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WHERE THE LEGITIMATION OF SUSTAINABLE PUBLIC PROCUREMENTS FINDS CONFLICT: AN ANALYSIS OF PUBLIC PROCUREMENT AGENTS' PERCEPTIONS ON SUSTAINABLE PROCUREMENTS

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ABSTRACT

The state has its purchasing power evidenced. Therefore, by using it strategically, it can influence the market, creating a demand for sustainable goods and services, through the inclusion of sustainable criteria in their purchasing and contracting process. On the other hand, the purchasing process has the action of public contracting agents as decisive element for the application of this process. Thus, it is relevant to know the perception of the agents on the subject, in view of possible obstacles to its implementation, even though the process is legitimized by State regulations. Therefore, the objective of this study was to analyze the perception of public contracting agents regarding sustainable public procurements and their application, by adopting a descriptive character with quantitative approach. The data were collected during the 2nd International Summit on Sustainable Public Contracting, held in Brasília, DF. The sample consisted of 77 public servants. The analysis used descriptive statistics and cluster analysis. The results indicate the possibility of inefficient training and qualification of the agents, as well as the recognition by the agents that the cultural factor is the main obstacle for the application of sustainable public procurements.

Keywords: Sustainable public procurement. Public procurement agents. Limiters of sustainable procurements. Sustainable Development.

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RESUMO

O Estado possui seu poder de compras evidenciado. Logo, ao utilizá-lo, estrategicamente, pode influenciar o mercado, criando uma demanda, por produtos e serviços sustentáveis, por meio da inclusão de critérios sustentáveis em seu processo de compras e contratações. Por outro lado, o processo de compras tem como elemento determinante a ação dos agentes de contratação pública, para aplicação deste processo. Tornando-se assim relevante conhecer a percepção deste sobre a temática, tendo em vista possíveis barreiras a sua implementação, embora legitimada pelo Estado por normativas. Portanto, o objetivo deste estudo foi analisar a percepção de agentes contratações públicas, quanto às compras públicas sustentáveis e sua aplicação. Assim, esta pesquisa adota caráter descritivo e tem abordagem quantitativa. Os dados foram levantados durante o segundo seminário internacional de contratações públicas sustentáveis, realizado em Brasília- DF. A amostra foi composta por 77 servidores. O método de análise deu-se por estatística descritiva e análise de clusters. Os resultados indicam a possibilidade de ineficácia na formação e capacitação dos agentes, bem como o reconhecimento por parte dos agentes que o fator cultura é o principal delimitador para aplicação das compras públicas sustentáveis.

Palavras-chave: Compras públicas sustentáveis. Agente de contratações públicas. Delimitadores das licitações sustentáveis.

1 INTRODUCTION

In Brazil, it is calculated that public procurements move funds equivalent to 20% of the national Gross Domestic Product (GDP), according to data from the Ministry of Planning, Budget and Management (MPOG) (Oliveira and Santos, 2015). Among developed countries, research indicates that public procurements and purchases amount to 45% of the GDP (Brammer and Walker, 2007). Perceiving this potential, some countries have utilized their State purchasing power to position themselves as a market-aware consumer, adopting sustainable criteria in their procurement processes. This innovation, by following sustainable standards, granted a new nature to public procurements, which allowed for the processes to be identified as "Sustainable Public Procurements" (SPP), or, further, Sustainable Tendering, as well as other terminology.

Until 2010, the principle of the Law no. 8666/93 was to select the most advantageous offer from bidders from a solely economic perspective, or at least that was the exclusive manner of interpretation. However, upon its modification in 2010, the law required the selection also to promote sustainable national development. As a result, "Law no. 12349 introduced relevant innovation in regards to tenders regime, specifically to ensure that public contracting becomes an instrument for national development" (Justen Filho, 2011, p. 448, our translation)[1].

Nevertheless, even though it is a legal instrument explicit by law for more than five years and similarly in effect in many countries, this requirement is still not widely met in Brazil. In the federal sphere, contracts consisting of sustainable items account for less than 1% of all funds invested in purchasing processes (Brasil, 2016).

The difficulty of legitimizing the concept of sustainable public procurements, which should be recognized as a necessity by contracting agents in all public spheres (federal, state and municipal), is therefore noticeable (Freitas, 2012).

As a result, the main objective of this study is to analyze the perception of public contracting agents in regards to sustainable public procurements and their appliance. This stems from the comprehension that the public servants involved in the procurement process are responsible for legitimizing sustainable procurements; however, these procurements have not yet permeated the actuality of public contracts.

1 Quoted from Portuguese: "a Lei nº 12.349 introduziu relevantes inovações sobre o regime das licitações. Especificamente para assegurar que as contratações públicas sejam um instrumento também para promover o desenvolvimento nacional".

The results presented in this research bring information which may contribute strategically to decision making and practical solutions regarding purchases. The information may aid in planning, training, improving public servant qualifications at different hierarchical levels, and providing data for inspection agents and members of civil society.

Therefore, it is noticeable that the goal of sustainable public procurements will only be reached as a consequence of a conjunction of actions. It is necessary for contracting agents to be made aware of and adhere to a new perception of public procurements, not only as a means of furnishing the State with the goods and services it needs, but also as a means of providing for the needs of an improved society in relation to its economic, environmental and social aspects, both in the present and in the future. Simultaneously, contracting agents ought to perceive the selection of sustainable options in procurements and purchases as a professional obligation, as well as inspection by legal representatives and by the society in general are necessary.

Next, we demonstrate the relationship of the State's purchasing power and the use of such power to influence sustainable production and consumption by means of sustainable public purchases.

2 BIBLIOGRAPHIC REVIEW

In this section, we aim at describing the State's purchasing power, demonstrating its strategic use as a way of reaching positive results for national development. With that goal, we shall present the context of the environment and strength of public purchases in Brazil, followed by a reflection on the concept of sustainable public purchases and its historic evolution, and we shall end with a review of the main barriers that are imposed in regards to the implementation of sustainable purchases, their legality and their legitimacy.

2.1 THE STRENGTH OF PUBLIC PURCHASES

Public purchases are the process through which the government obtains services, materials and equipment necessary to its functioning, following a process in accordance to current laws and regulations (Squeff, 2014). However, when used in a strategic manner, these purchases may reach other objectives, such as sustainable development.

> Even though purchases and contracts from the public sector primarily aim to attend to various governmental goals, it is undeniable that a more articulate usage of this economic potential may make other related objectives, also linked to the development process, more feasible (Squeff, 2014, p. 7, our translation)[2]

In 2014, governmental purchases in Brazil moved R$62.1 billion with the payment for goods and services (MPOG, 2015), which puts the government as one of the main buyers in the country, according to Ipea (Brazilian Applied Economics Research Institute).

Then, all these resources must be employed in the most efficient way possible, in order to provide not only for the needs of the State's functioning but also as an instrument of execution of public policies, in a broader and more complete approach.

By adopting sustainable criteria for its purchases and contracts, the government exerts its strength over the market, causing it to adapt to new demands of more sustainable production

2 Quoted from Portuguese: "Ainda que as aquisições e contratações do setor público visem prioritariamente ao cumprimento das diversas missões governamentais, é inegável que uma utilização mais articulada do potencial econômico desta demanda pode viabilizar diversos outros objetivos também associados ao processo de desenvolvimento".

and consumption. In light of that, Ferreira (2004) clarifies that the term "purchasing power" is known by economists but may be interpreted in a novel manner, being relevant here as an expression of the strength that an economic agent possesses in the role of a buying client in the market. For that economic agent, it is possible to "request new technologic and ecologic standards, uncommon at the time, for the goods and services they consume (but that, due to the prospective scale of business, at present and at future, make it a worthwhile investment)" (Ferreira, 2004, p. 40, our translation)[3].

It is noteworthy that the government is expected to be used as a market driver for some time. For ten years Ipea (2005) has been looking at how public purchases could be used as a driving force for technologic innovation and support to small businesses in its information and debate review, questioning the legislation the regulates public tenders. Even before tenders were legally required to include sustainable development as one of their parameters, this was explicitly recognized as an obligation for the government. However, it was made difficult by a biased culture surrounding Law no. 8666, as it is expressed below:

> The federal government is the largest consumer in Brazil. Last year, it purchased 1.5 billion Real in medicine and half a billion in books, mostly textbooks for public schools. A trifling 108 million Real was directed to 1,058,719 printer cartridges. This refers only to direct administration, not including state-owned companies. Petrobrás single-handedly spent 1.85 billion dollars in goods and services in 2004, including orders for off-shore oil rigs which can be worth a billion dollars each.
> It is estimated that purchases made by the three levels of government, adding together the 5,560 municipalities, the 27 states and the federal area, amount to 120 billion Real, close to 6.7% of the Brazilian Gross Domestic Product (GDP). This enormous purchasing power, however, has not been used to strengthen micro- and small businesses, to promote local and regional development, or to improve technologic innovation. The straitjacket that is Law no. 8666/93, which regulates governmental purchases, prohibits any directing. The winner for the tender shall be the one who bids the lowest cost, which not always means the highest quality. (Ipea, 2005, p. 1, our translation)[4]

It is relevant to note that modifications to this legislation were significative, giving this instrument further legal legitimacy, which shall be discussed in the following topic.

