

Green and Sustainable Supply Chain Management (GSCM and SSCM): A Comparative Literature Analysis of Definitions and the Identification of the Relationship between Environmental and Economic Pillars in GSCM

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Abstract: *The purpose of this document is to identify and analyse the published definitions of the management of the green and sustainable supply chain management. A total of 30 definitions for Green Supply Chain Management (GSCM) and 19 definitions for Sustainable Supply Chain Management (SSCM) have been identified and analyzed. Following this analysis, a set of companies sustainability characteristics are proposed (social, economic, ecological and corporate social responsibility (CSR) performance). The analysis has shown that GSCM definitions are generally based on the environment characteristics. Although SSCM definitions are based on the three levers of Sustainable Development (SD) at the same time. CSR has been identified only in the SSCM definitions, since it presents a set of practices implemented by the company in order to respect the principles of SD. It is argued that the SSCM is essentially an extension of the GSCM. However, some definitions of GSCM add the social lever to the economic and ecological levers which create an overlap between the two definitions, to solve this problem, a new definition of GSCM has been proposed.*

Keywords: Green Supply Chain Management/ Sustainable Supply Chain Management/ Sustainable Development/ Corporate social responsibility

1. Introduction

Since the revolution of the supply chain in the 1990s, we have seen that the sustainable development objectives have become the strategy of the supply chain of many companies. This approach has been chosen for its importance in bringing new markets and improving the reputation of the company, due to its impact on the logistics sector. The theme of sustainability in the context of supply chain management (SCM) has been discussed in the literature as the form of several enviro-industrial themes.

The two terms used, which most closely link the concepts of sustainability and supply chain management, are Green Supply Chain Management (GSCM) and Sustainable Supply Chain Management (SSCM) [1]. To this end, the GSCM and SSCM had evolved from SCM in terms of sustainability. These evolutions are characterized by the integration of SD principles in the strategies of the supply chain. Early SD initiatives tended to focus on environmental issues but, over time, they increasingly adopt a triple bottom line approach (ie environmental, economic and social) regarding sustainable development[2]. Several definitions of both terms GSCM and SSCM are presented in the literature. (Ahi and Searcy 2013) presents a systematic review of the definitions of GSCM and SSCM. In terms of sustainability, these studies have shown the weakness and incompleteness of the definitions presented in the literature. Given the

ambiguities and vagueness surrounding definitions of GSCM and SSCM, complications often arise when trying to apply sustainability principles in practice. In this context, our studies have been directed towards clarifying the relationship between SD objectives and the principles of the two approaches (GSCM and SSCM).

2. Materials and methods

As noted above, the objective of this document was to identify and analyze the definitions of GSCM and SSCM published in the literature. This analysis allows to accentuate on the SD levers present in the definitions of the two concepts which subsequently allows to adopt our own definition of GSCM.

Our study is based on the work of Ahi and Searcy's work (2013)[2]. Indeed, a broad review of the definitions of the two themes of GSCM and SSCM in the period between 2006 and 2012 was presented. To update the definitions of the two concepts studied, a review was conducted and included studies up to 2018. However, it should be noted that the research was limited to articles published in English, which is the most used language in scientific research compared to other languages. The definitions found in French were also included while preserving the original meaning during the translation.

The literature review focused on a search in the Google scholar database. It was selected because of its wide coverage in management journals and engineering sciences. The selection of relevant articles is done by keywords suitable for the field of research. As a result, the terms "green supply chain management" and "sustainable supply chain management" are two keywords in our study. The references cited in the identified articles have also been used as secondary roots to identify other relevant publications.

The references cited in the articles identified during the research in Google scholar were also used as secondary roots to identify other relevant publications. Once the database had been selected for both terms, then the content analysis was performed. For this purpose, declarations are considered as definitions if they explicitly express a set of "essential properties and characteristics" of the terms GSCM or SSCM[3]. To decide that a definition is based on one of the pillars of the SD, the author must explicitly mention it in the definition. For the naming of both terms, we considered that the Logistic Eco is another designation of GSCM and that the SSCM has only one name.

