



Sustainable Supply Chain Management Tools

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Abstract. Suppliers not only ensure the smooth operation of the company but also influence the sustainability of the company's activities, products, and services. The company's sustainability is also evaluated in terms of its entire supply chain, so it is very important to choose responsible and sustainable suppliers. The article analyzes sustainable supply chain and supply chain management concepts, sustainable supply chain tools, and sustainable supply chain trends. To achieve the goal, the analysis of scientific literature and the method of comparative analysis are applied. Analysis of scientific literature that sustainable supply chain management reduces negative environmental impacts, and increases consumer satisfaction and competitiveness. Sustainable supply chain management and sustainable supply chain management indicators can improve sustainable supply chain management processes.

Keywords: Supply chain · Sustainable supply chain · Supply chain management

1 Introduction

Sustainable supply chain management is the oversight of the entire delivery of goods from one location to another. A supply chain is thus a business link. This includes the contribution of each business to the entire chain from production to production and final consumption. The main objective of supply chain management is to ensure that it is efficient and effective in order to reduce costs and ensure customer satisfaction. Adequate management skills and appropriate training related to supply chain management would be required for any organization to be successful.

Investigation Problem. One of the most important sectors in European countries is the transport sector. Transport and logistics play an important role in Lithuania. The main means of human communication is transport, which is why more and more attention is being paid to it. The supply chain plays an important role nowadays, especially in a sustainable supply chain. Therefore, the application of various practices such as supply chain management, and sustainable supply chain management plays an important role. The concept of supply chain can be heard in various countries. A sustainable supply chain is examined by authors such as Tundys [21], Sánchez-Flores et al. [17], Saeed et al. [16], Panigrahi [13], Bernal et al. [1], Osei et al. [12].

Scientific Novelty. When examining the field of sustainable supply chain, sustainable supply chain management measures, this is not yet a widely studied subject, very little is discussed in the scientific literature. Sustainable supply chain management tools are not widely explored in the concept of sustainable supply chain. Sustainable supply chain management is still considered a novelty in Lithuania.

The purpose of the article is to evaluate sustainable supply chain management tools.

Research Contribution. Nowadays, there are trends to reduce the negative impact of transport on the environment, so more attention is paid to a sustainable supply chain, its management and measures. This concept is explored through a sustainable supply chain and its benefits. As the business environment is constantly changing, it is important for the supply chain to adapt to disruptions seamlessly. It is important for the supply chain to have the ability to adapt quickly to disruptions. Therefore, it is essential that a coherent supply chain ensures a smooth process.

1.1 Sustainable Supply Chain and Supply Chain Management Concept

Kashem et al. [7] mentioned that the supply chain connects customers and suppliers. A sustainable supply chain management includes many business processes of the company, which include the management of orders to suppliers, the supply of necessary raw materials, supply management, planning the supply of manufactured products according to orders to the customer, transportation, and supply requests. A sustainable supply chain is an interconnected or interconnected network, processes, and activities, the path of which starts from the submission of an order or supply request, and continues through production, services that reach the end user, to analysis and reporting. A sustainable supply chain also includes logistics management, delivery, and removal of goods. A sustainable supply chain includes suppliers who take delivery and transportation services.

Sustainable supply chain and sustainable supply chain management concept comparison is presented in Table 1.

Yuan et al. [19] considered that a sustainable supply chain 4 also facilitates the transition to sustainable innovation within the organization, increasing the contribution of employees to the creation of sustainable innovation. Sustainable supply chain 4 provides knowledge about product and process innovations in the market. Sustainable Supply Chain 4.0 facilitates partnership processes and helps align the needs of different stakeholder groups. A sustainable supply chain 4 is becoming a priority for both internal and external business entities.

Lengyel et al. [8] mentioned that a sustainable supply chain includes processes from order receipt to order completion. A sustainable supply chain consists of manufacturers, logistics companies, wholesalers, and retailers. In a sustainable supply chain, they operate using information, human and other resources. In a sustainable supply chain, the flow of goods and services is managed to ensure maximum value for customers and gain a competitive advantage in the market, therefore it is important to avoid unnecessary costs and maintain optimal speed of processes.

Joshi et al. [15] opined that changing market dynamics and consumer needs are causing organizations to rethink and adapt existing processes.

Table 1. Sustainable supply chain and sustainable supply chain management concept comparison.

Author	Definition	Highlights
Tundys [21]	A sustainable supply chain involves the integration of social, economic, and environmental indicators	Effective management of logistics processes to improve flow profitability
Sánchez-Flores et al. [17]	Sustainable supply chain management covers social responsibility, environmental care, and economic feasibility in all functions of the supply chain	The balance that can exist between social responsibility, environmental care, and economic feasibility in all functions of the supply chain
Saeed et al. [16]	Organizations aiming for sustainability must transform their current supply chains so that sustainability goals are incorporated into their operations from purchase to distribution	The aim is to provide maximum value to all stakeholders and meet customer requirements in the area of sustainability
Panigrahi [13]	The concept of Sustainable Supply Chain Management (SSCM) is important for environmental, social, and corporate responsibility through economic performance	Environmental, social, and corporate responsibility
Bernal et al. [1]	SSCM indicators are usually presented in the literature	Environmentally friendly indicators have been set
Osei et al. [12]	Improvements in a sustainable supply chain can be seen as improvements in environmental, social and economic outcomes	Improvements in a sustainable supply chain

According to Luo et al., the long-term sustainability of SC is still uncertain and requires further research.

