

UNSUSTAINABLE SUPPLY CHAIN OF SUSTAINABLE FOOD COMPANIES

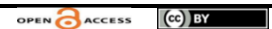
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ABSTRACT

Purpose - This study aims to investigate the sustainable food companies within the scope of sustainable supply chain management (SSCM). It also aims to reveal what are the challenges food companies face in their sustainable supply chains. In addition, it is aimed to show which points should be focused on in sustainable supply chain management.

Methodology - For this purpose, sustainability pages on the corporate website of 30 food companies operating in Turkey were analyzed with content analysis by adopting a qualitative research paradigm and an interpretive framework. While analyzing the contents, first of all, it was investigated at which dimensions the food companies attach importance to in the Triple Bottom Line approach. Secondly, the elements that food companies pay attention to while they integrate the supply chain into their sustainability practices were examined. Lastly, it was analyzed in which dimension of the sustainable supply chain management the food companies are located.

Findings - The findings of the study indicated that 23 of the food companies were found to be sustainable businesses according to the Triple Bottom Line approach. However, it was demonstrated that the same companies could not provide sustainability in supply chain management. In this sense, it was understood that one of the biggest reasons for this is that companies ignore the concept of "risk management".

Conclusion - As a result, the points that food companies have difficulty in sustainable supply chain management have been revealed. With this study, practical contributions were provided to the companies in terms of enabling them to evaluate themselves on this issue. In addition to this, the study also contributes to the field by building on the studies investigating sustainable supply chain management and providing a different perspective with the investigation of the issue from a TBL approach.

Keywords: Sustainability, triple bottom line, supply chain management, sustainable supply chain management**JEL Codes:** L91, S56, R41**1. INTRODUCTION**

The concept of sustainability continues to be an increasingly important issue for the world day by day. The reason for this is that humanity has begun to realize the unlivable world they leave behind while producing and consuming. Sustainability could be summarized as an effort to leave behind a livable world by considering the future generations. In this sense, governments, people, and businesses have duties to fulfill to leave a livable world. While implementing sustainable strategies, businesses need to integrate supply chain management into their strategies. Because the emissions that the world's 2500 largest companies release as a result of their operations constitute more than 20% of the world's total greenhouse gas, and the majority of these operations consist of the companies' supply chain operations. (Carbon Disclosure Project, 2011). For example, for Walmart which is one of the largest retail stores in America, 90% of the emissions that they create in their operations result from the supply chain (Birchall, 2010). On the other hand, when the food industry is taken into consideration, one-third of global food production is wasted every year (Mbow et al., 2019). With the waste of food products, the resources that are used for the production and distribution of the food products are also wasted (Göbel et al., 2015). The resources that are spent at this stage constitute approximately 30% of the global greenhouse gas (Tukker & Jansen, 2006). All of these demonstrate to us the fact that to be able to leave a livable world for the next generations, the companies and businesses that operate in the food industry need to adopt sustainable supply chain management (SSCM).

