

Green Supply Chain Management (GSCM) and Green Human Resource Management (GHRM): A Literature Review and Future Research Direction

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ABSTRACT

Green Supply Chain Management (GSCM) and Green Human Resource Management (GHRM) are two important branches of Operation Management and Human Resource Management in the field of environmental protection and sustainable development. The GSCM and GHRM were studied in isolation from each other in many years until the theoretical frameworks for their relevance were introduced. However, as a new research field, the empirical research under its theoretical framework is rather limited as there is little research in Chinese background. Thus, this study integrated and reviewed existing research on the relationship between GSCM and GHRM, summarized the gaps in the previous research and pave the way for the empirical research will be carried out in China.

Keywords: Green Human Resource Management, Green Supply Chain Management, Human Resource Management, Supply Chain Management, Sustainable Development, Green Management, Environmental Protection.

1. INTRODUCTION

Green supply chain management (GSCM) recently became a hot topic among scholars and businesses both in the field of academic research and enterprise governance. In terms of business strategy, the downstream customers' increasing environmental, ecological, and ethical awareness and demands to save energy, reduce pollution and waste have pushed enterprises to consider their ecological problems during the supply chain seriously (Vachon and Klassen, 2006). In a similar vein, human resources management has always been a significant segment for firms, yet in recent years, the theme of green human resources management (GHRM) has gradually emerged as a new subbranch of HRM much like GSCM (Jackson et al., 2011). Therefore, scholars suggest that green revolution within organizations may start with GHRM. Hence, the greening activities, especially related to GSCM and GHRM could be integrated for the better development of the firm.

This paper attempts to examine the basic conceptions of GHRM and GSCM and their possible inner connection.

Several studies from divergent perspectives on green supply management and green human resources management have been conducted. Describing the programs and decisions made in businesses aiming at the acquisition of products and services with environmental care, this paper will explain the concepts of 'green supply management', 'green human resources structure', and 'sustainable supply chain management' alternatively. This paper will discuss the current research stage of GSCM and GHRM in China.

This paper is structured as follows. First, the basic concepts and main development process of GHRM and GSCM based on previous studies are reviewed respectively. Second, this paper will discuss the practical meaning of the idea of 'greener cooperation' for organizations. Next, integrate the two research objectives and attempt to find out the inner connection in terms of firm governance. The results are discussed in the final section. In addition, considering the current research stage of the two objectives in China, this paper also proposes some suggestions and limitations in the final section for both academic research and business strategy aspects.

2. GSCM (GREEN SUPPLY CHAIN MANAGEMENT)

In the field of supply chain management (SCM), the research of environmental sustainability is presented with increasing frequency. (González-Benito and González-Benito, 2006). Since SCM was proposed in the late 1980s, academic research on the topic has mainly focused on how to achieve the overall optimization and coordination of the supply chain and maximize organizational potential performance (Zhu and Zhao, 2005). However, the environmental impact of the supply chain practice might be overlooked. The negative impacts of the implementation of the supply chain include a series of problems such as resource depletion, ecological destruction and environmental degradation, and these problems are precisely restricting the further rationalization of supply chain management. (Sarkis and Dou, 2018)

2.1. The development of green supply chain management

With an understanding of the negative impacts of supply chain implementation, scholars began to look for a more efficient and scientific method to organize the supply chain. Green Supply Chain Management (GSCM) was initially introduced as a subsystem of a sustainable supply chain (Berke and Seuring, 2014) which emphasizes the importance of environmental efficiency in modern operations management, is increasingly attracting people's attention. In the 1970s, GSCM was proposed as a secondary aspect of the research of logistics management, during this period the concept was termed green logistics (Huang and Wu, 2003). In 1996, some scholars put forward the concept of 'Green Supply Chain Management' for the very first time. However, at this time most scholars still only studied segments of green supply chain management in isolation and did not conduct research involving the entire supply chain. This was first done by Berman (1999), who began to study the supply chain as a complete system and put forward new ideas such as the green design of the supply chain, which took a big step forward in the mature development of green supply chain management (Zhu and Zhao, 2005). Srivastava (2007, pp.54) defines GSCM as: integrating environmental philosophy into supply chain management, from raw material sourcing and selection, manufacturing processes, to delivery of the final product to the consumers as well as end-of-life management of the product after its useful life. Wang et al. (2007) also presented their opinions of green supply chain operation goals as "environmentally friendly, welfare enhancement, and optimal allocation of resources". Furthermore, Vachon and Klassen (2006) also pointed out that the only way for organizations to resolve the search for sustainability seriously is by involving the entire supply chain.

