



Relationship between green management and environmental training in companies located in Brazil: A theoretical framework and case studies

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ABSTRACT

The main objective of this study is to understand the relationship between green management and environmental training in Brazilian companies, underscoring how this relationship takes place and its most important factors. For such, 9 case studies were conducted at large ISO 14001 certified companies, leaders in their market segments. Several interviews were conducted for each case, documents were collected and visits were made for direct observation. The main contributions and results of this study were: (a) a proposal for a theoretical framework relating the evolutionary stages of green management and the characteristics of environmental training; (b) it was ascertained, as per the proposed theoretical framework, that organizational culture and teamwork, top management support and more technical green management practices are the factors that seem to connect and convert environmental training into more proactive green management, especially for companies in the proactive green management stage; (c) the identification of the co-evolution between the companies' stage of green management and their environmental training level, which is the identified relationship mechanism between environmental training and green management. In other words, the higher the level of adoption of activities recommended for green management, the more evolved the green management practiced at the companies tends to be; and (d) identification that the proposed theoretical framework tends to be useful, mainly because it can explain the relationship between green management and environmental training at the company in the proactive stage.

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1. Introduction

The incorporation of green/environmental concerns at organizations generally occurs through technical alterations in product and service projects and in production and operations processes. However, arguments have been gaining strength indicating concern for technical aspects of green management should be complemented with management of human and behavioral aspects that support green management practices (Perron et al., 2006). Specialized literature calls this process Green Human Resource Management (GHRM) (Renwick et al., 2008). GHRM deals with the alignment of diverse practices destined for human resource management (recruiting, selection, training, performance evaluation, rewards) to a company's green management objectives (Renwick et al., 2008; Jackson et al., 2011). This is a multidisciplinary, emerging and still predominantly theoretical

field of study (Marshall and Mayer, 1992; Hale, 1995; Daily and Huang, 2001; Fernández et al., 2003; Govindarajulu and Daily, 2004; Jabbour and Santos, 2008).

Among the GHRM practices considered essential to the success of green management at organizations, environmental training stands out. Environmental training is called "one of the most important tools to develop human resources and facilitate the transition to a more sustainable society" (Agenda 21, 1992, Chapter 36). Although environmental training has been considered important since the 1990's (Marshall and Mayer, 1992), practical evidence of this has only recently begun to emerge.

Some research empirically affirms the importance of training for the success of green management at organizations: (1) Sarkis et al. (2010) conducted a study with automotive companies in Spain, and concluded that training is a variable that interferes in the level of adoption of green management practices by companies; (2) Cole et al. (2008) conducted a study with companies in Ghana concluding that training is a variable that positively influences the companies' environmental performance; (3) Sammalisto and Brorson (2008) also ascertained that training is

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a key aspect for implementing green management practices; (4) Daily et al. (2007) affirm that environmental training is important for empowering teams that manage the organizations' green management systems.

However, some gaps still challenge the advance of knowledge concerning the relation between environmental training and green management at organizations: (1) it is a recent phenomenon in organization, which requires greater understanding through qualitative research, based on case studies (Unnikrishnan and Hegde, 2007; Brío et al., 2008); (2) greater understanding is needed about environmental training in emerging countries through research that verifies several industrial sectors (Sarkis et al., 2010); (3) it is necessary to consider the evolutionary stages of green management at organizations when studying GHRM (Jabbour et al., 2010).

Aware that the aforementioned studies already point to a relationship between the evolution of management and environmental training, the main issues this paper discusses are: (1) how does the relationship occur between the evolution of green management and environmental training at manufacturing and service companies located in Brazil?; and (2) what are the main factors that determine this relationship between the evolution of green management and environmental training, taking into account the reality of companies located in Brazil?

Thus, this study intends to contribute towards the theme's state-of-the-art, achieving the following objectives: (1) identify how the relationship between the evolution of green management and environmental training takes place, based on a multiple case study of manufacturing and service companies located in Brazil; and (2) determine those factors that can related the evolution of green management and environmental training.

