energies

MDPI

Review

Environmental Sustainability and Energy-Efficient Supply Chain Management: A Review of Research Trends and Proposed Guidelines

Piera Centobelli [1], Roberto Cerchione [2,*] and Emilio Esposito [1]

[1] Department of Industrial Engineering, University of Naples Federico II, P.le Tecchio 80, 80125 Naples, Italy; piera.centobelli@unina.it (P.C.); emilio.esposito@unina.it (E.E.)

[2] Department of Engineering, University of Naples Parthenope, Centro Direzionale di Napoli Isola C4, 80143 Naples, Italy

* Correspondence: roberto.cerchione@uniparthenope.it; Tel.: +39-081-547-6791

Received: 29 December 2017; Accepted: 19 January 2018; Published: 24 January 2018

Abstract: This paper conducts a structured review on the topic of energy efficiency and environmental sustainability in the supply chain management context to define research trends on the topic and identify research gaps. The review is carried out using the largest databases of peer-reviewed literature (Scopus and Web of Science). A sample of 122 papers focusing on the topic of energy-efficient and sustainable supply chain management was selected and analyzed through descriptive and content analysis. The review highlights that despite there is a growing research trend on the topic, different research gaps remain to be covered. These gaps concern the factors influencing energy efficiency and environmental sustainability initiatives, the classification of energy efficiency and environmental sustainability initiatives, the impact of energy efficiency and environmental sustainability on supply chain performance, the customer perspective in sustainable and energy-efficient supply chain, and the different technologies supporting the energy efficiency and environmental sustainability initiatives. The research gaps and the research questions identified offer the opportunity to identify areas of investigation to design future research directions and propose guidelines in the field of supply chain management.

Keywords: barriers; customer perspective; drivers; energy-efficient supply chain; green supply chain; information and communication technologies (ICTs); supply chain performance; sustainable supply chain; systematic review

1. Introduction

The literature highlights that the supply chain has undergone radical changes and passed through several evolutionary phases [1–3].

In the 1970s, the body of literature was affected by the growth poles theory [4] and the supply chain was a star-shaped system affected by vertical dyadic customer-supplier relationships.

In the 1980s, the supply chain became a pyramidal-shaped system affected by dyadic trust between customer and first-tier suppliers [5–7] and the dyadic relationships between customer and suppliers were affected positively by the processes of information and knowledge sharing [8,9].

In the 1990s, the body of literature was influenced by the strategic collaborative/competitive alliances between firms and a variety of initiatives managed by the customer [10–13].

From the last decade, a growing research trend is related to the evolution of environmental awareness due the impact of the requirements established by the main climate change agreements [14–18] on individual firms and supply chains operating in both manufacturing and service industries [19–26]. According to the these requirements, starting from the last decade supply systems are affected by

sustainability issues [27–33], the impact of environmental management strategies [34–37], and the new opportunities offered to green supply systems by circular economy [38–50].

With these premises, new concepts began to spread in the body of literature, namely the circular supply chain, the green supply chain, the resilient supply chain, the responsible supply chain, the sustainable supply chain [51–58], as well as the crucial role represented by the processes of circulation of information and knowledge [59–63].

In addition, in this evolving scenario companies can leverage on product life cycles to promote collaborative processes with customers and other stakeholder [64,65], and sustainable social goals [66], significant product innovations and cultural changes that influence positively both environmental sustainability and energy efficiency issues across individual firms and supply chains [67–69]. More specifically, according to the emerging literature on open innovation, managing the impact of firms' operations on the environment could be supported by the use of innovative collaborative technologies for new product development [70–73].

With this background in mind, the main aim of the present review on environmental sustainability and energy-efficient supply chain management is to provide an updated overview on the topic to identify the main factors influencing positively or negatively the adoption of energy efficiency and environmental sustainability initiatives, the main initiatives adopted, the impact of these initiatives on supply chain performance, the information and communication technologies supporting these initiatives, and the customer perspective in energy-efficient and sustainable supply chain (RQ). These perspectives of analysis are complementary to those of the previous review on the topic of sustainable supply chain [36,74–76] that do not focus on the crucial role of energy efficiency issues in supply chain management. According to Stock and Boyer [77], we define supply chain management as the management of a supply network of internal and external relationships between interdependent firms and business units consisting of material suppliers, purchasing, production facilities, logistics, marketing, and related systems that facilitate the forward and reverse flow of materials, services, finances and information from the original producer to final customer with the benefits of adding value, maximizing profitability through efficiencies, and achieving customer satisfaction. The supply network includes the vertical dyadic relationships that exist between the firm and a single or multiple customers and suppliers, and the horizontal relationships between suppliers. According to this definition, these types of supply relationships identified are used as an analytical perspective to conduct our structured review and they are sharper to the consequent research gaps identified highlighting the operations management point of view.

The supply network includes both vertical dyadic relationships customer-supplier and horizontal relationships supplier-supplier. According to this definition, these types of supply relationships are used as a perspective of analysis to carry out our structured review and they are sharper to the consequent research gaps identified highlighting the operations management point of view.

The remainder of this paper is divided into seven sections. In the next section, the methodology is illustrated. The third section presents the process of material search. The process of papers selection is described in the fourth section. In the fifth section, the descriptive analysis provides a summary overview of the selected papers. In the sixth section, the content analysis of papers allows us to identify the research gaps in the literature as well as to define the proposed guidelines for future research on the topic. The paper presents conclusions and research implications in the seventh section.

2. Methodology

The methodology consists of a structured review dealing with supply chain energy-efficiency and environmental sustainability research. A structured review is an overview of scientific contributions on a topic adopting replicable methods. Pittaway et al. define a systematic methodology to conduct a structured review starting from the identification of keywords until the validation of papers selected through the citation method [78]. Petticrew and Roberts propose a conceptualization of structured review as a "review that strives to comprehensively identify, appraise and synthesize all relevant

studies on a given topic" [79]. Easterby-Smith et al. define a review protocol to conduct a structured review and identify research gaps on the topic under investigation [80].

Summarizing, the above contributions and according to Cerchione and Esposito [59] and Centobelli et al. [75], this structured review is divided into two phases, subdivided into two sub-phases:

1. Papers acquisition and selection which includes:
    (a) The material search, which consists in the identification of keywords and the choice of academic databases to be investigated (Scopus, Web of Science, etc.)
    (b) The papers selection, which consists in the identification of criteria for inclusion/exclusion of the papers according to such criteria
2. Descriptive and content analysis of the selected papers:
    (a) The descriptive analysis, which consists in a summary overview of the selected papers according to different descriptive perspectives
    (b) The content analysis, which consists in a more detailed analysis of the papers to highlight research gaps and define future research guidelines on the topic.

This section may be divided by subheadings. It should provide a concise and precise description of the experimental results, their interpretation as well as the experimental conclusions that can be drawn.

3. Material Search

The papers are selected using Scopus and Web of Science, the largest databases of peer-reviewed literature, searching the ones published from 1990, as environmental sustainability related to supply chain is a quite new topic of research. The keywords set used includes the strings "efficient supply chain", "energy supply chain", "environmental supply chain", "green supply chain", "sustainable supply chain", and "supply chain sustainability". These selected keywords allowed us to identify an initial sample of 1377 papers (Table 1).

Table 1. Material search.

Selected Keywords	"efficient supply chain" OR "energy supply chain" OR "environmental supply chain" OR "green supply chain" OR "sustainable supply chain" OR "supply chain sustainability"
Scopus database	1275
Web of science database	750
Duplicates	648
Total number excluding duplicates	1377

4. Papers Selection

According to the methodological review steps provided by Pittaway et al. [78], Roehrich et al. [81], and Cerchione and Esposito [59], three inclusion/exclusion criteria were identified to generate an unbiased review of the literature and focus only on the contributions focusing on energy efficiency and environmental sustainability in supply chain management context (Table 2). The definition of these criteria allows the reader to reproduce the different steps.

Table 2. Three selection criteria.

First selection criterion: focus of abstract	Abstracts focusing on energy efficiency and environmental sustainability in supply chain context have been considered
Second selection criterion: focus of paper	Papers focusing on energy efficiency and environmental sustainability in supply chain context have been considered
Third selection criterion: citation method	Papers not included in the selected academic databases, but cited in the literature on supply chain have been considered

The *first selection criterion* follows the approach proposed by Pittaway et al. [78], Roehrich et al. [81] and Cerchione and Esposito [59] to include those papers whose abstracts focus on energy efficiency and environmental sustainability in the field of the supply chain. Abstracts of the 1377 papers were analyzed by two readers in parallel, plus a third one in case of uncertainty. According to Roehrich et al. [81], after reading the abstracts, we excluded editorials, transcribed speeches, book reviews and books for our subsequent analyses. Then, according to Pittaway et al. [78], Roehrich et al. [81] and Cerchione and Esposito [59] papers were divided into three categories (Table 3):

- List I: papers with a focus on energy efficiency and environmental sustainability in supply chain context
- List II: papers with a prevalent focus on energy efficiency and environmental sustainability, but not focusing on the supply chain context
- List III: papers with a prevalent focus on the supply chain, but not focusing on energy efficiency and environmental sustainability issues.

Table 3. Three selection lists.

List	Description	Papers
I	Papers focusing on energy efficiency and environmental sustainability in supply chain context	308
II	Papers focusing on energy efficiency and environmental sustainability, but not on the supply chain context	545
III	Papers focusing on supply chain, but not on energy efficiency and environmental sustainability issues	524
Total		1377

The papers included in List II and List III were not considered as they were not focused on the scope of this literature review. The 308 papers included in List I were read in full and subjected to the second selection criterion.

The *second selection criterion* allows considering the focus of the entire paper. For this objective, according to Cerchione and Esposito [59], the content of selected papers was read in full by three researchers in parallel. This phase allowed us to exclude 195 and include only the papers focusing on the research topic. According to Roehrich et al. [81], the papers selected were scholarly publications based on conceptual, quantitative or qualitative empirical nature.

The *third selection criterion* is a validation criterion used in structured literature reviews for the choice of the selected databases and search terms. This criterion is very adopted in systematic reviews and allows us to identify and retrieve any important papers cited in the body literature, but not selected through the use of the selected databases and search terms [75]. Nine additional papers were added to the final sample in this phase. Then, the papers selected for the next phase of descriptive analysis are 122.

In summary, two criteria of exclusion and one criterion of inclusion have been defined to generate both an unbiased and comprehensive review of the literature according to the different topic areas identified and used as perspectives of analysis (i.e., green initiatives, performances, drivers and

barriers, ICTs). Specifically, the third criterion allows us to identify and retrieve any important papers cited in the literature, but not selected through the use of the selected databases and search terms.

5. Descriptive Analysis

The descriptive analysis aims to provide a summary overview of the selected papers that focus on the topic of energy efficiency and environmental sustainability in the supply chain. Three descriptive perspectives of analysis were identified:

1. Papers over time
2. Papers by journal subject area
3. Papers by methodology

5.1. Papers over Time

The distribution of papers over time highlights that in recent years there is a growing trend of the literature on the topic of energy efficiency and environmental sustainability in the supply chain. This growing research trend is related to the evolution of environmental awareness due the impact of the requirements established by the main climate change agreements [14–18] on individual firms and supply chains operating in both manufacturing and service industries. An increasing number of contributions are showing how firms can leverage on product life cycle to promote significant product innovations and cultural changes that influence positively environmental sustainability and energy efficiency issues across individual firms and supply chains [67–69]. Collaborative processes with customers and other stakeholders allow firms to achieve sustainable business goals [82], sustainable environmental goals [64], and sustainable social goals [66]. More specifically, in the context of open innovation, managing the impact of firms' operations on the environment could be supported by the adoption of innovative collaborative technologies for new product development [70–73].

5.2. Papers by Journal Subject Area

Different journal subject areas have been identified adopting the platform SCImago Journal Rank (SJR) (Appendix A): "*Multidisciplinary*", "*Business, Management and Accounting*", "*Decision Sciences*", "*Engineering*", "*Computer Science*", "*Social Sciences*", "*Economics, Econometrics and Finance*", "*Environmental Science*", "*Energy*", "*Mathematics*".

The papers dealing with energy efficiency and environmental sustainability in supply chain management context represent a crossroads research area involving different peer-reviewed journals concerning many different subject areas (Appendix A).

5.3. Papers by Methodology

More than 50% of papers are based on quantitative methodologies, i.e., surveys, mathematical and simulation models (Figure 1). Twenty-seven papers qualitative papers are single or multiple case studies. Twenty-five conceptual papers are based on previous theoretical approaches without collecting empirical data. Finally, two papers are based on mixed methods combine qualitative and quantitative methods. The methodological analysis of the selected papers highlights that the qualitative literature on the topic neglects longitudinal case studies. This result allows us to identify a research gap concerning the evolution in environmental awareness and the consequent evolutionary process of firms in adopting energy-efficient and sustainable initiatives. This aspect demonstrates that the framework of knowledge in the field of environmental sustainability and energy-efficient supply chain management is in evolution in the current literature and this result provides guidance for the necessity of future longitudinal research.