Although sustainability is a well-known phenomenon among the food companies, it is quite difficult to create a sustainable supply chain nowadays because to be able to create a sustainable supply chain network, it is necessary for the companies to go beyond traditional supply chain management (Shaverdi et al., 2016) and to act jointly with stakeholders to be able to ensure sustainability completely. For this reason, the main motivation of this study is to conduct a study that could be a guide for the food companies that are aware of the concept of sustainability but have difficulties in implementing it into their supply chain. For SSCM, the food companies, first of all, need to adopt the Triple Bottom Line (TBL) approach to sustainability. In this sense, incorporating the TBL approach in creating sustainable strategies is an effective method for sustainable supply chain practices (Mathivathanan et al., 2018). The sustainable supply chain contributes to businesses in social and environmental dimensions, and these dimensions also provide economic benefits to the companies (Wang & Dai, 2018). TBL is required for the businesses to minimize the losses arising from their operations and also to create an environmental and social value (Carew & Mitchell, 2008). In addition to this, TBL is an essential concept through which businesses can evaluate themselves in terms of economic, environmental, and social issues and develop strategies (Alzoubi et al., 2020). At this point, Carter and Rogers' (2008) model in which the conceptualization of the TBL approach is expanded for SSCM provides an opportunity for the businesses to evaluate themselves on these issues. In this sense, the main purpose of this study is to evaluate the sustainable food companies within the scope of SSCM. For this purpose, the sustainability contents of 30 businesses that include the concept of sustainability on their corporate websites will be analyzed through the content analysis method. In the analysis, mainly the TBL approach and the extended TBL approach for SSCM will be adopted. First of all, the food companies will be analyzed in terms of the TBL approach, and then these companies will be evaluated in terms of SSCM. Lastly, food companies will be analyzed to identify at what level they are within the scope of SSCM and the deficiencies in the companies' conduct of sustainability will be examined. Considering the purpose of the study, it will enable the food companies to evaluate themselves in terms of sustainable supply chain management. In addition, the evaluation of the businesses in the food sector in terms of SSCM according to the TBL approach will also contribute to the literature.

2. LITERATURE REVIEW

The concept of sustainability was coined in the literature in 1987 with the report "Our Common Future" by the World Commission on Environment and Development. In this report, sustainability is defined as acting by considering the future generations while meeting the needs of today and thereby leaving a livable world for future generations (WCED, 1987). Following this, many studies including the concept of sustainability were conducted in the literature. Considering the definitions and features attributed to the concept, sustainability basically means acting by taking into consideration the economic, environmental, and social dimensions altogether. Since the concept of sustainability gained importance, the companies have begun to internalize the concept within their businesses and adjust their strategies based on this concept. Moreover, the concept of sustainability has also begun to be noticed on the side of supply chain management which is one of the important operational pillars of the companies. In this way, the studies in which sustainability is integrated into the traditional supply chain management have begun to emerge in the literature.

Traditional supply chain management is a complex network system including three or more parties that coordinates the transmission of products, services, and information from the source to the customers (Hervani et al., 2005; Mentzer et al., 2001). On the other hand, the sustainable supply chain is a concept that emerges with the integration of social and environmental factors into the traditional supply chain (Wittstruck & Teuteberg, 2012). In a broader sense, SSCM is the creation of a social and environmental value through being in a systematic relationship with all the stakeholders and managing this relationship in a transparent manner in order to increase the economic performance of the businesses (Carter & Rogers, 2008). The fact that one of the places where sustainability is important is the supply chain and that most of the operations of the companies are carried out on the supply chain (Carbon Disclosure Project, 2011) has increased the number of studies on this subject in the literature. Soubbotina (2004) in his research indicates that sustainability in the supply chain increases the efficiency in the supply network economically, and it ensures full employment and equality socially, and lastly environmental benefits could be obtained by using renewable natural resources. Furthermore, sustainability has a direct impact on the economic performance of big companies (Gedik, 2021). On the other hand, Modica et al. (2020) argue that sustainability practices also have a direct impact on customer satisfaction. In addition to such benefits, it has been demonstrated that environmental and social dimensions also benefit businesses economically (Wang & Dai, 2018). In this sense, one of the recent studies has evaluated the sustainable supply chain in terms of economic benefits, environmental effects, social development, and operational risks (Tseng et al., 2019).

Although the contribution of sustainability to the businesses and supply chain management which is one of the most important operations of businesses, has been demonstrated by the studies, companies experience some difficulties in the implementation of sustainability. One of these difficulties is the high cost of sustainable supply chain operations in the environmental dimension (Gedik, 2021). In addition to this, Abbasi (2012) classified the difficulties that the companies experience in a sustainable supply chain into five categories as cost problems, complexity, operational difficulties, cultural difficulties, and uncertainty. In addition to the economic difficulties, the difficulties that are experienced in management and organization have been found in the