2.2 LEGAL DEFINITIONS AND CONCEPTUAL BASIS FOR SUSTAINABLE PUBLIC PURCHASES

Let us consider a citizen who wants to purchase something, such as a pair of shoes. This person would usually search for the product in more than one store in order to select the best product for the lowest price. This is essentially the same process as a public tender. However, if our example citizen finds the best product for the lowest price in the very first store they visit, they might buy it immediately, which is disallowed in the public tender process. Due to regulations, the contracting agent will not immediately select the first bidder, as they are managing

3 Quoted from Portuguese: "reclamar novos padrões tecnológicos e ecológicos, até então inusuais, para bens e serviços (mas que, pela envergadura das promessas de negócio, presentes e futuros, fazem valer o investimento necessário)".

4 Quoted from Portuguese: "O governo federal é o maior consumidor do Brasil. No ano passado comprou 1,5 bilhão de reais em remédios e meio bilhão de reais em livros, especialmente didáticos. A bagatela de 108 milhões de reais foi destinada à aquisição de nada menos que 1.058.719 cartuchos para impressoras. Isso apenas na administração direta, sem contar as empresas estatais. Somente a Petrobrás adquiriu 1,85 bilhão de dólares em bens e serviços durante 2004, incluindo encomendas de plataformas de exploração que podem valer um bilhão de dólares cada.
Estima-se que as compras dos três níveis de governo, somados os 5.560 municípios, os 27 estados e a área federal, sejam da ordem de 120 bilhões de reais, algo em torno de 6,7% do Produto Interno Bruto (PIB). O poder gigantesco, entretanto, não tem sido usado para fortalecer micro e pequenas empresas, para favorecer o desenvolvimento regional ou incrementar o processo de inovação tecnológica. A camisa-de-força da Lei nº 8.666, de 1993, que rege as compras governamentais, impede qualquer tipo de direcionamento. O vencedor é aquele que oferece o menor preço, o que nem sempre é sinônimo de qualidade".

public financial resources, and consequently they must observe current rules concerning public purchases (Mukai, 1999). This way, public tendering is the legal way through which public institutions make their purchases and contracts. As Justen Filho (2011, p. 448, our translation) defines:

> Public tendering is an administrative process governed by law and by a previous administrative act, which defines objective criteria aiming at the selection of the most advantageous contract bid and the promotion of national development, observing the principle of isonomy and conducted by an institution provided with specific competence.[5]

This definition proposed by the author encompasses the end goal of Law no. 12349/10, which modifies Article 3 in the former Law no. 8666/93, the original one to regulate tender processes, as well as other succeeding laws with the same objective (such as Law no. 8987/95, no. 10520/02, no. 11079/04). Below are the original Article 3 from Law no. 8666/93, without modification (our translation):

> Article 3: Public tendering aims at guaranteeing that the constitutional principle of isonomy is observed, and that the most advantageous bid for the Administration is selected. The bids shall be processed and assessed in strict conformity to the basic principles of legality, impersonality, morality, equity, disclosure of information, administrative integrity, adherence to the bid invitation, objective judgment and correlated principles.

And the modification incorporated by Law no. 12349/10 (our translation):

> Article 3: Public tendering aims at guaranteeing that the constitutional principle of isonomy is observed, and that the most advantageous bid for the Administration is selected, as a means of promoting sustainable national development. The bids shall be processed and assessed in strict conformity to the basic principles of legality, impersonality, morality, equity, disclosure of information, administrative integrity, adherence to the bid invitation, objective judgment and correlated principles. (emphasis added)[6]

This regulation defined various legal instruments included in Law no. 8666/93, Article 3 (para. 5 to 12), as non-compromising or non-restrictive, many of which were aimed at protecting regional industry and production. This includes paragraph 5, which authorizes the appliance of a margin of preference in favour of national manufactured goods and services that meet Brazilian technical regulations.

In this context, until 2010, the principle of this norm was to select the most advantageous bid solely from an economic perspective. However, with the modification operated by Law no. 12349/10, the selection shall consider not only the economic advantage but also the promotion of sustainable national development (Justen Filho, 2011).

The modification operated by Law no. 12349/10 may be considered as the legal framework provided by the State for the legal legitimization of sustainable public purchases and pro-

5 Quoted from Portuguese: "A licitação é um procedimento administrativo disciplinado por lei e por um ato administrativo prévio, que determina critérios objetivos visando à seleção da proposta de contratação mais vantajosa e à promoção do desenvolvimento nacional, com observância do princípio da isonomia, conduzido por um órgão dotado de competência específica."

6 Quoted from Portuguese. Law no. 8666/93, Article 3: "Artigo 3º A licitação destina-se a garantir a observância do princípio constitucional da isonomia e a selecionar a proposta mais vantajosa para a Administração e será processada e julgada em estrita conformidade com os princípios básicos da legalidade, da impessoalidade, da moralidade, da igualdade, da publicidade, da probidade administrativa, da vinculação ao instrumento convocatório, do julgamento objetivo e dos que lhes são correlatos."

Law no. 12349/10, with modified Article 3: "Art. 3º A licitação destina-se a garantir a observância do princípio constitucional da isonomia, a seleção da proposta mais vantajosa para a administração e a promoção do desenvolvimento nacional sustentável e será processada e julgada em estrita conformidade com os princípios básicos da legalidade, da impessoalidade, da moralidade, da igualdade, da publicidade, da probidade administrativa, da vinculação ao instrumento convocatório, do julgamento objetivo e dos que lhes são correlatos. (grifo nosso)"

curements. Despite that, there is some debate regarding the existence of previous legislation that adopted sustainable criteria for public purchases and contracting (Law no. 6938/81; Law no. 8666/93; Law no. 9605/98; Decree no. 2783/93; creation of Public Administration Environmental Agenda (A3P), 2001; Federal Decree no. 4059/01; Federal Law no. 10520/02; Constitutional Amendment no. 42, 2003; Law no. 11445/07; Federal Decree no. 6204/07; Ministry of the Environment Ordinance no. 61, 2008; Law no. 12187/09; Law no. 12305/10; Law no. 12349/10; Normative Ruling no. 1, 2010), as well as subsequent legislation (Ruling no. 1752, 2011; Ministry of the Environment Ordinance no. 247, 2011; Law no. 12462/11; Law no. 12651/12; Decree no. 7746/12; Normative Ruling no. 10, 2012; Normative Ruling no. 2, 2014; Brazilian Federal Constitution Articles 3, 37, 170, and 225) and, further, international agreements for sustainability adopted by the State, which acquire the same status as Constitutional Law.

Regarding a conceptual basis, Biderman et al. (2008) clarifies that there are plenty of well-known and frequently used terms, such as "sustainable public procurement", "sustainable bidding", "ecoacquisition", "green procurement", "positive bidding", "environmentally friendly procurement", "sustainable public contracting". Therefore, the different terminology that may be used, in this paper and in others, may be considered, in essence, synonyms.

As indicated by ICLEI (2015), there is also the interconnected usage of the terms innovation and sustainability, and also Public Procurement for Innovation (PPI), which become a focal point for local-, national- and European Union-level policies.

Lember, Kalvet and Kattel (2011) indicate that, in regards to theory, public procurements for innovation may be understood as a special case of creation and protection of sprouting industries, or as a political measure aimed at diversifying local economies, creating a demand for new products or technologies. Uyarra and Flanagan also point out this aspect, stating that "public procurement is increasingly seen as an attractive and feasible instrument for the implementation of innovation policy" (2010, p. 140).

In summary, it is our comprehension that, by producing changes in the tendering and contracting process by means of a legislation change, as was done with Law 12349 (Justen Filho, 2011), the State has also innovated in its management process, regarding purchases, signaling at other possible innovations related to the various agents and processes linked to sustainable public procurements. As a result, sustainable procurements shall not be considered a new category, but simply an innovation, which is here understood as the implementation of something new in an already existing process, or an improvement of an existing process (ICLEI, 2015).