3. Results and Discussions

3.1. Review of literature

3.1.1. Definition of logistics

Logistics is a subject that has always existed in our lives and has many aspects (simple function, integrated function, universal, common), but the spirit remains the same in all these aspects. The ASLOG¹ (Association of Business Logisticians) defines logistics as "a function whose purpose is the provision at the lowest cost the quantity of a product, where and when the demand exists"

3.1.2. Supply Chain

The Supply Chain Council (SCC) defines the supply chain as: "the sequence of steps in the production and distribution of a product from the suppliers of the suppliers of the producer until the customers of its customers", this definition is characterized by the global approach that links all actors from the source to the final consumer.²

3.1.3. Supply chain management (SCM)

The management of the supply chain is defined according to the three approaches of the supply chain (internal, integrated, and collaborative):

Internal Logistics Chain Management: This approach is based on operational performance, its activities do not go beyond the borders of the company, and the improvement of the performance is done by the optimization of the physical flows and the improved operational processes. According to

the definition proposed by AFNOR³: "The logistic chain is a function whose purpose is to satisfy the expressed or latent needs, at the best economic conditions for the company and for a certain level of service. Needs are internal (supply of goods and services to ensure the functioning of the company) or external (customer satisfaction). Logistics involves several trades and know-how that contribute to the management and control of physical flows and information as well as means".

Integrated Logistics chain Management: This approach is characterized by the exchange of information, goods, and money between several sites of the same company, as well as the integration of suppliers and direct customers of the company. "Supply Chain Management is a set of approaches used to effectively integrate suppliers, producers, distributors, so that the commodity is produced and distributed at the right place and at the right time to minimize costs and ensure the level of service required by the customer"[4].

Collaborative logistics chain management: it is defined by the following elements: "Two companies more or less working together to plan and execute supply chain operations with greater success than if they acted in isolation".

3.1.4. Supply Chain management and environmental issues

The supply chain ceases to be a secondary activity or function and has become an integrative and collaborative approach that follows the company's strategy. Faced with this progress, innovation in this concept has become a paramount necessity to increase performance. This innovation is done through the introduction of new approaches in supply chain strategies.

Today, the modernization of the logistics chain is done by integrating the ecological spirit into its strategy. This integration created two ecological approaches; the green Supply chain management or (management of the green Logistics chain) and sustainable supply chain management or (management of the sustainable logistics chain), they are two themes based generally on the concept of sustainable development (SD).

The supply chain observatory (2008) [The supply chain observatory (2008): Green Supply Chain: challenges and maturity of businesses, 2nd edition] defines green supply chain management (GSCM) "as a logistics chain aimed at minimizing the ecological footprints of a product or service throughout its life cycle". It concerns the environmental dimension of sustainable development in this case eco-design, eco sourcing, eco-manufacturing, eco-logistics and reverse logistics. There are obvious interactions between Eco design and reverse logistics [5].

Seuring and Muller (2008) defines sustainable supply chain management (SSCM) as "the management of material,

¹ASLOG: the 1st French network of professionals in the supply chain, it is a neutral and independent association, carries the stakes of the Supply Chain.<https://www.aslog.fr/aslog/>

²The Supply Chain Council(SCC)is an independent non-profit organization<https://gclgroup.ca/>

³AFNOR : is an international services group organized around four main areas of expertise: standardization, certification, specialized publishing and training www.afnor.org

information and capital flows as well as cooperation between companies along the supply chain, while taking into account objectives of the three dimensions of sustainable development, namely the economic, environmental and social pillars, which stem from the customers and stakeholders requirements" [6].

3.1.5. Sustainable Development (SD)

a) Definition

The definition of Brundtland Commission (1987) is the first definition of sustainable development and has been used since its publication in 1987 to date: "Sustainable development is a type of development that can meet the needs of the present generation without compromising the ability of future generations to meet theirs" [5]. In 2010, AFNOR defines sustainable development according to the NF ISO 26000 standard, and it states that "Sustainable development aims to combine the objectives of high quality of life, health, and prosperity with those of social justice while maintaining the capacity of the Earth to support life in all its diversity. These social, economic and environmental goals are interdependent and mutually reinforcing. Sustainable development can be considered as a way of expressing wider expectations of society in general" [7].

b) Sustainable development pillars

The three elements that constitute the pillars of SD were defined in the Third Summit of the Earth in Rio de Janeiro (1992) these elements are situated in the economic, ecological and social spheres. Thus the DD fits in their crossings as shown in Figure 1.