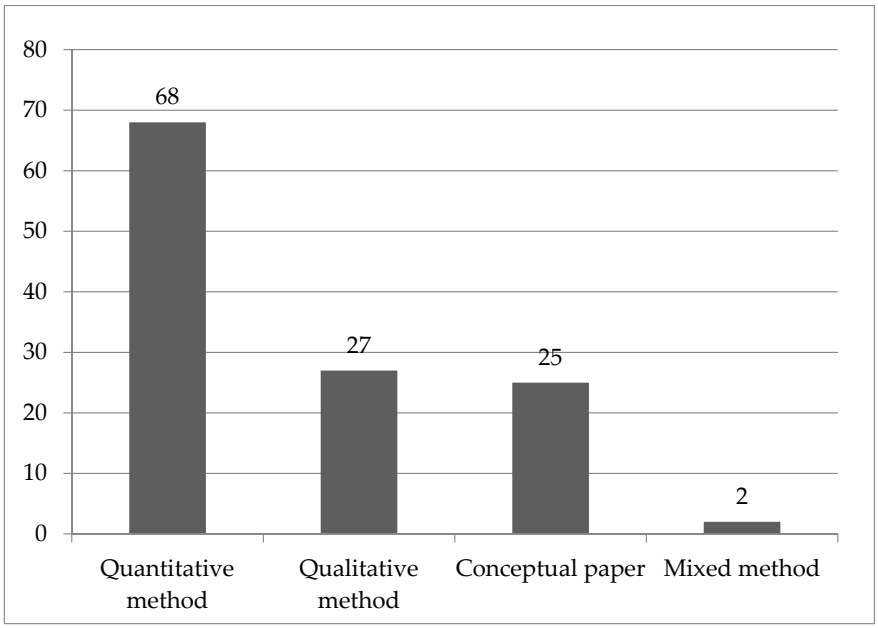

Figure 1. Papers by methodology.

6. Content Analysis

The content analysis of 122 selected papers aims to provide a more detailed analysis of the papers included in the body of literature on energy efficiency and environmental sustainability in the supply chain management context. According to the main topics analyzed by the literature, five topic areas were identified:

TA1. Factors influencing energy efficiency and environmental sustainability initiatives, in which the main drivers and barriers related to the introduction of energy efficiency and environmental sustainability initiatives in supply chain context are identified;

TA2. Classification of energy efficiency and environmental sustainability initiatives, showing the different categorizations of initiatives proposed in the literature;

TA3. Impact of energy efficiency and environmental sustainability on supply chain performance, in which the relationship between energy efficiency, environmental sustainability and supply chain performance is analyzed;

TA4. Customer perspective in energy-efficient and sustainable supply chain, showing the crucial role of customer involvement in greening the supply chain;

TA5. Information and communication technologies (ICTs) supporting energy efficiency and environmental sustainability initiatives, in which appropriate technological tools supporting the spread of energy efficiency and environmental sustainability in supply chain are analyzed.

The table reported in Appendix B highlights that the topic area with the highest number of papers is "impact of energy efficiency and environmental sustainability on supply chain performance" (51 papers), while "information and communication technologies (ICTs) supporting energy efficiency and environmental sustainability initiatives" includes the lowest number of papers (4); "factors influencing energy efficiency and environmental sustainability initiatives" includes 31 papers, "classification of energy efficiency and environmental sustainability initiatives" includes 25 papers, and "customer perspective in energy-efficient and sustainable supply chain" includes 23 papers. Since some papers deal with more than one topic area, the total of papers reported in Appendix B is 122 but

the sum of papers included in each topic area is 133. In the next paragraphs these five topic areas are analyzed.

TA1. Factors influencing energy efficiency and environmental sustainability initiatives

The first area includes 31 papers highlighting the factors influencing energy efficiency and environmental sustainability initiatives in the supply chain. Content analysis shows that the selected papers deal with the following two topics:

- *Drivers*: factors influencing positively energy efficiency and environmental sustainability initiatives (29 papers);
- *Barriers*: factors hindering energy efficiency and environmental sustainability initiatives (26 papers).

As for *drivers*, the table reported in Appendix C shows that energy efficiency and environmental sustainability initiatives adoption is affected by the following 11 specific factors: *company size* (7 papers), *human resource capability* (4 papers), *technology* (10 papers), *standard regulations* (7 papers), *customers pressure* (16 papers), *competitiveness pressure* (10 papers), *network* (5 papers), *profitability* (8 papers), *brand* (5 papers), *organization support* (7 papers), and *government support* (14 papers).

With regard to the *barriers*, the table reported in Appendix D highlights that energy efficiency and environmental sustainability initiatives adoption is influenced by the following 10 specific factors: *investment costs* (10 papers), *company size* (8 papers), *decrease in services offered quality* (2 papers), *uncertain recovery* (5 papers), *ecological complexity* (3 papers), *technological complexity* (five papers), *market volatility* (8 papers), *price increase* (six papers), *organization support* (3 papers), *standard regulations* (6 papers).

In summary, the papers included in this area highlight that the adoption of energy efficiency and environmental sustainability initiatives is driven mainly by relational drivers (e.g., *customers pressure*) and regulation drivers (e.g., *government support*). Concerning barriers, content analysis highlights that the majority of papers analyze the impact of blockage barriers (e.g., *investment costs*), contingency barriers (e.g., *company size*), and market barriers (e.g., *market volatility*).

More in details, the literature on the topic does not still provide an interpretative taxonomy for both drivers and barriers affecting the adoption of energy efficiency and environmental sustainability initiatives.

As for the lack of an interpretative taxonomy, since the classification of factors influencing positively/negatively energy efficiency and environmental sustainability initiatives adoption (Appendixs C and D) does not offer a detailed overview, it is possible to identify six main categories of factors that could be analyzed by future research: management factors (e.g., *quality equipment*, *organizational form*, *level of service*); human and cultural factors (e.g., *people competence*, *motivation*, *training and education*); firm factors (e.g., *international interactions*, *organizational size*); social skills (e.g., *cooperation*, *inter-organizational trust*, *common projects experience*, *approach to investments*); socio-political factors (e.g., *power of partners*, *socialization*, *institutional orientation*, *opportunistic attitude*); and technical factors (e.g., *ICTs application degree*, *information systems*, *tracking systems*).

In addition, no distinction emerges between pure drivers, pure barriers, contextual drivers and contextual barriers. Pure drivers are factors affecting positively the adoption of energy efficiency and environmental sustainability initiatives, but their lack would not negatively affect their acquisition. Pure barriers are factors hindering the adoption of energy efficiency and environmental sustainability initiatives, but whose lack would not drive their acquisition. Contextual drivers or barriers are factors whose presence would affect positively/negatively the adoption of energy efficiency and environmental sustainability initiatives, but whose lack would positively hinder/affect their acquisition. Specifically, an example of factors which have a dual nature of drivers/barriers are firm size, technology, standard regulations and organization support.

TA2. Classification of energy efficiency and environmental sustainability initiatives

The second area comprises 25 papers dealing with the classification of energy efficiency and environmental sustainability initiatives adopted in the supply chain. Content analysis of papers allows to identify the following five categories of initiatives:

- Administrative initiatives (5 papers);
- Transport initiatives (3 papers);
- Efficient initiatives (12 papers);
- Intra-organizational initiatives (10 papers);
- Inter-organizational initiatives (7 papers).

The table reported in Appendix E shows that the majority of papers included in this area focus on *efficient initiatives* and *intra-organizational initiatives*. In addition, it should be noted that 10 out of 25 papers deal with different categories of initiatives.

As for the papers dealing with *administrative initiatives*, Sarkis et al. [83] provide an overview regarding energy-efficient and green supply chain management (GSCM) carried out in relation with organizational theories about administrative initiatives in political science sector, human sciences, engineering end economics. Hsu et al. [84] carry out a survey that allows defining a model where administrative initiatives are independently classified and structured into three categories: green purchases, environmental and reverse logistics design. Moreover, the authors deem necessary that managers impose appropriate corporate policies and they use quantitative measuring instruments to verify the levels of achievement of objectives. Alexander et al. [85] analyze the use of decision theory concepts in sustainable supply chain management (SSCM). The findings allow classifying administrative initiatives in an analytic way. Roehrich et al. [56] develop a survey to sustain that the decision-makers can make sub-optimal choices than their efforts on supply chain management practices; their decision shall be taken under limited rationality compared with various constraints including conflicting priorities, available capabilities, and resources. Adawiyah et al. [86] define empirically the relationship between the energy-efficient and GSCM practices and relative performance, especially at an administrative and organizational level for small and medium enterprises.

As for the papers focusing on *transport initiatives*, Li et al. [87] define a number of parameters and a number of variables and then create a model to support the goods transportation management. Dadhich et al. [88] highlight the responsibilities that all companies have towards the society to implement production processes impacting as little as possible in a negative way on the environment, develop a reverse logistics as efficient as possible, realize packaging easy to dispose of and minimize the polluting waste production. Li et al. [89] realize a mathematical model to minimize the number of empty travels of containers, get the right mix of transported products, and measure the improvements achieved thanks to this model use.

Concerning the papers on *efficient initiatives*, Rao and Holt [90] conduct a survey dealing with the importance of involving actively all members of the supply chain, defining the performances of the actions described in the model. Vachon and Klassen [91] develop a survey to define the integration practices of supply chain and the necessary practices to implement an energy-efficient green supply chain. Zhu et al. [50] provide a survey on the connection between green supply chain practices and their performance, by focusing on the impact they have on the quality of the service provided. Pullman et al. [92] explore the connection between GSCM initiatives adopted and their environmental and social impact. Zhu et al. [93] propose a survey to numerous companies active in the logistics service providers (LSPs) industry, providing a classification of sustainable initiatives and identifying the most widespread one and the related impact in an analytic way. Schoenherr and Talluri [94] carry out a survey to analyze the relationship between environmental sustainability practices and their performances, and define for each initiative the efficiency and inefficiency percentages. Mohanty and Prakash [95] develop a survey to validate the following assumptions: companies that can handle a higher pressure from external stakeholder are more likely to adopt energy-efficient and GSCM practices; the application of these practices must be properly supported by expert top managers; the levels of

performance achieved are different according to the firm size. Green et al. [96] use a mathematical model that allows them to analyze the relationship between manufacturing companies developing environmental initiatives with their suppliers and their performance. The purpose of the work of Beske and Seuring [97] is to identify key categories of supply chain sustainability management practices. According to the authors, the environmental sustainability in LSPs has become a subject of crucial interest in the field of supply chain management. Bonilla et al. [98] conduct a survey to investigate that the adoption of energy efficiency and environmental sustainability initiatives is aimed not only to reduce the environmental impact but also to become more competitive than their competitors in LSP industry.

As for the papers dealing with *intra-organizational initiatives*, Rao [99] develops a model including the following latent constructs: use of ecological raw materials, processes optimization in order to reduce solid waste, processes optimization in order to reduce emissions of environmentally damaging substances and use of new technologies in order to save power from combustible sources. Zhu et al. [100] use an empirical study to compare environmental supply chain management (ESCM) practices within the automotive industry in China and UK. The findings allow realizing a classification of ESCM practices taken by them at inter- and intra-organizational level. Mollenkopf et al. [101] classify energy efficiency and environmental sustainability initiatives, and then they deal with the issue of factors which hinder/facilitate their adoption. Soler et al. [102] develop a case study highlighting that purchasers in the supply chain perceive and use environmental principles in a different way about their role. Shi et al. [103] formulate a theory that is connected with the application of energy efficiency and sustainability initiatives at intra-organizational level. The examined companies show both a reactive and proactive approach. Reactive approaches refer to policies aimed to satisfy the minimum set of measures needed to comply with existing legislation, whereas the proactive approaches refer to policies aimed to realize a reduction of harmful emission from solid waste. Ashby et al. [74] reveal a strong gap between theoretical and practical aspects relating to the application of energy efficient practices.

Finally, concerning the papers on *inter-organizational initiatives*, Kogg and Mont [104] develop a case study analyzing successful Swedish companies. The results indicate that responsibility in the supply chain is due to inter-organizational perspective.

The papers included in this category provide different classifications of energy efficiency and environmental sustainability initiatives. In addition, these papers do not provide a shared overview of the initiatives that a firm could adopt to achieve energy efficiency and environmental sustainability objectives, and do not offer a distinction between single firm initiatives (e.g., *alternative transportation modes*, *alternative vehicles*, *alternative energy sources*, *energy-efficient warehousing*) and supply chain initiatives (e.g., *coordinated logistics and transportation programs*, *coordinated certification programs and green goals*, *collaboration with customers*) neglecting the crucial role of supply chain partners to adopt joint sustainable initiatives.

TA3. Impact of energy efficiency and environmental sustainability on supply chain performance

The third topic area includes 51 papers focusing on the relationship between energy efficiency, environmental sustainability, and supply chain performance. Content analysis of selected papers highlights that energy efficiency and environmental sustainability initiatives may impact three main performance types:

- Environmental performance (39 papers)
- Economic performance (31 papers)
- Operational performance (7 papers)

The table reported in Appendix F shows that the majority of papers deals with *environmental performance* and *economic performance*. Furthermore, 22 out of 51 papers included in this area focus on diverse types of performance. To provide an in-depth analysis, it is possible to divide the categories mentioned above into subcategories (Appendix G).

As for environmental performance, it is possible to identify four subcategories: green performance, energy consumption, waste management and social impact. "*Green performance*" includes papers dealing with the adoption of practices that have an impact on environmental sustainability. "*Energy consumption*" includes papers concerning CO_2 emissions (i.e., the emission of carbon dioxide into the atmosphere), fuel consumption and GHG emissions (greenhouse gas is a gas able to hold infrared radiation and cause the greenhouse effect). "*Waste management*" includes papers focusing on the set of practices aimed to manage the process of production and disposal of waste. "*Social responsibility*" includes papers dealing with corporate social responsibility towards energy efficiency and environmental issues.

Concerning economic performance, it is possible to define four subcategories: economic growth, quality, environmental costs and competitive advantage. "*Economic growth*" includes papers dealing with the achievement of positive economic results through the adoption of supply chain practices. "*Quality*" includes papers concerning the adoption of practices that have positive effects on quality. "*Environmental costs*" includes papers dealing with costs to be born to achieve green targets. "*Competitive advantage*" includes papers concerning the adoption of practices allowing to achieve a competitive advantage.

As for operational performance, we include papers focusing on operational practices which have an impact on the energy efficiency and environmental sustainability in the supply chain.

The table in Appendix G shows that most of the papers (39) *concerns environmental performance* (green performance, energy efficiency, waste management and social impact); 31 papers deal with *economic performance* (economic impact, quality, environmental costs and competitive advantage); finally, seven papers focus on *operational performance*. Moreover, the majority of papers included in this area focus on different types of performance.

