

A Literature Review of the Impact of Green Supply Chain Management on Firm Performance

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Abstract

The public put forward higher requirements for enterprises in protecting the environment and green management. The emergence of green supply chain management provides enterprises with better choices. This article summarizes the relevant literature on green supply chain management, the relationship between green supply chain management and firm performance, and proposes future research trends and issues for further study.

Keywords

Green Supply Chain Management, Firm Performance, Literatures Review

1. Introduction

Nowadays, human beings are confronted with the great challenge of environmental pollution. The rapid development of industry has accumulated a lot of economic wealth for human beings. However, the extensive economic growth mode aimed at pursuing economic development consumes a lot of resources, resulting in resource waste and environmental destruction. The rapid development of the economy and the uncontrolled consumption of resources by human beings have seriously undermined the natural environment on which humans depend. People gradually realize that economic development cannot be at the cost of the natural environment, and the awareness of environmental protection is also gradually improved.

Due to the increasing concern of society for environmental issues and the need for sustainable development, the academic has also begun to combine supply chain management with green and sustainable. Green supply chain management that considers environmental issues in supply chain management

has received increasing attention in academia.

The emergence of the concept of green supply chain management provides enterprises with a better choice of technology. It fully considers the negative impact on the environment and the public in the process of operation, takes technological innovation and green management as the core concept, reduces the negative impact of operation on the environment and maximizes enterprise performance. Although the current academic research on the relationship between green supply chain management and enterprise performance has been preliminarily explored, there is still no unified conclusion on whether green supply chain management can improve or reduce the overall performance of enterprises. Therefore, this paper reviews the research results of the impact of green supply chain management on corporate performance and discusses the research trends of this issue.

2. Green Supply Chain Management

In the current research, quite a few scholars confuse green supply chain management with sustainable supply chain management. But in fact, green supply chain management is a more centralized concept, while sustainable supply chain management is a broader concept. Ahi and Searcy distinguished the two concepts of green supply chain management and sustainable supply chain management by summarizing the research of predecessors [1]. Sustainable supply chain management aims to promote the flow of information and capital by integrating economic, environmental and social factors with key inter-organizational business systems, establishing a coordinated supply chain, and efficiently managing materials related to procurement, production and distribution. Sustainable supply chain management provides products or services to consumers to meet the needs of stakeholders and improve the profitability and competitiveness of the organization in the short and long term. Green supply chain management is more inclined to environmentally friendly research based on sustainable supply chain management. Green supply chain management is the first step in integrating sustainable development concepts into supply chain management.

At present, the theoretical circle has not reached a consensus on the definition of green supply chain management. Researchers define the connotation of green supply chain management according to their different research purposes and problems to be solved. In recent years, some scholars have defined the green supply chain management as shown in **Table 1**. Most scholars have focused on environmental factors when defining green supply chain management. It can be seen that environmental factors are a key point in the research of green supply chain management. Based on the existing research, this paper will define green supply chain management as an enterprise to reduce the impact on the environment, no waste of resources in the production process, no environmental pollution, no adverse components and no side effects, an internal management and external collaborative management model.

Table 1. Definition of green supply chain management.

Author	Concept Definition
Lee & Klassen (2010)	Plans and activities for companies to integrate environmental issues into supply chain management to improve supplier and customer environmental performance [2].
Walton S V, <i>et al.</i> (2010)	Adding upstream and downstream suppliers as important influencing factors into the company's environmental strategy, the core is to apply integrated thinking to the whole process of green supply, such as enterprise design, procurement, production and sales [3].
Tseng (2011)	It can be defined in terms of the evolution of environmental management, including cross-border activities and corporate activities in the supply chain, where companies, suppliers and customers are directly involved in joint planning solutions to reduce environmental impacts in the production of products [4].
Perotti <i>et al.</i> (2012)	Organizations' activities and initiatives to reduce the impact on the natural environment [5].
Ahi & Searcy (2013)	Integrate environmental thinking into supply chain management, including product design, material procurement and selection, manufacturing process, final product delivery to consumers and product scrap management at the end of product life [1].

3. The Impact of Green Supply Chain Management on Firm Performance

After the 21st century, scholars began to conduct extensive and in-depth research on the extension of green supply chain management. The impact of green supply chain management on corporate performance is one of the hot research directions. Based on the triple bottom line theory, the existing research on the relationship between green supply chain management and performance divided performance into environmental performance, economic performance and social performance.

3.1. The Impact of Green Supply Chain Management on Environmental Performance

Johnson combined green supply chain management concepts with a balanced scorecard approach to propose environmental performance indicators in the enterprise performance evaluation system [6]. It is pointed out that green supply chain management can further improve corporate performance and achieve business objectives through improvement of environmental performance. Theyel discussed the impact of environmental management practices on environmental innovation and environmental performance, and the analysis shows that environmental management practices can promote environmental innovation and environmental performance of factories [7]. Zhu and Sarkis believed that the most significant result of green supply chain management is to improve environmental performance [8]. Eltayeb *et al.* analyzed sample data from 569 manufacturing companies in Malaysia and found that eco-design can significantly improve corporate environmental performance [9]. Using data from 85 manufacturing plants in Canada, Hajmohammad *et al.* discussed the impact of

lean management and supply management on green practices and their performance [10]. The results showed that green practices such as ISO14001 certification, pollution prevention and material recycling had significant positive effects on environmental performance. Dai *et al.* believed that managers adopt environmental management behaviors and enterprises implement green supply chain management can provide a “win-win” situation for enterprises, which can not only improve environmental performance but also improve corporate financial performance [11]. Tseng *et al.* found that green supply chain management can reduce negative environmental impacts and environmental risks while eliminating waste and improving eco-efficiency, thereby improving environmental performance [12].