literature as the difficulties that are experienced in the sustainable supply chain (Yadav et al., 2020). In fact, after the concept of sustainability was coined in the literature, many studies have been conducted on the evaluation of the companies' performances and the implementation of sustainability, and models have been developed. One of the preliminary studies that ensure its validity and that is identified with sustainability is the TBL approach. TBL approach was first introduced by Elkington in the 1990s to measure sustainability (Hall, 2011). Afterward, mentioning that the concept of sustainability would be even more important in the global market, Elkington reconsidered and revised the TBL framework that he developed (Elkington, 2018). In addition, one of the studies dealing with the TBL approach in the supply chain dimension was conducted by Carter and Rogers (2008), and they expanded the TBL model with their studies and adopted it to SSCM. Following this, in line with their study, Carter and Easton (2011) explained in detail the expressions in the TBL model that were developed for SSCM. The concepts that affect the SSCM were introduced by Ageron et al. (2012). On the other hand, Zeng et al. (2017) demonstrated that institutional pressure has a significant effect on SSCM with a quantitative research method. Furthermore, Mathivathanan et al. (2018) indicated that incorporating the TBL approach into the strategic decision-making process is an effective method for SSCM and their study supports the concept of "Strategy" in the study of Carter and Rogers (2008). Sajjad et al. (2019) examined the factors that hinder and promote the SSCM practices of the companies. Alzoubi et al. (2020) recommended the TBL approach with their quantitative study on the supply chain, and with this study, they examined the concept of "stakeholder engagement" which is required for SSCM.

It is possible to observe that the TBL approach is also adopted in the studies that are carried out on sustainability in the field of the food supply chain. Ross et al. (2015) investigated the corporate social responsibility reports of US food companies with the content analysis and revealed that companies participate in sustainability practices in a complicated manner. Kirwan et al. (2017) added health and ethical dimensions to food companies' SSCM with their study. On the other hand, Accorsi et al. (2018) proposed a framework by considering sustainable food logistics in micro and macro dimensions and supported their framework with a case study. Zhu et al. (2018) put forward the problems in the sustainable supply chain in the food industry with mathematical models and reviewed the existing models for the solution to the problems. Krishnan et al. (2020) conducted a study that presented a framework to identify operational and resource inefficiencies in the food supply chain. In one of the recent studies, it was investigated how food supply chains implement sustainability standards (Silva et al., 2020). The concept of sustainability has never lost its popularity and importance in the literature since the beginning of its inception in the field. Because of being a necessary concept for a livable world and its benefits to the companies, the studies on this issue continue to focus on the concept in their investigation. Especially, the existence of the recent studies encompassing SSCM and the food industry demonstrates to us that the studies on these issues will also continue to take place in further studies in the field.

3. METHODOLOGY

In the study, a qualitative research paradigm was adopted, and an interpretive framework was internalized into the analysis of the data with the adoption of the content analysis method. The study aimed to investigate the sustainable food companies within the scope of SSCM. For this purpose, three research questions were developed and the study provided an in-depth understanding of the following research questions:

1. What dimensions do sustainable food companies attach importance to in TBL approach?
2. What do sustainable food companies pay attention to while integrating supply chain management into their sustainability practices?
3. Where are sustainable food companies located according to the model that Carter and Rogers developed?

In accordance with the research question purposes, the sample of the study consists of food companies that implement sustainable strategies and engage in sustainability expressions and discourses. In accordance with this sample, 30 out of 49 companies that are under the umbrella of the "Sustainability Academy" and that are the members of "Sustainable Food Platform" were evaluated, and 19 companies were not taken into consideration because they did not have a sustainability page on their corporate website. The data were obtained from the texts on the sustainability pages on the corporate websites of the 30 companies in total. The analysis of the data was conducted based on the Carter and Rogers' model (2008). In the analysis, the pre-determined categories (e.g. strategy, organizational culture, risk management, and transparency) and the sub-categories in Carter and Rogers' model (2008) were taken into consideration while coding the data. Carter and Easton (2011) explain these main categories as follows:

- Strategy: determining the SSCM that is compatible with and supports the sustainability strategy of the companies in a holistic and planned manner;

- Organizational Culture: a culture that is deeply rooted and includes respect towards the society and natural environment with the high ethical standards and expectations encompassing the Organizational Citizenship;
- Risk Management: including contingency planning for the upstream and downstream supply chain;
- Transparency: active communication with stakeholders, and transparency in upstream and downstream supply chain operations.