2.2. The contents of GSCM

The main contents of GSCM in manufacturing include reverse logistics, internal environmental management, green marketing, green purchasing, cooperation with consumers, eco-design, recovering investments, etc. (Srivastava, 2007). In China, based on previous research, Wang et al. (2007) systematically divided the GSCM into the following aspects: production subsystem, consumption subsystem, social subsystem, and environmental subsystem. Its constituent elements include suppliers, manufacturers, distributors, consumers, recyclers, etc.

2.3. The implication of GSCM for enterprises

In practice, research has shown that the implementation of green supply chain management has a positive effect on firms. Lintukangas et al. (2015) conducted a survey which examined the philosophy of 'green supply management' at a firm's supply network level based on the data of 165 firms in Finland. It found out green supply management relates to significant creative concepts in business strategy, and therefore, can be concluded that it is essential for firms to enhance the understanding of green issues in supply management. As Zhu *et al.* (2007) have implied, higher implementation levels of green supply management are associated with better overall performance despite of the difference between industries. It can be therefore concluded supportive activities and programs should be adopted to improve the overall performance of a firm.

2.4. GSCM In China

With the deepening of the industrialization process in recent years, the issues related to GSCM have become increasingly critical in China. Although firms have increased their environmental awareness in business operations, this consideration has not been translated perfectly into strong GSCM practice adoption (Zhu et al., 2005). According to Liu et al. (2012), the implementation level of enterprise is significantly and positively associated with the external pressures from regulatory. In this sense, the Chinese government should spend more effort to regulate enterprises. However, the research of GSCM is still in its infancy in China and particularly, the companies' environmental management in cooperation with other parts of the supply chain is very limited (Zhu et al., 2005). Above scholars in China analyzed the development of green supply chain management from divergent perspectives and concluded that green supply chain management is a new strategic model for enterprise development and an inevitable trend for the sustainable development of China's industry (Zhu and Zhao, 2005).

3. GHRM (GREEN HUMAN RESOURCE MANAGEMENT)

While promoting social and economic development, enterprises also bring high energy consumption, greenhouse effect, and other costs, destroying the environment (Tu, 2008). Therefore, enterprises have the responsibility to assume the responsibility of environmental protection for society (Huang and Song, 2005). For enterprises to better adapt to the changes of the government's environmental protection policy, it is necessary to carry out reform from within the enterprise. Human resource management is the key to the development of enterprises. Therefore, the green reform of enterprises should start from human resource management (Gu, 2021). Green human resource management can protect the social environment and enable enterprises to produce higher efficiency and lower costs, which is conducive to the sustainable development of enterprises and enhance their green competitiveness (Tang et al., 2015).

3.1. The development of Green Human Resource Management

Green human resource management is not a new concept. In "The Limit to Growth," published by the Club of Rome in 1972, the earliest preliminary conception of green human resource management has been extended from the concept of "sustainable development" (Milliman and Clair, 1995; Piwowar-Sulej, 2020). In our Common Future, published by WECD in 1987, the idea of "sustainable development" was more accurately defined as meeting the needs of the current generation without affecting the conditions for future generations to meet their needs. After the idea of sustainable development was widely recognized, McCloskey, Maddock, and other scholars began to improve the theory of "environmental management." In 1990, Hunt et al. suggested combining the environmental management system with the company's human resource management (Tang, 2015). In short, human resource management is an environmental protection concept based on the original human resource management.

Studies in recent years show that the implementation of environmental protection policies is directly related to the competitiveness of enterprises (Yang, 2003). In the general trend of environmental protection, the combination of environmental protection and enterprise competitiveness means that enterprises will grasp the dominant power of the market economy to enhance competitiveness. (Qu, 2001). Therefore, environmental protection is not only a government policy but also a trend in the coming decades. Sustainable development of environmental protection is the only way for enterprises to go. Only by taking their interests and environmental benefits into account can enterprises bring strong

competitiveness (Ma, 2006).

3.2. The content of GHRM

Green HUMAN resource management is to apply the green concept of "sustainable development" to human resource management of enterprises (Tang et al., 2015). Under the general trend of China's environmental protection market (Huang and Song, 2005), green human resource management will promote enterprises to carry out green reform (Qu, 2001), which is conducive to sustainable development of enterprises, thus improving production efficiency and gaining enterprise competitiveness (Yang, 2003).

