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Sustainable Public Procurement: barriers and drawbacks

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The inclusion of sustainable criteria in public tenders could achieve environmental and social benefits. For this reason, public agencies are seriously involved in designing and implementing sustainable procurement policies focusing on how environmental and social issues can be integrated in the procurement processes. However, a clear understanding of the concept of sustainability and how it is related to the procurement process is lacking. This study seeks to review the concept of sustainable procurement at an international level and to identify the main barriers and drawbacks that are limiting its endorsement.

Keywords: Barriers; Public Procurement; Drawbacks; Sustainability

Contratación pública sostenible: barreras y limitaciones

La incorporación de criterios sostenibles en los procedimientos de contratación pública podría dar lugar a la obtención de beneficios ambientales y sociales. Por esta razón, los promotores públicos están más concienciados en la importancia de diseñar e implementar políticas de contratación sostenible y la incorporación de aspectos ambientales y sociales en las actividades de contratación. Sin embargo, existe una falta de consenso con el término sostenibilidad y cómo éste se relaciona con los procedimientos de contratación. Este estudio pretende realizar una revisión del concepto de la contratación pública sostenible, así como identificar las barreras e inconvenientes que existen y están limitando su aceptación.

Palabras clave: Barreras; Contratación Pública; Limitaciones; Sostenibilidad

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SUSTAINABLE PUBLIC PROCUREMENT: BARRIERS AND DRAWBACKS

1. Introduction

The construction industry has a severe impact on the environment and social well-being (Baloï 2003; Illankoon, Tam, & Le 2016). In fact, according to World Watch Institute (2015), building construction around the world alone consumes approximately 40% of the raw stone and 25% of virgin wood, and accounts for approximately 40% of the energy and 16% of water; and Addis and Talbot (2001) showed that the development undertaken by the construction industry generates about 70 million tons of waste every year. Thus, numerous studies such as Jones, Comfort and Hillier (2006), Spence and Mulligan (1995), Industry Canada (2011) or Ruparathna and Hewage (2015a) have claimed that the construction industry has a significant effect on the natural environment through energy use for construction, waste production, and impact on the landscape during construction, demolition, renovation, and occupancy of built assets, and it is considered as one of the most important exploiters of natural resources. On the other hand, the historical record of the construction industry highlights a poor performance towards human health and safety (Sev 2009; Ruparathna & Hewage 2015a). Therefore, as construction activities have a significant impact on all the three pillars of sustainability (social, environmental, and economic) (Sev 2009; Jones, Comfort & Hillier 2006; Spence & Mulligan 1995; Tam C., Tam V. & Tsui 2004), it is necessary for the construction industry to move towards sustainable development (Illankoon, Tam, & Le 2016).

Sustainability is a word which has emerged over the last few decades in the construction sector. However, this term is misinterpreted in many instances due to the fact that it is usually focused only on environmental dimensions of sustainability, overshadowing the social dimensions (Kuhlman & Farrington 2010; Illankoon, Tam, & Le 2016). On the other hand, although public procurement of construction has a significant potential to drive sustainability of a country because of its volume (Bratt et al. 2013; Ruparathna & Hewage 2015b), the correct implementation of sustainable procurement is complicated because of, at the time of procurement, many parameters are unknown (Varnäs 2008) and, additionally, there are several barriers and drawbacks that are limiting its endorsement.

Thus, this study presents a review of the concept of sustainable procurement at an international level and identifies the main barriers and drawbacks that stop its correct implantation.

2. Definition of Sustainable Procurement in the Construction Sector

According to Hall and Purchase (2006), construction development has an important impact on: (1) maintaining stable economic growth and employment; (2) providing effective protection of the environment; (3) ensuring prudent use of natural resources; and (4) encouraging social progress that meets the needs of everyone. Thus, to promote the sustainable development in the construction activities it is needed to have a significant impact on all the three pillars of sustainability: social, environmental, and economic (Jones, Comfort & Hillier 2006; Sev 2009; Ruparathna & Hewage 2015b; Pellicer, Sierra & Yepes 2016; Sierra, Pellicer & Yepes, 2016).