Apart from these aspects, sustainable public procurements may also be characterized, according to Biderman et al. (2008, p. 21, our translation) as

> a solution to integrate environmental and social considerations in all stages of the buying or contracting process by public (government) agents, with the objective of reducing impacts to human health, the environment and human rights.[7]

Steurer et al. (2007, p. 7) explain that the concept of SPPs may differ between countries and organizations. In the UK, SPPs are defined as

> a process whereby organisations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits, not only to the procuring organisation, but also to society and the economy, whilst minimising damage to the environment

7 Quoted from Portuguese: "uma solução para integrar considerações ambientais e sociais em todos os estágios do processo da compra e contratação dos agentes públicos (de governo) com o objetivo de reduzir impactos à saúde humana, ao meio ambiente e aos direitos humanos."

In this sense, sustainable public procurements aim to find a balance between the three dimensions of sustainable development, namely economic, social and environmental sustainability (Pnuma, 2012). According to Freitas (2012), the approach towards procurements and contracts is fundamentally based on the knowledge that the most advantageous bid will be the one that is capable of generating, directly or indirectly, the least negative impacts while providing most economic, social and environmental benefits. In the Brazilian context, as Freitas (2012, p. 257, our translation) indicates, sustainable public procurements (SPPs)

> are those which, through isonomy, aim at selecting the most advantageous proposal to the Public Administration, weighing as objectively as possible the social, economic and environmental costs and benefits, both direct and indirect. Or, in a more complete sense, they are the administrative procedures whereby an institution or agency of Public Administration summons interested parts – within an isonomic, sound and objective auction – aiming at selecting the best bid, that is, the most sustainable one, when said institution or agency seeks to establish an agreement for works, services, purchases, divestitures, lease, tenancy, licensing, always requiring, during the qualifying phase, verifiable proof that guarantees the completion of agreed obligations.[8]

In regards to sustainable public procurements, the main focus of the bid invitation is not limited to getting the lowest price. While this is still an important factor, especially when public funds are being discussed, the contracting agents ought rather to look at other factors that comply to the aim of promoting sustainable development through public purchases, at the same time that the principles of free competition are observed, seeking the most advantageous bid to the public interest in the form of the best quality good/service for the lowest price.

Next, our research looks at a history of sustainable public procurements for contextualization of their development in time, in order to furnish a better reflection regarding the need for their implementation, since they are essentially related to the concept of sustainable development.

2.2.1 The environment of historic developments of sustainable public procurements

In a worldwide context of environmental, social and economic awareness regarding the impacts of consumption and production, it became a demand that countries, in the position of consumers with a high purchasing power, position themselves as conscious consumers, adopting more sustainable standards for their consumption and production and, consequently, influencing their markets and promoting sustainable development (ICLEI, 2015).

The definition of sustainable development was drafted in 1987 by Norwegian Prime Minister Gro Harlem Brundtland in the UN report *Our Common Future*, also known as the *Brundtland Report*. It is defined therein as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1991, p. 125).

It is understood that sustainable development is a result of the balanced promotion of the multiple dimensions of sustainability. Social, environmental and economic dimensions need to develop in conjunction and in a strategic way, as a system, allowing for the highest quality of life, now and in the future, and enabling noticeable development. By following the practices of sustainability, sustainable development is supported (Sen, 2000; Sachs, 2008; Ferreira, 2012).

8 Quoted from Portuguese: "[SPPs] são aquelas que, com isonomia, visam à seleção de proposta mais vantajosa para a Administração Pública, ponderados, com a máxima objetividade possível, os custos e benefícios, diretos e indiretos, sociais, econômicos e ambientais. Ou, de forma mais completa, são os procedimentos administrativos por meio dos quais um órgão ou entidade da Administração Pública convoca interessados – no seio de certame isonômico, probo e objetivo – com a finalidade de selecionar a melhor proposta, isto é, a mais sustentável, quando almeja efetuar pacto relativo a obras e serviços, compras, alienações, locações, arrendamentos, concessões e permissões, exigindo, na fase de habilitação, as provas indispensáveis para assegurar o cumprimento das obrigações avençadas."

> The notion of sustainability is based on guaranteeing the availability of Earth's resources to our descendants, by means of management that contemplates environmental protection, social justice and healthy development of the economy in our societies. It does not suffice to reduce the pressure on our natural resources: we must guarantee the equality of opportunities to all people and the prosperity of productive sectors in order to allow our cities and nations to develop in balance, today and in the future. (Biderman et al., 2008, p. 14, our translation)[9]

Then, it can be considered that sustainable consumption does not regard only buying what is strictly necessary. More than that, it relates to selecting products which use fewer natural resources in their production, which provided decent jobs to those involved in the production process, and which may be reused or recycled, while sustainable production relates to taking the whole life cycle of products and services into consideration, using the best alternatives to diminish the possible environmental and social impacts caused during the production process (Biderman et al., 2008).

Therefore, a government, in adopting the role of a conscious consumer, uses its full purchasing power as a form of promotion of sustainable production, employing public procurements as an important instrument for that. From this arises the concept of sustainable public procurements. "By engaging in a proposal of sustainable development, public power must intervene to transform production standards and the habits of buying and consuming" (Betiol, 2012, p. 24, our translation)[10].

This approach of promoting development through public purchasing power, that is, by using sustainable purchases, in spite of not being a widespread concept, is not a new one. A decisive starting point for sustainable procurements arises in Agenda 21, one of the main products of the Rio-92 Summit. It brings, as one of its goals, action in favour of sustainable production and consumption and against a culture of waste (Betiol et al., 2012).

Taking Agenda 21 as a basis, its fourth chapter discusses two main areas of the summit: Focusing on unsustainable patterns of production and consumption; and Developing national policies and strategies to encourage changes in unsustainable consumption patterns (Agenda 21, 1995). The responsibility in regards to improving public purchasing policies is directly attributed to governments, as exposed by the report:

> Governments themselves also play a role in consumption, particularly in countries where the public sector plays a large role in the economy and can have a considerable influence on both corporate decisions and public perceptions. They should therefore review the purchasing policies of their agencies and departments so that they may improve, where possible, the environmental content of government procurement policies, without prejudice to international trade principles. (Agenda 21, 1995, p. 21)

Betiol et al. (2012) claims that, in the wake of Agenda 21, European countries, followed by the USA, Canada and Japan, led the way in adopting policies against unsustainable production standards. Throughout the world, pioneering initiatives in promoting practices with a smaller impact in natural ecosystems appeared. The creation of ISO 14000 in 1993, for example, as well as socio-environmental certifications and other "environment seal" initiatives, started influencing purchases and contracting, and became a visible marketing tool. In that same year, regulatory legal basis for procurements and contracting for the Public Administration is issued in the form of Law no. 8666.

9 Quoted from Portuguese: "A noção de sustentabilidade baseia-se no imperativo de se garantir a disponibilidade dos recursos da Terra para nossos descendentes, por meio de uma gestão que contemple a proteção ambiental, a justiça social e o desenvolvimento sadio da economia em nossas sociedades. Não basta reduzir a pressão sobre os recursos naturais, há que se garantir igualdade de oportunidades a todos os cidadãos e prosperidade dos setores produtivos para que cidades e nações se desenvolvam com equilíbrio, hoje e no futuro."
10 Quoted from Portuguese: "Ao se engajar em uma proposta de desenvolvimento sustentável, o poder público deve interceder para transformar padrões produtivos e as formas de se comprar e consumir".

In 2002, Brazilian Agenda 21 is published, in the form of a participative planning process and instrument towards sustainable development. Produced between 1996 and 2002 by the Commission for Policies towards Sustainable Development, it involved the participation of approximately forty thousand people from around the country. It was elaborated following the directions of the global Agenda 21, and was adopted by the government as part of the Multi-year Government Plan (PPA 2004/2007), highlighted as a public policy (Agenda 21 Brasileira, 2004).

The Brazilian Agenda 21 expresses as its objectives, in its strategies regarding economic instruments, to introduce socio-environmental criteria in the technical-legal devices that regulates the purchases of goods and services by the public power, in all hierarchy levels and all areas of competence, when and where it is appropriate. Consequently, this strategy directly relates to the process of sustainable public purchases (Agenda 21 Brasileira, 2004).

In the face of a consumption crisis and little development by governments during the Earth Summit 2002, ICLEI Europe introduced the Procura+ campaign with the aim of support public authorities in the implementation of sustainable purchases. The pioneers in complying to the campaign were European governments in Kolding (Denmark), Gothenburg (Sweden) and Zurich (Switzerland), according to Betiol et al. (2012).