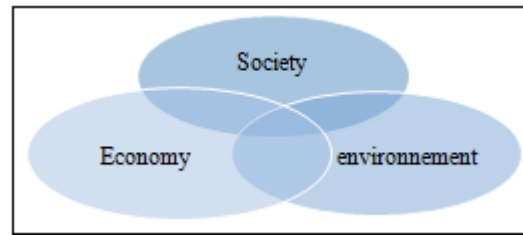


Figure 1: The pillars of sustainable development [8]

Sustainable development is often limited to environmental pillars, meaning that its objectives are mainly limited to preserving the environment and natural resources over the long term. While sustainable development must combine the three performances (economic efficiency, social equity, and a tolerable environment). The social pillar must be a goal, the pillar economy a means and the environmental pillar a condition.

3.2. Analysis

Research in the field of logistics chain management has been carried out to achieve a high level of performance. This research is usually oriented towards the development of old concepts or the introduction of new ones. The GSCM and SSCM are two new concepts of the management of the logistic chain that arose from the need to preserve the environment as the main objective. Some definitions of SSCM are summarized in Table.

Table 1: The definitions of SSCM

Author	SSCM	Citation number
Jorgensen and Knudsen, 2006, p. 450 [9]	"The means by which companies manage their social responsibilities through delocalized production processes going beyond organizational and geographical boundaries".	149 times
Carter and Rogers, 2008, p. 368 [10]	"The strategic and transparent integration of an organization's social, environmental and economic objectives and the achievement of its objectives into the systemic coordination of key inter-organizations' operational processes in order to improve the long-term economic performance of the company and its supply chains".	2468 times
Seuring and Muller, 2008, p. 1700 [2]	"Managing material, information and capital flows as well as cooperation between companies throughout the supply chain, while taking into account the objectives of the three dimensions of sustainable development, namely the economic, environmental and social pillars, which result from the requirements of customers and stakeholders".	3455 times
Seuring, 2008, p. 132 [11]	"The integration of sustainable development and supply chain management [in which] by merging these two concepts, the environmental and social aspects of the supply chain must be taken into account, thus avoiding the Related problems, but also taking into account more durable products and processes".	326 times
Ciliberti et al., 2008, p. 1580 [12]	"The management of the supply chains where all three dimensions of sustainability, namely the economic, environmental and social dimensions, are taken into account"	437 times
Font et al., 2008, p. 260 [13]	"Adding sustainability to existing supply chain management processes to take into account the environmental, social and economic impacts of commercial activities."	139 times
Pagell and Wu, 2009, p. 38 [14]	"Specific management actions undertaken to make the supply chain more sustainable with the ultimate goal of creating a truly sustainable chain"	1007 times
Badurdeen et al., 2009, p. 57 [15]	"Participation in the planning and management of the sourcing, procurement, conversion and logistics activities involved in the pre-fabrication, manufacturing, use and post-use stages of the life cycle in closed loop through multiple life cycles with continuous information sharing throughout the product life - Make a cycle between companies by explicitly taking into account the social and environmental implications to arrive at a shared vision."	92 times
Haake and Seuring, 2009, p. 285 [16]	"The set of logistics chain management policies, actions undertaken, and relationships created in response to concerns related to the natural environment and social problems linked to the design, acquisition, production, distribution, use, reuse and sale of the company's goods and services."	84 times
David akono, valérie fernades-2009 [17]	"The sustainable management of the supply chain encompasses the planning and management of all purchasing, procurement, transformation and logistics activities as well as the management of relationships with the actors of the chain (suppliers, logistics service providers, customers) in an	13 times

