

# **Green human resource management, Green supply chain management practices and Sustainable performance**

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## **Abstract**

The growing studies that focused on the topic of linking green human resource management (GHRM) with green supply chain management (GSCM) has necessitate the writing of this study. Recently, academics and practitioners have increasingly paying attention to environmental management systems and policies to improve a full spectrum of manufacturing sustainable performance through adopting environmental management system (EMS) in two major functions in the firm such as human resource (HR) and supply chain (SC) departments (i.e. GHRM and GSCM practices). The integration between these practices can help the manufacturing organizations to achieve green corporate culture and enhancement their sustainable performance in order to balance the environmental, economic, and social performance toward community which is considered the main responsibility for manufacturing firms. The aim of this study is to review the various literatures on the relationship between GHRM practices, GSCM practices and sustainability performance. Furthermore, this study aims to propose a reasonable conceptual model to clarify the relationship between these three variables in the context of Palestinian manufacturing sector. The research findings will be specifically imperative for manufacturing organizations with the aim of improving their sustainability.

## **Keywords**

Sustainability performance, Green human resource management, Green supply chain management,

## **1. Introduction**

Nowadays, "green" has become a buzzword and a prevalent practice to describe the eco-friendly image of products, processes, systems, and technologies and the way business is implemented (Vachon & Klassen, 2008 ). Green business has more sustainable practices than its competitors do. It is widely accepted that these practices help organizations to achieve financial savings and thus better profits. They also benefited the natural systems and provide a better environment, where people can enjoy a healthier life. This reflects an organization with a working

place that is ecologically acceptable and socially responsible (Rani & Mishra, 2014). In the green literature, the concept of environmentally sustainable development can be defined as the need for equilibrium between industrial growth for wealth creation and preservation the natural environment so that the coming generations can live a prosperous life (Daily & Huang, 2001). It became clear that environmental sustainability is a critical factor for organization's survival and competitiveness (Lee, 2009). As a result, an effective implementation of environmental management has become vital for the company's' survival and for improving their sustainable performance (Cia & Hussain, 2013; Preston, 2001); which has grown the need to adopt a good EMS. In fact, EMS allow developing, implement and monitor an environmental policy that aims at achieving green performance in firms' such as reducing waste or emissions into the atmosphere, EMS related to the implementation of green considered practices within various functions which make up the company (Pagell & Shevchenko, 2014; Young et al., 2015). Correspondingly, this study focuses on two important business functions supply chain (SC) and the human resource (HR) functions (Fisher et al., 2010).

On one hand, human resource management has been viewed as a key factor in enhancing environmental performance since the mid-nineties (Milliman & Clair, 1996), and its positive consequences on environmental performance have been progressively explored (Jabbour & Santos, 2008a; Jackson & Seo, 2010; Wagner, 2013). Different human resource practices have been identified to deploy environmental values across the organization (Fernández et al., 2003) and to implement environmental management initiatives (Jabbour & Santos, 2008 a, 2008 b). A recent review of empirical studies carried out by Renwick et al., (2013) confirms that a bundle of human resource management practices that "strategically target" environmental performance called GHRM bundle, composed of consistent and coherent HRM practices aimed at improving environmental performance plays a key role in "greening the organization." The GHRM bundle includes HR practices identified from previous studies such as green hiring, green training, and involvement, green performance and compensation (Guerci et al., 2016). GHRM bundle practices assist the greening of the organization, suggesting a synergistic effect of their joint adoption (Combs et al, 2006). This is in line with suggestions by Longoni et al., (2016); which called for more researches into the linkage between GHRM bundle practices and sustainable performance.

On the other hand, in the supply chain area, ecological standards and values have been initially incorporated into internal manufacturing processes (Sarkis, 1995), through the implementation of responsive practices, for example, contamination control technologies, and later through proactive and preventive practices such as contamination prevention technologies (Klassen & Whybark, 1999). Recently, firms have been increasing their attention on responsibility for their suppliers and customers as well as for their internal operational processes, therefore broadening ecological management activities outside the firm's limits (Krause, et al. 2009; Seuring & Müller, 2008). Based on that, GSCM practices are usually incorporated to ecological standards and values toward supply chain operations and activities (Srivastava, 2007), which require to adopt both internally and externally oriented practices (Gimenez, et al. 2012; Wolf, 2014; Zhu, et al. 2013), that can be adopted by any member within the supply chain either on the upstream or downstream side of the chain (Sarkis, 2012; Zhu, et al. 2008). Indeed, GSCM is receiving considerable interest from researchers and practitioners of business operations. However, the increasing significance of GSCM is urged by the increasing harmful impact upon the environment. Hence, GSCM is now considered as an effective management tool to lead manufacturing organizations to improve environment sustainability along with other performance target. In addition, De Giovanni (2012) highlighted GSCM is not only a tool to reduce the negative environmental impact of processes and products but also a distinctive strategy that provides economic benefits and increase environmental performance as well as enhancing the social welfare.