> In March 2004, the European Union also adopted directives in regards to public procurements which established environmental criteria in their tendering procedures [...]. This way, the number of European countries that comply to sustainable tendering policies rises, and those include the United Kingdom, the Netherlands, Norway, Sweden, Austria and Switzerland. (Souza, Olivero, 2010, p. 3, our translation)[11]

In 2007, the project "Fostering sustainable public purchases in Brazil" was developed in Brazil, by initiative of ICLEI. ICLEI – Local Governments for Sustainability was created in 1990 and is the main worldwide association of cities and local governments dedicated to sustainable development. The aforementioned project was developed in a partnership with the states of São Paulo and Minas Gerais, and with the city of São Paulo (the three highest GDPs in Brazil, after the Federal Government), aiming at leading the way to implementing sustainable public procurements throughout the country by example (ICLEI, 2015). In 2008, São Paulo created the State Program for Sustainable Public Contracting, instituted by State Decree no. 53336/08.

However, it is only in 2010 that Brazil establishes a more appropriate legal structure towards sustainable consumption. The necessity of monitoring, evaluate and perfect the progressing policies and practices becomes evident. In January of the same year, Normative Ruling no. 1, issued by the Logistics and Information Technology Secretariat (SLTI) of the Ministry of Planning, Budget and Management (MPOG), established that the institutions that compose the Federal Public Administration should abide to environmental sustainability criteria in the extraction, manufacture, use and disposal processes of goods and raw materials, in the purchase of goods, and in the contracting of services and works.

In August, Law no. 12305/10 instituted the National Policy for Solid Waste, which lifted sustainable procurements to a level of primary interest for all federal entities, due to its indicating a preference for recycled and recyclable materials in the event of public purchases and contracts, as well as a preference for goods, services and works that present criteria that are compatible with socially and environmentally sustainable consumption.

11 Quoted from Portuguese: "A União Europeia adotou também diretivas sobre licitação sustentável, em março de 2004, que estabelecem critérios ambientais em seus procedimentos licitatórios [...]. Assim, cresce na Europa o número de países que adotam medidas de licitação sustentável, entre eles encontram-se o Reino Unido, Países Baixos, Noruega, Suécia, Áustria e Suíça."

Lastly, in December 2010, Law no. 12349/10, a modification of Law 8666/93, included sustainable national development as one of the objectives of public procurements and tenders (Betiol et al., 2012).

In November 2011, the Action Plan for Sustainable Production and Consumption (PPCS) is issued. After the Brazilian adherence to Marrakech Process, the National Management Committee towards Sustainable Production and Consumption was instituted in 2008, coordinating many Ministries, private business partners and members of civil society, in order to elaborate the PPCS.

This document is considered the backbone of governmental, productive sector's and society's actions towards more sustainable production and consumption standards. The first cycle of the plan, from 2011 to 2014, had its focus on: Education for sustainable consumption; Retail and sustainable consumption; Increase in recycling; Sustainable public purchases; Sustainable building; and Public Administration Environmental Agenda – A3P (Brasil, 2015).

In 2013, Decree no. 7746/13 establishes criteria, practices and guidelines for sustainable national development in public contracts, as it regulates Article 3 of Law no. 8666/93 and institutes the Inter-Ministerial Commission of Sustainability in the Public Administration (CISAP) (Betiol et al., 2012).

By what has been described, it is noticeable that the discussion of sustainable public procurements is not a recent one, although Brazil has only had major developments during the past ten years, primarily the states of São Paulo and Minas Gerais and the city of São Paulo, which were pioneers, and more recently, in the past seven years, the Federal Government, after the modification of Law no. 8666/93. However, the implementation of sustainable practices is far from being something ordinary in all tendering processes.

Because of that, the next topic will discuss how limiting factors are perceived in the context of sustainable public procurements.

2.3 OBSTACLES TO THE IMPLEMENTATION AND LEGITIMACY OF SUSTAINABLE PUBLIC PURCHASES

This topic aims at clarifying the main obstacles towards the broad implementation of sustainable public procurements, as indicated by national and international literature. However, they are to be considered in their intrinsic connection to public contracting agents (those who manage purchases in the public sector) in such a way that the obstacles are not reified, that is, they shall not be deemed as concrete objects.

The purchasing and contracting processes are executed by agents (public servants) who, in general, constitute part of the purchasing sector of the institutions. Betiol et al. (2012) indicate that the purchasing sector needs to be aligned to the sustainability strategy of the institution. Therefore, these professionals (considered here as the public contracting agents) need to receive specific training and qualification. These agents must know regulatory frameworks, concepts, sustainability criteria and good practices.

Walker and Brammer (2009) defend that, while both public and private sector buyers need are concerned with cost reductions, public agents have the additional task of bringing social and environmental benefits within their purchasing processes, in order to meet the responsibilities of the government towards society.

In this context, Walker and Brammer (2009, 2011) report facilitating and limiting aspects to the implementation of sustainable public procurements in their studies, the first of which was done exclusively in the UK, and the second of which was developed at an international level, comparing different areas of the world (United Kingdom, Western Europe, Eastern Europe, Scandina-

via, USA/Canada, among other areas). The respondents were either the responsible professionals for the purchases in their workplace (public institutions), or their managers.

The authors evidenced that the obstacles regarding sustainable purchases that were perceived were, according to their relevance: financial, regarding managerial/structural administration, informational, regarding product quality, political/cultural, legal, and regarding priority.

Similarly, Betiol et al. (2012) present a piece of research developed by FGV and ICLEI Brasil, alongside 50 organizations that include public companies and institutions in Brazil (which are participants in sustainability forums), in which the following aspects are characterized as obstacles: informational, financial and managerial/structural.

These studies evidenced that the financial obstacle is the most frequently mentioned one, demonstrating the public managers' resistance to factors such as higher price of sustainable items. However, Biderman et al. (2008, p. 43, our translation) claims that "if implemented adequately, it shall not include additional costs […]. In many cases, there may even be a higher value for the same or even a smaller price"[12].

> In the city of Kolding, a new school building was projected to help the community save over 50% in electricity and maintenance costs, simply by installing a passive ventilation system. In the case of energy efficient products, a "high" purchase price is usually more than compensated by even higher long-term savings. For example, the price of compact fluorescent lightbulbs is higher than that of conventional incandescent lightbulbs, but they last ten times longer and consume a quarter of the electricity required by incandescent bulbs. Due to this, they bring savings to the public finances in their lifespan. (Biderman et al., 2008, p. 44, our translation)[13]

The informational obstacle refers to a lack of conceptual knowledge and unfamiliarity with the specificity of sustainable products and services, which indicates insufficient qualification of the professionals (Walker and Brammer, 2011; Machado and Neto, 2014). The study developed by Castro, Freitas and Cruz (2014) in the context of federal higher education institutions in the south of Brazil demonstrated that the use of sustainable criteria in tendering processes requires not only regulations, but also training of the managing professionals in the sector of public procurements, for them to respond effectively to the requirements.

The managerial/structural administration obstacle refers to the absence of support from managers, in an internal relationship that lacks hierarchical support towards the employment of sustainable public purchase policies (Walker and Brammer, 2011; Machado and Neto, 2014). Given this background, the study developed by Costa (2012) in the Belo Horizonte city administration evidenced that the tendering management did not incorporate the implementation of SPPs because they believed it was a new topic, and as such, it needed further studies and more maturity of the principles in order for the team and institutions of the municipal administration to put SPPs into practice. As a result, public servants have been directed to symposiums and courses that approach sustainable public procurements for further qualification.

The study also reveals that both the manager responsible for recording prices and the manager responsible for recording materials did not consider any sustainable criteria in their

12 Quoted from Portuguese: "Se implementado adequadamente, não deve envolver custos adicionais [...]. Em muitos casos pode-se obter mais valor pelo mesmo custo ou até por menos."

13 Quoted from Portuguese: "Na cidade de Kolding, um novo edifício escolar foi projetado para ajudar à comunidade à economizar mais de 50% em gastos com eletricidade e manutenção, simplesmente ao instalar um sistema passivo da ventilação. No caso de produtos energéticos eficientes, um preço de compra "elevado" está normalmente mais do que compensado por economias a longo prazo mais elevadas. Por exemplo, o preço das lâmpadas fluorescentes compactas é mais elevado do que o das incandescentes convencionais, mas elas duram 10 vezes mais e consomem somente 1/4 da eletricidade que as incandescentes. Por isso, oferecem economia em contas públicas durante sua vida."

decisions and actions. The former also reported a great difficulty in implementing sustainable purchases due to a lack in qualified public servants.

