers were: public procurement AND Strategic procurement and public purchasing AND strategic purchasing. Regarding the type of the documents, it was limited to "full articles". In the primary search it was found in both databases 711 papers. After that, following the steps of Methodi Ordinatio protocol with the filtering process, we analyse 68 full papers, which presented an index InOrdinatio above 80.

The results were categorized according to: university of origin; countries involved in researches; partnerships between universities and other organizations; methods; objectives; main results; main concepts approached and, suggestions for future

researches. Therefore, this paper contributes to synthesize the knowledge on strategic public procurement and demonstrating how this concept can aggregate value to public services, considering the criteria expressed in the SLR protocol used. It innovates by presenting an SLR that follows a more rigorous protocol for the selection of articles. In addition, it was possible to establish a research agenda based on the results found.

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2. Literature Review

2.1 Strategic vs Traditional Procurement

For years is has been accepted the idea that the main purpose of the procurement function is to acquire the right quantity of the right items at the right time and at the right price (Watts, Kim, & Hahn, 1995). One of the main purposes of the procurement function is the reduction of costs, which can represent around 55% of the total production costs. Besides that, it is recognized that the quality and delivery of any company acting in any segment is highly influenced by their suppliers' performance (Watts et al., 1995). In times of consistently high outsourcing rates and sourcing volumes often above 50% of a company's expenditure, the procurement function has changed from its operational focus and gained an increasingly strategic role (Johnson et al., 2006; Paulraj et al., 2006).

The multiple sourcing, short-term contracting and competitive bidding are, according Ellram and Carr (1994), the most common strategies of purchasing function. However these strategies can generate uncertainty among suppliers, increasing their operation costs. Ellram and Carr (1994) pointed out that purchasing function are concerned with the following decisions: i) the make or buy decision; ii) supplier technology; iii) the supplier relationship type; iv) external market factors and, v) how purchasing can support competitive strategy of enterprises.

It is important to comprehend the difference between purchasing strategy and purchasing as strategic function. The first one refers to the specific actions that purchasing function plays to support its objectives, as for example: standardization of materials, components and services. These strategies can be performed without relation with the corporation strategies. The second one occurs when purchasing participates in the strategic planning processes and it is seem as a key decision maker in this context. In this case, the purchasing actions are aimed to support and provide corporation's overall strategies (Ellram & Carr, 1994).

Erridge & Murray (1998) highlighted that the perception of public purchasing as a clerical and order placing function can be considered the main barrier in order to

improve and implement practices similar to those found in private companies. The main problems in public procurement are related to guarantee supplier's selection through transparent processes instead on the grounds of political, favouritism or fraud.

In the public sector, competitive bidding is utilized to avoid favoritism and corruption and to enable purchasers to externalize their search effort and yet not suffer penalties (Goldberg, 1977). The efficiency of competitive bidding are recognized as the greater competition among suppliers, guaranting lower awarding prices due to the lowest cost bidders selection (Baldi, Bottasso, Conti, & Piccardo, 2016). Besides that it reduces informative asymmetries and motivates bidders to reveal their private production costs, enabling also the transparency and, limiting corruption and local political favouritism (Baldi et al., 2016; Tadelis, 2012).

The legislation regulating procurement generally imposes some restrictions on bidders, in order to prevent opportunistic behaviour, guarantee equal treatment of all potential bidders and, stimulate competition (Gugler, Weichselbaumer, & Zulehner, 2015). The USA, countries from European Union and, some from Latin American, such as Brazil, are subject to similar restrictions (Tadelis, 2012). However, some authors have discussed the efficacy of auctions related to complex projects (Goldberg, 1977). In addition, it is important to emphasise that whether the quality of the good to be sold is not certain, price competition will provide the poorest types of goods. Thus, this mechanism generates undesirable consequences in procurement process and, negotiation becomes the better mechanism (Manelli and Vincent, 1995).

Matthews (2005) verified that there is little evidence that public procurement has reached the theoretical boundaries of public management or strategic management, although it is recognized the efforts in the last decades. Nevertheless, in the context of UK, Erridge & Murray (1998) already found that there was an increased interest of

government on benefits of best purchasing practices, similarly, with private sector practices.

The advancements in private and public sectors have drived to the purchasing role to step up to a strategic view (Matthews, 2005). This fact is reinforced when we consider that procurement professionals handle with the destination of a relevant amount of the annual government spend (Matthews, 2005).

2.2 Strategic practices related to public procurement

Among the boundaries existing in the context of public purchasing, we can detach that the innovation and the creativity tend to be limited when government organizations follow uniform and routine standards (Matthews, 2005). The purchasing function faces a rapidly changing environment that stresses decentralization and empowerment of service delivery managers (McCue & Gianakis, 2001)

It is clear that public sector purchasing has progressed over the years. Mainly until the 1990s the area evolved dute to the electronic technology boom, which impels e-procurement, e-business, and e-commerce (Matthews, 2005). Today, purchasing function should deal not only with the lowest price, but also with emerging technologies, increasing product diversity and choice, environmental concerns, and the growing emphasis on quality and best value. In addition purchasers should aim the balance competing socioeconomic objectives (McCue & Gianakis, 2001).

In opportunistic terms, Murray (2009) states that procurement could act on the shortterm superiority of bargaining power, in order to get, mainly cost reductions. On another hand, local government procurement could focus on a strategic perspective, instead the bargaining view, considering that the concept of supply chain management requires a long-term perspective. Actually, in this new perspective the rules on

Compulsory Competitive Tendering are softened in favour of a Best Value approach (Erridge & Murray, 1998).