3.3. The implications of GHRM for enterprises

In previous studies, the application of green HRM strategies has been shown to be beneficial to implementing environmental strategies (Jose F. Molina-Azorin, 2021). When enterprises employ employees with green awareness or provide green training to employees and take performance appraisal as catalyst, the overall performance of enterprises in environmental protection can be significantly improved (Yang, 2003). An excellent enterprise needs to integrate the green concept into its culture and bring economic, social, and ecological benefits to the company through green human resource management to achieve sustainable development of the enterprise (Wei and Li, 2006). To realize the green process and sustainable development of enterprises, there are three typical strategies: low-carbon, ecological, and capability. These GHRM strategies frame and practice the abstract green concept, thus giving full play to the value of green human resource management (Liu et al., 2014). The influence of the GHRM strategies on the green process of enterprises is subtle and complex. The internal operation process of the green revolution is the interaction between organizational factors and practical activities, and the two are relatively complementary. For example, developing a strategy of GHRM is a typical example of organizational factors. These GHRM strategies provide a framework for GHRM practices, which can be implemented more efficiently and improve the probability of achieving good environmental performance. Effective and high-quality GHRM practices can also affect the organizational factors of GHRM in turn, which is conducive to promoting the concept of green environmental protection more actively, building their green brand image, and thus gaining more substantial green competitiveness (Tang, 2015).

3.4. The GHRM in China

China is now in a period of rapid development of modernization, which is accompanied by environmental pollution (Lu, 2000). To remove the development model of high energy consumption and high pollution and return

to a sustainable development economy and ecological economy, enterprise ecological management and green management mode will occupy a leading position in the Chinese market in the future (Liu et al., 2014). To adapt to the increasing importance of environmental protection in China, Chinese enterprises should actively formulate and practice a green sustainable development strategy, improve the green competitiveness of enterprises to stand out of the fierce market competition (Yuan, 2008). Green human resource management applies the concept of sustainable development to the human resource management of Chinese enterprises, which can bring economic benefits to enterprises and ecological benefits to Chinese society (Wei and Li, 2006). Green human resource management is the green implementation of enterprises under the framework of sustainable development strategy, and it is the key for enterprises to win competitive advantages in Chinese market (Yang, 2003).

4. THE RELATIONS BETWEEN HRM (HUMAN RESOURCE MANAGEMENT) AND SCM (SUPPLY CHAIN MANAGEMENT) AND THE MEANING OF “GREEN STRATEGY”

In previous studies, the correlation between HRM and SCM has been proven, the conclusions include alignment between HRM and SCM significantly improves the efficiency of supply chain practice (Ellinger and Ellinger, 2014), and recent studies also confirmed that rational formulation of HRM strategy plays a positive role in SCM practice (Jena and Ghadge, 2021).

With the significant deterioration of the global environment, enterprises in all countries and industries need to consider the importance of green strategies in organizational management and the necessity of green strategies in organizational management (González-Benito and González-Benito, 2006). Triple bottom line (TBL) is a theory in the field of environmental sustainability and green organizations, which means an enterprise should balance the economic, environmental, and social performance in the process of operation (Milne and Gray, 2013). These require enterprises to consider the impact of various strategies on the environment and sustainable development in the process of operation.

When the need for sustainable and greening strategies of enterprises meets existing HRM and SCM relevance, the relevance between GHRM and GSCM must be discussed.

5. GREEN HUMAN RESOURCE MANAGEMENT (GHRM) AND GREEN SUPPLY CHAIN MANAGEMENT (GSCM)

Although both GHRM and GSCM play an indispensable role in the sustainable development strategy of enterprises, one of the few exceptions is they have been studied in isolation for a long time, and few people have conducted an integrated study on them (Jabbour and de Sousa Jabbour, 2016). Jabbour and de Sousa Jabbour (2016) reviewed past literature both on GHRM and GSCM, established a framework for the relations between them, and summarized conceptual theories of the relations. At the end of the study, they gave a direction of future research, hoping that future scholars can verify this framework with more qualitative or quantitative studies.