Costa (2012) also points to a delicate situation, because, as indicated, even managers have difficulty in grasping the new end goal of public purchases, making it even harder for its implementation due to a lack of people who can spearhead these projects and make their demands towards a sustainable national development be met through the execution of sustainable public procurements.

The political/cultural obstacle is understood, within the context of an organizational structure, as a resistance or fear of change. One of Walker and Brammer's (2009) interviewees comments on the fear of change, characterizing it as one of the barriers that causes people to avoid getting involved in the sustainability agenda. For Hegenberg (2013), institutional culture was one of the main barriers to the implementation of sustainable public procurements in federal higher education institutions. However, this obstacle is characterized as a lesser item in view of financial factors of price/costs of implementation, knowledge level, and supply of sustainable goods and services.

The obstacle regarding the quality of available products is exposed in the difficulty of that suppliers in the market have in meeting the possible sustainable criteria. (Walker and Brammer, 2011; Machado and Neto, 2014). Fonseca (2013) demonstrates that the market of sustainable products and services is not yet fully prepared to meet the demands for sustainable purchases of the public sector, but it is in an adaptation process. The current market may be categorized in three tiers: the first of which is fully ready to meet the demand for sustainable purchases; the second of which in an intermediate situation, close to the first; and a third that is not yet ready.

The priority obstacle is related to the ranking of priorities, by the organization or institution, in regards to other criteria that may be deemed for relevant in the decision-making process, while legal obstacles refer to the deficiency in legal devices and frameworks that lay foundation to the employment of sustainable criteria in the contracting processes (Walker and Brammer, 2011; Machado and Neto, 2014).

Brammer and Walker (2007) comment that there is clear legal support internationally for sustainable public procurements to be seen as investment. Nationally, Ferreira (2012, p. 26, our translation) indicates that

> what was envisaged in the academia as a possibility (around 2009) became a requirement, as "general norm", in finalistic tenders, thus compelling all public power institutions and members of all political entities to pursue the legitimally.[14]

Within this context, in regards to the obstacles towards the implementation of sustainable public purchases, we aim at proposing a reflection about the legality and legitimacy of this setting. While we shall not extend into the sociological roots of power relationships and legitimacy proposed by Max Weber and Habermas, or even the legal aspects of Kelsen, we will discuss, in a manageable manner, a comprehensible differentiation between what is legal and what is legitimate.

Kelsen defends that, in a stable legal order (that is, not in a context of revolution or unrest), legitimacy equals legality. All that is legal, that meets the procedures determined by legal order, is validated until being substituted by a different norm within this same legal order. This is the principle of legitimacy: all that is legal is also legitimate (Kelsen, 1998).

However, Siqueira (2007) claims that Habermas demonstrates the legitimacy of legal order is not only linked to legal aspects but also to a relationship between the elaboration of norms and popular participation, such that the power of the community legitimates the norma-

14 Quoted from Portuguese: "aquilo que se vislumbrou, na academia, como possibilidade (nos idos de 2009) passou a ser exigido mediante "norma geral" de licitações de raiz finalística, portanto obrigando todos os órgãos de poder e entidades de todos os entes políticos à sua perseguição legítima."

tive decisions. Therefore, the fact that a norm is legal does not make it automatically legitimate (Siqueira, 2007; Borreto, 2012).

In a more sociological approach, then, legitimacy refers to the act of awarding of recognition to a person, to a process, to an act, to an ideology, etc., so that it is acceptable within the community. Consequently, legitimacy refers to an agreement between the members of a community. In this manner, it is perceived that "the legitimacy is the legality supplemented with valuation. Within the concept of legitimacy are the beliefs of a particular time, that governs the expression of consent and obedience" (Massuanganhe, 2014, p. 121, our translation)[15].

Stemming from the discussions based on the historic background that produced SPPs and the legal framework involving the regulation of public procurement processes, presented previously, it is understood that the sustainable public procurements are considered legal and legally legitimate by the State, as it is justified by the State in creating and modifying regulations that start to include the process of sustainable public procurements. This reaffirms the State's intentions in demanding criteria that are considered sustainable in multiple dimensions (environmental, social, economic) as a legitimate and compulsory act.

Thus, it is noticeable that the legal obstacle perceived by contracting agents tends to be a fallacy. As Freitas comments (2012, p. 138, our translation), "fallacies are logical errors, conscious or unconscious, deceptive and/our self-deceptive, that serve the purpose of misleading and forming erroneous pre-comprehension, conducive to illegitimate prejudice, stereotyping and uninformed decisions"[16], to the point that it becomes a constitutional and legal obligation to execute sustainable public purchases in all, and by all, of the Public Powers (Freitas, 2012).

As one may notice, there is a gap in this context. Sustainable public procurements are legally legitimate from a legal order perspective, but studies show that, for public contracting agents, the legal aspect is still considered an obstacle. Therefore, there seems not to be a consensual legitimation by the community that is responsible for daily executing the process at hand.

Part of this conflict may be due to questioning in regards to whether the inclusion of sustainability criteria in public tendering hurts the principles of competitivity, isonomy and efficiency, although the inclusion of said criteria do not violate any of these principles. The binding to the principles remains, but only for those that are able to fulfil the demands of environmental sustainability which are required in the good or service in bidding process. It is, therefore, one of the public contracting agent's obligations to evaluate and ponder the best cost/benefit relationship before the tender, without ignoring the environmental, social and economic costs, of each and every administrative choice (Justen Filho, 2011; Freitas, 2012; Garcia and Riberito, 2012).

In essence, the theoretical context allows us to observe obstacles that surround the adoption of sustainable public procurements due to varied aspects, which in turn leads to non-compliance, by most tendering processes, to the legal principle of employing a sustainable purchasing process.

In the next section, we will present the methodology selected in our research.

3 METHODOLOGY

This study employs a quantitative-descriptive approach. Gil (2010) explains that descriptive research can be adopted when there is an interest in the opinions, attitudes and beliefs of a certain group,

15 Quoted from Portuguese: "A legitimidade é a legalidade acrescida de sua valorização. No conceito de legitimidade entram as crenças de determinada época, que presidem a manifestação do consentimento e da obediência."

16 Quoted from Portuguese: "Falácias são erros lógicos, conscientes ou inconscientes, enganadores e/ou auto enganadores, que servem para ludibriar e formar pré-compreensões equivocadas, conducentes a preconceitos ilegítimos, estereótipos e más decisões."

which is suitable for this research, since its objective was to analyze the perception of public contracting agents in regards to sustainable public procurements and their adoption. This research employed, for the gathering of primary data, closed-ended survey. The survey was developed by the authors using the theoretical debates in national and international studies concerning sustainable public contracting, such as Brammer and Walker's (2009; 2011), Fonseca's (2013) and Hegenberg's (2013).

The questions asked focus primarily on characterizing the sample by identifying the position/job, time in the position, location, whether it is a managerial position, whether the interviewee participates in the draft of auction notices, as well as level of education. Afterwards, 22 statements (table 1) were presented, with the first 14 using Likert scale using value-attributed answers of 1 (completely disagree) to 10 (completely agree), followed by eight possible limiting factors that might hamper the implementation of sustainable public procurements, where answers were provided also using Likert scale, with values 1 (least difficulty) to 10 (most difficulty).

In spite of authors referred to in this study having used five- or six-point Likert scales, we opted for a ten-point scale due to its comparability to five-, seven- or ten-point scales in analytical tools, as indicated by Dawes (2007).

After elaborating the survey, it was forwarded to the advisor of this research for examination and execution of a preliminary test. This test was performed with 12 researchers from different areas (among which were law, economics, accounting, business administration, and a professional responsible for the purchases of a public institution) in order to evaluate and adjust the research instrument. Without a databank that disclosed contact information from public contracting agents, a limitation similarly found by Walker and Brammer (2009), it was not feasible to perform the test with specialists in the area. Even professionals responsible for public purchases in municipal and state level were not aware of means to contact specialists in the field.

In view of these setbacks, an alternative was meeting specialists in person at a symposium that gathered professionals who worked with this theme. Then, the gathering of data happened on 27 and 28 August, 2014, at the 2º Seminário International sobre Contratações Públicas Sustentáveis (2nd International Summit on Sustainable Public Contracting) in Brasília, DF. The summit was promoted by the Logistics and Information Technology Secretariat (SLTI) of the Ministry of Planning, Budget and Management (MPOG), partnered with the British Embassy in Brasília and ICLEI – Local Governments for Sustainability, with support from the Federal Court of Auditors (TCU), aiming at discussing, disseminating and training managers in relation to sustainable public procurements.