The sub-categories of the main categories that are described above as follows:

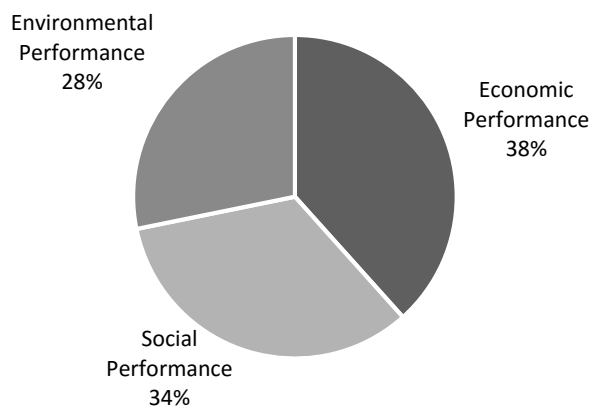
- Strategy: Sustainability as part of an integrated strategy.
- Organizational Culture: Deeply Ingrained, Organizational Citizenship, Values and Ethics.
- Risk Management: Contingency Planning, Supply Disruptions, Outbound Supply Chains.
- Transparency: Stakeholder Engagement, Supplier Operations.

In the study, the contents of the 30 food companies, which include sustainability in their corporate websites, were analyzed with an interpretive framework. With the analysis, the written texts of the companies were analyzed and categorized accordingly based on the Carter and Rogers' model (2008). As a result of this categorization, 305 entries emerged from the data.

4. FINDINGS

First of all, the companies were analyzed in terms of the environmental, social, and economic dimensions of the TBL approach. The data analysis indicated that only 3 companies out of 30 focused on the environmental and economic dimensions. On the other hand, one company focused solely on the social dimension, and another company focused on only the economic dimensions. In addition, one company paid attention to only the social and economic dimensions whereas another different company focused on only the environmental and social dimensions. This means that 7 out of 23 companies in total failed to encompass all the three dimensions of sustainability in their systems. However, except for the 7 companies stated above, it was revealed that the remaining 23 companies were able to take into consideration all the three dimensions of sustainability in accordance with the TBL approach in their written texts.

Figure 1: Sustainable Supply Chain Management



Secondly, the supply chain of the 30 food companies was evaluated in terms of sustainability in the study. To analyze the companies' supply chain in terms of sustainability, the TBL approach that was expanded by Carter and Rogers (2008) was adopted. Within the scope of this approach, the most focused dimension of the companies in SSCM is the economic dimension as could be seen in Figure 1 above. It could be observed that 30 food companies focus on economic performance at a rate of 38% in the sustainable supply chain. In addition to their preliminary focus on the economic dimension, it could be seen that companies give their secondary focus on the social dimension with approximately 34%, and following this, they pay attention to the environmental dimension with 28%. Although it has been revealed that the companies mainly give their preliminary focus on the economic dimensions, it could be stated that all the three dimensions are close to each other when the percentages are taken into consideration in Figure 1.

When Table 1 below is analyzed, it could be observed that 86 out of 305 entries that were obtained from 30 companies are under the strategy category. 28.2% of the companies' SSCM applications consist of the strategy. As could be understood from the sub-categories, 28.2% of the SSCM practices of the companies consist of integrating their strategies with sustainability. Table 1 demonstrates that 102 out of 305 entries are under the category of "organization culture". This indicates that the companies focus on the organizational culture in their SSCM practices at the rate of 33.5%. This rate is the highest among the entries, and 20.6% of this rate is placed in the "values and ethics" dimension. On the other hand, other sub-dimensions entitled "deeply ingrained" and "organization citizenship" are at the rate of 6.5% and 6.2% respectively.