Erridge & Murray (1998) introduces the term "local government lean supply model", which is derived from best practices in supply chain management in private sectors. The authors pointed out some practices from this new perspective of public purchasing: closer relationships with suppliers; the development of partnerships within periodic competitive tendering exercises; sharing of costs and benefits and, continuous improvement in cost and quality criteria (Erridge & Murray, 1998)

Murray (2009), also related to the context in United Kingdom – UK, pointed out that the local government lean supply model includes a serie of good practices such as: long-term contracts; consortium single-sourcing; two-stage tendering and, the use of e-procurement to reduce transaction costs. Knight et al. (2012) and (Piga & Thai, 2007) emphasized the cooperative or joint purchasing is considered also a good practice, which can reduce costs ans risks and enable economies of scale. In the United States of America – USA, activities such as best value purchasing, direct supplier negotiation, and strategic planning are commomly used in the context of public procurement. The public sector has responded in recent years to the public's expectation to become more efficient and effective (Matthews, 2005).

Erridge & Murray (1998) found evidences that it is possible to local government, obtain benefits similar to those private companies obtain with the application of lean supply. These benefits are: inventory reduction, products and services with better quality; cost improvement, reduction in inspection and better relationships with suppliers and customers. The authors also state that it is possible to improve the competitiveness of local government with the adoption of strategic purchasing.

McCue and Gianakis (2001) and Matthews (2005) agree that public purchasing process can be divided into four different activities, or phases: i) planning; ii) formalization; iii) implementation, and iv) evaluation. The planning requires early involvement of the purchasing office in order that alternatives can be better exploited; Formalization and implementation put in practice the procurement action and; Evaluation aims to evaluate the effectiveness of the procurement process and also, should be used as improvement tool for future processes. However, all these activities have been held accountable to legislative bodies and central management through budgetary, accounting, personnel, and purchasing systems (McCue & Gianakis, 2001). Oruezabala & Rico (2012) found that sustainability has become a main concern among public purchasers. However they pointed out that the environmental dimension prevails, while the economic dimension has a lesser extent and very little is known about the social dimension.

3. Methods and research techniques

Considering the intention of to analyse if the strategic public procurement can aggregate value to public services, it was carried out a literature review. Webster & Watson (2002) states that literature reviews present two perspectives: (i) revisions of topics that have accumulated knowledge and require analysis and synthesis; And (ii) revisions of emerging issues, whose contribution is the exposure of potential theoretical foundations, which is usually not as extensive as the first. This research fits the first perspective. (Schneider & Wallenburg, 2012) states that it is relevant to analyse previous work and thereby determine the status quo of research. This kind of revisions enable to outline potential areas for further research by connecting the results of the literature review to (future) business trends.

There are two types of literature review: (1) narrative or traditional literature review and, (2) systematic review of the literature (Cronin; Ryan & Coughlan, 2008).

According to the authors, the narrative review condenses the literature, but does not make explicit the criteria for the selection of the sources used, to the reader. On the other hand, the systematic literature review is characterized by well-defined steps and structured criteria in the process of searching and analyzing information about the subject to be investigated. Denyer & Tranfield (2009) state that this process guarantees greater rigor, robustness and replicability to the research.

For the reasons exposed, the procedure chosen for this research was the Systematic Literature Review (SLR). In addition, it is important to emphasize that the SLR considers only papers with empirical results, excluding papers of literature review from the amount analysed.

Pagani, Kovaleski & Resende (2015) emphasized that due to the increase of the amount of publications, concerns were raised regarding the choice of the most relevant sources to be included in the research and the criteria to eliminate those were not relevant. There are several RS protocols of SLR, some of them can be detached: Tranfied, 2003; Cronin; Ryan and Coughlan, 2008; Ensslin et al, 2010; Higgins and Green, 2011; Pagani, Kovaleski & Resende, 2015).

We chose to use the protocol *Methodi Ordinatio*, proposed by Pagani, Kovaleski & Resende (2015). This protocol was selected because it presents swell defined steps and a more rigorous procedure in order to select the papers for a SLR. The authors proposed an adaptation of Methodology Proknow – C by Ensslin et al. (2010), which is based in a Multicriteria Decision Aid (MCDA) approach. The Pagani, Kovaleski &d Resende (2015) protocol considers three criteria in order to ranking articles: the year of publication, the number of citations obtained and the impact factor of the journal in which it was published. The Methodology aids the researchers to select, collect, rank and systematically read scientific papers published in journals. The Methodi Ordinatio,

employs an equation to rank papers, the Index Ordinatio (InOrdinatio - IO) Pagani, Kovaleski & Resende (2015).

InOrdinatio = (IF/1000)+ α * [10 - (ResearchYear - PublishYear)]+ (\sum Ci) (Formula 1) Where:

IF is the impact factor, which is divided by 1000 (one thousand), aiming to normalize its value concerning the other criteria.

a is a weighting factor ranging from 1 to 10, to be attributed by the researcher. The closer the number is to one, the lower the importance the researcher will attribute to the criterion year, while the closer to 10, the higher is the importance;

Research Year is the year in which the research was developed;

PublishYear is the year in which the paper was published, and

Ci is the number of times the paper has been cited (Pagani, Kovaleski and Resende, 2015).

After the calculation, the InOrdinatio of each paper is obtained, and from this point, it is possible to rank the papers according to their scientific relevance: the higher the InOrdinatio value is, the more relevant is the paper. Thus, when the ranking is provided, the researcher can define how many papers he will search for the full version, according to the priorities of the research, which will be analysed.

