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Green training for sustainable procurement? Insights from the Brazilian public sector

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Abstract

Purpose – Human resources practices, particularly regarding environmental training, play a key role in the dissemination of sustainable supply chain practices, especially sustainable procurement. Both environmental training and sustainable procurement can prompt environmental maturity (EM) among organizations. However, little is known about the relationship between environmental training and the adoption of sustainable procurement in public sector organizations of emerging economies, such as Brazil. In this context, the purpose of this paper is to investigate the relationship between environmental training and the adoption of sustainable procurement in three Brazilian public/state universities.

Design/methodology/approach – This research is qualitative and includes an exploratory study based on in-depth interviews with experts from the procurement section of Brazilian public universities. A methodological framework is proposed to analyze the results. The main questions that guided this study were: is there a relationship between the environmental-training initiatives and the adoption of sustainable procurement? Does this relationship, whether positive or negative, improve the maturity of environmental sustainability? And what is the future outlook for this issue in the context of public universities in Brazil?

Findings – According to the results' analysis, the impact of sustainable procurement practices among the public organizations analyzed was almost void. The environmental training produced limited accomplishments, although respondents viewed it as a source of potential improvement, which indicates a co-evolution of sustainable procurement, environmental training and EM. In the cases analyzed, an alignment was identified among the levels of sustainable procurement and environmental training adoption.

Research limitations/implications – It was identified that the lacks of training and support from senior management, environmental culture, great bureaucracy and economic factors were considered barriers and difficulties to implementing environmental procurement practices. These barriers deserve further study.

Originality/value – There is a lack of research on the relationship between environmental training and the adoption of sustainable procurement in emerging economies and in public sector organizations.

Keywords Sustainable supply chain management, Green training, Sustainable human resource management, Sustainable procurement

Paper type Research paper

1. Introduction

Environmental training, which is one of several green human-resources management (GHRM) practices (Yusoff *et al.*, 2015), assists in creating an environmental culture and developing environmental management practices (Jabbour *et al.*, 2013) and well-trained employees with environmental awareness who are able to identify and reduce waste (Renwick *et al.*, 2013). This human resources practice can contribute to the adoption of modern sustainability practices (Sarkis *et al.*, 2010). One of these practices is called sustainable procurement. Sustainable procurement is part of a broader discussion about supply chain greening (Sarkis *et al.*, 2011).

Interest in the field of green supply chain management (GSCM) has been growing in both academic and business environments, and GSCM has emerged as a tool to help companies reduce their environmental risks and impacts, achieving greater profitability, better market share and increasing their eco-efficiency (Zhu *et al.*, 2008). In recent years, companies have adopted sustainability in

their corporate strategies, and the lack of sustainable supply chain talent is an issue that has put organizations in uncomfortable situation (Dubey and Gunasekaran, 2015). Sustainable public procurement, one of the practices of GSCM, already plays an important role in the implementation of public policies for sustainability: it has become a tool for environmental conservation and economic and social development, since it includes environmental, economic and social criteria in companies' hiring stages, and it is essential in order to train managers and civil servants to critically analyze purchases, observing, for example, aspects such as product life cycles.

In addition to the aforementioned issues, we noted a distinct lack of proposals among the related literature regarding the union of GHRM and CSCM practices in the context of public sector organizations in Brazil (specifically, three public universities), which justifies the following research. Based on the aforementioned, the following research questions were developed:

RQ1. Have the analyzed organizations adopted sustainable procurement?

RQ2. Is environmental training, which is a GHRM practice, helping to adopt sustainable procurement?

This research implies that the analyzed organizations can be classified into different levels of environmental maturity (EM) (i.e. at different levels of development of environmental management; Jabbour *et al.*, 2013).

2. Conceptual background

The debate on GHRM is part of a strategic human-resources management context. According to Huselid *et al.* (1997), human resources strategy “involves the design and implementation of a consistent set of internal policies and practices to ensure that the human resources of a company contributes to the achievement of its business goals.”

GHRM is the association and support of human-resource management practices for environmental management development in the organization (Renwick *et al.*, 2008; Jackson *et al.*, 2011). Human-resource management practices, such as recruitment and selection, compensation systems and rewards, empowerment, training and development and benefits, can have positive effects on organizational outcomes. Environmental management is mentioned as a powerful tool to align employees with an organization's environmental strategy (Renwick *et al.*, 2008) and allows companies to align practices and human resources dimensions with the environmental management goals, which guide an organization on its journey toward environmental sustainability (Jabbour, 2011).

Environmental training is considered essential among GHRM practices (Jabbour *et al.*, 2013), as it assists in the development of environmental management practices and the creation of an organizational culture sensitive to environmental management (Jabbour, 2013). Well-trained employees with environmental awareness are able, for example, to identify and reduce waste (Renwick *et al.*, 2013).