Longoni, Luzzini, and Guerci (2016) were carrying out an empirical study at the same time as the theory of GHRM and GSCM was introduced by Jabbour and de Sousa Jabbour (2016). There were two questionnaires were designed in their study, one for the human resource managers and the other for the supply chain managers, to investigate the environmental performance and financial performance of the enterprises with the GHRM and GSCM practices and the relation between them. The strategy of GHRM was proved to be positively correlated with GSCM implementation (Longoni et al., 2016). This study is the first empirical study and quantitative supplement to the theories of relations between GHRM and GSCM.

After the empirical study in Italy was published, the GHRM and GSCM practice in transactional economies or developing economies also were paid attention (Nejati et al., 2017, Zaid et al., 2018). The empirical in manufacturing industry of Iran suggested that the “Green Training”, “Green Employee Empowerment” and “Green Pay and Reward” of the GHRM have the biggest positive link to GSCM practice (Nejati et al., 2017). Then the empirical study in Palestine brought the theory of Triple Bottom Lines (TBL) into the study of GHRM and GSCM, which discussed how the practices of enterprises on GHRM and GSCM influence the environmental performance, economic performance, and social performance (Zaid et al., 2018). Wongleedee (2020) used the same theory to study Thailand pharmacies, it is concluded that GHRM and GSCM practice is positively correlated with sustainable performance, and employee performance plays a mediating role. The study of Acquah et al. (2021) with hospitality and manufacturing in Ghana also confirmed the positive impact from GHRM to GSCM, and its interaction was proved to improve organizational performance.

6. GHRM AND GSCM IN CHINA

There have been some empirical studies on the correlation between GHRM and GSCM, but this area is closely linked to social background, opinion, culture and values, sample collection and analysis in more countries and industries is still encouraged (Longoni et al., 2016, Nejati et al., 2017, Acquah et al., 2021).

Zhong and Gan (2007) pointed out that China's current environmental management mechanism makes enterprises lack initiative in environmental protection and sustainable development. Lash and Wellington (2007) the neglect of environmental problems of enterprises will make them lose the opportunity for sustainable development in the future. At the same time, under the influence of the national policies and future economic development direction in China, it is inevitable for Chinese enterprises to implement sustainable development strategy (Yang and Long, 2015). However, the GHRM and GSCM theory proposed by Jabbour and de Sousa Jabbour (2016) has not been empirically studied in China. As the second largest economy in the world and the largest developing country, the lack of research in the context of China makes it difficult for this valuable theory to guide the sustainable development strategy of Chinese enterprises. Therefore, for future scholars in this field, it is encouraged to conduct empirical research with the same theory in China, which can not only provide guidance for the sustainable development of Chinese enterprises in the future, but also verify the existing framework of GHRM-GSCM and develop GHRM-GSCM theory in more background.

7. CONCLUSION

This study aims to review the development of GHRM and GSCM in their respective fields, as well as the development of theoretical and empirical research after the combination of them. After the integrated issue of supply chain management and sustainable development was frequently raised (Gonzalez-Benito and Gonzalez-Benito, 2006), the positive impact of GSCM on organizational performance has been demonstrated in subsequent studies (Zhu et al., 2007; Lintukangas et al., 2015). While the positive impact of GHRM on organizational performance was proven, the GHRM was also demonstrated to be valuable to operation of enterprise. The value of combining the GHRM and GSCM (Jabbour and de Sousa Jabbour, 2016) is indisputable, the subsequent empirical studies also proven the correctness of this theory (Longoni et al., 2016, Nejati et al., 2017, Acquah et al., 2020).

This study also highlights the absence of empirical study about GHRM-GSCM theory in the Chinese context. At the same time as many studies suggested that Chinese enterprises should attach importance to environmental protection and sustainable development strategy (Zhong,

2007; Lash and Wellington, 2007; Zhao and Long, 2015), Chinese enterprises need such theoretical guidance at present. Therefore, the following issues should be focused on in the future:

Firstly, more qualitative, or quantitative research based on the theory proposed by Jabbour and de Sousa Jabbour (2016) in the Chinese context should be carried out in China. Secondly, more detailed questions about GHRM and GSCM raised by previous researchers can be studied in the Chinese context. For example, what is the impact of GHRM intervention on specific positions within GSCM practices (Zaid et al., 2018)? Whether long-term external GSCM practices will lead to positive financial performance for the company (Longoni et al., 2016)? Finally, Chinese scholars should pay more attention to local small and medium-sized enterprises. Compared with large companies, they have fewer international perspectives and more internal barriers to implementing green strategies, such complex background may produce a special set of theories and give more specific guidance to similar enterprises.

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