3.1 Description of the steps of the systematic literature review

The intention of the research was defined as: Analysing the papers related to public purchasing/procurement and strategic purchasing/procurement, published in last five years, considering the following aspects: university of origin; countries involved in researches; partnerships between universities and other organizations; methods; objectives; main results; main concepts approached and, suggestions for future researches.

Fahimnia, Sarkis and Davarzani (2015) highlight a serie of databases for research: Web of Science, Scopus, Science Direct Online, Emerald, Springer Link, IEEExplore, Academic Search Premier - ASP (EBSCO), Scielo, Sage Pub, Taylor & Francis, Oxford University Press, Cambridge University Press. Two scientifical bases were selected for this SLR: Science Direct and Web of Science. Both bases cover the the main leading journals in Social Sciences and are multidisciplinary by nature. Another reason for choosing the two bases was that most journals covered contain an impact factor in the JCR.

The key words used in the search for papers were: public procurement AND Strategic procurement and public purchasing AND strategic purchasing, which are synonyms. Thus, it was carried out two searches in each scientifical basis, combining the pairs of terms. It is important to point out that in Science Direct, the words public procurement and public procurement were set between double quotes, in order to narrow the results and make the search more accurate to the scope of the search, because when we did a first exploratory search on the bases, we noticed many out-of-scope articles already in the first pages of results. The key words were searched in all fields of paper.

In both basis the period of the publication of the papers defined was the last five years. Regarding the type of the documents, it was limited to "full articles", published in journals, in the English language.

Considering the choice by the *Methodi Ordinatio*, proposed by Pagany, Kovaleski & Resende (2015), only journals with impact factors were included in the systematic literature review, proposed in this paper. Besides that, the impact factor chosen was the Journal Citations Report – JCR®, which is a base from the Thomson Reuters Publisher. The JCR is a resource for evaluating and comparing scientific

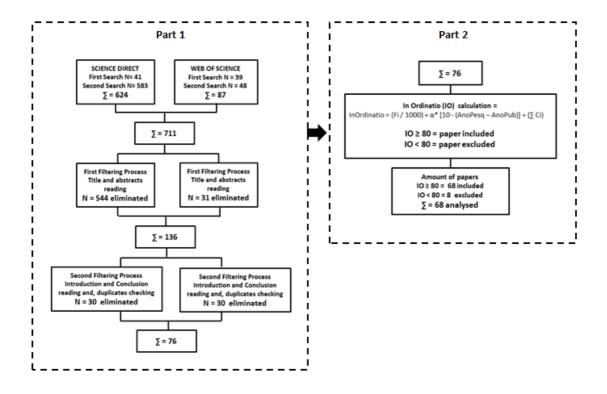
journals using citation data from academic and technical journals and their impact on the scientific community indexed by the Web of Science main collection. It reviews journals from 3,300 publishers, about 200 disciplines, and 60 countries and, it is possible to check citation statistics from 2001 to the present.

Considering the criteria of inclusion of papers to be analysed, it were excluded papers published in conference proceedings, chapters, patents and books, short survey, short communication, correspondence, letter, discussion, book review, product review, erratum and editorial. Furthermore, papers published previously to January 2012 and subsequently to March 2017 were not considered.

In addition, papers published in journals without JCR were also excluded. Regarding the subject of the papers excluded, some of them deal with disaster medicine; climate change, sustainability without link with purchasing/procurement, , green investments, green technology, green and low carbon technology, government internet portals, clean innovating, carbon footprint reduction, freight distribution related to sustainability, universal health coverage, environmental strategies, pharmaceutical regulation. Considering the above mentioned, subsequently it was carried out the duplicate checking of the papers, these were also eliminated from the analysis.

It is important to emphasize that it was considered the JCR report of the year of 2015, related to categories: Sciences (SCIE) and Social Sciences (SSCI). Regarding to number of citations of each article, it was obtained from Google Scholar.

The Figure 1 illustrates the results found in terms of quantities of papers found and the results after the filtering process and the aplication of *Methodi Ordinatio*.



As can be noted in Figure 1, the systematic literature review covers two parts: Part 1 and Part 2. In the Part 1, related to the first search, in Science Direct, with the terms "public purchasing" AND Strategic purchasing, it was found 41 results; in the second search, with the terms "public procurement" AND Strategic procurement, it was found 583 results. In Web of Science, in the first search, with the terms: (TS=(public purchasing AND strategic purchasing), it was found 39 results. In the second search, with the terms: (TS=(public procurement AND strategic procurement), it was found 48 results. The amount of articles found in two bases was 711 papers.

After the first filtering process, which comprised the title and abstracts reading in the bases Science Direct and Web of Science, they were, respectively eliminated 544 papers and 31 papers. Thus, remaining 136 papers.

At the second filtering process, which covers the introduction and conclusion reading, besides the duplicates checking, 30 papers were eliminated from Science Direct and 30 papers from Web of Science. The amount of articles remaining was 76.

In the Part 2, it was applied the formula for calculation of the index InOrdinatio (IO), which allows to get a ranking of the remaining papers, organized from the best to the worst. These 76 papers met all previously defined inclusion criteria in the protocol of systematic literature review. After the calculation of IO, it was defined by the researchers to establish as cut level the IO < 80. According Pagani, Kovaleski & Resende (2015), this cut level should be defined by the researchers according with their experience and sensitivity related to the subject researched.

4. Presentation of results

4.1 Evolution of publications

The Figure 2 shows the distributions of publications per year, considering the last five years analysed.

