



## Sustainable supply chain management (SSCM) in Malaysia: A survey

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### ABSTRACT

As a developing country, Malaysia has moved from an agriculture-based economy to an industrialized economy in which manufacturing is considered to be the highest contributor towards environmental concerns. These concerns push firms into seriously considering the environmental impact while doing their business. The implementation of sustainable supply chain management (SSCM) is a key enabler that could push organizations to focus on alleviating environmental issues, and providing economic and social benefits. This study investigates the extent of implementation of sustainable supply chain management practices (environmental purchasing and sustainable packaging). The study also examines the outcomes of these practices on sustainable supply chain performance. A survey via mail was carried out among 400 manufacturing firms in Malaysia. Factor analysis of the survey data resulted in four categories of outcomes (environmental, economic, social and operational). The study found that environmental purchasing has a positive effect on three categories of outcomes (economic, social and operational), whereas sustainable packaging has a positive effect on environmental, economic and social outcomes. The results have empirically proven that SSCM practices have a positive effect on sustainable supply chain performance, particularly from the economic and social perspective. Thus, firms need to collaborate in advocating sustainable supply chain management (SSCM) practices as a route for firm's commercial success rather than as a moral obligation.

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### 1. Introduction

There is a rapidly increasing awareness in industry that today's supply chains are flawed. To date, many manufacturing companies create waste and pollution and are threatening the existence of life on earth. Consequently, these challenges and pressures push firms to seriously consider the environmental impact while doing their business. As the population of the world increases and resource availability decreases, companies are starting to realize that supply chains must be re-designed (Carter and Jennings, 2002). From the companies perspective, they must portray the environmentally friendly image of products, processes, systems and technologies, and the way business is conducted (Vachon and Klassen, 2006a).

Recent developments in the world economic climate create uncertainty in the business environment, which creates the necessity for organizations to look at reconstructing and restructuring to enhance their strategy to sustain the business and profitability while remaining competitive in the marketplace.

Additionally, organizations are facing increasing global community inquiries through media and non-governmental organizations (NGOs) pertaining to the sustainability aspect of their development (Sarkis, 2001). According to Porter and Kramer (2006), companies are increasingly expected to extend their sustainability efforts beyond their own operations to include those of their suppliers and to meet their customer's sustainability expectations. Forward thinking companies are already taking steps to develop sustainability within their supply chains.

According to Carter and Jennings (2002), the supply chains need to be closed-looped, environmentally friendly and conserve and use as few resources as possible. Thus, many researchers claimed that the future of supply chain management is sustainability (Carter and Jennings, 2002, 2004; Murphy and Poist, 2002; Penfield, 2009). McKone-Sweet (2004) claimed that companies are under pressure to improve the social and environmental standards wherever they can exert their influence, for instance, at their suppliers and further along the supply chain. Most of these pressures focus on the outsourcing activities from large Western firms that source input from low cost manufacturers and service providers in developing countries by ignoring the social and environmental deteriorating issues with respect to supporting the short-term profitability of the organizations (Leenders et al., 2006).

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There are numerous definitions of the terms ‘Sustainable Supply Chain’ and ‘Supply Chain’. For example, [Leenders et al., 2006](#) stated that the supply chain considers the interactions between a business and its customers and suppliers. They urged that a sustainable supply chain – the management of raw materials and services from suppliers to manufacturer/service provider to customer and back with improvement of the social and environmental impact – be explicitly considered. Although in the past supply chain management only focused on the efficient and responsive system of production and delivery from the raw material stage to the final consumer, currently, environmental issues in the supply chain are significantly growing, which is partly due to the wider debate on how industry meets the challenges of sustainability ([Seitz and Wells, 2006](#)).

Pressure from various stakeholders present a great challenge for supply chain managers in integrating sustainable practices in managing their supply chains. A sustainable supply chain demands that practices like environmental friendly packaging, return of end-of-life and used products to the producer as well as the eco friendly handling of returns, recycling, remanufacturing and adequate waste disposal are enabled and are deemed to be important elements ([Zhu et al., 2005](#)). However, some of the key challenges in adopting the sustainable practices that are related to issues, such as price competition and responsiveness, are of prime importance making the adoption of sustainable practices a daunting task.