This study uses qualitative methodology based on conducting 9 case studies. Conducting qualitative research based on case studies has been recommended for analyzing GHRM (Brío et al., 2008), but only a few authors, such as Unnikrishnan and Hegde (2007) dedicated themselves to qualitative research on environmental training at Indian companies.

This article is structured as follows: Section 2 presents the theoretical foundation, divided between the evolution of green management at organizations (Section 2.1), GHRM and environmental training (Section 2.2), resulting in a theoretical framework that will be used to guide the analysis of results and discussions (Section 2.3). Section 3 introduces the research method. Section 4 shows the results. Section 5 presents discussions, and Section 6 presents the final considerations for the research.

2. Theoretical foundation

2.1. Green management at organizations

According to Haden et al. (2009), green (or environmental) management deals with the complete incorporation of environmental objectives and strategies to the broader-based objectives and strategies that exist at the organization. Jabbour (2010) complements this definition indicating that green management should be based on a systemic approach for incorporating the environmental theme at every level of the organization.

Several reasons could lead a company to adopt green management practices (Berry and Rondinelli, 1998). According to González-Benito and González-Benito (2006), stakeholder pressure is the main factor that leads organizations to seek more advanced green management. More advanced green management can also improve the company's financial performance (Molina-Azorín et al., 2009) and increase the company's manufacturing competitiveness, promoting cost reductions, quality improvements and the generation of

new products and processes (Yang et al., 2010). Furthermore, especially with an increase in the population's environmental awareness, companies that invest in green management could be valorized through green marketing initiatives (Woolverton and Dimitri, 2010).

However, many studies indicate that organizations do not practice green management at the same level (Hunt and Auster, 1990; Azzone and Bertelè, 1994; Borri and Boccaletti, 1995; Azzone, Bertelè and Noci, 1997; Winn and Angell, 2000; Boiral, 2006; González-Benito and González-Benito, 2006). These different levels at which companies can incorporate environmental issues have been called the evolutionary stages of green management (Jabbour et al., 2010). In this study, based on the proposals by (Jabbour and Jabbour, 2009; Jabbour, 2010), we believe companies can evolve following three main stages of green management, and there may be companies at intermediate stages (Table 1).

Some green management instruments help organization reduce their environmental impacts, especially: (1) ISO 14001 green management systems, a certification that attests a company defined an environmental policy and is continuously seeking improvement in its environmental performance (Massoud et al., 2010; ISO 14001/2004); (2) Design for Environment, which deals with incorporating environmental concerns to new product and service projects, giving environmental issues the same status as other important issues for new products, services and processes (Pigozzo et al., 2010); (3) Life Cycle Assessment, a methodology that maps environmental impacts along the production chain,

Table 1
Main characteristics of the evolutionary phases of green management.

Stage	Name	Characteristics
Stage 1	Reactive	<ul style="list-style-type: none"> This is the least developed stage of green management. Organizations in this stage tend only to meet legislation and the advancing environmental regulations. The green management system focuses on avoiding environmental problems, green management tends to have little authority in the organizational structure. Company does not get involved in external activities on the environmental theme.
Stage 2	Preventive	<ul style="list-style-type: none"> In this stage, the organization seeks to optimize the use of natural resources through eco-efficiency and the application of principles like the 3 Rs (reduce, reuse, recycle). The environmental issue begins to be discussed by the organization's areas. The green management area becomes more prominent in the organization's structure. Some external green management actions are initiated.
Stage 3	Proactive	<ul style="list-style-type: none"> This is the final stage of green management. The environmental issue is a fundamental element in business strategy and to create competitive advantages. At this stage, green management is active and its actions are integrated to the other areas of the organization. The company begins to implement methodologies to reduce internal environmental and production chain impacts, like Life Cycle Assessment and supplier selection based on environmental criteria.

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