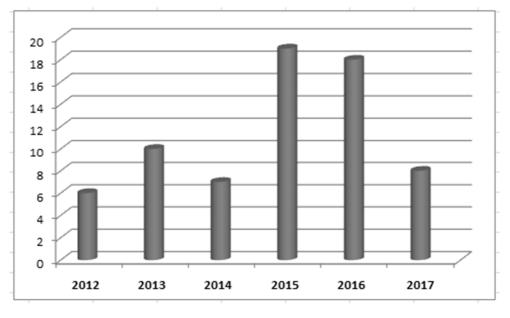


Figure 2 – Distributions of publications per year

It is clearly perceptible that the interest for the study of issues related to strategy related to procurement is on the rise. The years of 2015 and 2016 presented the highest peak of publications; on the other hand 2017 had a decrease due to the period defined for the search of papers in the systematic review process, which was March of 2017. Thus

papers published previously to January 2012 and subsequently to March 2017 were not considered in this research.

The Figure 3 presents the main journals of publications of paper analysed, following the protocol of systematic review of literature.

Figure 3 – Main journals of publications



It is possible to observe that four papers are prominent in the publications on this subject, which are: Journal of Cleaner Production (Elsevier); Supply Chain Management: an International Journal (Taylor & Francis); Journal of Purchasing and Supply Chain Management (Elsevier) and, International Journal of Project Management. Despite of some journals with public focus were encountered, we can observe that the editors maybe do not prioritize the issues related to strategic procurement yet.

With regard of the countries more prominent in the research of the issues related to public procurement, focusing on strategic ones, the figure 4 shows the results.

Figure 4 – Countries of origin of publications



We can clearly observe that the most prominent countries in research the issues related to strategic public procurement are developed countries. The most of practices were found in UK, followed by USA, Australia, Sweden, Italy, France, Germany, Portugal, Spain, and other. Basically, countries are from EU and North America. On the other hand, we can perceive some developing and/or emerging countries in the results such as: Thailand, China, Chile and, Costa Rica. Some papers denote also partnerships between researchers from two or more countries such as: Sweden-France; UK-Australia-Spain-Hong-Kong; UK-Italy; Estonia-Belgium-Germany; Italy-France; UK-Australia and other. The figure 5 shows the main universities researching this subject.

Figure 5 – Universities researching strategic public procurement



Clearly there is a predominance of universities from EU researching on strategic public procurement, such as: Cardiff, Birmigham, York (UK); Politecnico di Milano (Italy); Paris (France); Lund (Sweden). However universities from Australia also can be highlighted: Swinburne, RMIT (Australia). The other universities had only one paper published in the period analysed. Other institutions were also found in the analysis, which are shown in the Figure 6.

Figure 6 – Other institutions of origin



The institutions encountered in the research were shown in the Figure 6, and denotes also the partnerships of research between researchers from universities with

practitioners from public agencies. The Figure 7 presents the main publishers of papers analysed in this systematic literature review.

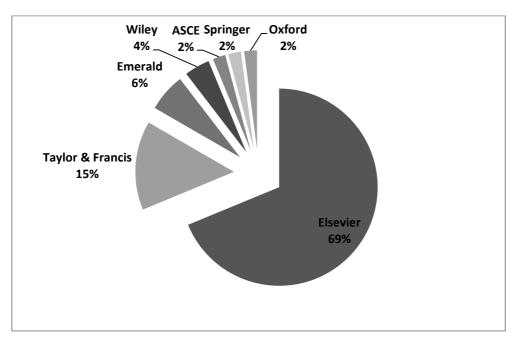


Figure 7 – Main publishers

We found 33 papers published in journals from Elsevier; 7 from Taylor & Francis; 2 from Wiley, 3 from Emerald, 1 from: ASCE, Oxford, Springer. Thus Elsevier shows to be the main publisher searched by researchers in this area. The figure 8 shows the main methods used in the papers analysed.

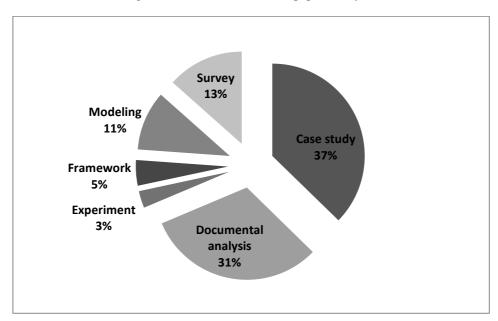


Figure 8 – Methods used in the papers analysed

We found that most of papers published had prevalence of the qualitative approach in the delineations of research. With regard the procedures, the case study was used in 37% of the papers and the documental analysis in 31% of them, the survey appears in the third position with 13% and modeling, which can be from econometrics, mathematical, linear programming or multicriteria perspective, are 11% of the papers analysed.

4.2 - Categorization of the papers analysed

In order to structure the examination of strategic procurement in the public sector, this research performs a content analysis, with the thematic categorical technique (Bardin, 1977), in order to propose a categorization of the selected papers based on Carter & Ellram (2003). However it is important to emphasize that Carter & Ellram (2003) notoriously have consolidated researches in private context. The categories are detailed in the discussion section.

The Table 1 shows the papers categorized according the main subject approached, expressed in its objectives and titles.