2.1. Sustainability and Sustainable Development.

The terms sustainability and sustainable development have widely varied over the years (Kaye, Gabriela & Nijaki 2012) and both have multiple interpretations and often mean

different things to different people (Palmer, Cooper & Van Der Vorst 1997; Illankoon, Tam, & Le 2016). Dovers and Handmer (1992) defined sustainability as the ability of a human system, natural or mixed, to resist or adapt to endogenous or exogenous change indefinitely. According to Ross (2009), sustainability refers to things that can be done for longer periods of time without any unacceptable consequences. Ortiz, Castells and Sonnemann (2009) identified sustainability as a concept of enhancing quality of life, and therefore allowing people to live in a healthy environment and improve environmental, economic, and social conditions for present and future generations. Weybrecht (2010) defined sustainability as the incorporation of economic, environmental, and equity-driven into the values and policy aims. Regarding the term sustainable development, one of the most known definitions is the one introduced by the World Commission on Environment and Development (WCED, 1987): "to make development sustainable is to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs". This definition of sustainable development has been adopted by many researchers (Giddings, Hopwood & O'Brien 2002; Curran 2009; Kuhlman & Farrington 2010). Another important approach was defined by Elkington (1997) who established that the sustainable development has to consider the triple-bottom-line (TBL). The triple-bottom-line departed from the standpoint that a development's success is not uniquely dependent on its financial condition but also depends on social/ethical and environmental welfare (Winter & Lasch 2016).

2.2. Sustainable Procurement

Procurement can be defined as "the process of acquiring goods, works and services, covering both acquisitions from third parties and from in-house providers" (Sourani 2008). The procurement process is viewed as involving sourcing (planning: needs identification and assessment, supplier selection) contracting, monitoring and evaluation, and expediting (Kalubanga 2012).

Sustainable procurement builds on the traditional procurement practice which seeks to extend through the adoption of sustainability principles (Kalubanga 2012). This has emerged as a potential solution to the problems with traditional procurement practices. Defra (2006) stated that sustainable procurement should consider generating benefits for the organization, society and the economy, thereby minimizing environmental impact and generating value for money in whole life cycle basis (Naoum & Egbu 2016). According to Kalubanga (2012) sustainable procurement is focused on the process of purchasing goods and services that takes into account the social, economic and environmental impact that such purchasing has on people and communities. It is about considering what the products are made of, where they have come from, who has made them, how they are transported and how they are eventually disposed of. Sustainable procurement means taking into account economic, environmental and social impacts in buying choices. This includes optimizing price, quality, availability, etc. but also environmental life-cycle impact and social impacts linked to product/service's origin.

2.3. Sustainable Construction Procurement

Construction procurement is the process of acquiring goods and services for realizing a constructed asset according to predefined requirements (Ruparathna & Hewage 2015a). Public procurement has the potential to influence the market in terms of production and consumption trends in favor of environmentally friendly, socially responsible and innovative products and services on a large scale (Kahlenborn et al. 2010). Since procurement applies to multiple stages of a project, sustainable procurement is a well suited mechanism to integrate sustainability initiatives into construction projects. Thus, many researchers have identified procurement as a main driver to integrate sustainability initiatives into construction

practices (Ruparathna & Hewage 2015b). Construction in the public sector includes a wide range of activities comprising major infrastructure and civil engineering projects, major building programs (such as hospitals, schools, prisons and social housing), in addition to refurbishment and maintenance activities. Thus, sustainable construction procurement is about achieving a balance between the social, economic and environmental aspects of construction so that the costs and the benefits, evaluated along these three dimensions, are optimized (Sourani & Sohail 2011).

Therefore, sustainable construction procurement should be conceptually framed and understood within a three-dimensional framework:

1. **Environmental Sustainability:** According to Kaye, Gabriela and Nijaki (2012) environmental protection refers to the natural environment including water, energy, agriculture, biodiversity, fish, forest and air. Thus, environmental sustainability refers to the long-term viability of the natural environment maintained to support long-term development by supplying resources and taking up emissions (Balkema et al. 2002). Regarding construction industry, environmental sustainability is focused on the protection of natural resources, focusing on issues such as reducing energy and water consumption, using renewable resources and minimizing pollution (Illankoon, Tam, & Le 2016).
2. **Social Sustainability:** Social sustainability is concerned with the well-being condition of any person affected directly or indirectly by development efforts (Said & Berger 2013). Parkin (2000) defined social well-being as human feelings such as security, satisfaction, safety, comfort, and human contributions such as skills, health, knowledge, and motivation. Kaye, Gabriela & Nijaki (2012) refer the well-being condition to issues such as human rights, peace, security, justice, gender, equity, and cultural diversity, among other things. In the perspective of the construction industry, social sustainability is referred to the social well-being of both occupants and workers; focusing on issues such as health and safety, involvement of stakeholders, equality and diversity in the workplace and creating employment opportunities (Illankoon, Tam, & Le 2016; Sierra, Pellicer & Yepes 2016).
3. **Economic Sustainability:** Balkema et al. (2002) highlighted that economic sustainability should, in principle, include all resources taking into account those associated with social and environmental values. Additionally, Kaye, Gabriela and Nijaki (2012) indicated that economic development is referred to an understanding of the potential of economic growth and should include issues such as poverty reduction, responsible consumption, corporate responsibility, energy efficiency, conservation, waste management, and education. In the perspective of the construction industry, the economic dimension referred to cost performance of the construction including both initial direct and indirect costs and maintenance costs over the life span, focusing on issues such as whole life costing, support of local economies and financial affordability for intended beneficiaries (Illankoon, Tam, & Le 2016).

3. Barriers and Drawbacks

Despite the potential benefits that the sustainable public procurement could generate, in the literature there is a wide debate regarding the kinds of barriers and drawbacks that can limit its real uptake (Günther & Scheibe 2006). Previous studies have suggested that there are several issues and challenges related to the implementation of sustainable public procurement. These issues and challenges that influence the implementation of sustainable public procurement in one country might be different in another probably due to socio-economic, demographic and cultural differences (Adham & Siwar 2012).

Following a review of the literature, in general, the main barriers and drawbacks that are limiting a correct implantation of sustainable public procurement are detailed in the following sub-sections.

3.1. Lack of awareness and lack of knowledge

Sustainability is itself a contested and complex concept, and procurement professionals often do not have skills and knowledge necessary to implement sustainable procurement correctly. Studies have found that managers are unsure of how to incorporate sustainable issues in the procurement process (Brammer & Walker 2011). On the other hand, numerous studies highlight that the concept of sustainable development has been misunderstood and perceived differently. Moreover, there is a low level of awareness and understanding about sustainability issues among people working in public client organizations. This may be attributed to the lack of training on sustainable development issues, lack of clear concept definition of sustainable construction and regulatory constraints, lack of information needed to make the right decisions in relation to issues such as selection of sustainable products and materials, lack of knowledge about what sustainable procurement is and how to achieve it and lack of information, knowledge and competences among procurers (Walker & Brammer 2009; Testa et al. 2016; Sourani & Sohail 2011; Iles & Ryall 2016; Weissman 2009).

On the other hand, the environmental, economic and social aspects of sustainability have not been given equal weighting in procurement, promoting environmental issues. This implies that the public sector should move beyond the focus on environmental issues (Sourani & Sohail 2013).

Additionally, although sustainable preferences as evaluation criteria will promote a creative development of the environmental and social issues in the construction sector (Varnäs, Balfors & Faith-ell 2009), it has been pointed out that the applied criteria do not always correspond to the importance of the sustainable aspects. There is a lack of agreed and comprehensive sets of social, economic and environmental sustainability criteria and public clients need to understand in a comprehensive and unambiguous way what sustainability criteria (whether social, economic or environmental) need to be addressed in their procurement strategies (Sourani 2008). Several authors have revealed that a restraint in the application of sustainable procurement is still due to a lack of knowledge of how to formulate specific, measurable and verifiable sustainable preferences (Varnäs, Balfors & Faith-ell 2009; Testa et al. 2016). Walker and Brammer (2009) found that fear of change and lack of awareness of how to include sustainable criteria in public tenders were the main drawbacks identified by the interviewees.

3.2. Policies, regulations and incentives.

According to Roman (2017), implementing sustainable procurement can be quite challenging, both in terms of technical aspects as well as in terms of politics of the organization. Political factors and a lack of supportive legislative mandates or incentives at the local, state and national levels can significantly stymie the development of a favorable framework for adopting and promoting sustainable practices (Brammer & Walker 2011; Iles & Ryall 2016).