Regards to the issue of inter-functional relations between supply chain management (SCM) and human resource management (HRM), Fisher et al. (2010) affirm that HR practices can improve SCM which enhances business performance. Moreover, the author suggests that environmental management must be disseminated from during multi-functional approach, but most of the existing literature concentrate on independent functional systems (Menon, 2012). In addition, both green HRM and green SCM literature have theorized and empirically demonstrated that specific practices, aimed at developing the environmental performance of the firm, result in superior environmental performance. Meanwhile, those two streams of literature emerged and developed in parallel, neglecting the relation between GHRM practices and GSCM practices (Jabbour & de Sousa Jabbour, 2016).

In today's global environmental demands, sustainable consciousness has become intertwined with daily life and sound business. In recent years, companies have adopted sustainability in their corporate strategies (Aragão et al., 2017); the lack of sustainable supply chain talent is an issue that has put organizations in an uncomfortable situation (Dubey & Gunasekaran, 2015). Sustainable GSCM practices have already played an important role in the implementation of policies for sustainability (Caniato, et al., 2012) 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 to critically analyze the GSCM practices,

for example, aspects such as product life cycles (Aragão et al., 2017). 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 & Gunasekaran, 2015). As a result, it is worth to signifies the need to further explore whether GSCM practices could mediate the GHRM practices and sustainable performance relationship in order to achieve a long-lasting competitive advantage for organizations. In particular, this paper suggests that the exploring potential relationships between these two sets of practices will lead us to formulate a conceptual relational model. This conceptual model may help explain in depth their impact on sustainability performance, besides providing insightful implications for both theory and practice. However, any new contribution in this field of study will lead to gain a considerable improvement in environmental protection and sustainable development for manufacturing organizations.

## **2. Proposed Conceptual Model**

In consort with the supports that has been identified from the prior literature, a theoretical framework is suggested to investigate the relationship between GHRM bundle practices, GSCM practices and sustainability performance in the proposed model, as shown in Fig. 1. In this research, we consider that the GHRM bundle is a cohesive set of human resource practices that have a general consequence on overall manufacturing organization performance by (i) Selecting ideal employees who are sufficiently aware of environmental management aspects of the organization, this call “Green hiring” terms (Renwick et al. 2013; Tang et al. 2017) (ii) Providing environmental training to the organizational members to involvement in greening activities in order to increase environmental awareness, called “Green training and involvement” (Teixeira et al. 2016) (iii) Offers a non- monetary and monetary compensation to the organizational members based on the environmental achievement, called “Green performance management and compensation” (Guerci et al 2017; Longoni et al., 2016).

The GSCM practices are classified into external and internal practices. In particular, this study considers environmental management practices that need partial cooperation and transactions with suppliers and customers as external GSCM practices including environmental cooperation, green purchasing, and reverse logistics. (Zhu et al., 2013). Meanwhile, those activities without direct supplier or customer involvement including internal environmental management and eco-design are considered as internal GSCM practices which can be managed and implemented by an individual manufacturer (Zhu et al., 2012). The sustainability performance is investigated from the perspectives of economic, environmental, and social.

The recommended conceptual model is primarily resource-based view (RBV) which was enunciated by Barney in 1991. Indeed, the RBV has been widely utilized to explain the relationship between HRM-SCM practices and firm performance (Alfalla – Luque et al., 2015; Fisher et al., 2010; Fu et al., 2013), also, to elucidate the direct effect of GSCM and GHRM practices on organizational performance (Longoni et al., 2016). According to this theory, the valuable human capital resources are required by organizations to implement effective SCM which in turn leads to competitive advantage (Fisher et al., 2010; Swart, et al. 2012). Therefore, we argue that HRM is a critical strategic resource that has important implications for effective supply chain strategy implementation. In general, RBV provides theoretical lenses in understanding the relationship between GHRM, GSCM practices and sustainable performance in which it advocates the importance of environmental practices such as strategic asset that contribute directly to better firm performance (Longoni et al., 2016). Many researchers have recommended sustainability performance, such as economic performance, environmental performance and social performance as important performance indicators (Jabbour & Santos, 2008b; Holt & Ghobadian, 2009, Laosirihongthong et al. 2013, Ricardo et al. 2011). It is imperative to note that in the present paper, the proposed model may not comprise a complete set of measurement scale due to the constraint of encompassing the entire of GHRM bundle practices, GSCM practices and sustainability performance in a single study.

