

Review of Sustainable Supply Chain Performance Evaluation Feng Wei^{1,2,*} Zhihui Xiong¹

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ABSTRACT. With the increasingly prominent problems of resources, environment and society, sustainable development has become a global issue. While pursuing their own development, supply chain enterprises must also make overall adjustments to the economic, environmental and social benefits they face, and introduce the concept of sustainable development into the supply chain to maximize the overall benefits. "sustainable supply chain" is exactly in line with this trend. This paper mainly introduces the research status of sustainable supply chain based on the Triple Bottom Line (TBL)theory in three aspects of economic, environmental and social benefits, so as to summarize the relevant theoretical results from home and abroad.

1. INTRODUCTION

In the 21st century, market competition is no longer between enterprises, but between supply chains. Ageron et al. (2012) pointed out that many enterprise practitioners and scholars attach great importance to supply chain management. At the same time, with the continuous upgrading of the global industrial structure, the economic development model dominated by resources and laborintensive industries has caused many adverse impacts on the environment and society, and no longer meets the requirements of the sustainable development goals [1]. According to the world commission on environment and development, "sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their needs." How to achieve sustainable development has become a global challenge. With the constant changes of society, market and environment, Elkington (1998) first proposed that enterprises should start from the triple bottom line (TBL) and fulfill the responsibilities of economy, society and environment[2].Sikdar (2003) defined sustainability as a balance between economic development, environmental protection and social equity from a macro perspective [3]. Hassini (2012) et al defined the sustainability of an enterprise as its ability to maintain long-term economic, environmental and social benefits [4]. Under the influence of economic globalization, the requirement of sustainable development and the triple bottom line responsibility for enterprises, new requirements have been put forward for the performance of supply chain management, which requires that supply chain management should not only aim at economic performance, but also take social and environmental performance into consideration and carry out supply chain management on the basis of sustainability. Seuring et al. (2008) proposed that sustainable supply chain management should comprehensively consider the three dimensions of economy, environment and society in the process of sustainable development, so as to manage the logistics, information flow and capital flow in the supply chain as well as the cooperation among supply chain enterprises [5]. Ahi et al. (2013) summarized the 12 definitions including the above definitions of comparative analysis of a large number of literatures, and summarized their own views based on the combination of these definitions. That is, by integrating environmental, social and economic objectives into the key business process system of the supply chain organization, it aims to efficiently manage the logistics, information flow and capital flow, and coordinate the procurement, production and distribution of products or services to meet the requirements of stakeholders, so as to improve the profitability and competitive advantage of the organization in the short or long term [6].

Based on the Triple Bottom Line (TBL)theory, this paper divides sustainable supply chain performance into three dimensions and summarizes relevant research results from home and abroad.

2. Literature Review on Sustainable Supply Chain Economic Performance

The goal of supply chain management is to reduce supply chain costs and improve responsiveness to achieve profit growth. Whether traditional supply chain management or sustainable supply chain management, the ultimate goal is to achieve economic growth. Zhelei Huang et al. (2016) [7] proposed a framework of sustainable performance evaluation based on the potential relationship between traditional supply chain management and performance, mainly focusing on economic performance. When Kumar et al. (2017) constructed the sustainable supply chain evaluation index model, they divided the economic performance into product cost, resource utilization, profit margin and other indicators for measurement [8]. Osiro et al. (2018) proposed the sustainable supply chain evaluation model, and based on the summary of relevant literature, divided the performance indicators of the economic dimension into six aspects: quality management, risk management, strategic management, partner, information sharing and technology management [9]. Rostamzadeh et al. (2018) studied and discussed sustainable supply chain performance evaluation from two aspects: financial performance and non-financial performance [10]. When evaluating suppliers in the context of sustainable supply chain, Petrudi et al. (2018) divided the economic criteria for selecting suppliers into seven aspects: cost/price, quality, delivery and service time, technical capability, financial capability, reliability and flexibility [11]. Sandeepa (2018) pointed out that factors such as flexibility, reliability, transportation cost and selection of transportation routes are the important basis for realizing economic profit and customer demand, and are more closely related to realizing sustainable development [12]. Fan et al. (2016) pointed out that the economic dimension of sustainable supply chain mainly refers to the focus on generating and maintaining long-term profits [13]. Wang (2018) et al. demonstrated against empirical research that the sustainable enterprise practice of stakeholders in the supply chain has a positive impact on the profits of all members of the chain [14].