As for the papers dealing with *environmental performance*, Ala-Harja and Helo [105] provide a case study claiming that a supply chain may be converted into a green supply chain by reducing use of electricity and CO_2 emission, using alternative energy sources and optimizing the use of vehicles. Bai et al. [106] develop a mathematical model to evaluate, select and control sustainable supply chain performance through the use of a performance measurement system (PMS). Bjorklund et al. [107] conduct a case study in which they propose a way to measure the performance of energy efficiency and environmental sustainability supply chain initiatives. Blome et al. [108] develop a mathematical model analyzing 259 European manufacturing firms. The findings show a number of direct and indirect effects resulting from the adoption of reverse logistics initiatives (e.g., recycling and reusing). Fahmnia et al. [109] carry out a mathematical model to define a trade-off between costs and environmental performance in terms of indicators to measure energy consumed level and CO_2 emission level. Gualandris and Kalchshmidt [110] develop a survey in the manufacturing industry to investigate the relationship among sustainable initiatives, green supply chain management and customers pressure. Grosvold et al. [39] provide a case study to analyze how GSCM and its practices impact on performance of companies belonging to the supply chain. Gurtu et al. [111] analyses several companies operating in LSP industry. The findings reveal that several companies deem it necessary to adopt initiatives of reverse logistics. Kim et al. [112] carry out a survey highlighting that customers are more inclined to purchase products of firms adopting green practices. Perotti et al. [113] explore green supply chain management initiatives adopted in the LSP industry in Italy. The findings define both initiatives adopted (e.g., more efficient components design, use of cleaner fuels, empty runs reduction, renewal of loading and unloading system, use of renewable energy sources) and their performance. Ross et al. [114] conduct a survey to explore logistics infrastructure, commercial and environmental differences and social factors among 89 countries. Shi et al. [103] provide a structural model of supply chain management focusing on the relationship between green initiatives performance and factors facilitating green initiatives adoption. Singhry [115] focusses on sustainable transports, sustainable consumption and sustainable reverse logistics. Tachizawa and Wong [116] conduct a study focusing on a qualitative evaluation of environmental performance. Tachizawa et al. [117] explore the interaction

among governmental mechanism, GSCM complexity and environmental performance. The paper introduces a number of theoretical concepts concerning supply chain network and complexity of organizational design in order to provide a clear theory regarding energy efficiency and environmental sustainability. Tognetti et al. [118] carry out a case study in a German automotive company, showing how it is possible to reduce CO_2 emission by 30% in a supply chain by optimizing energetic mix.

Regarding the papers concerning *economic performance*, Azevedo et al. [119] conduct a case study highlighting that managers dealing with green supply chain management have as a target the acquisition of better results in economic and social terms. Ding et al. [120] investigate the impact of government incentives on economic performance in the collaborative supply chain system. Gunasekaran et al. [121] define a number of initiatives concerning the integration of green initiatives and cooperation between the supply chain partners. Lee et al. [122] develop a survey to validate a model on the relationship among different parameters used to verify the performance of GSCM initiatives. Masoumik et al. [123] develop a conceptual model to highlight positive effects that the adoption of green practices may have on competitive advantage. Rao and Holt [90] conduct a survey to identify the relationship among green supply chain management, economic performances, and competitiveness in a sample of companies set in South-East Asia. Shang et al. [124] conduct a survey involving Taiwanese companies to define the main capabilities of a green supply chain and analyze the relationship between green supply chain management initiatives and economic performance. The paper shows that companies involved in the adoption of green supply chain initiatives get better results in terms of trade, brand, and savings. Zaarour et al. [125] develop a mathematical model to demonstrate that many firms are using green supply chain practices to increase their competitiveness. Zhu et al. [126] carry out a statistical model which suggests that the adoption of energy-efficient and green practices affect indirectly economic performance.

Concerning the papers focusing on *operational performance*, Azadi et al. [127] provide a case study to define a strategic plan for companies operating in freight industry to reduce waste and fuel consumption. Zhu et al. [100] carry out a survey among 39 automotive companies operating in the UK and 89 automotive companies operating in China. The findings define three dimensions (practice, pressure, and performance) and show that UK companies have a reduction in terms of taxes concerning waste treatment and disposal.

As for the papers concerning more types of performance, Adhitya et al. [128] carry out a case study to investigate how environmental sustainability topic is becoming an important business factor. The findings highlight that companies are taking decisional support tools to evaluate environmental impacts resulting from their production. Aksoy et al. [129] develop a mathematical model to study fuel consumption and CO_2 emission according to vehicles technical specifications and shipload. Azevedo et al. [130] conduct a case study to identify the initiatives impacting on performance (e.g., eco-sustainable sources of supply, use of recyclable packaging, reduction of empty runs). Moreover, the paper explores the relationship between GSCM and logistic lean initiatives and their economic and social performance. Carter and Easton [131] explore some GSCM initiatives impacting on corporate performance (e.g., reverse logistics practices, such as the reuse of neglected items). Carter and Rogers [132] develop a survey to demonstrate that companies adopting green supply chain initiatives obtain better economic results than companies which negate the importance of green initiatives. Chan et al. [133] highlight the importance to adopt energy efficiency and environmental sustainability initiatives to improve corporate performance and competitiveness. Chan et al. [134] conduct a case study that aims to demonstrate how to integrate environmental problems in the combination of buyers and sellers in the same supply chain. Moreover, the authors propose the following indicators: waste of energy per unit time per supplier, waste of raw materials per unit time per supplier, and air pollution per unit time per buyer-seller transport. Chiou et al. [135] carry out a survey to identify different initiatives (e.g., reverse logistic initiatives) adopted to reduce energy consumption, solid and toxic waste generation, and CO_2 emissions. Choi and Hwang [136] carry out a survey to investigate how eco-design is positively correlated with both environmental performance and economic performance.

Erol et al. [137] propose a fuzzy logic methodology for the resolution of multi-criteria problems and define a framework to measure supply chain sustainability performance. Gold et al. [138] develop a multi-case study based on fuzzy logic and neural networks in order to evaluate and select the best providers in the LSP industry. Golicic and Smith [139] conduct a meta-analysis to demonstrate the positive relationship between green practices and market-based, operational-based and accounting-based performance. Green et al. [96] develop a model to detect the impact of green supply chain initiatives in the economic, organizational and social way. Hamprecht et al. [140] conduct a case study to connect social and economic performance control in the supply chain. The findings highlight the importance of quality control also for energy-efficient and environmental sustainability initiative in the context of food supply chain. Jabbour [61] develops a multiple case study among several Brazilian companies. The findings show that these companies are sensitive to environmental sustainability problem and they are implementing eco-sustainability initiatives to reduce CO_2 emission. Jabbour et al. [62] conduct a survey to define green supply chain initiatives impacting on internal and external performance. The results connect the following concepts: quality management, eco-sustainability initiatives management, and adoption of GSCM external initiatives influencing environmental performance. Jakhar [141] develops a survey to evaluate the impact of GSCM initiatives (e.g., inter-modal transports) on supply chain performance. Mallidis et al. [142] provide a mathematical model to organize the supply chain as a network and reach the optimal solution to the problem of CO_2 emission. Pullman et al. [92] reveal that an improvement of environmental performances leads to an improvement of products and services quality, which, in turn, improves cost performances. Validi et al. [143] provide a mathematical model to select the shortest path allowing to reduce environmental harmful emission in the field of food supply chain. Yang et al. [144] carry out a survey and apply a structural equation model to demonstrate that the adoption of energy-efficient and green practices positively impacts on competitiveness. Zhu and Sarkis [145] adopt a moderated hierarchical regression analysis to evaluate the relationship between the adoption of green supply chain practices and economic performance. Zhu et al. [146] provide an empirical taxonomy highlighting the differences existing between environmental, economic and operational performance.

The papers included in this area show the need to deepen the influence of energy efficiency and environmental sustainability initiatives on the different types of performance and the necessity for companies adopting those initiatives to adopt performance measurement systems.

TA4. Customer perspective in energy-efficient and sustainable supply chain

The fourth area comprises 23 papers and deals with the customer perspective in energy-efficient and sustainable supply chain (Appendix H). Three sub-areas are identified:

- Papers focusing on the impact of environmental issues on logistics outsourcing (11 papers)
- Papers focusing on the inclusion of environmental issues in purchasing contracts (four papers)
- Papers focusing on green supplier selection (12 papers)

Moreover, four out of 23 papers fall into different categories. Concerning the papers dealing with the *impact of environmental issues on logistics outsourcing*, Dam and Perkova [147] provide a mathematical model analyzing a sample of 66 multinational companies. The findings show the main initiatives aiming to reduce CO_2 emission. Frostenson and Prenkert [148] conduct a case study showing the importance that large-size companies confer to environmental issues when customers purchase logistics services and freight services. Gold et al. [138] develop a multiple case study based on fuzzy logic and neural networks to evaluate and select the best suppliers in the LSP industry. Lee [149] explores green supply chain management in several Chinese industries with special emphasis on initiatives concerning outsourcing. The findings show that logistics outsourcing does not allow customers to reduce the use of energy and global warming. Liu et al. [150] develop a mathematical model showing changes concerning sustainability issues. The paper focuses on main factors influencing both green supply chain and customers satisfaction. Sarkis [151] conducts a multiple case study in a

sample of 142 companies operating in South Korea to investigate the impact of energy-efficiency and environmental issues on logistics outsourcing. Yang and Sheu [152] carry out a case study highlighting how firms involve supply chain partners in their energy-efficient and sustainable processes.

As regards the papers dealing with the *inclusion of environmental issues in purchasing contracts*, Lintukangas et al. [153] carry out a survey among 165 Finnish companies to explore the problem of the pressure that companies suffer because of their customer which increasingly require compliance with high standards regarding green supply chain management. Meixell and Louma [154] highlight practices adopted by logistics companies operating in LSP industry to achieve a competitive advantage.

As for the papers concerning *LSP selection*, Caniels et al. [155] develop a survey among 54 automotive companies to develop a conceptual framework for suppliers' participation in eco-sustainability initiatives. Dai et al. [156] show how environmental management may be used to achieve a competitive advantage. Moreover, authors carry out a survey among 230 companies showing that integration of green supply chain positively impacts on the development of incremental environmental innovation, while integration with customers impacts significantly on environmental innovation. Hitchcock [157] carried out a theoretical study highlighting difficulties that arise in logistics services industry (e.g., UK and China) concerning environmental sustainability adoption. Huang et al. [158] carry out a survey to investigate pressures impacting on LSP selection of small and medium-sized companies in China. Seuring [159] provides empirical methods highlighting intuitions resulting from some projects contributing to obtain a better understanding of green supply chain management. Seuring and Muller [36] highlight a lack towards social side for sustainability and define a quantitative model for green supply chains. Tamosaitiene et al. [160] develop a mathematical model to select suppliers using information from marketing. Yang et al. [161] develop a survey among 112 manufacturing companies in China, highlighting that energy-efficient and environmental initiatives management may influence on technological innovation.

As regards the papers falling into more categories, Hoejmose et al. [162] carry out an empirical analysis of 12 companies operating in different industries. The findings highlight the relationship among management, sustainability performance and supply chain. In particular, the results explore these concepts moving away from the traditional theory that considers them as a single concept. Nawrocka [163] analyses how environmental factors influence logistics outsourcing (e.g., control of governmental media, customers' demands, internal management, brand, society, and resources). Smith and Minutolo [164] highlight the positive relationship between productivity and efficiency measures and provide support to managers to guide suppliers in a sustainable direction. Wilding et al. [165] explore sustainability concept through three analysis levels: dyadic relationship, industry, and corporate network.

The papers included in this area show the crucial role of the customer in the decision-making process of adoption of energy-efficient and environmental sustainability initiatives. Furthermore, these papers do not analyze the way this influencing role translates in the adoption of collaborative supply chain initiatives.

TA5. Information and communication technologies (ICTs) supporting energy efficiency and environmental sustainability initiatives

The fifth area comprises four papers dealing with the role of technological tools supporting the adoption of energy efficiency and environmental sustainability initiatives in the supply chain (Table 4).

Table 4. Papers focusing on ICTs supporting energy efficiency and environmental sustainability initiatives.

Authors	Reference	Collaborative Systems	RFID
Prause and Hunke	[166]	●	
Smith and Minutolo	[164]		●
Soler et al.	[102]	●	
Srivastava	[167]	●	
Total		3	1

Table 4 shows that the content analysis highlights two sub-areas:

- *Collaborative systems* supporting information diffusion among supply chain partners;
- *Radio Technology IDentification* (*RFID*) to identify and track objects.

Srivastava [167] highlights the importance of information and communication technologies to obtain a coordination and integration of supply chain initiatives. Soler et al. [102] conduct a case study showing the importance of collaboration among supply chain members. In particular, they suggest comparable methods for the diffusion of information, languages and filing systems to make the flow of information as smooth as possible. Moreover, authors highlight the importance to spread information about green initiatives adopted to obtain a competitive advantage. Prause and Hunke [166] conduct a survey to analyze the issue of pollution generated by couriers. The findings highlight the necessity to optimize the traffic management and improve communication systems; the initiatives considered include the improvement of information transfer among supply chain members, the use of information about road traffic to choose the less busy road, the standardization of software interface and database continuous updating. Smith and Minutolo [164] carry out a survey revealing the importance of RFID, a technology using electromagnetic fields to automatically identify and track tags attached to objects.

The papers included in this topic area highlights that technological tools supporting energy-efficiency and environmental sustainability initiatives need a more comprehensive analysis highlighting the variety of technologies used by supply chain partners. This issue requires a further study to analyze if the ICTs used by firms are appropriate to support their energy efficiency and environmental sustainability initiatives.