Table 1 – Categorization of papers related to main subject

Authors	Focus
SUSTAINABILITY RELATED ISSUES	
(Domingues, Moreno Pires, Caeiro, & Ramos, 2015); (Oruezabala & Rico, 2012);	
(Navarro Galera et al. 2014); (Loosemore, 2016); (Hueskes, Verhoest, & Block,	
2017); (Testa, Iraldo, Frey, & Daddi, 2012); (Testa, Iraldo, Frey, & Daddi, 2012);	
(Walker & Brammer, 2012); (Bratt, Hallstedt, Robèrt, Broman, & Oldmark, 2013);	
(Testa, Annunziata, Iraldo, & Frey, 2016); (Smith et al., 2016); (Rainville, 2016);	
(Roman, 2016); (Ahsan & Rahman, 2017); (Lenferink, Tillema, & Arts, 2013);	
(Nogueiro & Ramos, 2014); (Rizzi, Frey, Testa, & Appolloni, 2014); (Amann, K.	
Roehrich, Eßig, & Harland, 2014); (Ferreira, & Gonzalez-Zapatero, 2016)	Sustainability
(Nakabayashi, 2013); (Loader & Norton, 2015); (Loader, 2015);	Incentives to
	Small Businesses
PARTNERSHIPS RELATED ISSUES	
(Sedita & Apa, 2015); (Meehan, Ludbrook, & Mason, 2016); (Grudinschi, Sintonen,	Relations between
& Hallikas, 2014); (Bovaird, 2016); (Mamavi, Meier, & Romain, 2013);	suppliers and
(Theodorakopoulos & Kakabadse, 2015); (Pazirandeh & Norrman, 2014)	buyers;
	Partnerships
	and/or
	collaborative
	relationships

(Rehmatulla, Smith, & Tibbles, 2015); (Keranen, 2015); (Hoppe, Kusterer, & Schmitz, 2013); (Liu, Wang, & Wilkinson, 2016); (Hueskes, Verhoest, & Block, 2017); (Torvinen & Ulkuniemi, 2016); (Lenferink, Tillema, & Arts, 2013);	Public-private partnerships (PPPs)	
(Edquist & Zabala-Iturriagagoitia, 2012); (Torvinen & Ulkuniemi, 2016); (Vecchiato & Roveda, 2014); (Edler & Yeow, 2016); (Dale-Clough, 2015); (Lember, Kattel, & Kalvet, 2015);	Public	
e-GOVERNMENT AND/OR e-PROCUREMENT RELATED ISSUES		
(Concha, Astudillo, Porrúa, & Pimenta, 2012); (Caloghirou, Protogerou, & Panagiotopoulos, 2016); (Raventós & Zolezzi, 2015); (Choi, Park, Rho, & Zo, 2014); (Sun, Ku, & Shih, 2015); (Walker & Brammer, 2012); (Costa, Arantes, & Valadares Tavares, 2013);		
OTHER RELATED ISSUES		
(Baldi, Bottasso, Conti, & Piccardo, 2016); (Uttam & Le Lann Roos, 2015) (Kumru & Kumru, 2013); (Kasdin & Lin, 2015); (Blauberger & Weiss, 2013); (Schneider & Wallenburg, 2013); (Staples & Dalrymple, 2016); (Thurbon, 2015); (Patrucco, Luzzini, & Ronchi, 2016); (Habicht, Habicht, & van Ginneken, 2015); (Tangcharoensathien et al., 2015)	Case reports	
(Papakonstantinou & Bogetoft, 2016); (Bergman & Lundberg, 2013); (Brisset, Cochard, & Le Gallo, 2015); (Ballesteros-Perez, Skitmore, Pellicer, & Zhang, 2016); (Barrett, 2015); (Rosar, 2017); (Alcalde & Dahm, 2013); (Gugler, Weichselbaumer, & Zulehner, 2015) (Tadelis, 2012); (Decarolis & Giorgiantonio, 2015);	Other (strategic thinking, bidders' behaviour Procurement Regulations	
(Seres, 2017); (Locatelli, Mariani, Sainati, & Greco, 2016); (Reeves-Latour & Morselli, 2016)	Frauds and corruption	

It is clear that the sustainability related issues in procurement are the most researched topics, followed by some case reports, which do not make clear which strategy were adopted; e-government and e-procurement practices; issues related to relations with suppliers, partnerships and collaborative relationships; PPPs; PPIs; issues related to the change of traditional to strategic procurement and bidders' behaviour; procurement regulations and, frauds and corruptions.

5. Discussion of the results

When the subject of strategic procurement comes up, it is inevitably reflecting on the following issues: Is not strategy being directly linked to competitiveness? Is it possible to be competitive in public organizations? Would such a position not go against the aims of a public organization?

There are, clearly, some differences when we compare private to public procurement. As pointed out by Kernaghan (2003); Purchase, Goh, & Dooley (2009) and Larson (2009), the goals of public organizations are distinct from the practices of private companies. While private companies are aimed to profit maximization, the public organizations are focused in integrate ethical, social, environmental, economic, democratic, professional and person-related.

However, it is possible to observe that despite their differences, the scientific focus on the subject has been largely based on private sector studies, while strategic procurement in the public sector has received relatively little academic attention, despite representing a significant share of government spending (White, Parfitt, Lee, & Mason-Jones, 2016). Maybe this little attention in academic terms arises from the fear of discussing strategic and innovative practices, when there are legislations that are quite restrictive and conservative.

Practitioners in public procurement may be apprehensive of breaking laws and academics may do not research it for not observing it in practice in many public organizations. For these reasons, a systematic literature review can clarify some issues, establishing what is actually being researched and also practiced in the scope of public procurement, in terms of strategy. For this purpose, we categorize the strategic practices found in this RSL as: Partnerships; Sustainability Supplier management, and, E-Procurement related practices and Other (practices were not identified), similarly to proposed by Carter & Ellram (2004). Each category is described as follows.