## **3. Hypotheses Development**

Green human resource required the entire organization members to be fully involved towards getting the organizations to be greener (Wagner, 2013). All employees should be constantly practicing green endeavours in their working area. In addition, green practices should be included in human resources processes such as recruitment, training, compensation etc. (Wood, 2014). A positive outcome should be achieved towards establishing green human resources through these processes (Rani & Mishra, 2014). According to Jadhav & Mantha, (2013) GHRM bundle act as the adhesive that connects various practices as a synchronous unit. GHRM bundle practices

offer. Tremendous mutual benefits to the organization and workers “Bundles” ought to signify sequences of consistent and internally dependable HR practices, corresponding to each other. Incorporation of practices unveils greater and more direct impact on company’s competitive improvement and organizational performances (Ivana Tadić, 2014). Hence, in this research the practices in GHRM bundle includes: Green hiring, Green training and involvement, Green performance management and compensation.

Current literature on environmental management recognizes that in order to achieve environmental sustainability objectives, organizations can use appropriate human resource practices to stimulate their employees. A great endeavours have been made to explore what drives employees to engage in pro-environmental behaviours that help their organization to become greener (Paillé et al., 2013), also firms concerned with the protection of the natural environment cannot act without the support of their staff; though improve employee knowledge, skills, commitment, and productivity (Zhu et al., 2012). Nowadays, green human resource endeavours have mainly encompassed on enhancing competency within processes, reducing and eliminating environmental damage, and restoring human resource products, tools, and procedures consequential in greater efficiency and lower costs. Literature confirms the significance of the putting the ‘greening’ function as the main factor in improving financial and environmental performance of organizations (Haddock-Millar et al., 2016).

It is possible to conclude that by understanding and increasing the scope and depth of green human resource practices, organizations can improve their environmental performance in a more sustainable manner (Arulrajah et al., 2016). The green human resource practices are more powerful tools in making organizations’ and their operations green. The green performance, green behaviours’, green attitude, and green competencies of human resources can be shaped and reshaped through adaptation of green human resource practices. Moreover , numerous authors have advocated that financial performance are driven by employee-level outcomes (i.e., employee competence, involvement, and motivation) associated to environmental-oriented practices (Jabbour & de Sousa Jabbour, 2016; Masri & Jaaron, 2017). Without a doubt , the fact that hiring environmentally conscious workers led to hiring of talented ones who are appealed to that particular organizations’ environmental reputation. Correspondingly, by establishing the involvement of employees in environmental activities and providing environmental training and goals enables improvement on their skills, motivation, retention, and job-related results (Teixeira et al., 2016; Anusingh & Shikha, 2015), which consequently enhanced the performance of the organization’s finance.

Wagner (2013) concludes that investing in social responsibilities for the organization will gain some tangible benefits such as improve its image regards to customers, employee satisfaction, recruit excellent staff and increased innovativeness Undoubtedly these advantages will lead to enhancing the organization performance. This is in the same line with suggestions by Rezaei-Moghaddam ( 2016) that emphasize that if the manufacturing organizations invest more or on social programs that focus for both the employees and the community is an important step toward reinforcement green management of human resources in organizations. These programs agenda must be focus on health and safety tasks which staff is exposed to harmful potential emissions and their extent, beside environmental reporting roles, applying these programs will enhance the sustainable performance in manufacturing organization. Based on the assumption that using GHRM bundle can hold an organization together for sustainability performance, where bundle has found to lead significantly to firm performance the following research hypotheses have been developed in line with recent suggestions by Longoni et al. (2016) and Renwick et al. (2013):

**H1:** The GHRM bundle is positively related to sustainability performance.

GSCM practice is a multi-dimensional concept which can be measured from different perspectives. Different dimensions of GSCM practices have been highlighted in the past literature (Bowen, et al. 2001, Carter & Ellram, 1998; Zsidisin & Siferd, 2001, Handfield, et al., 2005). The disagreement on GSCM practices is because of the fact that GSCM is in the growth stage; also the theory in this area is in the rudimentary stage, as mentioned by Eltayeb and Zailani (2011). However, the GSCM can be viewed at multiple levels including external and internal GSCM dimensions (Zhu & Sarkis, 2004; Zhu et al., 2012; Jabbour & Jabbour de Sousa 2016) needed by manufacturing sectors to achieve enhanced sustainability performance (Ninlawan et al. 2010; Thoo et al. 2014).