The main findings of the literature review are integrated in a literature map (Figure 2) on the topic that has allowed us to provide a comprehensive definition of sustainable supply chain initiative. A sustainable supply chain initiative should include: (1) the sustainable drivers aimed to produce environmental sustainability strategies involving the partners; (2) the sustainable practices, i.e., the environmental techniques and methods shared with supply chain partners to achieve the sustainable aims; (3) the enabling technologies, namely the specific collaborative systems supporting the sustainable practices. According to this conceptualization a sustainable supply chain initiative is a multifaceted concept incorporating a managerial perspective (the sustainable drivers), an organizational perspective (the sustainable practices) and a technological perspective (the enabling technologies). The main sustainable supply chain initiatives concern administrative, transport and efficiency issues and can have a dual focus on intra-organizational and inter-organizational aspects.

The literature map highlights that the adoption of sustainable initiative is affected by a set of drivers and barriers that have an impact on the environmental, economic and operational performance of the individual firm and the supply chain. Pure drivers are factors affecting positively the adoption of energy efficiency and environmental sustainability initiatives, but their lack would not negatively affect their acquisition. Pure barriers are factors hindering the adoption of energy efficiency and environmental sustainability initiatives, but whose lack would not drive their acquisition. Contextual drivers or barriers are factors whose presence would affect positively/negatively the adoption of energy efficiency and environmental sustainability initiatives, but whose lack would positively hinder/affect their acquisition (e.g., firm size, standard regulations, organization support).

In summary, the literature map points out that the framework of knowledge in the field of environmental sustainability and energy-efficient supply chain management is in evolution in the current literature. In fact, thanks to the enabling collaborative technologies, cheaper and very easy to use systems are available posing reduced financial, technical and cultural barriers. This aspect stresses that the scenario is evolving and is offering firms new managerial and technological opportunities to explore in the field of sustainable supply chain management.

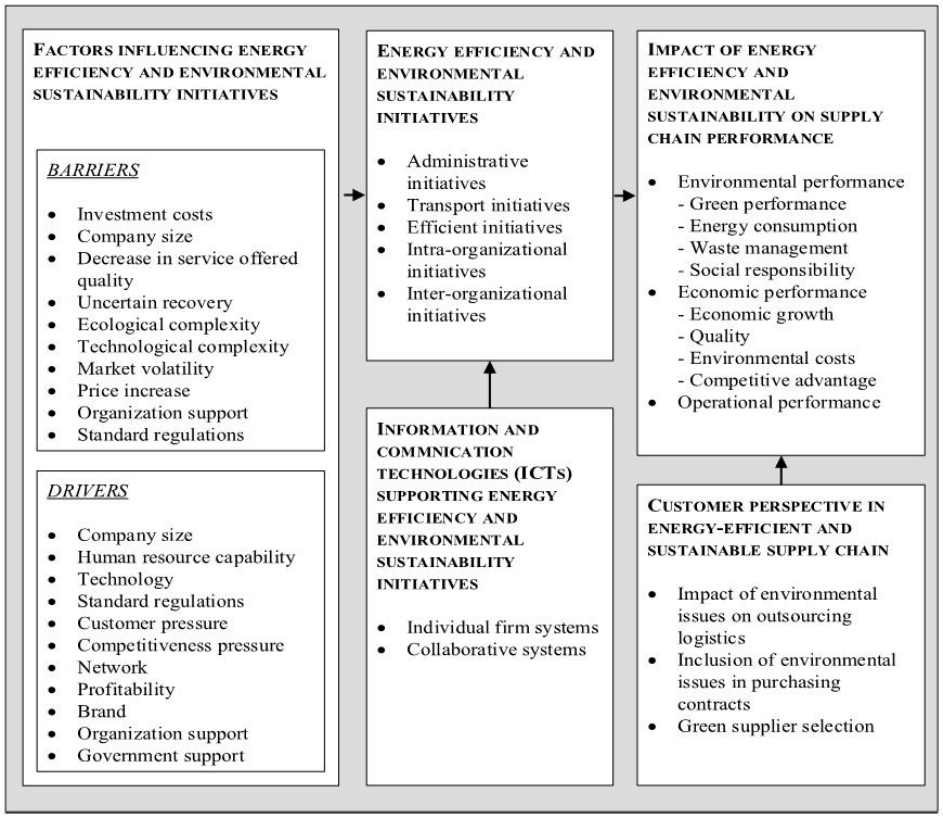

Figure 2. Literature map of environmental sustainability and energy-efficient supply chain management.

7. Conclusions and Implications

This paper provides a structured review on the topic of energy efficiency and environmental sustainability in the supply chain management context to identify the main factors influencing positively or negatively the adoption of energy efficiency and environmental sustainability initiatives, the main initiatives adopted, the impact of these initiatives on supply chain performance, the information and communication technologies supporting these initiatives, and the customer perspective in energy-efficient and sustainable supply chain.

The descriptive analysis provides a summary overview of the 122 selected papers, highlights a positive research trend on the topic involving papers published in journals focusing on different subject areas (e.g., supply chain management, logistics, transportation, engineering, information management). As for the methodology adopted, many papers are based on surveys, with a lower percentage of papers using other methodologies (e.g., case studies, conceptual model, mixed approaches). The methodological analysis of the selected papers highlights that the qualitative literature on the topic neglects longitudinal case studies. This result allows us to identify a research gap concerning the evolution in environmental awareness and the consequent evolutionary process of firms in adopting energy-efficient and sustainable initiatives. This aspect demonstrates that the framework of knowledge in the field of environmental sustainability and energy-efficient supply chain management is in evolution in the current literature and this result provides guidance for the necessity of future longitudinal research. In fact, thanks to the enabling collaborative technologies, cheaper and very easy to use systems are available posing reduced financial, technical and cultural barriers. This aspect stresses that the scenario is evolving and is offering firms new managerial and technological opportunities to explore in the field of sustainable supply chain management.

The content analysis has allowed us to identify five different topic areas: (1) factors influencing energy efficiency and environmental sustainability initiatives, (2) classification of energy efficiency and environmental sustainability initiatives, (3) impact of energy efficiency and environmental

sustainability on supply chain performance, (4) customer perspective in energy-efficient and sustainable supply chain, and (5) information and communication technologies (ICTs) supporting energy efficiency and environmental sustainability initiatives

The content analysis of these five topic areas has allowed us to identify five main research gaps. These gaps allow us to formulate possible research questions to be investigated by future research on the topic.

Starting from the first topic area focusing on the main factors influencing energy efficiency and environmental sustainability initiatives, it emerges the necessity to provide a contextual classification of a set of factors and barriers that drive or hinder the adoption of energy efficiency and environmental sustainability initiatives, and conduct more empirical investigation in the field of supply chain management. This gap allows us to formulate the first and second research questions:

RQ1: What is the set of factors affecting positively and negatively the adoption of energy efficiency and environmental sustainability initiatives in the supply chain?

RQ2: How do factors affecting the adoption of energy efficiency and environmental sustainability act as a pure or contextual driver or barrier?

The second topic area dealing with the classification of energy efficiency and environmental sustainability initiatives has highlighted the necessity to identify an interpretative taxonomy of the initiatives that a firm could adopt to support environmental sustainability strategies. The third research question that arises then is:

RQ3: How can be identified an interpretative taxonomy of energy efficiency and environmental sustainability initiatives in the field of supply chain management?

The third topic area on the impact of energy efficiency and environmental sustainability on supply chain performance has shown a gap in the literature which lead us to propose the following two research questions:

RQ4: What is the impact of energy efficiency and environmental sustainability initiatives on the different types of performance?

RQ5: How can supply chain performance be evaluated in terms of both energy efficiency and environmental sustainability?

The fourth topic area focusing on customer perspective in energy-efficient and sustainable supply chain has highlighted that the collaborative initiatives' adoption based on the vertical dyadic customer-supplier relationship is not sufficiently analyzed. Starting from this gap, it is possible to define the following research question:

RQ6: How does the vertical dyadic customer-supplier relationship impact on the adoption of collaborative supply chain initiatives?

Finally, the fifth topic area dealing with the role of information and communication technologies (ICTs) supporting energy efficiency and environmental sustainability needs a more comprehensive analysis to identify a set of technologies that could support the individual firms and the entire supply chain towards energy-efficient and environmental objectives. From this research gap the following research question may be formulated:

RQ7: What is the set of ICTs supporting the adoption of environmental sustainability initiatives?

Starting from this research question, firms could face misalignment problems between the diffusion of the specific technologies adopted and the specific initiatives carried out by other firms operating in their supply network. In fact, despite nowadays firms are technologically prepared for the adoption of green strategies, they could not have a full understanding of their integrated role to be able to perform a variety of supply chain initiatives towards both energy efficiency and environmental sustainability objectives. Firms providing such services typically have a good understanding of their

customers' needs. In fact, firms typically already own technological tools before the adoption of sustainability programs, but they are adopted with other aims in view, and to manage other business processes. Not fully understanding their energy efficiency and environmental sustainability adoption processes and consequently how to achieve their green aims leveraging on organization practices with the support of technological tools, firms tend not to exploit the potential of technological assets. Therefore, they are achieving their energy efficiency and sustainability objectives with an unexploited potential and this is a cultural gap affecting the entire supply chain.

To integrate the results of content analysis and draw out more fine-grained insights for the reader a literature map on the topic has been provided. This literature map, bringing together the manifold research streams, aims to provide the basis for advancing both research and practice. The adoption of sustainable initiative is affected by a set of drivers and barriers and have an impact on the environmental. economic and operational performance of the individual firm and the supply chain. Pure drivers are factors affecting positively the adoption of energy efficiency and environmental sustainability initiatives, but their lack would not negatively affect their acquisition. Pure barriers are factors hindering the adoption of energy efficiency and environmental sustainability initiatives, but whose lack would not drive their acquisition. Contextual drivers or barriers are factors whose presence would affect positively/negatively the adoption of energy efficiency and environmental sustainability initiatives, but whose lack would positively hinder/affect their acquisition (e.g., firm size, standard regulations, organization support).

The literature map points out that the framework of knowledge in the field of environmental sustainability and energy-efficient supply chain management is in evolution in the current literature. In fact, thanks to the enabling collaborative technologies, cheaper and very easy to use systems are available posing reduced financial, technical and cultural barriers. This aspect stresses that the scenario is evolving and is offering firms new managerial and technological opportunities to explore in the field of sustainable supply chain management.

The above-presented research gaps identify some possible future areas of investigation in the context of energy-efficient and sustainable supply chain management. A first future research direction concerns the issue of sustainable business models in the context of environmental sustainability and energy-efficient supply chain. A second future research direction regards the analysis of the evolution in environmental awareness and the consequent evolutionary process of firms in adopting energy-efficient and sustainable initiatives. In fact, the framework of knowledge in the field of environmental sustainability and energy-efficient supply chain management is in evolution in the current literature and this result provides guidance for the necessity of future longitudinal research. In fact, thanks to the enabling collaborative technologies, cheaper and very easy to use systems are available posing reduced financial, technical and cultural barriers. This aspect stresses that the scenario is evolving and is offering firms new managerial and technological opportunities to explore in the field of sustainable supply chain management. These future areas of investigation need to take into consideration not only the vertical dyadic customer-supplier relationships, but also the horizontal supplier-supplier relationships within the supply network. Finally, this study has some limitations, some of which can be addressed by future research. In fact, according to Roehrich et al. [81], this review provides an overview of the topic investigated, but does not deploy an analytical framework and not generate detailed hypotheses for empirical analysis. In addition, this review is based on manual filtering and is mainly based on the analysis of the researchers and their interpretation of the literature is inevitably influenced by their critical perspectives. This, undoubtedly, is both the strength and weakness of structured literature reviews. Therefore, despite some degree of human subjectivity is indispensable to carry out literature reviews and provide an in-depth understanding of qualitative aspects, future research avenues could analyze the same body of literature by adopting bibliometric analysis.

Author Contributions: These authors contributed equally to this work.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A. Papers by Journal Subject Area

	Journal	Journal Subject Area										Number of Papers
		Multidisciplinary	Business, Management and Accounting	Decision Sciences	Engineering	Computer Science	Social Sciences	Economics, Econometrics and Finance	Environmental Science	Energy	Mathematics	
SCM	Supply Chain Management		x									20
TR	Transportation Research Part E: Logistics and Transportation Review		x	x			x					11
IJOPM	International Journal of Operations and Production Management		x	x								9
IJPE	International Journal of Production Economics		x	x	x			x				7
IJPDLM	International Journal of Physical Distribution and Logistics Management		x				x					6
CSREM	Corporate Social Responsibility and Environmental Management		x				x		x			5
JPSM	Journal of Purchasing Supply Management		x									5
JSCM	Journal of Supply Chain Management		x		x	x						5
BSE	Business Strategy and the Environment		x				x		x			4
JCP	Journal of Cleaner Production		x		x				x	x		4
IJLSM	International Journal of Logistics System and Management		x	x								3
IJPR	International Journal of Production Research		x	x	x							3
EE	Ecological Economics							x	x			2
EJOR	European Journal of Operational Research			x							X	2
TEM	IEEE Transaction on Engineering Management		x		x							2
JEM	Journal of Environmental Management								x			2
JOM	Journal of Operations Management		x	x	x	x						2
MD	Management Decision		x	x	x							2
O	Omega		x	x								2
ABM	Asian Business and Management		x				x					1
EAXXI	Economic Annals XXI						x	x				1
EST	Environmental Science and Technology	x							x			1
GEC	Global Environmental Change						x		x			1
GJFSM	Global Journal of Flexible Systems Management		x									1