	optic of the environment and social norms respect in order to create sustainable value for the different stakeholders. This sustainable management requires a holistic approach and by process to track down waste and improve the environmental, social and economic efficiency of the enterprise.”	
Theiry-2010 [18]	“The integration of sustainable development into supply chain management strategies brings out two new dimensions - social and environmental. These are in addition to the economic challenge of supply chain managers. The sustainable logistics chain is based on the Eco-logistics and other economic pillar (efficiency, reliability and responsiveness) and the pillar of Eco-logistics is based on the three levers of DD”	Website on logistics
Wolf, 2011, p. 223 [19]	“The degree to which a manufacturer collaborates strategically with its supply chain partners and collaboratively manages intra-organizational and inter-organizational processes for sustainability.”	205 times
Closs et al., 2011, p. 102 [20]	“Consideration of the company's ability to plan, mitigate, detect, respond to and recover potential global risks. Among important marketing and supply chain risks, there are product development, channel selection, market decisions, sourcing, manufacturing complexity, transportation, government and industry regulations, availability resources, talent management, alternative energy platforms and security.”	263 times
NGOOH [21]	“Sustainable logistics is a process that can be summed up in these words: "Do better with fewer resources". It is about ensuring the survival of logistics processes over time by reducing as much as possible the density and diversity of operations, activities and products”	Website on logistics
Chadine buamane - 2011[22]	“Transposing sustainable development into industrial activities (the operationalization of sustainable development) translates into CSR (Corporate Social Responsibility)” CSR incorporates social, environmental, and economic concerns	PhD thesis
Wittstruck et Teuteberg, 2012, p. 142 [23]	“An extension of the traditional concept of supply chain management by adding environmental and social/ethical aspects.”	138 times
Ahy et Searcy 2013 [2]	“Creation of coordinated supply chains through the voluntary integration of economic, environmental and social considerations into key inter-organizational operational systems designed to effectively manage the flow of materials, information and capital associated with procurement, production and distribution of products or services to meet the needs of stakeholders and improve the profitability, competitiveness and resilience of the organization in the short and long term.”	626 times
Morana, 2014 [24]	“Sustainable Supply Chain Management is valued as the management of material, information, financial, people and intelligence flows for economic, environmental and social / societal purposes. As a strategic management approach, it is driven by the voluntary inter and intra-organizational connections and for the long-term performance of each company and its supply chain.”	380 times
Boukherroub T. 2016 [25]	“Sustainable supply chain management can then be seen as integrating environmental and social concerns into the management of the supply chain, in order to improve and balance the three economic, environmental and social performances. In this sense, the analysis and quantification of the economic, environmental and social impacts linked to the implementation of CSR practices”	PhD thesis

Table 2 presents 30 definitions of GSCM. These definitions were gathered through an analysis of the. We can find other relevant definitions but they are not in this article because of

the number of results returned by the Google search engine Scholar. Therefore, the definitions present in these searches are rich enough to be able to form a synthesis.

Table 2: The definitions of GSCM

Author and year	GSCM	Citation number
Handfield et al., 1997[26]	“Application of environmental management principles to all activities of the customer's control cycle, including design, supply, manufacture and assembly, packaging, logistics and distribution”	618 times
Zhu et al. 2005[27]	“New and important archetype for companies to achieve their profit and market share goals by reducing their environmental risks and impacts, while increasing their ecological efficiency.”	1034 times
Hervani et al., 2005, p. 334 [28]	“Ecological shopping + Eco Manufacturing / Materials Management + Distribution / Ecological Marketing + Reverse Logistics”	1266 times
Sheu et al., 2005 [29]	“Combination of both the product manufacturing supply chain and Used-product reverse Logistics chain.”	573 times
NGOOH [21]	“Translates into the integration of the ecological approach in the management of logistic processes. Green logistics extends beyond the simple characteristics of sustainable logistics with a goal: to reduce the impact of logistics and transport activities on the environment.”	Website on logistics
Srivastava 2007 [30]	“Integration of environmental thinking into logistics chain management, including product design, materials supply, selection of manufacturing processes, delivery of the final product to consumers, and product management after its end of useful life.”	3039 times
H'Mida and Lakhal, 2007, p. 6 [31]	“The practice of monitoring and improving environmental performance in the supply chain over the life cycle of a product.”	20 times
Lakhal et al., 2007 [32]	“Olympic green supply chain characterized by the Olympic five-circle flag: zero emissions, zero waste in activities, zero waste of resources, zero use of toxic substances, zero waste in the product's life cycle, as well as inputs and ecological yields.”	24 times
Srivastava, 2008, p. 535[33]	“Integrating environmental management into the process of converting resources into usable products”	603 times
Lee and Klassen, 2008, p. 575 [34]	“Purchasing plans and activities that integrate environmental issues into supply chain management to improve environmental performance of suppliers and customers.”	396 times
Albino et al., 2009, p.	“A strategic approach to extend environmental measures across the whole supply chain”	360 times