3. Literature Review on Sustainable Supply Chain Environmental Performance

The ultimate goal of sustainable development is to achieve harmony between man and nature. Longon (2018) et al. pointed out that the study of environmental problems with the supply chain will show an increasing trend. Sustainable supply chain environmental performance requires the realization of green cycle growth mode with low energy consumption and low pollution. The environmental performance of sustainable supply chain management is often associated with green supply chain management [15]. In his research on green supply chain management, Qisheng Chen (2019) pointed out that green supply chain management is an effective environmental management method of enterprises, and buyers and supply chain managers play key roles in green supply chain management. Through the selection and evaluation of suppliers and cooperation with suppliers for green procurement, enterprises play an important role in establishing and maintaining competitive advantages [16]. At the same time, the establishment and implementation of green supply chain management vary from industry to industry and from enterprise to enterprise, so different methods must be adopted according to the actual situation of the enterprise to reduce costs, improve environmental benefits and corporate reputation, and ultimately increase profit and achieve sustainable development. Centobelli (2018) pointed out that sustainable supply chain management is to consider environmental factors of supply chain management, including product design, source and selection of raw materials, production process, delivery of final products to customers and management after product life cycle [17]. Esfahbodi (2017) integrates the concepts and technologies of green, low-carbon and environmental protection into the supply chain based on the



product life cycle theory. Sustainable design, sustainable procurement, sustainable distribution, investment recovery and other four basic processes [18]. Hong (2018) pointed out that the environmental dimension of sustainable supply chain performance refers to achieving the minimum negative impact on supply chain operation on the environment [19]. Jinsong Zhang (2018) et al used four indicators to evaluate the environmental performance in the performance of sustainable supply chain, including energy resource utilization rate, product recycling rate, three-waste emission rate and energy security guarantee rate [20]. Das (2018) points out the five most important aspects of sustainability practices in the ecological environment, namely, reducing emissions of three wastes, using energy-saving products and services, using renewable and recycled energy, maximizing the application of reusable components and raw materials, and applying standards to evaluate sustainability performance [21].Wang (2018) et al. showed that enterprises' environmental management practices have a positive impact on enterprises' economic and environmental performance [14].

4. Literature Review on Social Responsibility Performance of Sustainable Supply Chain

The economic and environmental dimensions are considered to be two important aspects of TBL, while the third dimension, social responsibility, is often overlooked. With the continuous development of economy and society, enterprises need to assume more social responsibilities. Many studies have shown that the three dimensions of economy, environment and social responsibility are positively correlated. Eriksson (2015) pointed out that in recent years, due to the increasing awareness of equity, health and safety, education, debt and ethics in enterprises, social sustainability in supply chain has attracted more and more attention [22]. Lubberink et al. (2017) believe that the social dimension of sustainable supply chain management refers to maximizing the social welfare of relevant stakeholders related to supply chain operation, including employees, consumers, suppliers and other stakeholders affected by supply chain operation [23]. xiaoyan Yang (2016) proposed an optimization model to measure social performance from product acceptance rate, employee five social insurance and one housing fund, employment number, etc., and found that considering social dimension can not only improve corporate social responsibility performance level, but also improve the performance level of the whole supply chain [24]. Yuangao Chen (2015) in the system analysis of corporate social responsibility an and green supply chain on the basis of relevant theories, to the enterprise bear the social responsibility of the dynamic mechanism are studied, put forward the coercive power of public policy, social public pressure, competition in the market driving force, growing demand and the supply chain internal binding five integrated dynamic model of supply chain social responsibility [25]. Juan Ren(2019) et al evaluated the social responsibility performance of sustainable supply chain by using seven indicators, including the responsibility for shareholders, the responsibility to employees, the responsibility to customers, the responsibility to partners, the responsibility to the community, the responsibility to the government and the responsibility to the public welfare industry [26].

5. conclusion

This paper introduces the development direction of supply chain management in the new era of the theme of economic globalization and sustainable development, proposes that supply chain management should meet the requirements of sustainable development, and points out that sustainable supply chain is the inevitable choice to conform to the trend of The Times.

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