	Journal	Journal Subject Area										Number of Papers
		Multidisciplinary	Business, Management and Accounting	Decision Sciences	Engineering	Computer Science	Social Sciences	Economics, Econometrics and Finance	Environmental Science	Energy	Mathematics	
IMM	Industrial Marketing Management		x									1
I	Information				x	x						1
IBM	International Business Management		x									1
IBR	International Business Review		x					x				1
IJLRA	International Journal of Logistics Research and Applications		x	X	x	x						1
IJMR	International Journal of Management Reviews		x	x								1
IJSOM	International Journal of Services and Operations Management		x	x	x							1
IJTM	International Journal of Technology Management		x		x	x	x					1
JBL	Journal of Business Logistics		x	x								1
JETM	Journal of Engineering and Technology Management		x	x	x							1
JMTM	Journal of Manufacturing Technology Management		x		x	x						1
JSSI	Journal of Security and Sustainability Issues						x			x		1
JORS	Journal of the Operational Research Society		x	x								1
MRR	Management Research Review		x									1
OMR	Operations Management Research		x	x	x							1
PSBS	Procedia-Social and Behavioral Sciences						x					1
PPC	Production Planning and Control		x	x	x	x						1
RCR	Resources, Conservation and Recycling							x	x			1
SAJBM	South African Journal of Business Management		x									1
S	Sustainability						x		x	x		1
TQMJ	TQM Journal		x	x								1

Appendix B. Classification of Papers by Topic Area

References	Year	TA1	TA2	TA3	TA4	TA5
Abbasi and Nilsson [168]	2012	●				
Adawiyah et al. [86]	2015		●			
Adhitya et al. [128]	2011			●		
Ahn and Lee [169]	2014	●				
Aksoy et al. [129]	2014			●		
Ala-Harja and Helo [105]	2014			●		
Alexander et al. [85]	2014		●			
Amann et al. [19]	2014	●				
Ashby et al. [74]	2012		●			
Azadi et al. [127]	2014			●		
Azevedo et al. [119]	2011			●		
Azevedo et al. [130]	2012			●		
Bai et al. [106]	2012			●		
Beske and Seuring [97]	2014		●			
Bjorklund et al. [107]	2012			●		
Blome et al. [108]	2014			●		
Bonilla et al. [98]	2015		●			
Brandenburg et al. [170]	2014	●				
Caniels et al. [155]	2013				●	
Cantor et al. [171]	2012	●				
Carter and Easton [131]	2011			●		
Carter and Rogers [132]	2008			●		
Chan et al. [133]	2012			●		
Chan et al. [134]	2013			●		
Chiou et al. [135]	2011			●		
Chkanikova and Mont [172]	2015	●				
Choi and Hwang [136]	2015			●		
Cosimato and Troisi [173]	2015	●				
Dadhich et al. [88]	2015		●			
Dai et al. [156]	2015				●	
Dam and Petkova [147]	2014				●	
Ding et al. [120]	2015			●		
Dzung and Khoi [174]	2014	●				
Erol et al. [137]	2011			●		
Fahimnia et al. [109]	2015			●		
Frostenson and Prenkert [148]	2015				●	
Giunipero et al. [175]	2012	●				
Gold et al. [138]	2010			●	●	
Gold et al. [176]	2013	●				
Golicic and Smith [139]	2013			●		
Govindan et al. [177]	2014	●				
Govindan et al. [178]	2014	●				
Green et al. [96]	2012		●	●		
Grosvold et al. [39]	2014			●		
Gualandris and Kalchschmidt [110]	2014			●	●	
Gunasekaran et al. [121]	2015			●		
Gurtu et al. [111]	2015			●	●	
Hall and Matos [179]	2010	●				
Hamprecht et al. [140]	2005			●		
Hitchcock [157]	2012				●	
Hoejmose et al. [162]	2014				●	
Hsu et al. [84]	2013		●			
Huang et al. [158]	2015				●	
Jabbour et al. [61]	2015	●		●		
Jabbour et al. [180]	2015			●		
Jabbour et al. [62]	2015	●				
Jakhar [141]	2014			●		
Kagawa et al. [181]	2015	●				
Kim et al. [112]	2014			●		
Kogg and Mont [104]	2012		●			

References	Year	TA1	TA2	TA3	TA4	TA5
Lee [149]	2008				●	
Lee et al. [122]	2013			●		
Li et al. [89]	2014		●			
Li et al. [87]	2015		●			
Lintukangas et al. [153]	2015				●	
Liu et al. [182]	2012				●	
Liu et al. [150]	2012	●				
Mallidis et al. [142]	2014			●		
Mangla et al. [183]	2014	●				
Masoumik et al. [123]	2014			●		
McKinnon [184]	2010	●				
Meixell and Luoma [154]	2015				●	
Mohanty and Prakash [95]	2014		●			
Mollenkopf et al. [101]	2010		●			
Nawrocka [163]	2008				●	
Perotti et al. [113]	2015			●		
Prause and Hunke [166]	2014					●
Pullman et al. [92]	2009		●	●		
Rao [99]	2002		●			
Rao and Holt [90]	2005		●	●		
Roehrich et al. [56]	2014		●			
Ross et al. [114]	2012			●		
Sarkis [151]	2012				●	
Sarkis et al. [83]	2011		●			
Schoenherr and Talluri [94]	2013		●			
Seuring [159]	2011				●	
Seuring and Muller [36]	2008				●	
Shang et al. [124]	2010			●		
Shi et al. [103]	2012		●	●		
Singhry [115]	2015			●		
Smith and Minutolo [164]	2014				●	●
Soler et al. [102]	2010		●			●
Srivastava [167]	2007					●
Svensson [185]	2007	●				
Swami and Shah [186]	2013			●		
Tachizawa and Wong [116]	2014			●		
Tachizawa et al. [117]	2015			●		
Tamosaitiene et al. [160]	2014				●	
Thun and Muller [187]	2010	●				
Tian et al. [188]	2014	●				
Tognetti et al. [118]	2015			●		
Vachon and Klassen [91]	2006		●			
Validi et al. [143]	2014			●		
Walker and Jones [189]	2012	●				
White et al. [190]	2015	●				
Wiengarten et al. [191]	2013	●				
Wilding et al. [165]	2012				●	
Wu and Pagell [192]	2011	●				
Yang and Sheu [152]	2007				●	
Yang and Sheu [193]	2011	●				
Yang et al. [144]	2013			●		
Yang et al. [161]	2015				●	
Zaarour et al. [125]	2014			●		
Zhu and Sarkis [145]	2004			●		
Zhu et al. [194]	2005	●				
Zhu et al. [50]	2007		●			
Zhu et al. [100]	2008	●				
Zhu et al. [195]	2008	●				
Zhu et al. [196]	2008	●	●	●		
Zhu et al. [93]	2011		●			
Zhu et al. [146]	2012			●		
Zhu et al. [126]	2013			●		
Total		31	25	51	23	4

Appendix C. Drivers Influencing Energy Efficiency and Environmental Sustainability Initiatives

Authors	Year	Company Size	Human Resources Capability	Technology	Standard Regulations	Customers Pressure	Competitiveness Pressure	Network	Profitability	Brand	Organization Support	Government Support
Abbasi and Nilsson [168]	**2012**			●								
Ahn and Lee [169]	2014			●				●		●		
Amann et al. [19]	2014				●	●						●
Brandenburg et al. [170]	2014					●		●				
Cantor et al. [17]	2012	●					●				●	
Chkanikova and Mont [172]	2015			●		●	●				●	●
Cosimato and Troisi [173]	2015			●								●
Dzung and Khoi [174]	2014			●		●		●		●		●
Giunipero et al. [175]	2012				●	●			●	●		
Gold et al. [176]	2013				●	●					●	
Hall and Matos [179]	2010		●									●
Jabbour et al. [62]	2015	●			●	●	●					
Jabbour et al. [61]	2015			●		●	●		●	●		
Kagawa et al. [181]	2015							●				
Liu et al. [150]	2012	●	●	●		●					●	●
Mangla et al. [183]	2014				●	●	●		●			
McKinnon [184]	2010						●		●		●	●
Svensson [185]	2007					●						
Thun and Muller [187]	2010					●	●			●		●
Tian et al. [188]	2014					●						
Walker and Jones [189]	2012	●	●	●							●	●
White et al. [190]	2015		●									
Wiengarten et al. [191]	2013	●				●						
Wu and Pagell [192]	2011	●		●					●			
Yang and Sheu [193]	2011				●	●						●
Zhu et al. [194]	2005			●			●		●			●
Zhu et al. [195]	2008	●			●		●		●		●	●
Zhu et al. [100]	2008						●	●				●
Zhu et al. [196]	2008					●			●			●
Total		**7**	**4**	**10**	**7**	**16**	**10**	**5**	**8**	**5**	**7**	**14**

Appendix D. Barriers Affecting Energy Efficiency and Environmental Sustainability Initiatives

Authors	Year	Investment Costs	Company Size	Decrease in Services Offered Quality	Uncertain Recovery	Ecological Complexity	Technological Complexity	Market Volatility	Price Increase	Organization Support	Standard Regulations
Amann et al. [19]	2014		●				●				●
Brandenburg et al. [170]	2014	●									
Cantor et al. [17]	2012	●									
Chkanikova and Mont [172]	2015	●						●			
Cosimato and Troisi [173]	2015	●		●			●				
Giunipero et al. [175]	2012	●			●			●			
Gold et al. [176]	2013	●									
Govindan et al. [177]	2014	●	●			●	●				
Govindan et al. [178]	2014			●					●	●	
Hall and Matos [179]	2010		●						●		
Jabbour et al. [62]	2015		●					●			
Kagawa et al. [181]	2015								●		
Liu et al. [150]	2012	●						●		●	
McKinnon [184]	2010	●								●	●
Svensson [185]	2007					●			●		
Thun and Muller [187]	2010				●		●				
Tian et al. [188]	2014		●					●			
Walker and Jones [189]	2012		●		●		●				●
White et al. [190]	2015				●			●			
Wiengarten et al. [191]	2013	●	●								
Wu and Pagell [192]	2011		●					●			●
Yang and Sheu [193]	2011					●			●		
Zhu et al. (2005) [145]	2005				●						
Zhu et al. [195]	2008										●
Zhu et al. [100]	2008							●	●		
Zhu et al. [196]	2008										●
Total		**10**	**8**	**2**	**5**	**3**	**5**	**8**	**6**	**3**	**6**

Appendix E. Classification of Energy Efficiency and Environmental Sustainability Initiatives

Authors	Year	Administrative	Transport	Efficient	Intra-Organizational	Inter-Organizational
Adawiyah et al.	2015 [86]	●		●	●	
Alexander et al.	2014 [85]	●				
Ashby et al.	2012 [74]				●	●
Beske and Seuring	2014 [94]			●		
Bonilla et al.	2015 [98]			●		
Dadhich et al.	2015 [88]		●			
Green et al.	2012 [96]			●		
Hsu et al.	2013 [84]	●				
Kogg and Mont	2012 [104]					●
Li et al.	2014 [89]		●			
Li et al.	2015 [87]		●			
Mohanty and Prakash	2014 [95]			●		●
Mollenkopf et al.	2010 [101]				●	
Pullman et al.	2009 [92]			●		●
Rao	2002 [99]				●	
Rao and Holt	2005 [90]			●	●	
Roehrich et al.	2014 [56]	●		●		
Sarkis et al.	2011 [83]	●			●	
Schoenherr and Talluri	2013 [94]			●		
Shi et al.	2012 [103]				●	
Soler et al.	2010 [102]				●	
Vachon and Klassen	2006 [91]			●	●	●
Zhu et al.	2007 [50]			●		
Zhu et al.	2008 [196]				●	●
Zhu et al.	2011 [93]			●		●
Total		**5**	**3**	**12**	**10**	**7**

Appendix F. Papers Dealing with the Impact of Energy Efficiency and Environmental Sustainability on Supply Chain Performance

Authors	Year	Supply Chain Performance		
		Environmental Performance	Economic Performance	Operational Performance
Adhitya et al.	2011 [128]	●	●	
Aksoy et al.	2014 [129]	●		●
Ala-Harja and Helo	2014 [105]	●		
Azadi et al.	2014 [127]			●
Azevedo et al.	2011 [119]		●	
Azevedo et al.	2012 [130]	●	●	
Bai et al.	2012 [106]	●		
Bjorklund et al.	2012 [107]	●		
Blome et al.	2014 [108]	●		
Carter and Easton	2011 [131]	●	●	
Carter and Rogers	2008 [132]	●	●	
Chan et al.	2012 [133]	●	●	
Chan et al.	2013 [134]	●	●	
Chiou et al.	2011 [135]	●	●	
Choi and Hwang	2015 [136]	●	●	
Ding et al.	2015 [120]		●	
Erol et al.	2011 [137]	●	●	
Fahimnia et al.	2015 [109]	●		
Gold et al.	2010 [138]	●	●	
Golicic and Smith	2013 [139]	●	●	●
Green et al.	2012 [96]	●	●	●
Grosvold et al.	2014 [39]	●		
Gualandris and Kalchschmidt	2014 [110]	●		
Gunasekaran et al.	2015 [121]		●	
Gurtu et al.	2015 [111]	●		
Hamprecht et al.	2005 [140]	●	●	
Jabbour et al.	2015 [61]	●		●
Jabbour et al.	2015 [180]	●	●	
Jakhar	2014 [141]	●	●	
Kim et al.	2014 [112]	●		
Lee et al.	2013 [122]		●	

Authors	Year	Supply Chain Performance		
		Environmental Performance	Economic Performance	Operational Performance
Mallidis et al.	2014 [142]	●	●	
Masoumik et al.	2014 [123]		●	
Perotti et al.	2015 [113]	●		
Pullman et al.	2009 [92]	●	●	
Rao and Holt	2005 [90]		●	
Ross et al.	2012 [114]	●		
Shang et al.	2010 [124]		●	
Shi et al.	2012 [103]	●		
Singhry	2015 [115]	●		
Swami and Shah	2013 [186]		●	
Tachizawa and Wong	2014 [116]	●		
Tachizawa et al.	2015 [117]	●		
Tognetti et al.	2015 [118]	●		
Validi et al.	2014 [143]	●	●	
Yang et al.	2013 [144]	●	●	
Zaarour et al.	2014 [125]		●	
Zhu and Sarkis	2004 [145]	●	●	
Zhu et al.	2008 [196]			●
Zhu et al.	2012 [146]	●	●	●
Zhu et al.	2013 [126]		●	
Total		**39**	**31**	**7**