The target audience were public servants that work in the area of auctions, but suppliers, researchers and foreign public agents were also present. There were 240 vacancies for participation, and 487 people enrolled, according to the organizers. As such, we can consider that the population of the study were the total participants of the event.

It is, therefore, non-probabilistic intentional sampling, as we consider that the participants in the summit are characteristic of the population of interest for being directly related to the proposed theme of this study. Also, we employed the method of convenience sampling, for that it was a part of a readily available population.

After receiving authorization from the organizers of the summit, the survey was distributed in person to the participants during their registration, and they kindly volunteered to answer it after understanding the scope of the research. It was requested that the survey was later returned at an appropriate place. Approximately 209 copies of the survey were handed out, of which 78 (37%) were returned fully answered.

Following the data collection phase, the confidence level was determined. The survey presented a Cronbach's alpha of 0,749 in regards to the 22 questions (henceforth *variables*) answered

with a Likert scale. According to Hora et al. (2010), Cronbach's alpha estimates the reliability of a survey being used in research. It measures the correlation of responses by analyzing the overall characteristics of the responses given by respondents, as an average correlation between variables.

We used statistical procedures for analyzing the data. The data were analyzed in a descriptive manner and also using cluster analysis, employing statistical analysis software Statistical Package for the Social Sciences (SPSS). In regards to the level of agreement between respondents, we calculated the average score of each variable for our analysis, considering an average between 1.0 and 3.9 as low agreement (negative perception), an average between 4.0 and 7.0 as moderate agreement (moderate perception), and between 7.1 and 10.0 as high agreement (positive perception).

The cluster technique allows for the creation of homogenous groups in function of quantitative variables (Pestana and Gageiro, 2014). It becomes possible, then, to identify the main differences between interviewees that constitute each of the determined groups. This approach allows the researcher to identify variables that decisively influence each of the groups, and also the different interviewee's perceptions about the topic.

Firstly, the data were analyzed using hierarchical clustering, with the objective of determining the number of clusters to be defined by their dissimilarity, or their distance. The further the objects were, the more dissimilar they were, and the weaker is their connection. This distance (in a multidimensional space of variables) was calculated in Euclidean metrics, using raw data, and is not affected by addition, but it is so by a scale change.

The hierarchical clustering analysis enabled us to see the formation of four clusters, which allowed us to use this number when analyzing the data in a non-hierarchical clustering method. This way, it was possible to identify which variables brought the most dissimilarity to the cluster formation. We will present this information ahead, during the description and analysis of the results.

4 DESCRIPTION AND ANALYSIS OF THE RESULTS

4.1 DESCRIPTIVE ANALYSIS OF CLUSTERS

In this first part, we will describe the cluster formation through the statistical analysis of the data using SPSS. Based on the information presented in Table 1, the variables that most distinguished clusters present a higher F value in case they are significative at α 5% confidence level. In this case, the results indicated that variable 10, which refers to respondents' participation in other training event (forums, seminars, training courses) regarding sustainable public procurements, was the one which most distinguished clusters.

The variables that were used in the score analysis, in order to differentiate clusters, were 1, 5, 10, 11, 14, 16, 17, 18, 19, 21 and 22. They were used with a descriptive purpose, looking at maximum differentiation between clusters in order to identify their main distinct characteristics.

Table 1 – Anova Test

No.	Variable	F	Sig.
1	I am familiar with the concept of sustainable development.	6.095	0.001
2	Public procurements have an impact on sustainable development.	1.330	0.271
3	Sustainable public procurements have an impact on sustainable development.	0.506	0.679
4	The current legislation provides complete and total legal support for the execution of sustainable public procurements.	1.635	0.189
5	It is difficult to use sustainable criteria in public bids.	7.854	0.000

6	The institution of which I am part uses sustainable criteria in its bids.	0.874	0.459
7	The government is able to promote the production of environmentally correct products by means of its purchasing power.	1.182	0.323
8	Suppliers are prepared to meet the demand for sustainable purchases.	2.722	0.050
9	The institution to which I provide my service sets sustainability criteria in its contracting process, for effect of Normative Ruling no. 1/2010.	1.531	0.214
10	Before this summit, I had already participated in another training event (forum, seminar, training course) about sustainable public procurements.	155.299	0.000
11	I feel prepared / qualified to work with sustainable bids.	12.010	0.000
12	By adopting sustainable criteria in the execution of public procurements, I notice an increase in expenses due to a higher cost of the products and to a smaller competition in the sustainable products market.	1.788	0.157
13	Sustainable bids are economically viable in the long term.	2.747	0.049
14	The adoption of sustainable criteria in an auction tendering process, which uses the lowest price as an appraisal criterion, is possible.	7.740	0.000
15	Legislation.	6.714	0.000
16	Qualification / Knowledge about the topic.	10.816	0.000
17	Lack of sustainable products in the market.	10.354	0.000
18	Few businesses in compliance with environmental legislation.	19.451	0.000
19	Culture (change in a standardized process).	18.789	0.000
20	Costs.	5.339	0.002
21	Specifications in the auction notice.	8.164	0.000
22	Inspection and auditing by responsible institutions after the bidding process.	10.947	0.000
Source: research data (2016).			

The **first cluster**, consisting of 13 interviewees, presented the lowest scores in regards to the concept of sustainable development. They have a low score in relation to participation in training events and to possibility of adoption of sustainable criteria in their auctions.

In summary, we may consider that this cluster consists of respondents who are beginners in the topic, who possibly had the least knowledge about the theme and its employment and who, by extent, could not debate the difficulties of its use. Because they were also the highest average time in position among the respondents, this may indicate a resistance to the new legal objective of public procurements.

The **second cluster** included 25 respondents, and was characterized by the highest score in regards to awareness about the topic of sustainable development as well as to participation in training events (forums, seminars, training courses), which means a high knowledge related to the adoption of sustainable criteria.

Beyond that, this cluster also includes the respondents with the highest score for awareness of their own qualifications for handling sustainable public procurements. However, among the variables that were indicated as limiting factors, respondents considered that the behavior change (change in a standardized process) is the most difficult aspect.

In summary, the second cluster is composed of the most qualified respondents in regards to the topic, which grants them a lower level of difficulty in relation the theme, but they still indicate the change in behavior as the most challenging aspect.

The **third cluster** was composed of 19 interviewees and presented high scores in regards to knowledge about the topic and participation in other events, similarly to the second cluster.

This cluster presented the highest scores in variables related to difficulties in actual use of sustainable public procurements. The respondents indicated a lack of sustainable products and a small number of businesses complying to environmental legislation in the market. As well

as that, they consider a change in behavior, the current legislation and the inspections by responsible institutions as complicating factors for the employment of sustainable public procurements.

In summary, the third cluster had a predominance of qualified respondents, but ones who had a perception of difficult obstacles towards the use of the process.

Lastly, the **fourth cluster** comprised 20 interviewees, who indicated a high score in regards to the difficulties of employing sustainable criteria and a low score is regards to attending other training events. As such, this cluster is characterized by low scores concerning the perception of being well-prepared and qualified for working with sustainable tenders.

This cluster presented the highest scores in regards to difficulty related to qualification and knowledge about the topic and to changing the current behavior (changing a standardized process), indicating those as the most challenging obstacles to employing sustainable public procurements. In summary, the fourth cluster includes predominantly not-yet-qualified respondents, who, as a result, consider the use of sustainable criteria in public purchases as a difficult task.

In general, considering all clusters, 70% of respondents are part of auction drafting teams. The third cluster had the highest proportion of respondents in decision-making or managerial positions, while the first cluster had the lowest number.

During the cluster formation, we noticed that the cultural factor (change in a standardized process) was indicated as the most commonly perceived obstacle in regards to putting the new legal objective of public procurements into effect. This indication was observed in three clusters, and even more noticeably among interviewees with a higher score for qualification and knowledge about the topic, which highlights the importance of a behavior change for the use of sustainable criteria.

Another important analysis is the efficiency of contracting agents' training and qualification. In the second cluster, for example, where there were high scores for knowledge and participation in training events, there also were high scores indicating difficulties in various aspects.

This confirms what was claimed by Castro, Freitas and Cruz (2014), who identified, among their respondents, the lack of information and the lack of technical know-how about environmental aspects as the main obstacles in the path of using sustainable tendering processes.

Some of the variables were not examined during the cluster analysis due to their not indicating a discretion factor for their formation. In the following section, we will present a complete outlook of the interviewed public servants' perceptions.

4.2 ANALYSIS OF THE OUTLOOK OF THE INTERVIEWEES' PERCEPTIONS

In this section, we aimed at characterizing a complete outlook of the interviewees' perceptions. The first aspect we analyzed was the perception of public servants regarding the use of the government's purchasing power for the promotion of sustainable national development, in the form of sustainable public procurements.