Table 1. The distribution of SSCM

	n	Categories	n	% of all categories	Sub-categories	n	% of all categories
Environmental Performance	86	Strategy	86	28,2	Sustainability as part of an integrated strategy	86	28,2
					Deeply Ingrained	20	6,5
Social Performance	102	Organizational Culture	102	33,5	Organizational Citizenship	19	6,2
					Values and Ethics	63	20,6
Economic Performance	117	Risk Management	26	8,5	Contingency Planning	13	4,3
					Supply Disruptions	2	0,6
					Outbound Supply Chains	11	3,6
					Stakeholder Engagement	61	20
					Transparency	91	29,8
					Supplier Operations	30	10
Total	305		305	100		305	100

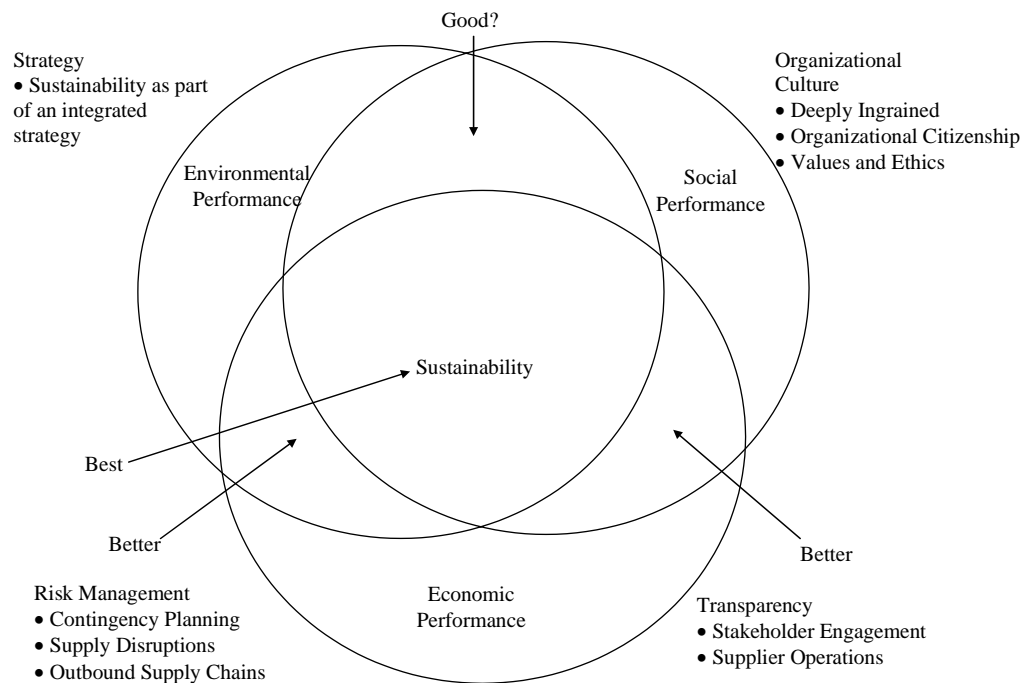
When it comes to the category of "risk management", Table 1 displays that risk management is the dimension with the lowest rate with 8.5% in SSCM performance. 26 out of 305 entries are under this category. Considering the sub-categories attributed to this dimension, there are "contingency planning", "supply disruptions" and "outbound supply chains", and the percentages of these sub-categories are 4.3%, 0.6%, and 3.6% respectively. Among these sub-categories, the sub-category of "supply disruptions" has the lowest rate as illustrated in Table 1.

On the other hand, it could be seen that 91 out of 305 entries fall into the "transparency" dimension, and the ratio of this category in the total analysis is almost 30%. However, the majority of this rate is composed of the sub-category of "stakeholder engagement" with 20% whereas the sub-category of "supplier operations" consist of 10% of this category.