Jabbour *et al.* (2013), who investigated the relation between environmental training and EM in Brazilian companies with ISO 14001 certification, cited several works, such as Shaw *et al.* (1999), who analyzed environmental training needs; Perron *et al.* (2006), who compared companies that did and did not offer environmental training; and Unnikrishnan and Hegde (2007), who analyzed the environmental-training characteristics of companies that adopted clean production and the influence of empowerment, environmental training and business performance (Daily *et al.*, 2012). These studies confirmed the importance of environmental training in organizational environmental management.

However, research on training and its benefits on the green supply chain, especially sustainable procurement, is just beginning. Although sustainable supply chain performances present a greater impact on environmental performance compared to any other activities and are highly related to human resource capacity, organizations still have neglected the human and behavioral components of supply chain management (Dubey and Gunasekaran, 2015).

According to Sarkis *et al.* (2011), the interest in the field of GSCM is growing both in academic and business fields. Among the various management definitions of GSCM, we have highlighted

Srivastava (2007), who posited that GSCM is the integration of environmental thought in supply chain management, including product design, outsourcing and selection equipment, manufacturing processes, final product delivery to consumers and product management after the end of the product's life cycle.

In Brazil, government purchases comprise about 10 percent of Brazil's GDP, which makes the government a key agent in the diffusion of sustainable procurement assumptions. It also has the power to influence thousands of citizens to create a sustainable culture, stimulate the market and be a catalyst for suppliers' environmental policies.

These arguments are aligned with Walker and Brammer (2012, 2009), who claimed that procurement managers should promote social responsibility in organizations' supply chains with sustainable procurement practices, since sustainable public procurement is consistent with the principles of sustainable development and the public sector is responsible for the use of taxpayers' money in order to achieve social and environmental goals.

3. Research method

This research is qualitative and exploratory. This study was conducted among three of the most important public universities in Brazil. They are responsible for significant scientific production and have significant public budgets supported by taxes. This study has omitted information about these cases purposely in order to maintain anonymity. Figure 1 illustrates this study's framework.

In order to answer the presented research question:

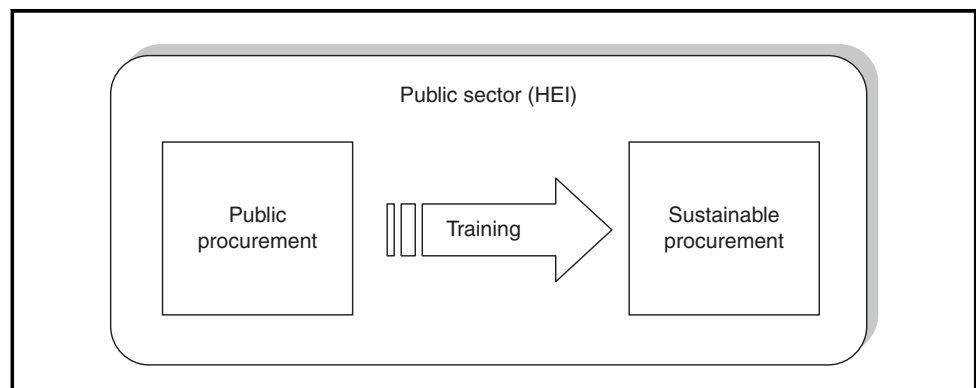
RQ3. Are higher-education institutions adopting sustainable procurement and environmental training and is GHRM spurring the process.

This study used interviews with experts from each university's procurement areas. This relation is illustrated in Figure 1.

From March to April 2016, some contacts were made by e-mail and phone, and interviews were scheduled and conducted with people the selected public sector institutions' procurement areas, which will be referred to as HEI 1, HEI 2 and HEI 3. Ten people were interviewed personally in their workplaces as part of a previously scheduled appointment, including the following positions: managing director, department supervisor, assistant director, department head and department supervisor (substitute). There were also some phone interviews, which provided more necessary information. Of the ten interviews, five were conducted in person and another five by telephone, with durations ranging approximately from 20 to 90 minutes.

The main questions asked were as follows: do you know what sustainable procurement is? Does your organization make use of sustainable procurement practices? Do you think that training can help the application of these practices? The respondents were free to respond to the questions, however, they saw fit and could also discuss other actions, attitudes and opinions that they

Figure 1 Framework of the research



deemed relevant. The objective was to find out whether they were aware of sustainable procurement, whether green purchasing practices were applied in their respective universities and whether training practices were important to the application and development of sustainable procurement action, based on their answers. From there, this study examined barriers, motivators and facilitators of the relationship between training and sustainable procurement.

This study used desk research, internet searches on sites and secondary data concerning the HEIs' development of actions and environmental projects to complete the interviews. These data were particularly useful for classifying the organizations according to their levels of EM. It was found that the institutions were with higher or lower EM than the others.