Partnerships related practices

Public Procurement for Innovation (PPI) is one of the practices pointed out as source of value-added to public services. It occurs when governments demand from supplier's products that do not yet exist or that have innovative characteristics. It includes a R&D phase and enables the governments to participate in a structured partnership with a

supplier with the objective of developing an innovative product or service, with the subsequent purchase of the outcome (Procurement Innovation Plataform, 2017).

This strategic practice can be pointed out as an effort to solve the problems related to traditional procurement practices, commonly based only in the 'lowest price'. On the other hand, the trust in a soft factor considered as most important in PPI. The attention of EU countries for the innovation potential in public procurement has been presented in reports and has been discussed in policy debates (Caloghirou, Protogerou & Panagiotopoulos 2016). This concept can be also categorized as the strategic practice of 'partnerships or alliances', which is widely used in private companies.

In public sector this practice is known as "Innovation Partnership". In the private sector as "Co-development or Co-design Partnerships", which are encountered in private sector, commonly in automotive and electronics industries. This practice is strategic because it provides knowledge transfer, risk-sharing collaborative relationships with suppliers, interaction of the procuring agency with the market, aggregated value to the product and services provided, satisfying the citizens. However its first purpose is not enhance the development of a new product or service, but generate the satisfaction of a human need or societal problems (Edquist & Zabala-Iturriagagoitia, 2012).

This practice has been adopted in countries as USA, UK, Norway, Greece and Sweden (Caloghirou, Protogerou & Panagiotopoulos 2016; Edquist & Zabala-Iturriagagoitia 2012). However, as pointed out by Uyarra et al. (2014), only a minority of suppliers assessed the knowledge of public organisations relating to supplier products and related markets, as well uses this knowledge in the whole supply chain.

Another type of strategy found in the literature analysed, was the public-private partnerships (PPPs), which refers to a range of collaborative efforts undertaken conjointly by public and private organizations (Jamali, 2004). PPP is defined as an

institutional arrangement between public and private organizations (Hodge & Greve, 2007), including collaboration to reach shared goals of delivering public services (Jamali, 2004), which has benefits at the same time that is a challenging process (Haglund, & Liljefors, 2014; Erridge & McIlroy, 2002), and still have a little attention from researches, regardless its managerial relevance (Keranen 2017). According Sedita & Apa (2015), small and medium enterprises are often excluded of large-scale projects due its liability of smallness. Thus, partnering practices can be recognized as a way to small and medium companies to access and win public procurement tenders, within consortiums of companies.

As highlighted by UNCTAD (2013), while in Europe and USA the economic growth is stagnated, and the China do not present relevant growth, the emerging markets, especially the developing countries in Africa has represented a business opportunity and attracted foreign investment. The PPP is a category of procurement widely adopted in emerging economies, mainly related to large projects related to public transportation, and infrastructure sectors, such as transport, education, healthcare, electricity and water and wastewater treatment (Hoppe, Kusterer & Schmitz, 2013; Haglund & Liljefors, 2014; Liu, Wang & Wilkinson, 2016).

Sedita & Apa (2015) refer to partnering ability as the capacity of the organizations to have a key-role within a contractors' network. The authors found that the organization's success is positively affected both by the number of relationships of the organization and by the organization's reach ability, but negatively affected by the quality of playing a brokerage role in the network. Hueskes, Verhoest & Block (2017) state that PPPs are long-term partnerships to provide infrastructure and, Liu, Wang & Wilkinson (2016) emphasize that it brings complementary resources and expertise from both public and private sector sides.

Sustainable related practices

Sustainability is a broad concept that involves the consideration of balance and synergy among economic, environmental and social interests (Elkington, 1997; Devolder & Block, 2015). According Bratt et al. (2013), the potential of public procurement for driving the corporate sustainability agenda is prominent. However, if the sustainability concept is not clear, the related strategic progresses, which are stepwise approaches towards long-term principled objectives, would be impossible (Bratt et al. 2013). In this context, this concept can reflect several practices related to environmental practices such as: selection of green suppliers, green purchasing (Bratt, Hallstedt, Robèrt, Broman, & Oldmark, 2013); social related practices, as such as: select suppliers that promote fair trade and employ disadvantaged people on its projects, provide employment opportunities for disadvantaged and marginalised groups such as the disabled, ex-offenders, ethnic minorities or the long-term unemployed, contribute to the welfare and amenity of local communities (Loosemore 2016). The concept can reflect also, provide direct support to small businesses to participate in procurement auctions through specific policies (Nakabayashi 2013; Almeida, Almeida & Guarnieri, 2017). In the United States, the Small Business Administration recommends that almost federal agencies should spend at least 23 percent of their procurement budget on small firms; in Japan the spending target for small and medium-sized enterprises are 50.1 percent of their procurement budget (Nakabayashi 2013). In Brazil, the subject gained more prominence with the sanction of two norms: the Law 123/2006 and the Complementary Law 12,349/2010. The first one provided for the inclusion micro and small companies in the government procurement processes; while the second highlighted that the promotion of sustainable national development should be one of the objectives of the public tenders (BRASIL, 2006, 2010; Almeida, Almeida & Guarnieri, 2017).

Loosemore (2016) emphasize the new policies and guidelines from EU, Australia and UK countries, which have recognized that it is necessary to broaden public procurement criteria beyond cost. In this sense there is a change to the traditional focus of procurement, from an adversarial and competitive tendering towards valuing social impact, public, private partnership and sustained supply chain relationships (Loosemore, 2016).