With an aim to provide an in-depth understanding of the third research question, which is about the investigation of the companies' position in terms of SSCM, the companies were analyzed based on the expressions "good", "better" and "best" in Figure 2 that Carter and Rogers (2008) created as a model. In addition to this, the companies' deficiencies in the dimensions demonstrated in the model were also revealed. With this aim, the practices of the companies in each dimension were analyzed

separately, and then the companies were categorized accordingly. Considering the practices and applications of the companies in sub-categories, it was observed that 22 out of 30 companies were not included in any of the expressions “good”, “better”, and “best”. In addition to this, it was observed that the two companies had SSCM at the “best” level by taking into consideration both strategy and organizational culture dimensions. On the other hand, one company had SSCM at “better” level with its applications and practices in economic and environmental dimensions. The remaining 5 companies, on the other hand, indicated that they had SSCM at both “good” and “better” levels in all the categories, except for the “risk management” category. The elimination of the shortcomings of these 5 companies in “risk management” will enable them to have SSCM at the “best” level.

Figure 2: Sustainable Supply Chain Management (Carter & Rogers, 2008)



5. DISCUSSION AND CONCLUSION

The main purpose of the study is evaluation of sustainable food companies within the scope of SSCM. What was striking in this study was the examination of the supply chain management of the companies that are members of the “Sustainable Food Platform” in terms of sustainability. This is due to the assumption that companies can not integrate sustainability into their supply chain management because although sustainability is a well-known concept among companies, it is a difficult concept to integrate into the supply chain. For this reason, first, 30 food companies as a sample of the study were evaluated according to the TBL approach, and then they were analyzed with the expanded TBL approach that was elaborated for SSCM by Carter and Rogers (2008). As a result of the analysis, it was found that 23 out of 30 companies included in the study were sustainable companies that act in accordance with the TBL approach. This finding demonstrated that the companies included in the analysis are sustainable food companies in accordance with the study. Furthermore, it was observed that the main focus of the food companies is the economic sustainability dimension within the scope of SSCM. In addition to their preliminary focus on the economic dimension, it could be stated that companies also give importance to the social dimension. In this sense, as the social dimension is also beneficial for the companies in economical manner (Wang & Dai, 2018), it is natural for companies to focus on the social dimension. When the sub-categories were analyzed in detail, it was discovered that companies especially ignore the “risk management” issue. Interestingly, under this category, the dimension of “supply disruptions” is hardly taken into consideration by the companies because “supply disruptions” not only cause economic damage to businesses but also it causes loss of profitability and products environmentally. In addition to this, it is striking that the vast majority of the companies were not included in any of the expressions “good”, “better”, and the “best”. This finding is the most eye-catching finding of the study. It is

seen that although food companies embrace sustainability, they cannot fully provide SSCM. In line with the literature, the reason for this could result from the difficulty in going out of the supply chain (Shaverdi et al., 2016), the high cost of SSCM (Gedik, 2021), difficulties arising from uncertainty (Abbasi, 2012), and the difficulties experienced in management and organization (Yadav et al., 2020). At this point, food companies need to give importance to the concept of "risk management" in order to cope with these difficulties. All in all, considering the findings of the study, it could be stated that sustainable companies have an unsustainable supply chain, and this results from the scarcity of the practices and applications for "risk management". Focusing on "risk management" will not only eliminate the problems arising from uncertainty but also reduce the costs significantly. In addition, considering the companies within the scope of the study, the improvement of the companies themselves in the issues related to "risk management" will take them to the "best" situation in SSCM.

In conclusion, 30 food companies that have sustainability pages on their corporate websites were evaluated within the scope of SSCM in this study. As a result of the data findings, it was revealed that although the companies adopted sustainability, they were not able to perform SSCM comprehensively and completely. With this study, it has been revealed that the main problem that is experienced by food companies in their SSCM is caused by "risk management". However, since the study did not specifically focus on the "risk management" issue, it could not be found why the food companies had difficulties in this area. For this reason, there is a necessity for further studies that focus on "risk management" and investigate the reasons for the difficulties of the companies in this area. Such further studies focusing on "risk management" will enlighten businesses and contribute to the field.

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