Mandičák et al. [10] mentioned that supply chain technologies will reduce costs and shorten material delivery times.

Brandenburg et al. [2] indicated that process orientation, customer focus, and collaboration are critical elements of a sustainable supply chain.

According to Chauhan et al. [4] SCM and Industry 4.0 apply technologies such as the Internet of Things (IoT), cloud computing, big data, artificial intelligence (AI), and blockchain.

Silva et al. [18] argue that a sustainable supply chain can provide strategic and transparent social, environmental, and economic dimensions to systemic inter-organizational coordination projects and business processes.

Gružasuskas et al. [6] argue that a supply chain management system evolve into sustainable development – capacity, collaboration, and complexity management.

1.2 Sustainable Supply Chain Tools

A sustainable supply chain includes functions such as planning, sourcing, manufacturing, shipping, and returns. A sustainable supply chain is run by a team of supply chain managers. Optimum management of a sustainable supply chain depends on all process participants communicating well and sharing real-time information promptly to identify and resolve issues as effectively as possible.

Correia et al. [5] state that there are several tools for sustainable supply chain management: (i) provide a comprehensive approach to sustainability; consider three aspects of sustainability; ii) considers various governance-oriented functional/activity areas and specific actions (action area structuring) aimed at improving sustainability; (iii) is not limited to practices that need to be developed for supply chains and other stakeholders.

Reyes-Soriano et al. [14] mentioned that nowadays companies must promote and contribute to environmental sustainability in their production activities.

Tseng et al. [20] believed that sustainable supply chain management (SSCM) helps companies control costs and maximize economic performance.

1.3 Sustainable Supply Chain Trends

Much of the sustainability impact of products occurs in the supply chain, which cannot be directly controlled. Developing long-term relationships with suppliers and improving their sustainability, including health and safety, environment, and social and business ethics, is essential. All suppliers are expected to adhere to the standards of the code of conduct, and all those defined as “at-risk suppliers” are subject to regular sustainability audits and corrective action plans.

Budrys [3] analyzed that supply chain participants must be familiar with each other’s business vision when cooperating and strategic goals that should be acceptable to each other. A collaborative strategy is a win-win for all parties – there are no losers, and there are partners who create a common value chain and deliver higher value to the end user. The researchers say that the supply chain is limited and focuses more on efficiency than on the end user. Therefore, in this context, it would be very wrong to focus only on your functions in product development. It is important to understand the continuity of the process and how the value chain changes at the next stage of the supply chain. It is necessary to constantly exchange information and cooperate. Authors yes also notice that more and more organizations are changing their orientation and approach to supply chain management from a broader point of view – value chain management.

It is important to emphasize that more and more companies are starting to switch to a sustainable business model. In such a large sector as logistics and trade, the principle of sharing significantly reduces the ecological footprint of companies, which is also in line

with EU expectations and legislation. Constantly working with leading retail chains and thousands of customers, companies are looking for solutions to reduce the impact of their business on the environment. Therefore, the goal of every company is to help increase the sustainability of the supply chains of customers and business partners, saving time, the environment, and money.

Mikuckienė et al. [11] stated that production raw materials or products must be delivered by transport companies if the business is to operate. The supply chain starts from this process. Properly managing a sustainable supply chain and forming optimal production plans in the company help to avoid high operating costs and disruptions in production processes that may occur due to improper management of logistics processes taking place inside and outside the company.

Budrys [3] mentioned that from a supply chain management perspective, it can be argued that organizations focus on their immediate customer fulfilling orders on time. Given the rapid dynamics of the market, it is often observed that the flexibility of organizations' responses is rather limited due to the lack of knowledge about the end user.

Budrys [3] stated that a value chain management approach strengthens sustainability and collaboration, allows an understanding of the dynamics of demand, and understands who creates value for the end user. Continuous cooperation between suppliers allows to increase productivity and reduces demand forecast deviation and planning costs.

2 Conclusions

The approach to sustainability combines values, ongoing activities, strategic directions, and principles of sustainable (responsible) activities that contribute to the goals of sustainable development. Sustainable supply chain management principles are an inseparable and integral part of the company's long-term strategy, realized through the areas of economic impact, social responsibility, and environmental protection. The transport company is based on the following principles of responsible activity: Transparency - base activities on responsibility and zero tolerance for corruption; Respect - attention to the human and labor rights of employees; Social responsibility – application of measures that create long-term value within the company and for society; Reducing the impact on the environment - implementing preventive measures for environmental protection and ensuring their impact; Honest reporting - voluntary disclosure of the company's performance results to the public and interested groups. The transport company bases its activities on the goals of sustainable development, good practices of sustainable development and sustainability, and social responsibility.

By engaging with suppliers who are guided by values and meet sustainability standards, companies ensure that all supply chains have the same goals: a sustainable supply chain. In cooperation with suppliers, companies constantly improve the quality and safety level of their products and strive to create a supply chain that meets the requirements of suppliers. Suppliers who value sustainability also value quality.

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