Based on the literature review of GSCM practices, this paper portrayed GSCM practices from tow important perspective: internal and external of GSCM practices. These practices have been widely adopted and discussed from the recent literature which includes (De Giovanni, 2012; Laari et al.(2016); Longoni et al., 2016; Yang et al., 2013; Zhu et al. 2013),. However, these two sets of intra- and inter-organizational green practices can be adopted by any member within the supply chain either on the upstream or downstream side of the chain, also it can lead to a more sustainable competitive advantage (Zhu et al., 2008; Sarkis, 2012).

Concerning GSCM practices, previous literature has shown a positive impact on environmental performance (Lee et al. 2012; Zhu & Sarkis 2004; Zhu et al. 2005) For instance, Green et al. (2012) found that internal GSCM practices such as eco design and internal environmental management result in improved environmental performance of the manufacturing industries in the US context. Diabat et al. (2013) and Green et al. (2012) found that a positive relationship between green purchasing, reverse logistics and cooperation with customers that are a part of external GSCM practices and environmental performance

Recently, many empirical studies have found a positive relationship between GSCM practices and economic performance that lead to gain competitive advantage for a firm (Rao & Holt, 2005; Zhu & Sarkis, 2007; Laosirihongthong et al., 2013). For example, Koh et al. (2012), found that eco-design which is a part of internal GSCM practices implies the reduction of waste and efficient use of materials lead to cost savings which positively affect the economic performance of the firm. Holt and Ghobadian (2005) found external GSCM practices such as green purchasing leads to economic performance (cost savings, increase in profit, sales, and market share). Despite that empirical studies on the relationship between GSCM practices and social performance are limited in the literature (De Giovanni, 2012) the available empirical evidence shows that eco-friendly practices in general, have a considerable social performance such as customer loyalty (De Giovanni, 2012) and enhancing corporate image (Eltayeb & Zailani, 2011). Accordingly, the following hypotheses postulate that:

**H2:** External GSCM practice is positively related to sustainability performance.

**H3:** Internal GSCM practice is positively related to sustainability performance.

In fact, the HRM-SCM mediation relationships in relations to environmental issues are scarce. Recently, Jabbour and de Sousa Jabbour (2016) called for more empirical studies on this issue. Previous empirical studies tested such relationship showing that specific GHRM practices drive GSCM implementation (Teixeira et al. 2016; Sarkis et al. 2010; Lin & Ho 2011). For instance, Teixeira et al. (2016) conducted an empirical study among Brazilian firms certified with ISO 14001 to investigate the relationships between green training which is a part of GHRM practices and GSCM practices such as green purchasing and cooperation with a customer. The study found that green training is positively and significantly related to GSCM practices implementation. Moreover, the study emphasized that the alignment of human resources practices are important and crucial to the greening of firms, as they reduce barriers to GSCM adoption. In other words, GSCM requires more attention from green training programs (Sarkis et al., 2010; Lin & Ho 2011). More recently, Longoni et al. (2016) conducted an empirical study among Italian organization to investigate the relationships between GHRM and GSCM practices. The study confirms that the GHRM practices have positive impacts on GSCM practices adoption. Indeed, GHRM playing a significant role in disseminating environmental ideologies and standards, and offering employees who are talented and committed to implement environmental ideologies and standards in the foundation of a supply chain business development (Jackson & Seo, 2010; Ahmad, 2015; Jabbour & de Sousa Jabbour, 2016). For instance, Longoni et al. (2016) confirm that GSCM practices play a mediating role between GHRM practices and environmental performance relationship. As a result, it can be deduced from previous debates that an effective implementation of GSCM practices depends primarily on GHRM practices since in case of the absence HRM practices, this results in lacking availability of employee's engagement whom an environmental competent, besides that conventional organizational culture would obstacle the adoption of GSCM practices (Jabbour and de Sousa Jabbour, 2016). Hence, this study extends these empirical studies through exploring the impacts on sustainable performance as well. Accordingly, the following hypotheses were developed:

**H4:** GHRM bundle positively affect External GSCM practices

**H5:** GHRM bundle positively affect Internal GSCM practices

**H6:** External GSCM practices can play mediating role between GHRM bundle and sustainability performance

**H7:** Internal GSCM practices can play mediating role between GHRM bundle and sustainability performance

#### **4. Sample, Data Collection and Measurements.**

The expected survey respondents are brought from the "PSE directory of Palestinian Companies 2016". The directory comprises information on manufacturing organizations (large and small) from the industrial sector, locations, name of an organization, year of foundation, contact information, a number of employees, etc. The study population entails Palestinian manufacturing companies in the most pollutant industrial sectors that include food, chemical and pharmaceuticals industries (Masri & Jaaron, 2017) in the years 2017/2018 with a total of 110 manufacturing companies operating in the West Bank region of OPT, where most of the Palestinian manufacturing