[Carter and Mol \(2006\)](#) stated that Asia is heavily emphasizing sustainability despite the difference in views concerning corporate social responsibility and sustainability between Europe and Asia. In the context of Malaysia, [Zailani et al. \(2009\)](#) studied the key drivers of sustainable supply chain management. However, [Eltayeb and Zailani \(2009\)](#) researched the level of the adoption of a green supply chain among ISO 14001 certified manufacturing firms within Malaysia, whereas this paper is interested in determining the extent of the involvement of Malaysian companies in the sustainable supply chain. This paper will focus on the practices of a sustainable supply chain within an organization and their relationship with the performance of a sustainable supply chain.

The body of this paper comprises five sections. This paper starts with this introductory section, which provides a general idea about the research topic and gaps of the study. [Section 2](#) reviews the literature related to a sustainable supply chain, practices and

performance for sustainable supply chain. [Section 3](#) addresses the methodology and [Section 4](#) discusses the findings from the data analysis. Finally, [Section 5](#) relates the conclusions, implications and poses questions for future research, thereby fulfilling the purpose of the paper.

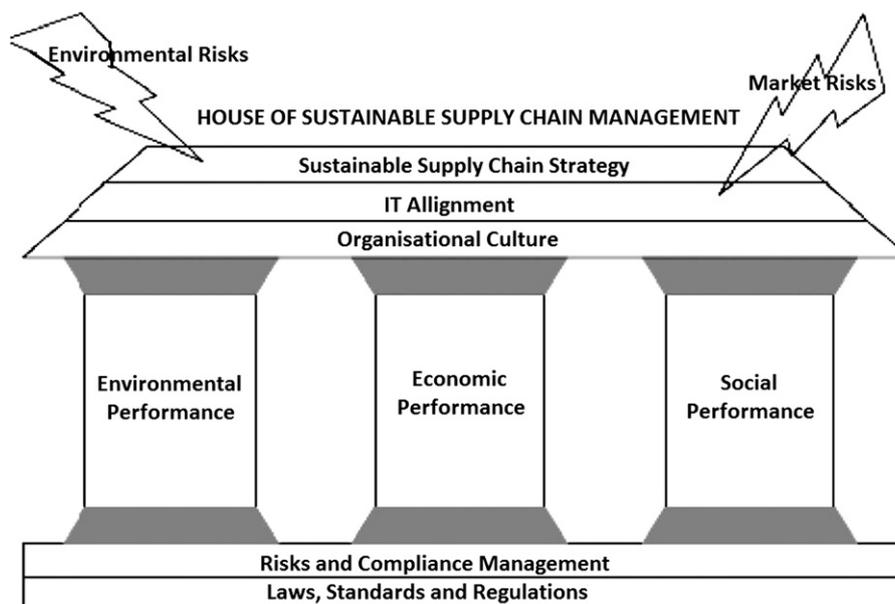
## 2. Literature review

### 2.1. Sustainable supply chain management (SSCM)

According to [Dyllick and Hockerts \(2002\)](#), SSCM is comprehended as the integration of sustainable development and supply chain management whereby sustainable development is often described as containing three dimensions – integrating environmental, social and economic issues for human development – which also affects the corporate strategy and action. Although the field of SSCM is considered quite new, interest in SSCM has been growing rapidly over the years. [Seuring and Martin \(2008\)](#) identified and reviewed 191 papers and found that the economic and environmental aspects of the supply chain are by far the dimensions that are the most studied among the papers reviewed (73.3%), and that papers integrating sustainable dimensions only started to appear from 2002 onwards.

[Sikdar \(2003\)](#), who takes a “macro-viewpoint”, which includes the social, environmental, and economic aspects, defined sustainability as “a wise balance among economic development, environmental stewardship, and social equity”. Reviews of different elements related to supply chain sustainability suggests that SSCM can be linked to green design, inventory management, production planning and control for remanufacturing, product recovery, reverse logistics, waste management, energy use and emissions reduction ([Ramudhin et al., 2009](#)). [Carter and Rogers \(2008\)](#) defined SSCM as the strategic, transparent integration and achievement of an organization’s social, environmental, and economic goals through the systemic coordination of key inter-organizational business processes for improving the long-term economic performance of the individual company and its supply chain.

[Teuteberg and Wittstruck \(2010\)](#) proposed the “House of Sustainable Supply Chain” ([Fig. 1](#)), built on the three dimensions of the Triple Bottom Line, which are viewed as the key pillars



**Fig. 1.** House of SSCM.

Source: Teuteberg and Wittstruck, 2010.

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