In addition, Barraket & Weissman (2009) pointed out the main barriers to make a transition from traditional to social procurement perspective, such as: governmental culture, lack of knowledge and experience of procurement professionals related to social indicators, the difficulty in measure and evaluate social value, limited organisational capacity, and limited capacity of organizations in order to demonstrate its social value added. Hueskes, Verhoest & Block (2017) highlight that the definition and the specification of sustainability criteria is still complex in the procurement process, and it can be also considered as a barrier. The public procurers consider difficulty incorporate this kind of criteria, especially with those related to social sustainability.

Supplier management related practices

In order to mitigate the risks that less-qualified or inferior suppliers win the bidding, it is essential that governments manage suppliers in order to select qualified bidders, due to some projects require advanced technologies, abilities and sufficient capital to enable the delivery of the product or service required (Nakabayashi, 2013).

Lambert (2008) highlight some practices related to supplier management, which can contribute for the attainment of the purpose of select the best suppliers of products or services: selection process, performance evaluation, certification, categorization, management and, finally, optimal allocation of orders. Besides that, in line of the concept of strategic procurement, it is important also include, after the optimal

allocation of orders, the monitoring of the quality and the service level of the products or service delivered. The objective of the strategic procurement is to maximize the economy and provide crucial information that may influence the course of the negotiations.

According Nakabayashi (2013) preliminary qualification certifies a set of firms as 'bona fide bidders' in procurement auctions in order to protect the buyers against the risk of non-delivery or non-performance of products or services purchased. This process is widely used in Europe and USA. In Japan the preliminary qualification is based on the information disclosure of the firms related to financial and technology capital (Nakabayashi, 2013).

Technology related practices

With regard to e-procurement, Carayannis & Popescu (2005) recommended conducting future research to provide an exhaustive assessment of the preparation for its implementation (identification and classification of costs and benefits perceived on the basis of results of projects, enabling qualitative intangibles to be compared in a way that would be possible to indicate the most cost-effective option) and to provide guidance on the necessary measures for countries to implement electronic contracting (such as the definition of a legal and organizational framework, systems availability and dissemination of information).

Walker and Harland (2008), suggest the investigation of interventions could help reduce the digital divide (the differential extension in which rich and poor countries benefit from various forms of information technology) and help e-procurement among suppliers in developing countries.

McCue & Roman (2012) studied whether platforms have been developed to achieve many of the stated goals of digital transformation if governments are willing to take

risks by investing heavily in e-procurement when the benefits associated with transformation can be difficult to generate revenue, and whether procurement professionals are willing to change processes to advance their strategic position within the organization.

Other related practices

In this category we can denote the papers that do not show some clear strategy related to public procurement. The papers approached issues related to prevention or identification of frauds and corruption, adversarial behaviour of participants of bidding process; regulations on procurement; reports of cases in which the traditional procurement is or was being replaced by the strategic concerns and other. In these papers the strategic procurement are not well stablished as in the previous categories.

5.1 Research agenda

Analysing the further studies recommended by the authors of paper considered for this systematic literature review, we can propose a research agenda in the categories mentioned above, which can be useful for researchers and practitioners interested in this field.

Procurement in general

- Studies exploring affirmative practices adopted in public procurement,
 comparing developing and developed economies (Alcalde & Dahm, 2013);
- ii. Studies on foresight indicators for designing public procurement (Vecchiato & Roveda, 2014);
- iii. Studies exploring the transparency and accountability with respect to public procurement practices (Galera, de los Ríos Berjillos, Lozano & Valencia, 2014).

Total Cost of Ownership - TCO - (life cycle)

- Studies approaching energy efficiency measures and studies approaching the concept of Total cost of ownership - TCO (Rehmatulla, Smith, & Tibbles, 2017).
- ii. Studies related to the formal definition and measuring of TCO (Oruezabala & Rico, 2012);
- iii. Studies exploring how to market sustainable solutions sound positioning in terms of TCO (Oruezabala & Rico, 2012).

Online Procurement - technologies

- i. Studies based in surveys evaluating the maturity of eGPs (Concha, Astudillo, Porrua & Pimenta, 2012);
- Studies on periodical measurement of eGP portals' performance and goal satisfaction (Concha, Astudillo, Porrua& Pimenta, 2012);
- iii. Studies related to best practices of EGPs (Concha, Astudillo, Porrua & Pimenta, 2012).

Sustainability in public procurement

- Studies related to assessment of sustainability performance of public procurement using mathematical models or multicriteria decision models (Domingues, Pires, Caeiro & Ramos, 2015);
- ii. Studies on monitoring system on sustainability practices in the organisation and across public organizations (Domingues, Pires, Caeiro & Ramos, 2015);
- iii. Studies related to best practices related to sustainability assessment in procurement (Domingues, Pires, Caeiro & Ramos, 2015);
- iv. Studies evaluating overall cost and finally the return on investment (ROI.) of green procurement (Oruezabala & Rico, 2012);

- v. Studies related to measurement of value creation for end users or economic sustainability of hospitals (Oruezabala & Rico, 2012);
- vi. Studies exploring the transparency and accountability practices with respect to sustainability indicators included in procurement (Decarolis & Giorgiantonio, 2015).