4. Results

Overall, HEI 1 has showed greater EM than HEI 2 and HEI 3, since it took more consistent political, practical and environmental actions than the others. Based on interviews with administrative and procurement-department managers, HEI 1 completed actions toward the use of reusable materials, reducing the use of plastic cups, rationing the use of materials and purchasing items with an environmental seal. Based on the interviews, we noticed that HEI 2 and HEI 3 did not implement sustainable procurement practices in their procurement sectors.

All respondents and employees directly linked to purchase processes pointed out barriers, such as bureaucracy, the economic focus of activities the purchasing teams' lack of autonomy and information and the lacks of support from senior management and community awareness. So, although the HEIs showed different levels of EM and different likelihoods of adopting sustainable purchasing initiatives, all of them tended to face barriers.

The results presented in the interviews showed that more respondents agreed that training can help HEIs adopt sustainable procurement practices but were unanimous on the issue "support of senior management."

Regarding environmental training, HEI 1's actions stood out. In 2013, HEI 1, through the Office of Environmental Management, initiated a "process of environmental training" for their staff members. The initiative aimed to reach 17,000 administrative and academic servers on all of its campuses. To achieve this number of servers, we used the multiplying-knowledge method, a network of training in which a group of employees was trained and worked as multipliers of environmental knowledge acquired from up to four server levels. There were four steps envisaged in the program during the second period half of 2013 to the first half of 2015. Although some of HEI 1's units did not complete all of the steps, the program included 37 unique courses for HEI 1 employees covering topics including waste, water, sustainability in universities and green purchasing and actions that brought positive results, considering the responses of one HEI 1 respondent.

The information obtained through interviews with HEI 2 and HEI 3 employees and the HEIs' websites revealed that courses or training focusing on sustainable procurement were not offered. However, HEI 2 and HEI 3 employees did verify that their universities offered training focused on waste management.

Considering the evidence presented by the interviewees and the information found on the HEIs' websites, we carried out a cross-analysis on the case studies' sustainable procurement and training, as shown in Table I. The analysis also compared the EMs of the analyzed institutions. However, classifying exhaustively the HEIs based on their EMs was not the focus of this work.

Table I Cross-analysis of cases

	<i>Sustainable procurement adoption level</i>	<i>Level of environmental training offered</i>	<i>Relative EM of each institution</i>
HEI 1	Higher than HEI 2 and HEI 3	Higher than HEI 2 and HEI 3	Higher than HEI 2 and HEI 3
HEI 2	No evidence	No evidence	Lower than HEI 1
HEI 3	No evidence	No evidence	Lower than HEI 1

The results showed HEI 1's superior performance regarding sustainable purchases and training, demonstrating greater EM, indicating an alignment between the adoption of sustainable procurement practices and training and EM. Considering the lack of evidence of sustainable procurement and training, HEI 2 and HEI 3 had lower results than HEI 1 in terms of EM.

5. Final remarks

This section presents the findings of the work and points out limitations and possible future research.

This study investigated three higher-education institutions, HEI 1, HEI 2 and HEI 3, using interviews with ten respondents from each institution's management and procurement sections. This study also researched the HEIs' websites. The results from the interviews and information from the HEIs' websites led to the conclusion that sustainable procurement has not been developed adequately in these institutions, demonstrating poor public sector engagement in this debate and stunting supply chains in terms of sustainability. Additionally, the HEIs were not acting to implement practices and develop initiatives with an environmental focus in their administrative activities, even though much research was completed in the area.

Training sessions were limited and rare but seen as a source of potential improvement, considering the respondents' statements and two projects developed by two HEIs: HEI 1's Superintendence of Environmental Management and HEI 3's creation of the Management Group Sustainable University. In terms of their environmental education efforts, HEI 1 had the best instances of structuring and developmental actions regarding environmental sustainability.

The results also show evidence of a co-evolution among sustainable procurement, environmental training and EM, as all of the HEIs adopted these practices and concepts at equally low or intermediate rates.

As proven in the literature, when implementing environmental management practices, there is a reliance on technical prerequisites or human/organizational aspects (Jabbour *et al.*, 2015). Environmental training tends to help companies improve, for example, their GSCM and cooperate with customers to implement green purchasing (Teixeira *et al.*, 2016).

Potential alignment between the observed concepts was also observed, demonstrating that in HEIs with higher EM, environmental training and sustainable procurement also were more intense than in HEIs with lower EMs, which was similar to Teixeira *et al.*'s (2012) report.

There were barriers and difficulties regarding implementing environmental purchasing practices in HEIs. It was clear that because of the lack of support from senior management, the absence of an environmental culture in the community, a lack of training and excessive bureaucracy, the procurement area was subject to a dominating economic logic during decision-making processes. Although human and organizational aspects have already been proven in the literature (e.g. Daily and Huang, 2001), aspects considered to be bureaucratic obstacles appear to be particularly relevant in understanding the Brazilian higher-education context.

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