Additionally, Sourani and Sohail (2011) highlighted that there is a need for a more mandatory role in order to address sustainability better. Because even though there are regulations and government policies in place to assist in addressing sustainability issues in public procurement such regulations and policies may be insufficient to move towards realization of sustainable development.

3.3. Insufficient/confusing guidance, tools and indicators.

Currently, although there are tools and triple bottom line parameters already in place (Ahankoob, Morshedi & Rad 2013; Asdrubali et al. 2015; Fenner & Ryce 2008; Forsberg & Von Malmberg 2004; Fowler & Rauch 2006; Gowri 2004), there is a lack of evidence on evaluating these tools in terms of credit point allocation for each of the triple bottom line parameters. According to Papajohn, Brinker and Asmar (2016), there is no widely accepted method to determine the effectiveness of the tools in existence in terms of evaluating the sustainability.

On the other hand, current tools and indicators are too many and too broad, with overly complex lists of action and heavily focused on environmental issues (Carter & Fortune 2007). Additionally, the definitions of many of the issues related to sustainability are vague and confusing and that sustainability is interpreted differently by different people (Sourani & Sohail 2013). Sourani and Sohail (2011) highlighted that there is a lack of simple and structured guidance, demonstrations and best practice illustrating what is operationally meant by sustainability and how to implement it.

3.4. Improving organizations and management factors.

Sourani and Sohail (2011) noted that, quite often, the organization (or the part of the organization) that is responsible and accountable for making the capital investment is not the same organization (or the part of the organization) that is responsible for the operational budget throughout the asset life cycle. In such a case, the organization (or the part of the organization) which is responsible for the capital investment might have no interest in investing in sustainable solutions (such as energy-saving measures) because it is not the same organization (or the part of the organization) that would reap the benefits achieved throughout the facility life cycle.

Additionally, aspects such as the lack of sufficient time to address sustainability issues, the importance of training, lack of communication and coordination both within the organization and between suppliers and clients, lack of management support, lack of the definition of clear goals, resistance to change or lack of the inclusion of sustainability strategies in procurement policy documents have been recognized as some of main problems in the implementation of sustainable procurement practices (Varnäs, Balfors & Faith-ell 2009; Sourani & Sohail 2011; Swanson et al. 2005; Testa et al. 2016; Iles & Ryall 2016).

Carter and Fortune (2007) stated that there is a lack of structured frameworks to assist the project teams in delivering sustainable construction projects. Faith-Ell, Balfors and Folkeson (2006) concluded that practical implementation of sustainable criteria is a daunting task mainly due to lack of information and inability to supervise after the contract award. Moreover, Hwang and Ng (2013) emphasized the importance of strengthening the knowledge areas related to sustainable project management. Moreover, civil engineering consultants are unclear on sustainable procurement due to lack of knowledge of alternative procurement systems (Hwang & Ng 2013; Ruparathna & Hewage 2015a). Korkmaz (2012) emphasized on the importance of having qualified professionals who thoroughly understand sustainable buildings and project delivery processes to implement sustainable procurement (Ruparathna & Hewage 2015b). Finally, organizations often approach sustainability in 'fragmented' ways, which are 'disconnected' from the overall organizational strategy (Porter & Kramer 2006; Roman 2017; Weissman 2009)

3.5. Financial issues and general perception that addressing sustainability always leads to incurring greater capital cost.

According to several authors, financial issues are possibly one of the main barriers for sustainable procurement worldwide (Varnäs 2008; Brammer & Walker 2011). There is a tendency to buy the cheapest alternatives due to simply lack a vision of the triple bottom line, while remaining focused on the short-term economic performance (Testa et al. 2016).

As indicated by Sourani and Sohail (2011), the reduction of the funding available for public sector organizations and the imposition of restrictions on their expenditure is a major problem facing public clients in their attempts to obtain a more sustainable outcome.

Additionally, availability of funding is important to deliver sustainable procurement; the literature indicates that cost is the leading barrier to sustainable procurement (Sourani & Sohail 2011; Sourani & Sohail 2013; Walker & Brammer 2009). On the other hand, sustainability has always been perceived to be more expensive (Brammer & Walker 2011; Roman 2017). However, it does not always have to cost more (Preuss 2009). Even where sustainability proves to be more expensive in terms of capital cost, it should be noted that with the adoption of a long-term perspective, an organization's sustainability performance could make further contribution to business competitiveness in the future (Bratt et al. 2013; Varnäs, Balfors & Faith-Ell 2009; Iles & Ryall 2016).

