

Suppliers as an important factor in the management of the sustainable supply chain in the food industry

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Abstract

The present work analyzes the characteristics of the existing relationship between the suppliers, the agents in the food industry and the management of the supply chain with a sustainable approach. In this perspective, the analysis focuses on the link between the management of sustainable supply chains and a series of external factors that determine its viability. The methodological proposal develops an exercise to identify factors that affect the results of the supply chain through spatial georeferencing and content analysis techniques in the food industry. With this objective, we will identify a corpus of scientific articles that allow us to characterize these factors, including issues such as the selection and development of suppliers, supply of raw materials and supplies, integration of corporate strategy and analysis of social and environmental risks, among others.

Keywords

Sustainable supply chain management, sustainability, supplier management, sustainable practices, food industry.

1. Introduction

Currently, sustainability has been defined as the capacity to meet needs in the present without compromising the ability of future generations to meet theirs (WCED, 1987). For companies, sustainability has become one of the key issues in planning and management within organizations and between supply chains (Subramoniam, Huisingsh & Chinnam, 2009, Huang, Chen & Fan, 2010, Jayal, Badurdeen, Dillon & Jawahir, 2010).

The different approaches to sustainability analysis have shown a growing interest in the study of the practices that companies have adopted to assume sustainable objectives at the level of management and production. One of the axes of work, which has stood out for its appearance in the literature, focuses on the design and operation of the supply chain (Hutchins & Sutherland, 2008; Darnall, Jolley & Handfield, 2008).

The tendency in the business sector is to recognize sustainability as a central point in the development of operations (Browne, J., 2002; Aragón-Correa, J.A. & A. Rubio-López, E., 2007), especially in the food industry due to its high degree of impact on the quality of life of the population.

However, the concept of sustainability is characterized by a difficult definition, mainly because of the multidimensional way in which it is used in business theory and practice. Initially, the concept was associated with environmental issues, but over time, the economic and social dimensions have been incorporated, generating the interaction of a greater number of factors and actors within the companies for their implementation. (Ahi & Searcy, 2013).

If we consider that the supply chain contemplates the manufacture of a product from its initial phase, including the selection of raw materials, until delivery to the consumer, a sustainability approach in the supply chain is the core for the theory and practice, where management becomes the key to its definition and adoption. (Carter, R.C. & Rogers, D.S., 2008). However, according to the literature, there is no general definition of sustainable supply chain management (SSCM). Authors such as Ahi & Searcy (2013) identified the existence of multiple definitions, observing heterogeneity in the interpretation and its axes of development.

According to the authors' findings, the definitions of the SSCM include the objective of sustainability in the development of the company's activities. However, they do not explain what it is to be sustainable or how to be sustainable. The different definitions propose different approaches to analysis that range from strategic aspects (Ashby, A., Leat, M. & Hudson-Smith, M., 2012), the development of the production phases (Haake, H. & Seuring, S., 2009), the life cycle of products (Badurdeen, F., Iyengar, D., Goldsby, T.J., Metta, H., Gupta, S. & Jawahir, I.S., 2009), work among strategic groups such as workers, suppliers or consumers (Seuring, S. & Müller, M., 2008; Wolf, J., 2011), until the incorporation of environmental, social and economic dimensions (Ciliberti, F., Pontrandolfo, P. & Scozzi, B., 2008; Font, X., Tapper, R., Schwartz, K. & Kornilaki, M., 2008; Wittstruck, D. & Teuteberg, F., 2011).

In relation to the SSCM, different authors suggest that it can be affected by a series of internal and external factors. Within the category of internal factors stand out: the influence of senior management (Wu & Pagell, 2011; Walker & Jones, 2012; Bastian & Zentes, 2013; Gold, Hahn & Seuring, 2013), the business strategy (Oglethorpe & Heron, 2010; Mojtahedzadeh & Izadi, 2013; Govindan, Jafarian, Khodaverdi & Devika 2014), the organizational structure (Pullman & Dillard, 2010), the measurement systems (Kashmanian, 2015; McLaren, 2016), the conscience for the environment (Validi, Bhattacharya & Byrne, 2014; Cagliano, Worley & Caniato, 2016; Genovese, Acquaye, Figueroa & Koh, 2017), the characteristics of the physical plant (Kyllönen & Helo, 2012; Meneghetti & Monti, 2015) and the dynamic capabilities (Beske, 2012; Beske, Land & Seuring, 2014; Rauer & Kaufmann, 2015; León-Bravo, Caniato, Moretto & Cagliano, 2016; McDougall, Wagner & MacBryde, 2016).

With respect to the external factors that affect the SSCM for the food industry, the authors highlight the policies and regulations (Gold, Seuring & Jeff, 2012; Forsman, Milani, Schondebare, Matthias & Guyondet, 2014; Müller, Vermeulen & Glasbergen, 2009; Trachana, Karagiannaki, Zampou & Pramadari, 2016), the attitude of consumers (Hospido, Milà, Canals et al, 2009; Beer & Lemmer, 2011) and the suppliers (Styles, Schoenberger & Galvez-Martos, 2012; Grimm, Hofstetter & Sarkis, 2014; Tidy, Wang & Hall (2016)

Based on the findings and considering the suppliers as an external factor that affects the SSCM, this document analyzes the characteristics of the relationship between the suppliers, the agents in the food industry and the SSCM. To this end, the following section briefly describes the methodology for the development of this objective.