88[35]		
Swadago.M 2010 [36]	“The green supply chain is also concerned with producing and distributing goods in a sustainable way, taking into account environmental and social factors.”	0 times
Thiery 2010 [18]	“Ecologistics is a pillar of SSCM, it brings together the three levers of DD”	Website on logistics
Sarkis 2011 [37]	“The integration of environmental considerations into the inter-organizational practices of supply chain management, including reverse logistics.”	1182 times
Wee et al., 2011, p. 603 [38]	“Integrate environmental considerations into supply chain management, including product design, material selection, manufacturing processes, delivery of the end product to consumers, and end-of-life management of ecological products.”	75 times
Gavrinski et al., 2011, [39]	“The complex set of mechanisms implemented at the company and plant level to assess or improve the environmental performance of supplier’s base.”	158 times
Lau, 2011, p. 874 [40]	“Integrate environmental thinking into closed loop supply chain management.”	84 times
El Saadany et al., 2011, p. 1203 [41]	“Reduce the use of energy and virgin raw materials and waste generation and increase product recovery options. Greening generally refers to supply chain functions such as production, purchasing, material management, storage and inventory control, distribution, shipping and transportation logistics.”	104 times
Wu and Pagell, 2011, p. 578 [42]	“The environmental dimension of sustainability in the context of a supply chain.”	492 times
Gnoni et al., 2011, p. 129 [43]	“An approach that aims to integrate environmental issues into SC management procedure starting from product design, and continuing through material sourcing and selection, manufacturing processes, the final product delivery and end-of-life management.”	11 times
Yeh and Chuang, 2011, p. 4244 [44]	“Management between suppliers, their products and their environment, that is to say that the principle of environmental protection is integrated into the supplier management system. Its purpose is to add an environmental awareness to the original products and to improve the competitive capacity of the markets.”	321 times
Kim et al., 2011 [45]	“Integration of environmental concerns into the cross-organizational practices of supply chain management, including reverse logistics”	47 times
Parmigiani et al., 2011 [46]	“A set of practices aimed at applying, monitoring and supporting environmental performance by allocating possible human resources and redefining organizational responsibilities and procedures.”	206 times
Buyukozkan et Cidci, 2012 [47]	“A way for companies to achieve profit and market share goals by reducing environmental impacts and increasing environmental efficiency”	523 times
Andic et al., 2012 [48]	“Minimize and preferably eliminate the negative effects of the supply chain on the environment.”	125 times
S. Kumar et al., -2012 [49]	“Green Supply Chain Management (GSCM) is an approach that focuses on the overall optimization of material and information flows along the value chain. The main aspect is to put more emphasis on ecological and sociological aspects when making management decisions”	163 times
Ahy et Searcy 2013 [2]	“The green supply chain refers to a focal company collaborating with its suppliers to improve environmental performance”	626 times
Morana 2014 [24]	“GSCM represents an environmental aspect of SSCM The social aspect of SD is translated in GSCM by the "security”	380 times
Thoo Ai China, Huam Hon Tatb, Zuraidah Sulaiman-2015 [50]	“GSCM plays a vital role in leveraging the total environmental impact of any company involved in supply chain activities and thus contributing to improve”“performance in sustainability (economic performance, social performance and environmental performance).”	87 times
Sharma et al_2017 [51]	“Considering that innovative techniques in supply chain management to reduce environmental impact and maximize economic benefits are known as GSCM practices”	43 times

We classify the characteristics of the definitions of GSCM and SSCM into two categories: the characteristics of sustainability (social, environmental, economic and CSR) and the characteristics of management (the stakeholders, the means, the Risks, processes, efficiency, performance, strategy...). Because of the ambiguity between the two terms SSCM and GSCM in the area of sustainability, we analyze them to determine the extent to which they deal with the characteristics of the company's sustainability. In the definitions, there are four sustainability criteria presented in

tables: Social, environmental, economic and CSR. The first three criteria are the pillars of DD, while the fourth is corporate social responsibility. We excluded 3 definitions of a set of 30 definitions of GSCM and 3 definitions of a set of 19 definitions of SSCM. The five definitions were excluded because the content generality prevents us from characterizing the definition. Another definition was excluded because of content repeatability (regarding durability characteristics) by the same author in two different articles.