Appendix G. Papers on the Impact of Energy Efficiency and Environmental Sustainability on the Different Performance Types

Authors	Header	Environmental Performance				Economic Performance				Operational Performance
		Green Performance	Energy Consumption	Waste Management	Social Responsibility	Economic Growth	Quality	Environmental Costs	Competitive Advantage	
Adhitya et al.	2011 [128]				●	●				
Aksoy et al.	2014 [129]		●							●
Ala-Harja and Helo	2014 [105]		●							
Azadi et al.	2014 [127]									●
Azevedo et al.	2011 [119]						●			
Azevedo et al.	2012 [130]		●	●	●			●		
Bai et al.	2012 [106]	●								
Bjorklund et al.	2012 [107]	●								
Blome et al.	2014 [108]	●								
Carter and Easton	2011 [131]	●			●	●				
Carter and Rogers	2008 [132]	●			●	●				
Chan et al.	2012 [133]	●				●				
Chan et al.	2013 [134]	●			●	●				
Chiou et al.	2011 [135]	●							●	
Choi and Hwang	2015 [136]	●				●				
Ding et al.	2015 [120]							●		
Erol et al.	2011 [137]	●			●	●				
Fahminia et al.	2015 [109]		●	●						
Gold et al.	2010 [138]				●				●	
Golicic and Smith	2013 [139]	●				●				●
Green et al.	2012 [96]	●				●				●
Grosvold et al.	2014 [39]	●								
Gunasekaran et al.	2015 [121]							●		
Gurtu et al.	2015 [111]	●								
Hamprecht et al.	2005 [140]	●			●		●			
Jabbour et al.	2015 [61]	●								●
Jabbour et al.	2015 [180]	●					●			
Jakhar	2014 [141]	●				●				
Kim et al.	2014 [112]				●					
Lee et al.	2013 [122]								●	
Mallidis et al.	2014 [142]		●					●		
Masoumik et al.	2014 [123]								●	
Perotti et al.	2015 [113]	●								
Pullman et al.	2009 [92]	●					●	●		
Rao and Holt	2005 [90]					●			●	
Ross et al.	2014 [114]		●		●					

Authors	Header	Environmental Performance				Economic Performance				Operational Performance
		Green Performance	Energy Consumption	Waste Management	Social Responsibility	Economic Growth	Quality	Environmental Costs	Competitive Advantage	
Shang et al.	2010 [124]					●				
Shi et al.	2012 [103]	●								
Singhry	2015 [115]	●								
Swami and Shah	2013 [186]					●				
Tachizawa and Wong	2014 [116]	●								
Tachizawa et al.	2015 [117]	●								
Tognetti et al.	2015 [118]		●							
Validi et al.	2014 [143]		●					●		
Yang et al.	2013 [144]	●							●	
Zaarour et al.	2014 [125]								●	
Zhu and Sarkis	2004 [145]	●				●				
Zhu et al.	2008 [196]									●
Zhu et al.	2012 [146]	●				●				●
Zhu et al.	2013 [126]					●				
Total	**27**	**8**	**2**	**10**	**16**	**4**	**6**	**7**	**7**	
		39					**31**			

Appendix H. Articles Focusing on Customer Perspective in Energy-Efficient and Sustainable supply Chain

Authors	Year	Impact of Environmental Issues on Logistics Outsourcing	Inclusion of Environmental Issues in Purchasing Contracts	GreenSupplier Selection
Caniels et al.	2012 [155]			●
Dai et al.	2015 [156]			●
Dam and Petkova	2014 [147]	●		
Frostenson and Prenkert	2015 [148]	●		
Gold et al.	2010 [138]	●		
Gualandris and Kalchshmidt	2014 [110]			●
Gurtu et al.	2015 [111]	●		
Hitchcock	2012 [157]			●
Hoejmose et al.	2014 [162]		●	●
Huang et al.	2015 [158]			●
Lee	2008 [149]	●		
Lintukangas et al.	2015 [153]		●	
Liu et al.	2012 [182]	●		
Meixell and Louma	2015 [154]		●	
Nawrocka	2008 [163]	●		●
Sarkis	2012 [151]	●		
Seuring	2011 [159]			●
Seuring and Muller	2008 [36]			●
Smith and Minutolo	2014 [164]	●		●
Tamosaitiene et al.	2014 [160]			●
Wilding et al.	2012 [165]	●	●	
Yang and Sheu	2007 [152]	●		
Yang et al.	2015 [161]			●
Total		**11**	**4**	**12**

References

1. Centobelli, P.; Cerchione, R.; Esposito, E. Developing the WH2 framework for environmental sustainability in logistics service providers: A taxonomy of green initiatives. *J. Clean. Prod.* **2017**, *165*, 1063–1077. [CrossRef]
2. Pickernell, D. Less pain but what gain? A comparison of the effectiveness and effects of the Japanese and non-Japanese car assemblers' buyer-supplier relations in the UK automotive industry. *Omega* **1997**, *25*, 377–395. [CrossRef]
3. Zhang, D. A network economic model for supply chain versus supply chain competition. *Omega* **2006**, *34*, 283–295. [CrossRef]
4. Perroux, F. *L'economie du XXe siècle*; Presses Universitaires de France: Paris, France, 1961.
5. Klein, B.; Crawford, R.; Alchian, A. Vertical integration, appropriable rents and the competitive contracting process. *J. Law Econ.* **1978**, *21*, 297–326. [CrossRef]
6. Aoki, M. *The Co-Operative Game Theory of the Firm*; Oxford University Press: Oxford, UK, 1984.
7. Williamson, O.E. Transaction-cost economics: The governance of contractual relations. *J. Law Econ.* **1979**, *22*, 233–261. [CrossRef]
8. Asanuma, B. Manufacturer-supply relationships in Japan and the concept of relation-specific skill. *J. Jpn. Int. Econ.* **1989**, *3*, 1–30. [CrossRef]
9. Lamming, R. *Beyond Partnership. Strategies for Innovation and Lean Supply*; Prentice Hall: New York, NY, USA, 1993.
10. Colombo, M.G.; Mariotti, S. Organizing vertical markets: The Italtel case. *Eur. J. Purch. Supply Manag.* **1998**, *4*, 7–19. [CrossRef]
11. Contractor, F.J.; Lorange, P. *Cooperative Strategies in International Business*; Lexington Books: Lexington, MA, USA, 1988.
12. De Toni, A.; Nassimbeni, G. Supply networks: Genesis, stability and logistics implications. A Comparative Analysis of Two Districts. *Omega* **1995**, *23*, 403–418. [CrossRef]
13. McIvor, R. A practical framework for understanding the outsourcing process. *Supply Chain Manag.* **2000**, *5*, 22–36. [CrossRef]
14. *United Nations Framework Convention on Climate Change*; United Nations Framework Convention on Climate Change (UNFCCC), Climate Change Secretariat: Bonn, Germany, 1992.

15. *Kyoto Protocol*; United Nations Framework Convention on Climate Change (UNFCCC), Climate Change Secretariat: Bonn, Germany, 1998.
16. *Copenhagen Accord*; United Nations Framework Convention on Climate Change (UNFCCC), Climate Change Secretariat: Bonn, Germany, 2009.
17. *Doha Amendment to the Kyoto Protocol*; United Nations Framework Convention on Climate Change (UNFCCC), Climate Change Secretariat: Bonn, Germany, 2012.
18. *Paris Agreement*; United Nations Framework Convention on Climate Change (UNFCCC), Climate Change Secretariat: Bonn, Germany, 2015.
19. Amann, M.; Roehrich, J.K.; Eßig, M.; Harland, C. Driving sustainable supply chain management in the public sector: The importance of public procurement in the European Union. *Supply Chain Manag.* **2014**, *19*, 351–366. [CrossRef]
20. Dubey, R.; Gunasekaran, A.; Papadopoulos, T.; Childe, S.J.; Shibin, K.T.; Wamba, S.F. Sustainable supply chain management: framework and further research directions. *J. Clean. Prod.* **2017**, *142*, 1119–1130. [CrossRef]
21. Preuss, L. Addressing sustainable development through public procurement: The case of local government. *Supply Chain Manag.* **2009**, *14*, 213–223. [CrossRef]
22. Raut, R.D.; Narkhede, B.; Gardas, B.B. To identify the critical success factors of sustainable supply chain management practices in the context of oil and gas industries: ISM approach. *Renew. Sustain. Energy Rev.* **2017**, *68*, 33–47. [CrossRef]
23. Schaltegger, S.; Burritt, R.; Burritt, R.L.; Schaltegger, S. Measuring the (un-)sustainability of industrial biomass production and use Sustainability Accounting. *Manag. Policy J.* **2012**, *3*, 109–133.
24. Varsei, M.; Polyakovskiy, S. Sustainable supply chain network design: A case of the wine industry in Australia. *Omega* **2017**, *66*, 236–247. [CrossRef]
25. Zhao, R.; Liu, Y.; Zhang, N.; Huang, T. An optimization model for green supply chain management by using a big data analytic approach. *J. Clean. Prod.* **2017**, *142*, 1085–1097. [CrossRef]
26. Zhu, Q.; Qu, Y.; Geng, Y.; Fujita, T. A Comparison of Regulatory Awareness and Green Supply Chain Management Practices among Chinese and Japanese Manufacturers. *Bus. Strategy Environ.* **2017**, *26*, 18–30. [CrossRef]
27. Fallahpour, A.; Udoncy Olugu, E.; Nurmaya Musa, S.; Yew Wong, K.; Noori, S. A decision support model for sustainable supplier selection in sustainable supply chain management. *Comput. Ind. Eng.* **2017**, *105*, 391–410. [CrossRef]
28. Kim, D.; Kim, S. Sustainable supply chain based on news articles and sustainability reports: Text mining with Leximancer and DICTION. *Sustainability* **2017**, *9*, 1008. [CrossRef]
29. Mathivathanan, D.; Govindan, K.; Haq, A.N. Exploring the impact of dynamic capabilities on sustainable supply chain firm's performance using Grey-Analytical Hierarchy Process. *J. Clean. Prod.* **2017**, *147*, 637–653. [CrossRef]
30. Roehrich, J.K.; Hoejmose, S.U.; Overland, V. Driving green supply chain management performance through supplier selection and value internalisation: A self-determination theory perspective. *Int. J. Oper. Prod. Manag.* **2017**, *37*, 489–509. [CrossRef]
31. Sari, K. A novel multi-criteria decision framework for evaluating green supply chain management practices. *Comput. Ind. Eng.* **2017**, *105*, 338–347. [CrossRef]
32. Walker, H.; Phillips, W. Sustainable procurement: Emerging issues. *Int. J. Procure Manag.* **2009**, *2*, 41–61. [CrossRef]
33. Walker, H.; Preuss, L. Fostering sustainability through sourcing from small businesses: Public sector perspectives. *J. Clean. Prod.* **2008**, *16*, 1600–1609. [CrossRef]
34. Abidi, N.; Bandyopadhayay, A.; Gupta, V. Sustainable supply chain management: A three dimensional framework and performance metric for Indian IT product companies. *Int. J. Inf. Syst. Supply Chain Manag.* **2017**, *10*, 29–52. [CrossRef]
35. Laari, S.; Töyli, J.; Ojala, L. Supply chain perspective on competitive strategies and green supply chain management strategies. *J. Clean. Prod.* **2017**, *141*, 1303–1315. [CrossRef]
36. Seuring, S.; Müller, M. From a literature review to a conceptual framework for sustainable supply chain management. *J. Clean. Prod.* **2008**, *16*, 1699–1710. [CrossRef]
37. Vachon, S.; Klassen, R.D. Environmental management and manufacturing performance: The role of collaboration in the supply chain. *Int. J. Prod. Econom.* **2008**, *111*, 299–315. [CrossRef]