2. Methodology

The methodological development starts from the content analysis of 19 articles published in the last 10 years in the SCOPUS, Scindirect, ISI Web of Science and JSTOR databases. The identification of these documents was done through a bibliometric exercise that includes the key words of sustainability, supply chain, management and suppliers.

From the corpus of the documents, a documentary review was carried out that allowed to identify the key factors linked to the characteristics that result from the relationship between suppliers, companies in the food industry and sustainability.

3. Discussion

The findings of the analysis highlight the role of suppliers within the sustainable supply chain and recognize the multiple dimensions involved in their study. For Seuring & Müller (2008), risk management and the performance of suppliers, loss of reputation, environmental and social criteria and standards are the strategic factors of the SSCM. These factors could also, depending on the case, hinder the development of the SSCM.

Morali & Searcy (2013), Chkanikova & Mont (2015), Chkanikova (2016), Chavez, Yu, Feng & Wiengarten (2016) and Schmidt, Foerstl & Schaltenbrand (2017) highlights the importance of developing practices with stakeholders such as suppliers and consumers due to the pressure they can exert against the objectives of sustainability in the SSCM.

For Kashmanian (2015) the monitoring and audits for the evaluation of the performance of the sustainability of the suppliers is a key factor in the SSCM. With this practice, the author concludes that the performance of suppliers is improved through the demands of compliance with regulations and policies. In the same way, the reduction of environmental impacts allows to obtain greater benefits from the activities of companies. In contrast, Sajjad, Eweje & Tappin (2015) point out the lack of knowledge for the implementation of the sustainability of the suppliers, as a barrier to the implementation of SSCM.

Jarosz (2000) proposes the analysis of the management of the sustainable supply chain from the theory of networks, where he emphasizes relations based on trust and cooperation. The author highlights the importance of relationships between suppliers, producers, workers, intermediaries, wholesalers and retailers within specific geographical areas to promote cooperation and confidence in the supply chain. Additionally, it shows the importance of understanding how to manage the relationships between the different stakeholders to achieve the objectives of sustainability in the supply chain.

Styles, Schoenberger & Galvez-Martos (2012) and Grimm, Hofstetter & Sarkis (2014) highlight that the SSCM requires special attention in its different levels of business partners, where the management of suppliers generates a series of unique complexities and challenges. Among the challenges identified are those associated with sub-suppliers such as the lack of contractual relationships, the few opportunities to exert direct pressure on them and the lack of transparency in their participation within supply chains.

For this reason, the authors propose an analysis from the theory of the dependence of resources to analyze the relationships of suppliers and consumers, where the power of the participants influences the management of the relationships within the supply chain, affecting the implementation of sustainable initiatives, modifying the benefits and risks associated with the sustainability that members of the supply chain receive.

For Harms, Hansen & Schaltegger (2013), the management of suppliers is also an important element, being a key strategy for the GCSS, where the selection and hiring mechanisms of suppliers facilitate a strategic perspective aimed at mitigating risk.

Foerstl, Azadegan, Leppelt & Hartmann (2015) and Tidy, Wang & Hall (2016) point out the relevance of supplier management practices, especially practices aimed at reducing pollution and greenhouse gas emissions. Among its findings, the importance of analyzing in an integral way the role played by external actors in the production process is highlighted due to the lack of control over their activities and their propensity to fail to comply with commitments for sustainability in their production processes.

Sgarbossa & Russo (2017) highlight the importance of adopting proactive strategies and sustainable practices as a strategic element to facilitate SSCM in the food industry. An example is the recovery of materials through activities that allow the return of waste to be transformed in the supply chain (reverse logistics).

Finally, Mehmam & Teuteberg (2015) analyze the importance of integrating providers of logistics services (outsourcing in transportation), aligning them with the fulfillment of objectives oriented to sustainable development and the mitigation of the impacts on the environment as a result of transportation in the food industry.

In general, the literature highlights the development of practices among suppliers and the different interest groups that make up the sustainable supply chain, control and follow-up to suppliers of sustainability standards and cooperation with business partners in the objective of the sustainability. In addition, outsourcing aligned to sustainability, the development of sustainable suppliers, the sustainable management of suppliers and the integration of suppliers to the sustainable strategy of the companies as factors to be highlighted of suppliers as an external factor that is related to the GCSS.

4. Conclusions

The analysis of the corpus of scientific articles that highlight the role of suppliers as a key factor in the management of the sustainable supply chain allows us to identify three great perspectives of analysis in this field:

- *Approach suppliers as a key player in the sustainability of the supply chain*, which highlights its significant ability to influence management and strategic and operational results.
- *The re-significance of the role of suppliers as a strategic link for efficiency in the use of productive resources within the food industry*. Suppliers are constituted as an actor that contributes to strategies related to sustainability in the use of productive inputs.
- *Suppliers as an articulating axis between companies in the sector and the environment*, where these behave as interconnection nodes for the flow of goods and services that contribute to the sustainability strategy.

From this perspective, the analysis of suppliers as a strategic factor in the management of the sustainable supply chain stands out for its strategic role for organizations in the food industry thanks to the ability to influence and affect its competitive performance in the sector.

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