organizations are located (PSE, 2016) . The number of respondents within acceptable limits of this study is subjected to the statistical tool employed in structural equation modelling (PLS-SEM); therefore, the minimum sample size required for this study is 80 (Hair et al., 2017). In order to meet the objectives of this study, two questionnaires were adopted, one dedicated to HR manager and another one to the operation manager. By doing so, this design of the questionnaire helps the study to obtain a more accurate and reliable information about the GHRM and GSCM practices from the appropriate informant, consequently increasing the response rate. It is important to note that there is a part in common between the two questionnaires which is composed by the firm descriptive and the measure of sustainable performance, hence, we decided to insert the firm descriptive in both questionnaires in order to match HR and SC responses of the same company. The survey is developed to measure the constructs of GHRM bundle practices (formative construct), external GSCM practices (reflective construct), internal GSCM practices (reflective construct) and different dimension of organizational performance (reflective constructs). Regarding the sustainable performance, we inserted it in both questionnaires for two reasons: first of all because in this way we can study the relationship that GHRM and GSCM practices have on sustainable performance separately, and then because, in case of none response of one respondent (HR or SC), we would have the measure of the impact of the other respondent in any case. PLS-SEM is used to test the seven developed hypothesis in a single, methodical, and overall analysis by investigating the relationships among exogenous and multiple endogenous variables together (F. Hair, et al., 2014).

## 5. Discussion and Conclusion

According to the literature review, both HRM and SCM literature have theorized and empirically demonstrated that specific practices, aimed at developing the firm performance, result in superior environmental and economic performance (Luzzini, et al., 2014). However, those two streams of literature emerged and developed in parallel, neglecting the relation between GHRM practices, GSCM practices, and the sustainable performance. (Jabbour & de Sousa Jabbour, 2016; Longoni et al., 2016). Thus, this raises the critical issue for conducting a cross-functional study (Fisher, et al., 2010) in the deployment of environmental management in the HR and SC departments in order to, show in particular the role of GHRM for internalizing environmental values and principles among employees and thus in supply chain activities, thus can provide firms' competitive advantage. Therefore, the HRM is a critical strategic resource that has important implications for effective supply chain strategy implementation (Swart et al., 2012). In view of this matter, this paper tries to explain the distinct mediating roles that specific GSCM practices play in the GHRM bundle and sustainable performance relationships. The proposed conceptual model is mainly grounded within resource base view (RBV) that applied by Barney (1991). According to this theory, the HRM practices affected the organizational performance by transforming the employees into an extraordinary, important, and unique resource. Given the utilization of such resource in business development, the organization's goals can be supported (Lado & Wilson, 1994; Ray, et al. 2004), this is affirmed by Chen, et al. (2009) and Porter (1985) whose suggested that the utilization of talents in SC operations (internal and external) contributes to the organization's goals. Moreover, talented employees in SCM can enhance the performance of supply chain which in turn leads to a sustainable competitive advantage (Ellinger & Ellinger, 2014). However, a competitive advantage may be derived from the interaction mechanism of various resources. Concisely, the suggested model, despite the fact that it is considerably beneficial, there are still needs for modifications and practical studies so that it can be properly applied to the context of Palestinian manufacturing organizations. Last, but not the least, the integration of GHRM - GSCM practices have significant chance to add value to the green development of the firm and engage in an essential tool in motivating, inspiring, and stimulating employees to implement green practices for a greener system that lead to the enhancement of the sustainability performances.

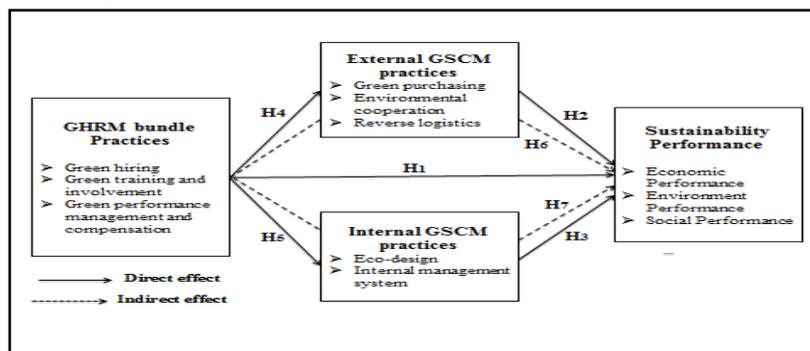


Figure 1. Proposed conceptual model

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