The data were then analyzed from a complete perspective, by adopting descriptive statistics, and the levels of perception for each variable were identified.

Table 2, below, presents the variable with an average score higher than 7.1, which indicates a positive perception and high level of agreement among respondents.

Table 2 – Descriptive statistics of the variables with positive perception

No.	Variable	N	Minimum	Maximum	Avg.	SD
1	I am familiar with the concept of sustainable development.	77	2.0	10.0	7.9	1.9

2	Public procurements have an impact on sustainable development.	77	5.0	10.0	9.3	1.2
3	Sustainable public procurements have an impact on sustainable development.	77	2.0	10.0	9.1	1.7
12	By adopting sustainable criteria in the execution of public procurements, I notice an increase in expenses due to a higher cost of the products and to a smaller competition in the sustainable products market.	77	1.0	10.0	7.6	2.1
13	Sustainable bids are economically viable in the long term.	77	2.0	10.0	8.1	2.1
14	The adoption of sustainable criteria in an auction tendering process, which uses the lowest price as an appraisal criterion, is possible.	77	1.0	10.0	7.9	2.7

Source: research data (2016).

The analysis allowed us to identify that the contracting agents are familiar with the concept of sustainable development, although our research did not seek to find how much knowledge interviewees in fact have.

Variables 2 and 3 allow us to understand the agents' positive perception in regards to the impact that sustainable public procurements might have towards a sustainable development, along with the recognition of the government's purchasing power representing a possible promoter of sustainable national development.

Another very relevant factor is the perception of the agents concerning the economic viability of sustainable purchases in the long term, although they also indicate that products that meet the criteria usually have a higher cost.

Next, we present the perception of contracting agents in relation to the execution of sustainable purchases and their qualification for executing them.

Table 3 – Descriptive statistics of the variables with moderate perception

No.	Variable	N	Minimum	Maximum	Avg.	SD
4	The current legislation provides complete and total legal support for the execution of sustainable public procurements.	77	1.0	10.0	5.4	2.0
6	The institution of which I am part uses sustainable criteria in its bids.	77	1.0	10.0	5.7	2.6
7	The government is able to promote the production of environmentally correct products by means of its purchasing power.	77	1.0	10.0	6.1	2.6
9	The institution to which I provide my service sets sustainability criteria in its contracting process, for effect of Normative Ruling no. 1/2010.	77	1.0	10.0	5.5	2.8
10	Before this summit, I had already participated in another training event (forum, seminar, training course) about sustainable public procurements.	77	1.0	10.0	6.2	4.0
11	I feel prepared / qualified to work with sustainable bids.	77	1.0	10.0	5.3	2.5

Source: research data (2016).

Table 3 indicates the variable that were, on average, rated with moderate perception. It is noticeable that the respondents do not feel entirely prepared or qualified for working with sustainable public procurements, similarly to their participation in other training events, such as forums, seminars, training courses or workshops related to sustainable public procurements.

The respondents also lack a positive perception towards the current legislation, consid-

ering that there is not enough support from regulations in order for them to employ sustainable public procurements. Consequently, these factors possibly influence in the compliance to Normative Ruling no. 1/2010, which, as it has been shown, sets sustainability criteria for contracting processes. The use of sustainability criteria in contracting and tendering processes, as indicated by the responses for variable 6, implies the compliance to Law no. 8666/93 and seems to confirm the influence we suppose.

Table 4 presents the negative perception of contracting agents in regards to the behavior of the market. In summary, they believe suppliers are not yet prepared to meet tha market's demands towards sustainability.

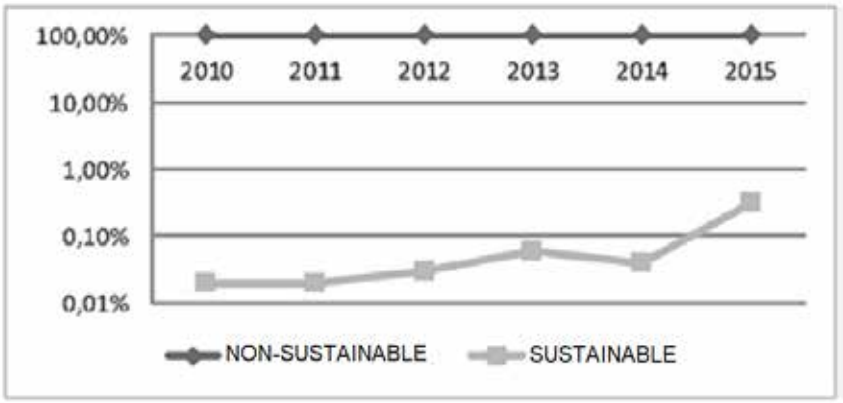
Table 4 – Descriptive statistics of the variables with negative perception

No.	Variable	N	Minimum	Maximum	Avg.	SD
8	Suppliers are prepared to meet the demand for sustainable purchases.	77	1.0	9.0	3.7	1.8

Source: research data (2016).

This perception originates from the present context of the market and its production standards, which the government seeks to change. Most of the current market is not concerned with producing sustainable goods and offering sustainable services. In light of that, the government must use its purchasing power in order to press the market for a change. Similarly, Oliveira (2008, p. 30, our translation) claims that "the inclusion of environmentally-friendly criteria in public purchases is one of the instruments for sustainable urban management and it aims to bring ecologic concepts to the market"[17].

Such limiting factor can be clearly seen in Graph 1. Sustainable public purchases do not yet account for 1% of all auctioned purchases. Their growth is extremely slow, which hampers a strategy that promotes them.



Graph 1 – Development of the value proportion of sustainable items in auction purchases

The opposite of this projection would likely describe a market in which production and services were based on sustainable aspects, in their multiple and interconnected dimensions. Below, Table 5 provides the expressive numbers to which the graph refers:

17 Quoted from Portuguese: "a inserção de critérios ambientais nas aquisições públicas é um dos instrumentos da gestão urbana sustentável e visa à integração dos conceitos ecológicos ao mercado."

Table 5 – Quantities and costs of public procurements in 2010-2015.			
Type of item	Quantity of purchases	Cost	Year
Non-sustainable	268,339	R$ 59,004,629,947.58	2010
Sustainable	1,938	R$ 10,653,964.66	
Non-sustainable	178,455	R$ 38,806,564,556.46	2011
Sustainable	1,109	R$ 8,390,938.68	
Non-sustainable	169,128	R$ 66,583,131,526.30	2012
Sustainable	1,195	R$ 22,911,003.13	
Non-sustainable	159,326	R$ 51,396,926,091.43	2013
Sustainable	1,200	R$ 28,490,802.73	
Non-sustainable	144,011	R$ 74,235,634,466.97	2014
Sustainable	1,021	R$ 33,122,988.97	
Non-sustainable	105,423	R$ 43,774,808,232.21	2015
Sustainable	901	R$ 130,425,711.00	
Source: Painel de Compras do Governo Federal (2016).			

In this direction, Oliveira and Santos (2015) present in their study the actions of 250 municipal leaders in Europe, who signed the Hannover Call, a document in which they express full awareness of their purchasing power in the market and agree to direct it towards development. This dissemination of knowledge is fundamental for the present state of affairs to be inverted and sustainable purchases become an efficient instrument towards development.

With the aim of gathering more information that may guide future strategic decisions to promote this practice, this study sought to identify limiting factors in the employment of sustainable criteria in public procurements.

A number of factors were listed and the respondents were asked to indicate in a scale how difficult each was in regards to the adoption of sustainable criteria in public procurements. Table 6 presents the perception of the interviewed contracting agents in relation to the difficulty of each aspect for the use of sustainable public procurements.

Table 6 – Descriptive statistics of the variables regarding difficulty of implementation						
No.	Variable	N	Minimum	Maximum	Avg.	SD
5	It is difficult to use sustainable criteria in public bids.	77	1.0	10.0	7.4	2.4
15	Legislation.	77	1.0	10.0	6.9	2.0
16	Qualification / Knowledge about the topic.	77	1.0	10.0	6.6	2.6
17	Lack of sustainable products in the market.	77	1.0	10.0	7.2	2.3
18	Few businesses in compliance with environmental legislation.	77	1.0	10.0	7.5	2.3
19	Culture (change in a standardized process).	77	1.0	10.0	8.2	2.2
20	Costs.	77	1.0	10.0	6.9	2.4
21	Specifications in the auction notice.	77	2.0	10.0	6.8	2.5
22	Inspection and auditing by responsible institutions after the bidding process.	77	1.0	10.0	7.2	2.5
Source: research data (2016).						