Table 3: The Classification of definitions according to the four sustainability criteria

auteur	GSCM				SSCM			
	Economic focus	Ecologic focus	Social focus	CSR focus	Economic focus	Ecologic focus	Social focus	CSR focus
[26]-1996		•						
[27]-2005	•	•						
[9]-2006								•
[30]-2007		•						
[36]-2007		•						
[32]- 2007		•						
[10]- 2008					•	•	•	

[6]-2008					•	•	•	
[11]- 2008					•	•	•	
[12]-2008					•	•	•	
[13]-2008					•	•	•	
[34]-2008		•						
[54]-2009					•	•	•	
[15]-2009					•	•	•	
[16]-2009						•	•	
[35]-2009		•						
[18]-2010		•	•	•	•	•	•	
[21]	•	•			•	•		
[36]-2010		•	•					
[37]-2011		•						
[38]-2011		•						
[39]-2011		•						
[40]-2011		•						
[41]-2011		•						
[42]-2011		•						
[22]-2011					•	•	•	•
[43]-2011		•						
[50]-2011		•						
[44]-2011	•	•						
[46]-2011		•						
[47]-2012	•	•						
[23]-2012						•	•	
[48]-2012		•						
[49]-2012		•	•					
[5]-2013		•			•	•	•	
[24]-2014	•	•	•		•	•	•	
[50]-2015		•	•					
[25]-2016					•	•	•	•
[51]- 2017	•	•						

3.3. Discussion

Figure 2 shows a comparison between the GSCM and the SSCM. This comparison is based on the Content analysis in terms of sustainability (economic, ecological, social and CSR).

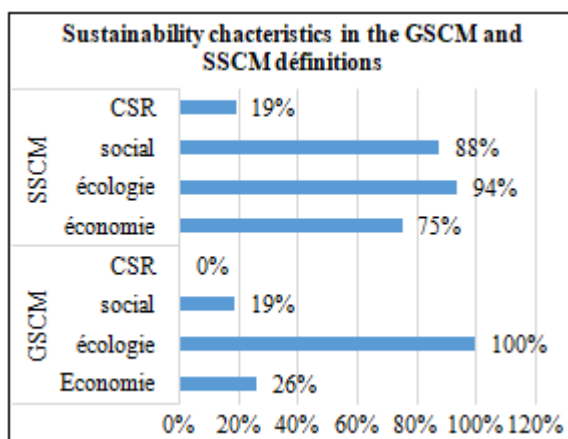


Figure 2: Sustainability characteristics in the GSCM and SSCM definitions

The results presented on the histogram shows that the ecological component is necessarily present in the GSCM definitions by a percentage of 100%, and that the social component is less present in the definitions with a percentage of 19%. For the SSCM we noticed that the gap between the first three percentages is small and that the ecological lever has the highest percentage as 94% of the definitions explicitly expresses the ecological pillar, while

the social pillar is present in 88 % of set of definition, and we emphasized that the economic pillar is also present with a percentage of 81%. CSR has also taken its place in the definitions of SSCM with a percentage of 19%, while it was absent in the GSCM definitions. All these comparisons allowed us to form the following syntheses:

- The GSCM is essentially aimed at improving the environmental situation, so it is more targeted than SSCM, as the ecological lever is present in all GSCM definitions without exception. It should be noted that we must add economic leverage to the same level of ecological leverage in our own operational definition of GSCM, to motivate stakeholders to integrate into the process. In the light of these results, the GSCM must be a strategic approach with a focus on improving the environmental dimension of sustainability and also creating value at the economic level (Figure 2).
- The three sustainability characteristics (social, environmental and economic) are simultaneously and uniformly defined as SSCM definitions (Figure 2).
- The social pillar and CSR are two criteria of differentiation between the GSCM and SSCM.
- The SSCM is an extension of GSCM; it covers all the characteristics of DD.

The presence of CSR in the SSCM definitions is generally conditioned by the presence of the three components of DD. We can explain this link between CSR and the three SD components by the definition of CSR proposed by the ISO 26000 standard: "Responsibility of an organization for the impacts of its decisions and activities on society and on the environment, resulting in transparent and ethical behavior

that: contributes to sustainable development including the health and well-being of society, takes into account the expectations of stakeholders, complies with applicable laws and is compatible with international standards, is integrated throughout the organization and implemented in its relationships".

3.4. Results

According to the syntheses formed by the analysis of definitions, we can therefore place the two terms GSCM and SSCM in the universal illustration of DD as shown in Figure 3.

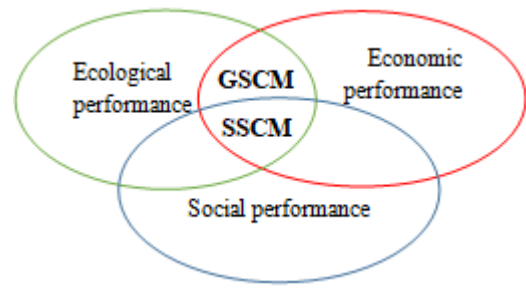


Figure 3: The proposed illustration of GSCM and SSCM in relation to DD

According to the definitions presented by logisticians, we found that the Green supply chain is a strategic approach based on economic concepts (reliability, responsiveness, efficiency) to achieve the required level of economic performance, while adding questions its strategy is to minimize the ecological footprint of products. Figure 4 presents a set of relationships between the two SD levers for the GSCM.