On the other hand, another important aspect is that the lack of evidence regarding the tangible benefits of environmental responsible procurement remains unclear (Preuss 2009; Roman 2017)

3.6. Bid evaluation and analysis of the sustainable benefits.

Regarding bid evaluation, there is a lack of objective methods to assess sustainable procurement. Ruparathna and Hewage (2015a) indicated that most of the time, the current bid evaluation methods overlook life cycle perspective of the project and solely focus on the initial cost. The absence of objective methods in bid evaluation could open up opportunities for mismanagement, corruption, and fraud. Moreover, there is a deviation between the qualitative and quantitative analysis for the benefits of using sustainable procurement because most suppliers do not have a coherent approach to achieve or measure sustainable benefit (Weissman 2009). Other important aspects are related to logistical factors such as ensuring timely involvement of project stakeholders; and allowing sufficient time in the program to address and assess sustainability issues (Sourani & Sohail 2013).

4. Conclusions and Recommendations

Although sustainability has emerged as important field of research and development over the last few decades, this term has been misinterpreted in many instances. Thus, according to the definition of different authors, the term sustainability is considered as a concept which integrates, at least, three dimensions: (1) social dimension, including issues such as health and safety, stakeholders' involvement, workforce conditions, user needs and satisfaction and employment creation; (2) economic dimension, including issues such as whole life costing and supporting local economies; and (3) environmental dimension, including issues such as using renewable resources in preference to non-renewable resources, maximizing resource reuse and/or recycling and minimizing air, land and water pollution at global and local levels.

On the other hand, construction procurement is the process of acquiring goods and services for realizing a constructed asset according to pre-defined requirements. Thus, sustainable procurement is defined as a process whereby organizations meet their needs for goods,

services, works and utilities in a way that achieves value for money on a whole life basis in order to generate real long-term benefits, not only for the organization, but also for the society and the economy, while minimizing damage to the environment.

Regarding to implementation of sustainable construction procurement, there are important barriers and drawbacks which are limiting its endorsement. These barriers might be different for each country due to socio-economic, demographic and cultural differences. However, numerous studies highlight that the main barriers that are having influence over the correct implantation of sustainable construction procurement are: (a) Lack of awareness and lack of knowledge; (b) Policies, regulations and incentives; (c) Insufficient/confusing guidance, tools and indicators; (d) Improving organizations and management factors; (e) Financial issues and general perception that addressing sustainability always leads to incurring greater capital cost; (f) Bid evaluation and analysis of the sustainable benefits.

Some of the recommendations which have been defined in the literature in order to minimize these barriers are: to develop a common understanding of the individual features of sustainable-development policies and how these are addressed at the building-project level (Carter & Fortune 2007; Sourani & Sohail 2013); to ensure that client organizations have clear policies and guidelines regarding the application of sustainability principles adopting a balanced approach that ensures the explicit consideration of all sustainability dimensions; to improve communication and knowledge shared within the client organization regarding sustainability implementation and best practice (Sourani & Sohail 2013); to help with experts to define sustainable procurement initiatives (Sourani & Sohail 2013); to develop simple but comprehensive tools, measurable indicators and techniques to deal with situations where sustainability needs to be assessed (Sourani & Sohail 2011); to increase awareness and understanding in relation to sustainable development issues amongst government office staff (DEFRA 2006); to ensure involvement of all project stakeholders and consideration of their needs; to ensure the consideration of a complete range of options to meet the need (e.g. refurbishment, new build); to ensure the consideration of whole-life costing/ value; and facilitating publicity of actions taken by public procurers towards addressing the sustainability agenda; to allocate more resources in terms of frameworks, tools, databases, which are capable of standardizing the practices (Ruparathna & Hewage 2015a); to integrate sustainability requirements into contract specifications and conditions (including specifying any project-specific sustainability requirements); and to emphasize the importance of sustainability in tender evaluation and selection procedures (Sourani & Sohail 2013).

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