Variable 5 indicated a positive perception in relation to the difficulty of using sustainable criteria in public bids. Similarly, the variable rated as the most difficult referred primarily to culture (variable 9), related to changing stablished and standardized processes.

Variables 17 (lack of sustainable products in the market), 18 (small number of businesses that comply to environmental legislation) and 22 (inspections and auditing of the bidding process) were also indicated as obstacles to sustainable public procurements.

Castro, Freitas and Cruz (2014) confirm that the perception of a small number of suppliers is among the main obstacles faced in the implementation of sustainable public procurements. Because of this perception of a limited number of suppliers, agents have the incorrect notion of breaking the principles of isonomy and open competition that should be observed. This notion is incorrect since all the suppliers that fit the determined sustainability demands may compete and supply the State. Therefore, it remains a process with undeniable fairness which shall serve the objectives of selecting the bid that is the most advantageous for national development.

We then propose a short reflection on the cycle of this process. The agent needs to understand their key role in the procedures because, as Dias and Costa (2000, p. 5, our translation) indicate, "it is not possible, today, to imagine a buyer that is concerned solely with making the purchase, without evaluating the impact of this operation in relation to other processes that are integrated to a productive or operational chain of organizations"[18].

In this sense, a professional in the area of government purchases that does not have a comprehensive vision about products, from the sourcing of the raw materials to the disposal, including each and every step of their lifecycle, and how they influence the environment, considering the multiple dimensions of the concept of sustainability, is unimaginable.

This way, from the moment that the cultural obstacle is surpassed and sustainable criteria are adopted and included in auction notices, displaying the real products and services that are in the interest of the public administration, the market shall foresee this convergence of intentions, and shall make these criteria guidelines of its productive process, in order to become an adequate supplier for these demands. As a result, competitiveness and availability of products shall increase.

In regards to inspections, this constitutes a paramount controlling aspect, since their occurrence is a clear positioning in favor of sustainable contracting. In a study by Costa (2011), an auditing report by TCU (Federal Court of Auditors) revealed that 73% of institutions admitted to not making sustainable procurements, in non-compliance to Normative Ruling of the Ministry of Planning (Ruling no. 1752/2011). The author comments that, "however, with the clear inclusion of the expression 'sustainable' in the general law of auction notices, the dissent seems to be settled, ending concerns of its implication" (Costa, 2011, p. 15, our translation)[19]. What we find that remains different from the results of this study is that inspections and auditing are still perceived as obstacles.

This study shows, similarly to Castro, Freitas and Cruz (2014), that simply designing legal devices is not enough, which is exacerbated, on the other hand, when studies such as that by Silva (2014) conclude that there is a lack of motivation and awareness of public servants from the State Court of Auditors in Santa Catarina (TCE-SC) in relation to requesting and using sustainable products and services or, furthermore, to the adoption of a sustainable purchasing guide.

The factors that were considered to be moderate obstacles included legislation, knowledge of the area, costs and specifications in the auction notice. The respondents indicated a high level of difficulty in relation to the process of adopting sustainable criteria in public contracting.

Concerning legislation, as it was indicated during the bibliographic review by Freitas (2012) and Ferreira (2012), it offers full support to the public contracting agent. More than that, it requires from the agent that they find the most advantageous bid for the public administration

18 Quoted from Portuguese: "não se pode, portanto, hoje, imaginar um comprador preocupado unicamente com a conclusão de uma compra, sem avaliar o impacto dessa operação em relação aos demais processos integrados à cadeia produtiva ou operativa das organizações".

19 Quoted from Portuguese: "entretanto, que com a inclusão expressa do termo sustentável na lei geral das licitações essa celeuma parece estar dirimida, pondo fim ao receio quanto a sua implicação."

with local and national development as the ultimate objective. This shall not be seen as a limiting factor, but, rather, as a positive aspect related to the execution of sustainable procurements.

As for costs, it is necessary to discuss the relationship between cost and benefit. The cost cannot be limited to an economic discussion, especially under the perspective of sustainability, as the best bid shall be the one among the participants that offers the most suitable product or service for the objectives of the public administration, which ultimately is sustainable national development, as Freitas (2012) indicates.

In summary, it is possible to identify a positive perception in relation to the valuable input that public procurements can have on sustainable development. At a moderate-level perception, it was shown that the public servants' qualifications and the use of sustainable criteria in the procurement process were highlighted. The preparedness of the market, in the form of suppliers who are not ready to meet the demands for sustainable goods and services, had a negative perception in the eyes of our respondents. Furthermore, the cultural obstacle was indicated as the most important problem for the adoption of sustainable procurements, which is worrisome when this perception is compared, for instance, to that of the United Kingdom, where this obstacle is only the sixth most indicated, according to Walker and Brammer (2009).

5 FINAL CONSIDERATIONS

Considering the purchasing power of the State, public procurements may become a strategic instrument for the Public Administration, which can influence the market with a possible, more sustainable way of producing and consuming. By adopting more sustainable criteria for its procurements, the government exerts this power over the market, creating a demand for products and services that reflect in more sustainable standards throughout the production chain.

As such, this was legally attempted through the addition of sustainable criteria to public procurements by a modification in Law no. 8666/93, providing it with a new legal objective, which is considered a regulatory mark for SPPs. They aim to be not only a process through which the State makes contracts for goods and services, but also promote sustainable national development.

However, this legal device only gains legitimate influential power when it stops being theoretical and starts being implemented and used by public contracting agents as an invaluable process, having the progress of the market in the direction of more sustainable production processes as an incidental consequence, in order to meet the new demands.

In this direction, this study analyzed the perception of public contracting agents in regards to sustainable public procurements and their usage. In general, the results allowed us to identify that these agents, responsible for public tenders, acknowledge the impact that public procurements have on the national development and the economy they may represent in the long term, at the same time that they indicate the use of these sustainable procurements in their institutions of work as moderate and regard employing these sustainable criteria in tenders and auction notices as a difficult task, rating all the aspects listed by our research as relevant obstacles.

Preliminarily, these bottlenecks may be attributed to limitations of the agents. However, our cluster analysis clarifies that even agents with a high level of qualification indicate an equivalent level of difficulty, which may reflect the efficiency of training and qualifications provided.

It is fundamental that technical training is provided to the agents, because it is clear that simply creating regulations does not suffice. Educating agents about the implicit value of this proposal is essential for it not to become a utopian ideal amid the practices of public procurements. This education allows agents to perceived how useful of a device they have in their hands, which

they can use to promote change in regards to social, economic and environmental aspects. By not using it, they not only refrain from producing deep effects, but they abstain from fulfilling their professional role as well as their civil role, as they do not promote sustainable national development.

The understanding that the purchase cannot be an end in itself is fundamental. On the contrary, public purchases must be a means, their objective must go beyond supplying a need for a certain product. The whole process must be considered and evaluated by the agents in terms of an ethical judgment towards a common good, taken as a substantive rationale. In essence, it must manifest the need of a behavior change.

The cultural aspect was highlighted by our respondents as the biggest limiting factor against the use of sustainable public procurements, differently to other places where, although this aspect was mentioned, it did not appear as a main issue. Therefore, one can notice that this is a key piece of information to direct future discussions and practices to overcome obstacles on the way to sustainable public procurements. Also, it may help guide discussions about other obstacles indicated by our respondents, namely legislation, costs, training and knowledge about the topic, rated at a lower score.

It is not our intention to burden the public contracting agents with all the responsibility of legitimizing sustainable public procurements. It is our understanding that all public agents, the civil society, suppliers, the State, managers, and especially inspection institutions, are relevant to the implementation of this procedure. But once the obstacles involved are elicited, each of the agents involved must strive to change the landscape where legislation is simultaneously enforced and ignored, either by agents who err due to lack of knowledge or qualification, or by inflexibility and unwillingness to change, by a lack of auditing over purchasing processes on the side of the public administration, or by simple non-compliance to a legal obligation.

To finish, this study recommends, as further research proposals, investigating the practice of sustainable procurements at the state and municipal levels, as well as analyses of how the auditing and inspection processes handle this new legal objective of the auction notices.

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Contribution	[Author 1]	[Author 2]
1. Definition of research problem	√	√
2. Development of hypotheses or research questions (empirical studies)	√	√
3. Development of theoretical propositions (theoretical work)	√	√
4. Theoretical foundation / Literature review	√	
5. Definition of methodological procedures	√	√
6. Data collection	√	
7. Statistical analysis	√	√
8. Analysis and interpretation of data	√	√
9. Critical revision of the manuscript	√	√
10. Manuscript writing	√	
11. Other (please specify)		