Innovation Partnerships

- i. Studies related to the existence of "Innovation partnerships" (Caloghirou, Protogerou & Panagiotopoulos, 2016);
- Studies on the balance in the participation of experienced large firms and specialized smaller providers in innovative procurement practices (Caloghirou, Protogerou & Panagiotopoulos, 2016);
- iii. Studies exploring both success and failure stories of PPI practices in different ICT fields and socioeconomic contexts (Caloghirou, Protogerou & Panagiotopoulos, 2016);
- Studies exploring if formal rules could usefully frame the objectives of future product innovation in terms of environmental impact (Oruezabala & Rico, 2012);
- v. Studies about the relationships based in trust and their influence in public procurement for innovation (Vecchiato & Roveda, 2014);
- vi. Studies exploring and implementing foresight for supporting public procurement of innovation and assessing its impacts on competitiveness at the national scale in several countries (Vecchiato & Roveda, 2014);
- vii. Studies exploring the role of partners organizations (public and private) in procurement of innovation (Edler & Yeow, 2016);

- viii. Studies approaching public procurement of innovation under the perspective of the suppliers (Edler & Yeow, 2016);
 - ix. Studies approaching quantitative validation of the emerging links between sustainable procurement and supplier management (Oruezabala & Rico, 2012).

Partnerships and supplier management

- Studies approaching quantitative validation of the emerging links between sustainable procurement and supplier management (Oruezabala & Rico, 2012);
- Longitudinal empirical surveys to sort out how new rules and new forms of contracts within the public buyer-private provider relationships are implemented (Oruezabala & Rico, 2012).
- iii. Studies approaching the criteria to select suppliers related to strategic outsourcing, without consider cost savings Rosar (2017);

Public and private partnerships

- i. Studies approaching the knowledge sharing and trust in PPPs (Keränen, 2017);
- ii. Studies on the roles in PPP development and implementation (Keränen, 2017);
- iii. Studies exploring PPPs in a centralized service setting (Keränen, 2017);
- iv. Studies with theoretical focus of PPPs to open the black box of contracting arrangements within the private consortia (Hoppe, Kusterer & Schmitz, 2013).

Inclusion of micro and small businesses

- Studies investigating the long-run effect of the set-aside program which includes small firms in public auctions (Nakabayashi, 2013);
- ii. Studies approaching the results and impacts of the inclusion of small firms in public procurement (Almeida, Almeida & Guarnieri, 2017).

6. Concluding remarks

We analyze and categorize the papers found in SLR, besides to synthetize the knowledge in the field in the last five years, considering the criteria of inclusion explained in the protocol of SLR, we propose a research agenda that could guide future research related to the topic. According to the analyzed articles, it is possible to think strategically about public procurement. In traditional procurement, concerns related to fraud, corruption, adversarial and competitive behavior, and opportunistic behavior are more frequent.

It is important to point out that considering the concept of strategic procurement, the three following phases are found: i) planning and definition of objectives and criteria, which fits the selection of suppliers, certification and qualification; ii) preparation of bidding notice, which considers the procurement priorities defined in the planning phase, objectives, criteria and rules for qualification of suppliers; iii) monitoring of the contract, which includes analysis of the quality and level of services of the products or services provided and, if necessary, application of administrative sanctions and cancellation of the contract. By adopting these three steps, the incidence of fraud and corruption in the purchasing processes can be reduced or even eliminated.

In this sense, it should be emphasized that the value added to public services is reflected in smarter procurement, considering the organization's objectives, with well-defined criteria and with control, which avoids mistaken or fraudulent procurement processes. This kind of occurrences consumes public resources without a return to the population, and should be avoided. There are also value added related to the speed of the process, since with planning avoids that procurement of products, execution of services, as well as the execution of large projects are canceled by irregularities detected by the control organs in the progress of the process.

The Innovation, the knowledge and resources sharing, the development of products and services more appropriate to citizens, the implementation of partnerships that allow public and private companies to share resources and rewards, the social and environmental gains, the agility from technology, the reduction of frauds, the guarantee of quality of products and services, according to the level of service contracted and the transparency in the process can also be pointed as direct gains of the adoption of the concept of strategic public procurement. The reliability and robustness of the purchasing process is well known, since the procurement are thus planned according to the objectives of the public organization and for this purpose, the criteria defined according to these objectives for choosing the best supplier/best proposal are respected, instead of just being based on the cost decisions. These practices are aimed to obtain the "Best Value for Money".

The following limitations can be pointed out: the publication period of articles: January 2012 to March 2017; having considered only the bases Science Direct and Web of Science as sources of articles and, having adopted the *Methodi Ordinatio* as the basic protocol of the systematic literature review; having adopted as a factor of cutting the InOrdinatio index of 80, as well as, having delimited the cut of articles that had the JCR impact factor.

As a suggestion for future studies, further systematic reviews based on other protocols, such as Tranfield, Denyer and Smart (2003), Rousseau, Manning and Denyer (2008) and Denyer and Tranfield (2009) are suggested. The extension of the period analysed, the journal databases and the consideration of other types of impact indicators can be part of other studies. In addition, we suggest systematic reviews of the strategies categorized in Table 1. Future studies using quantitative approaches, such as surveys and/or proposing frameworks based on mathematical, econometric, problem-structuring

or multi-criteria approaches to support decisions can be useful. In addition, further studies can approach issues related to Strategic procurement to some theories, such as Institutional Theory of Institutional Change, or still related to Decision Theories.

The contribution of this research lies in the systematization of the existing knowledge related to strategic procurement in public context, considering that, in the private sector this issue is already consolidated. Moreover, this study indicates a future agenda of research, which can aid researchers and practitioners acting in this field of knowledge. It also shows that the body of knowledge on strategic procurement in public sector is more concentrated in developed countries, which have some best practices that can be adopted and studied in developing or emergent economies, in which the frauds and corruption in public procurement is very common.

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