38. Correia, E.; Carvalho, H.; Azevedo, S.G.; Govindan, K. Maturity models in supply chain sustainability: A systematic literature review. *Sustainability* **2017**, *9*, 64. [CrossRef]
39. Grosvold, J.; Hoejmose, S.U.; Roehrich, J.K. Squaring the circle: Management, measurement and performance of sustainability in supply chains. *Supply Chain Manag.* **2014**, *19*, 292–305. [CrossRef]
40. Hafezalkotob, A. Competition, cooperation, and coopetition of green supply chains under regulations on energy saving levels. *Transp. Res. Part E* **2017**, *97*, 228–250. [CrossRef]
41. Köksal, D.; Strähle, J.; Müller, M.; Freise, M. Social sustainable supply chain management in the textile and apparel industry—A literature review. *Sustainability* **2017**, *9*, 100. [CrossRef]
42. Madani, S.R.; Rasti-Barzoki, M. Sustainable supply chain management with pricing, greening and governmental tariffs determining strategies: A game-theoretic approach. *Comput. Ind. Eng.* **2017**, *105*, 287–298. [CrossRef]
43. Reefke, H.; Sundaram, D. Key themes and research opportunities in sustainable supply chain management—Identification and evaluation. *Omega* **2017**, *66*, 195–211. [CrossRef]
44. Song, W.; Ming, X.; Liu, H.-C. Identifying critical risk factors of sustainable supply chain management: A rough strength-relation analysis method. *J. Clean. Prod.* **2017**, *143*, 100–115. [CrossRef]
45. Yang, D.; Xiao, T. Pricing and green level decisions of a green supply chain with governmental interventions under fuzzy uncertainties. *J. Clean. Prod.* **2017**, *149*, 1174–1187. [CrossRef]
46. Basiri, Z.; Heydari, J. A mathematical model for green supply chain coordination with substitutable products. *J. Clean. Prod.* **2017**, *145*, 232–249. [CrossRef]
47. Costantini, V.; Crespi, F.; Marin, G.; Paglialunga, E. Eco-innovation, sustainable supply chains and environmental performance in European industries. *J. Clean. Prod.* **2017**, *155*, 141–154. [CrossRef]
48. Vanalle, R.M.; Ganga, G.M.D.; Godinho Filho, M.; Lucato, W.C. Green supply chain management: An investigation of pressures, practices, and performance within the Brazilian automotive supply chain. *J. Clean. Prod.* **2017**, *151*, 250–259. [CrossRef]
49. Zeng, H.; Chen, X.; Xiao, X.; Zhou, Z. Institutional pressures, sustainable supply chain management, and circular economy capability: Empirical evidence from Chinese eco-industrial park firms. *J. Clean. Prod.* **2017**, *155*, 54–65. [CrossRef]
50. Zhu, Q.; Sarkis, J.; Lai, K.-H. Initiatives and outcomes of green supply chain management implementation by Chinese manufacturers. *J. Environ. Manag.* **2007**, *85*, 179–189. [CrossRef] [PubMed]
51. Agi, M.A.N.; Nishant, R. Understanding influential factors on implementing green supply chain management practices: An interpretive structural modelling analysis. *J. Environ. Manag.* **2017**, *188*, 351–363. [CrossRef] [PubMed]
52. Ansari, Z.N.; Kant, R. A state-of-art literature review reflecting 15 years of focus on sustainable supply chain management. *J. Clean. Prod.* **2017**, *142*, 2524–2543. [CrossRef]
53. Geng, R.; Mansouri, S.A.; Aktas, E. The relationship between green supply chain management and performance: A meta-analysis of empirical evidences in Asian emerging economies. *Int. J. Prod. Econ.* **2017**, *183*, 245–258. [CrossRef]
54. Gunasekaran, A.; Childe, S.J.; Papadopoulos, T.; Wamba, S.F. World class sustainable supply chain management: Critical review and further research directions. *Int. J. Logist. Manag.* **2017**, *28*, 332–362.
55. Hoejmose, S.U.; Roehrich, J.K.; Grosvold, J. Is doing more doing better? The relationship between responsible supply chain management and corporate reputation. *Ind. Market. Manag.* **2014**, *43*, 77–90. [CrossRef]
56. Roehrich, J.K.; Grosvold, J.; Hoejmose, S.U. Reputational risks and sustainable supply chain management: Decision making under bounded rationality. *Int. J. Oper. Prod. Manag.* **2014**, *34*, 695–719. [CrossRef]
57. Scur, G.; Barbosa, M.E. Green supply chain management practices: Multiple case studies in the Brazilian home appliance industry. *J. Clean. Prod.* **2017**, *141*, 1293–1302. [CrossRef]
58. Shabani, A.; Saen, R.F. Developing a novel data envelopment analysis model to determine prospective benchmarks of green supply chain in the presence of dual-role factor. *Benchmarking* **2014**, *22*, 711–730. [CrossRef]
59. Cerchione, R.; Esposito, E. A systematic review of supply chain knowledge management research: State of the art and research opportunities. *Int. J. Prod. Econ.* **2016**, *182*, 276–292. [CrossRef]
60. Esposito, E.; Passaro, R. Evolution of the supply chain in the italian railway industry. *Supply Chain Manag.* **2009**, *14*, 303–313. [CrossRef]

61. Jabbour, A.B.L.D.S.; Jabbour, C.J.C.; Latan, H.; Teixeira, A.A.; de Oliveira, J.H.C. Quality management, environmental management maturity, green supply chain practices and green performance of Brazilian companies with ISO 14001 certification: Direct and indirect effects. *Transp. Res. Part E* **2015**, *67*, 39–51. [CrossRef]
62. Jabbour, C.J.C.; Neto, A.S.; Gobbo, J.A.; Ribeiro, M.D.S.; De Sousa Jabbour, A.B.L. Eco-innovations in more sustainable supply chains for a low-carbon economy: A multiple case study of human critical success factors in Brazilian leading companies. *Int. J. Prod. Econ.* **2015**, *164*, 245–257. [CrossRef]
63. Rueda, X.; Garrett, R.D.; Lambin, E.F. Corporate investments in supply chain sustainability: Selecting instruments in the agri-food industry. *J. Clean. Prod.* **2017**, *142*, 2480–2492. [CrossRef]
64. López-Morale, V.; Ouzrout, Y.; Manakitsirisuthi, T.; Bouras, A. MKMSIS: A multi-agent knowledge management system for industrial sustainability. *Stud. Comput. Intell.* **2015**, *607*, 195–213.
65. Sujatha, R.; Krishnaveni, R. Knowledge management: An ingredient for sustainability of organizations. *Int. Bus. Manag.* **2015**, *9*, 299–309.
66. Pietrosemoli, L.; Rodríguez Monroy, C. The impact of sustainable construction and knowledge management on sustainability goals. A review of the Venezuelan renewable energy sector. *Renew. Sustain. Energy Rev.* **2013**, *27*, 683–691. [CrossRef]
67. Depping, V.; Grunow, M.; van Middelaar, C.; Dumpler, J. Integrating environmental impact assessment into new product development and processing-technology selection: Milk concentrates as substitutes for milk powders. *J. Clean. Prod.* **2017**, *149*, 1–10. [CrossRef]
68. Vezzetti, E.; Alemanni, M.; Morelli, B. New product development (NPD) of 'family business' dealing in the luxury industry: Evaluating maturity stage for implementing a PLM solution. *Int. J. Fash. Des. Technol. Educ.* **2017**, *10*, 219–229. [CrossRef]
69. Violante, M.G.; Vezzetti, E. Guidelines to design engineering education in the twenty-first century for supporting innovative product development. *Eur. J. Eng. Educ.* **2017**, *42*, 1344–1364. [CrossRef]
70. Alemanni, M.; Destefanis, F.; Vezzetti, E. Model-based definition design in the product lifecycle management scenario. *Int. J. Adv. Manuf. Technol.* **2011**, *52*, 1–14. [CrossRef]
71. Cappa, F.; Del Sette, F.; Hayes, D.; Rosso, F. How to deliver open sustainable innovation: An integrated approach for a sustainable marketable product. *Sustainability* **2017**, *8*, 1341. [CrossRef]
72. Vezzetti, E.; Alemanni, M.; Macheda, J. Supporting product development in the textile industry through the use of a product lifecycle management approach: A preliminary set of guidelines. *Int. J. Adv. Manuf. Technol.* **2015**, *79*, 1493–1504. [CrossRef]
73. Violante, M.G.; Vezzetti, E.; Alemanni, M. An integrated approach to support the Requirement Management (RM) tool customization for a collaborative scenario. *In. J. Interact. Des. Manuf.* **2017**, *11*, 191–204. [CrossRef]
74. Ashby, A.; Leat, M.; Hudson-Smith, M. Making connections: A review of supply chain management and sustainability literature. *Supply Chain Manag.* **2012**, *17*, 497–516. [CrossRef]
75. Centobelli, P.; Cerchione, R.; Esposito, E. Environmental sustainability in the service industry of transportation and logistics service providers: Systematic literature review and research directions. *Transp. Res. Part D* **2017**, *53*, 454–470. [CrossRef]
76. Schaltegger, S.; Burritt, R. Measuring and managing sustainability performance of supply chains: Review and sustainability supply chain management framework. *Supply Chain Manag.* **2014**, *19*, 232–241. [CrossRef]
77. Stock, J.R.; Boyer, S.L. Developing a consensus definition of supply chain management: A qualitative study. *Int. J. Phys. Distrib. Logist. Manag.* **2009**, *39*, 690–711. [CrossRef]
78. Pittaway, L.; Robertson, R.; Munir, K.; Denyer, D.; Neely, D. Networking and innovation: A systematic review of the evidence. *Int. J. Manag. Rev.* **2004**, *5–6*, 137–168. [CrossRef]
79. Petticrew, M.; Roberts, H. *Systematic Reviews in the Social Sciences*; Blackwell Publishing: Malden, MA, USA, 2006.
80. Easterby-Smith, M.; Thorpe, R.; Jackson, P. *Management Research*; SAGE Publications: London, UK, 2012.
81. Roehrich, J.K.; Lewis, M.A.; George, G. Are public-private partnerships a healthy option? A systematic literature review. *Soc. Sci. Med.* **2014**, *113*, 110–119. [CrossRef] [PubMed]
82. Kaiser, D.B.; Köhler, T.; Weith, T. Knowledge management in sustainability research projects:Concepts, effective models, and examples in a multi-stakeholder environment. *Appl. Environ. Educ. Commun.* **2016**, *15*, 4–17. [CrossRef]

83. Sarkis, J.; Zhu, Q.; Lai, K.-H. An organizational theoretic review of green supply chain management literature. *Int. J. Prod. Econom.* **2011**, *130*, 1–15. [CrossRef]
84. Hsu, C.-C.; Tan, K.C.; Zailani, S.H.M.; Jayaraman, V. Supply chain drivers that foster the development of green initiatives in an emerging economy. *Int. J. Oper. Prod. Manag.* **2013**, *33*, 656–688. [CrossRef]
85. Alexander, A.; Walker, H.; Naim, M. Decision theory in sustainable supply chain management: A literature review. *Supply Chain Manag.* **2014**, *19*, 504–522. [CrossRef]
86. Adawiyah, W.R.; Pramuka, B.A.; Najmudin; Jati, D.P. Green supply chain management and its impact on construction sector Small and Medium Enterprises (SMEs) performance: A case of Indonesia. *Int. Bus. Manag.* **2015**, *9*, 1018–1024.
87. Li, L.; Wang, B.; Cook, D.P. Reprint of Enhancing green suppy chain initiatives via empty container reuse. *Transp. Res. Part E* **2015**, *74*, 109–123. [CrossRef]
88. Dadhich, P.; Genovese, A.; Kumar, N.; Acquaye, A. Developing sustainable supply chains in the UK construction industry: A case study. *Int. J. Prod. Econ.* **2015**, *64*, 271–284. [CrossRef]
89. Li, L.; Wang, B.; Cook, D.P. Enhancing green supply chain initiatives via empty container reuse. *Transp. Res. Part E* **2014**, *70*, 190–204. [CrossRef]
90. Rao, P.; Holt, D. Do green supply chains lead to competitiveness and economic performance? *Int. J. Oper. Prod. Manag.* **2005**, *25*, 898–916. [CrossRef]
91. Vachon, S.; Klassen, R.D. Extending green practices across the supply chain: The impact of upstream and downstream integration. *Int. J. Oper. Prod. Manag.* **2006**, *26*, 795–821. [CrossRef]
92. Pullman, M.E.; Maloni, M.J.; Carter, C.R. Food for thought: Social versus environmental sustainability practices and performance outcomes. *J. Supply Chain Manag.* **2009**, *45*, 38–54. [CrossRef]
93. Zhu, Q.; Geng, Y.; Sarkis, J.; Lai, K.-H. Evaluating green supply chain management among Chinese manufacturers from the ecological modernization perspective. *Transp. Res. Part E* **2011**, *47*, 808–821. [CrossRef]
94. Schoenherr, T.; Talluri, S. Environmental sustainability initiatives: A comparative analysis of plant efficiencies in Europe and the U.S. *IEEE Trans. Eng. Manag.* **2013**, *60*, 353–365. [CrossRef]
95. Mohanty, R.P.; Prakash, A. Green supply chain management practices in India: An empirical study. *Prod. Plan. Control* **2014**, *25*, 1322–1337. [CrossRef]
96. Green, K.W., Jr.; Zelbst, P.J.; Meacham, J.; Bhadauria, V.S. Green supply chain management practices: Impact on performance. *Supply Chain Manag.* **2012**, *17*, 290–305. [CrossRef]
97. Beske, P.; Seuring, S. Putting sustainability into supply chain management. *Supply Chain Manag.* **2014**, *19*, 322–331. [CrossRef]
98. Bonilla, D.; Keller, H.; Schmiele, J. Climate policy and solutions for green supply chains: Europe's predicament. *Supply Chain Manag.* **2015**, *20*, 249–263. [CrossRef]
99. Rao, P. Greening the supply chain: A new initiative in South East Asia. *Int. J. Oper. Prod. Manag.* **2002**, *22*, 632–655. [CrossRef]
100. Zhu, Q.; Crotty, J.; Sarkis, J. A cross-country empirical comparison of environmental supply chain management practices in the automotive industry. *Asian Bus. Manag.* **2008**, *7*, 467–488. [CrossRef]
101. Mollenkopf, D.; Stolze, H.; Tate, W.L.; Ueltschy, M. Green, lean, and global supply chains. *Int. J. Phys. Distrib. Logist. Manag.* **2010**, *40*, 14–41. [CrossRef]
102. Soler, C.; Bergström, K.; Shanahan, H. Green supply chains and the missing link between environmental information and practice. *Bus. Strategy Environ.* **2010**, *19*, 14–25. [CrossRef]
103. Shi, V.G.; Koh, S.C.L.; Baldwin, J.; Cucchiella, F. Natural resource based green supply chain management. *Supply Chain Manag.* **2012**, *17*, 54–67.
104. Kogg, B.; Mont, O. Environmental and social responsibility in supply chains: The practise of choice and inter-organisational management. *Ecol. Econ.* **2012**, *83*, 154–163. [CrossRef]
105. Ala-Harja, H.; Helo, P. Green supply chain decisions—Case-based performance analysis from the food industry. *Transp. Res. Part E* **2014**, *69*, 97–107. [CrossRef]
106. Bai, C.; Sarkis, J.; Wei, X.; Koh, L. Evaluating ecological sustainable performance measures for supply chain management. *Supply Chain Manag.* **2012**, *17*, 78–92. [CrossRef]
107. Bjorklund, M.; Martinsen, U.; Abrahamsson, M. Performance measurements in the greening of supply chains. *Supply Chain Manag.* **2012**, *17*, 29–39. [CrossRef]