Obviously, based on the reduction of pollution to the environment and the waste of resources, the concept of green supply chain management is proposed. Therefore, we can see from the previous research that green supply chain management has a positive impact on improving the environmental performance of enterprises.

3.2. The Impact of Green Supply Chain Management on Economic Performance

Carter *et al.* used historical data to analyze the impact of environmentally conscious procurement on corporate financial performance [13]. The study found that environmentally conscious procurement has a significant correlation with corporate net profit and product cost. Sarkis used network analysis method to evaluate the strategy of green supply chain management, and pointed out that the concept of green supply chain management can improve the competitive advantage of enterprises, improve the organizational performance of enterprises, reduce production costs and protect the natural environment [14]. Corbett and Klassen found that green supply chain management has a positive impact on business performance [15]. Taking 334 manufacturing enterprises in Dalian, Suzhou and Tianjin as samples, Zhu *et al.* discussed the relationship between environmentally-oriented supply chain cooperation (green procurement, customer cooperation) and circular economy practice (internal environmental management, ecological design, investment recovery) and their performance [16]. The study found that the higher the level of green procurement execution and customer cooperation, the higher the level of internal environmental management, ecological design and investment recovery, and the better the corresponding environmental performance and economic performance. Green *et al.* used structural equation modeling to analyze data from 159 manufacturing companies [17]. The research results showed that the application of green supply chain management technology in manufacturing enterprises had a positive impact on environmental performance and economic performance, and would lead to an increase in operational performance, which in turn would lead to an increase in organizational performance.

However, other scholars have found that green supply chain management has a negative impact on the economic performance of enterprises. Horbach *et al.* believed that green supply chain management will inevitably make a very big change to the existing process, increasing the burden and cost of the enterprise, and will damage the economic interests of the enterprise [18]. Wiengarten *et al.* analyzed the data of European countries in the GMRG (Global Manufacturing Research Group) from 2006 to 2008 and found that implementing green supply chain management has a negative impact on the economic performance of the supply chain [19]. Miroschnychenko *et al.* found that the adoption of ISO 14001 has a negative impact on the economic performance of companies [20].

From the above studies, it can be found that the relationship between green supply chain management and enterprise economic performance has been preliminarily studied and explored. However, whether the green supply chain management concept has a positive or negative impact on the economic performance of enterprises, the academic circle has not yet reached a unified conclusion.

3.3. The Impact of Green Supply Chain Management on Social Performance

Corporate social performance is developed from the theory of corporate social responsibility, which refers to the efforts of enterprises to prevent, limit or correct the negative externalities or broader social problems of their operations, and these problems do not necessarily originate from the enterprises themselves. Corporate social performance is the evaluation result of corporate social responsibility behavior. In the past few decades, the number of papers on corporate social performance related research has increased year by year. It can be seen that corporate social performance has become an important topic in academic research.

Social issues such as product safety and environmental pollution have caused widespread concern among researchers in recent years, and social performance is also considered to be a key factor in green supply chains. Freeman and Gilbert's research indicates that in addition to pursuing financial performance for shareholders, companies should also assume social responsibility and seek benefits for other stakeholders [21]. Preuss research showed that measures to protect the environment within the enterprise can be transferred to suppliers through procurement functions, which can have a knock-on effect, leading to rapid and profound changes in overall social performance [22]. Eiadat and others believe that implementing a green innovation strategy will help enterprises to win a good social reputation, and this reputation can enable enterprises to establish a first-mover advantage in environmental protection, thereby enhancing the social performance of enterprises [23]. Chiu and Sharfman believe that the social performance of enterprises comes from the various behaviors that promote social responsibility, and the environmentally responsible behaviors of enterprises can increase the social performance of enterprises [24]. Hanim Mohamad Zailani *et al.* analyzed data from 400 manufacturing companies in Malaysia and found that green procurement and green packaging have a positive impact on social performance [25].

From the above research, it can be seen that the implementation of green supply chain management contributes to the improvement of corporate performance. When enterprises make some environmental protection measures, they are actually fulfilling their social responsibilities and reducing the occurrence of some social problems.

4. Conclusions

This paper summarizes and sorts out the relevant research literature on the impact of green supply chain management and green supply chain management on corporate performance. It can be found that the relationship between green supply chain management and corporate performance has been initially studied and explored by some scholars. Most studies show that green supply chain management has a positive impact on corporate environmental performance and social performance, but the impact of green supply chain management on corporate economic performance is positive or negative, and there is no unified statement in the academic world. By collating relevant literature, this paper proposes that the future can be further studied from the following three aspects.

First, continue to explore the relationship between green supply chain management and corporate economic performance, and clarify whether the impact of green supply chain management on economic performance is positive or negative. The concepts of the two can be subdivided to form consistent conclusions, such as the breakdown of the type of business, and whether the same type of enterprise uses the green supply chain management concept to influence the economic performance of the enterprise.

The second is to explore the reasons for the inconsistent impact of green supply chain management on corporate economic performance. For example, does green supply chain management have its own unique and special performance evaluation method? Is it accurate to use the performance evaluation method of traditional supply chain management to evaluate the performance of green supply chain management? Will the current performance evaluation method cause the inconsistent impact of green supply chain management on the economic performance of enterprises?

The third is to explore the relationship between green supply chain management and other types of corporate performance, such as: operational performance, financial performance. This paper divides corporate performance into environmental performance, economic performance, and social performance according to the triple bottom line theory. However, corporate performance is not limited to these three aspects. Future research can explore the relationship between corporate performance and green supply chain management from other aspects of corporate performance. This is also the research limitation of this article.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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