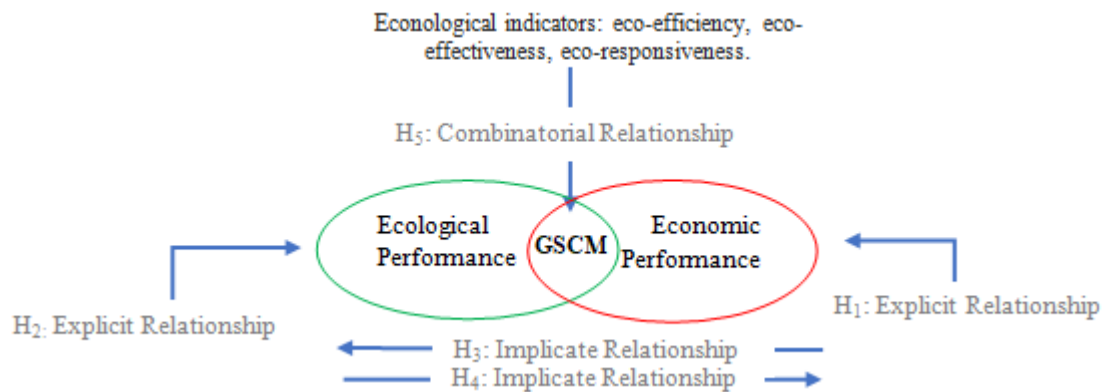


Figure 4: The relationship between the ecological and economic pillars in the GSCM

(H1, H3): The economic indicators figure4 allows the development of the economic lever in an explicit way (H1) by the increase of the turnover related to the satisfaction of the customer. While the environmental leverage of sustainable development has been taken into consideration implicitly (H3) while reducing for example the pollution related to the delay or doubling of delivery.

(H2, H4): The ecological indicators explicitly develop (H2) the environmental situation, introducing a sustainable development program. For example, the training of drivers in eco-driving, the use of hybrid propulsion modes, the pooling of warehouses and transport or the development of multimodal transport combining road, rail, river, air and maritime to reduce energy consumption, greenhouse gas emissions and the congestion of roads: the limitation of packaging and the increase in the rate of recyclability of products are also concrete measures to reduce the environmental footprint of goods. This program also makes it possible to increase economic performance implicitly (H4) by reducing fuel consumption through the use of hybrid or electric transport; investment in material used in packaging; the rate of use of the raw material by increasing the rate of recyclability... etc.

We can find economic performance indicators that do not meet the environmental criteria or vice versa, which gives

two spheres that do not converge to a space called the GSCM or the criterion of logistic viability. Thus, for that we propose the concept of ecological indicators in the following studies.

(H5): Ecological indicators directly create a combination between the two economic and ecological spheres. They are performance indicators that take into consideration both economic and environmental objectives.

4. Conclusion

In these studies, we showed the difference between the GSCM and SSCM in terms of sustainability (social, environmental, economic, CSR). Given the unclear definitions of the two terms GSCM and SSCM, these studies necessary targeted and identified the characteristics of each definition, and as a result get rid of any kind of ambiguity between the two concepts. Indeed, all the hypotheses resulting from the analysis of the definitions led to the development of an operational definition of GSCM "The Green Supply Chain is a logistics chain aimed to minimizing the ecological footprints of a product or a product. Service, throughout its life cycle, it concerns the environmental and economic aspect of sustainable development. All these activities must ensure a symmetrical relationship (win / win) between the two components" (amrani souhli khaoula,

2018). The study of the relationship between the economic and ecological component in the GSCM brought out ecological indicators. These indicators create a combinatorial relationship between the two economic and ecological spheres, which in turn facilitates the implementation of the GSCM approach.

5. Future Studies

Based on these results we can determine the most used approach in Morocco between the GSCM and SSCM, by analyzing the actions taken by companies in this context.

The identification of the relationship between the ecological and economic pillars of the GSCM allowed us to propose the good practices of GSCM, taking into consideration the indicators that we have the given the name of the ecological indicators.

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