108. Blome, C.; Paulraj, A.; Schuetz, K. Supply chain collaboration and sustainability: A profile deviation analysis. *Int. J. Oper. Prod. Manag.* **2014**, *34*, 639–663. [CrossRef]
109. Fahimnia, B.; Sarkis, J.; Eshragh, A. A tradeoff model for green supply chain planning: A leanness-versus-greenness analysis. *Omega* **2015**, *54*, 173–190. [CrossRef]
110. Gualandris, J.; Kalchschmidt, M. Customer pressure and innovativeness: Their role in sustainable supply chain management. *J. Purch. Supply Manag.* **2014**, *20*, 92–103. [CrossRef]
111. Gurtu, A.; Searcy, C.; Jaber, M.Y. An analysis of keywords used in the literature on green supply chain management. *Manag. Res. Rev.* **2015**, *38*, 166–194. [CrossRef]
112. Kim, B.; Park, K.; Swink, M. Consumers' preferences for facets of green supply chain management. *Int. J. Serv. Oper. Manag.* **2014**, *18*, 74–98. [CrossRef]
113. Perotti, S.; Micheli, G.J.L.; Cagno, E. Motivations and barriers to the adoption of green supply Chain practices among 3PLs. *Int. J. Logist. Syst. Manag.* **2015**, *20*, 179–198. [CrossRef]
114. Ross, A.D.; Parker, H.; del Mar Benavides-Espinosa, M.; Droge, C. Sustainability and supply chain infrastructure development. *Manag. Decis.* **2012**, *50*, 1891–1910. [CrossRef]
115. Singhry, H.B. An extended model of sustainable development from sustainable sourcing to sustainable reverse logistics: A supply chain perspective. *Int. J. Supply Chain Manag.* **2015**, *4*, 115–125.
116. Tachizawa, E.M.; Wong, C.Y. Towards a theory of multi-tier sustainable supply chains: A systematic literature review. *Supply Chain Manag.* **2014**, *19*, 643–653. [CrossRef]
117. Tachizawa, E.M.; Gimenez, C.; Sierra, V. Green supply chain management approaches: Drivers and performance implications. *Int. J. Oper. Prod. Manag.* **2015**, *35*, 1546–1566. [CrossRef]
118. Tognetti, A.; Grosse-Ruyken, P.T.; Wagner, S.M. Green supply chain network optimization and the trade-off between environmental and economic objectives. *Int. J. Prod. Econom.* **2015**, *170*, 385–392. [CrossRef]
119. Azevedo, S.G.; Carvalho, H.; Cruz Machado, V. The influence of green practices on supply chain performance: A case study approach. *Transp. Res. Part E* **2011**, *47*, 850–871. [CrossRef]
120. Ding, H.; Zhao, Q.; An, Z.; Xu, J.; Liu, Q. Pricing strategy of environmental sustainable supply chain with internalizing externalities. *Int. J. Prod. Econ.* **2015**, *170*, 563–575. [CrossRef]
121. Gunasekaran, A.; Subramanian, N.; Rahman, S. Green supply chain collaboration and incentives: Current trends and future directions. *Transp. Res. Part E* **2015**, *74*, 1–10. [CrossRef]
122. Lee, S.M.; Rha, J.S.; Choi, D.; Noh, Y. Pressures affecting green supply chain performance. *Manag. Decis.* **2013**, *51*, 1753–1768. [CrossRef]
123. Masoumik, S.M.; Abdul-Rashid, S.H.; Olugu, E.U. Gaining competitive advantage through strategic green supply chain management: From a literature review towards a conceptual model. *Int. J. Supply Chain Manag.* **2014**, *3*, 49–58.
124. Shang, K.-C.; Lu, C.-S.; Li, S. A taxonomy of green supply chain management capability among electronics-related manufacturing firms in Taiwan. *J. Environ. Manag.* **2010**, *91*, 1218–1226. [CrossRef] [PubMed]
125. Zaarour, N.; Melachrinoudis, E.; Solomon, M.M.; Min, H. The optimal determination of the collection period for returned products in the sustainable supply chain. *Int. J. Logist. Res. Appl.* **2014**, *17*, 35–45. [CrossRef]
126. Zhu, Q.; Sarkis, J.; Lai, K.-H. Institutional-based antecedents and performance outcomes of internal and external green supply chain management practices. *J. Purch. Supply Manag.* **2013**, *19*, 106–117. [CrossRef]
127. Azadi, M.; Shabani, A.; Khodakarami, M.; Farzipoor Saen, R. Planning in feasible region by two-stage target-setting DEA methods: An application in green supply chain management of public transportation service providers. *Transp. Res. Part E* **2014**, *70*, 324–338. [CrossRef]
128. Adhitya, A.; Halim, I.; Srinivasan, R. Decision support for green supply chain operations by integrating dynamic simulation and LCA indicators: Diaper case study. *Environ. Sci. Technol.* **2011**, *45*, 10178–10185. [CrossRef] [PubMed]
129. Aksoy, A.; Küçükoğlu, I.; Ene, S.; Öztürk, N. Integrated Emission and Fuel Consumption Calculation Model for Green Supply Chain Management. *Procedia* **2014**, *109*, 1106–1109. [CrossRef]
130. Azevedo, S.G.; Carvalho, H.; Duarte, S.; Cruz-Machado, V. Influence of green and lean upstream supply chain management practices on business sustainability. *IEEE Trans. Eng. Manag.* **2012**, *59*, 753–765. [CrossRef]
131. Carter, C.R.; Easton, P.L. Sustainable supply chain management: Evolution and future directions. *Int. J. Phys. Distrib. Logist. Manag.* **2011**, *41*, 46–62. [CrossRef]

132. Carter, C.R.; Rogers, D.S. A framework of sustainable supply chain management: Moving toward new theory. *Int. J. Phys. Distrib. Logist. Manag.* **2008**, *38*, 360–387. [CrossRef]
133. Chan, R.Y.K.; He, H.; Chan, H.K.; Wang, W.Y.C. Environmental orientation and corporate performance: The mediation mechanism of green supply chain management and moderating effect of competitive intensity. *Ind. Mark. Manag.* **2012**, *41*, 621–630. [CrossRef]
134. Chan, C.K.; Leea, Y.C.E.; Campbell, J.F. Environmental performance—Impacts of vendor–buyer coordination. *Int. J. Prod. Econ.* **2013**, *145*, 683–695. [CrossRef]
135. Chiou, T.-Y.; Chan, H.K.; Lettice, F.; Chung, S.H. The influence of greening the suppliers and green innovation on environmental performance and competitive advantage in Taiwan. *Transp. Res. Part E* **2011**, *47*, 822–836. [CrossRef]
136. Choi, D.; Hwang, T. The impact of green supply chain management practices on firm performance: The role of collaborative capability. *Oper. Manag. Res.* **2015**, *8*, 69–83. [CrossRef]
137. Erol, I.; Sencer, S.; Sari, R. A new fuzzy multi-criteria framework for measuring sustainability performance of a supply chain. *Ecol. Econ.* **2011**, *70*, 1088–1100. [CrossRef]
138. Gold, S.; Seuring, S.; Beske, P. Sustainable supply chain management and inter-organizational resources: A literature review. *Corp. Soc. Responsib. Environ. Manag.* **2010**, *17*, 230–245. [CrossRef]
139. Golicic, S.L.; Smith, C.D. A meta-analysis of environmentally sustainable supply chain management practices and firm performance. *J. Supply Chain Manag.* **2013**, *49*, 78–95. [CrossRef]
140. Hamprecht, J.; Corsten, D.; Noll, M.; Meier, E. Controlling the sustainability of food supply chains. *Supply Chain Manag.* **2005**, *10*, 7–10. [CrossRef]
141. Jakhar, S.K. Designing the green supply chain performance optimisation model. *Glob. J. Flex. Syst. Manag.* **2014**, *15*, 235–259. [CrossRef]
142. Mallidis, I.; Vlachos, D.; Iakovou, E.; Dekker, R. Design and planning for green global supply chains under periodic review replenishment policies. *Transp. Res. Part E* **2014**, *72*, 210–235. [CrossRef]
143. Validi, S.; Bhattacharya, A.; Byrne, P.J. Integrated low-carbon distribution system for the demand side of a product distribution supply chain: A DoE-guided MOPSO optimiser-based solution approach. *Int. J. Prod. Res.* **2014**, *52*, 3074–3096. [CrossRef]
144. Yang, C.-S.; Lu, C.-S.; Haider, J.J.; Marlow, P.B. The effect of green supply chain management on green performance and firm competitiveness in the context of container shipping in Taiwan. *Transp. Res. Part E* **2013**, *55*, 55–73. [CrossRef]
145. Zhu, Q.; Sarkis, J. Relationships between operational practices and performance among early adopters of green supply chain management practices in Chinese manufacturing enterprises. *J. Oper. Manag.* **2004**, *22*, 265–289. [CrossRef]
146. Zhu, Q.; Sarkis, J.; Lai, K.-H. Green supply chain management innovation diffusion and its relationship to organizational improvement: An ecological modernization perspective. *J. Eng. Technol. Manag.* **2012**, *29*, 168–185. [CrossRef]
147. Dam, L.; Petkova, B.N. The impact of environmental supply chain sustainability programs on shareholder wealth. *Int. J. Oper. Prod. Manag.* **2014**, *34*, 586–609. [CrossRef]
148. Frostenson, M.; Prenkert, F. Sustainable supply chain management when focal firms are complex: A network perspective. *J. Clean. Prod.* **2015**, *107*, 85–94. [CrossRef]
149. Lee, S.-Y. Drivers for the participation of small and medium-sized suppliers in green supply chain initiatives. *Supply Chain Manag.* **2008**, *13*, 185–198. [CrossRef]
150. Liu, X.; Yang, J.; Qu, S.; Wang, L.; Shishime, T.; Bao, C. Sustainable production: Practices and determinant factors of green supply chain management of chinese companies. *Bus. Strategy Environ.* **2012**, *21*, 1–16. [CrossRef]
151. Sarkis, J. A boundaries and flows perspective of green supply chain management. *Supply Chain Manag.* **2012**, *17*, 202–216. [CrossRef]
152. Yang, C.-L.; Sheu, C. Achieving supply chain environment management: An exploratory study. *Int. J. Technol. Manag.* **2007**, *40*, 131–156. [CrossRef]
153. Lintukangas, K.; Hallikas, J.; Kähkönen, A.-K. The Role of Green Supply Management in the Development of Sustainable Supply Chain. *Corp. Soc. Responsib. Environ. Manag.* **2015**, *22*, 321–333. [CrossRef]
154. Meixell, M.J.; Luoma, P. Stakeholder pressure in sustainable supply chain management: A systematic review. *Int. J. Phys. Distrib. Logist. Manag.* **2015**, *45*, 69–89. [CrossRef]

155. Caniels, M.C.J.; Gehrsitz, M.H.; Semeijn, J. Participation of suppliers in greening supply chains: An empirical analysis of German automotive suppliers. *J. Purch. Supply Manag.* **2013**, *19*, 134–143. [CrossRef]
156. Dai, J.; Cantor, D.E.; Montabon, F.L. How Environmental Management Competitive Pressure Affects a Focal Firm's Environmental Innovation Activities: A Green Supply Chain Perspective. *J. Bus. Logist.* **2015**, *36*, 242–259. [CrossRef]
157. Hitchcock, T. Low carbon and green supply chains: The legal drivers and commercial pressures. *Supply Chain Manag.* **2012**, *17*, 98–101. [CrossRef]
158. Huang, X.; Tan, B.L.; Ding, X. An exploratory survey of green supply chain management in Chinese manufacturing small and medium-sized enterprises pressures and drivers. *J. Manuf. Technol. Manag.* **2015**, *26*, 80–103. [CrossRef]
159. Seuring, S. Supply chain management for sustainable products—insights from research applying mixed methodologies. *Bus. Strategy Environ.* **2011**, *20*, 471–484. [CrossRef]
160. Tamosaitiene, J.; Zavadskas, E.K.; Liou, J.J.K.; Tzeng, G.H. Selecting suppliers in green supply chain management. *Int. J. Prod. Res.* **2014**, *54*, 114–134.
161. Yang, J.; Han, Q.; Zhou, J.; Yuan, C. The influence of environmental management practices and supply chain integration on technological innovation performance-Evidence from China's manufacturing industry. *Sustainability* **2015**, *7*, 15342–15361. [CrossRef]
162. Hoejmose, S.U.; Grosvold, J.; Millington, A. The effect of institutional pressure on cooperative and coercive 'green' supply chain practices. *J. Purch. Supply Manag.* **2014**, *20*, 215–224. [CrossRef]
163. Nawrocka, D. Inter-organizational use of EMSs in supply chain management: Some experiences from Poland and Sweden. *Corp. Soc. Responsib. Environ. Manag.* **2008**, *15*, 260–269. [CrossRef]
164. Smith, A.D.; Minutolo, M.C. Green supply chain acceptability and internal stakeholder concerns. *Int. J. Logist. Syst. Manag.* **2014**, *19*, 464–490. [CrossRef]
165. Wilding, R.; Wagner, B.; Miemczyk, J.; Johnsen, T.E.; Macquet, M. Sustainable purchasing and supply management: A structured literature review of definitions and measures at the dyad, chain and network levels. *Supply Chain Manag.* **2012**, *17*, 478–496.
166. Prause, G.; Hunke, K. Secure and sustainable supply chain management: Integrated ICT-systems for green transport corridors. *J. Secur. Sustain. Issues* **2014**, *3*, 5–16. [CrossRef]
167. Srivastava, S.K. Green supply-chain management: A state-of-the-art literature review. *Int. J. Manag. Rev.* **2007**, *9*, 53–80. [CrossRef]
168. Abbasi, M.; Nilsson, F. Themes and challenges in making supply chains environmentally sustainable. *Supply Chain Manag.* **2012**, *17*, 517–530. [CrossRef]
169. Ahn, K.; Lee, S. Logistics service model for sustainability of supply chain. *Information (Japan)* **2014**, *17*, 4177–4182.
170. Brandenburg, M.; Govindan, K.; Sarkis, J.; Seuring, S. Quantitative models for sustainable supply chain management: Developments and directions. *Eur. J. Oper. Res.* **2014**, *233*, 299–312. [CrossRef]
171. Cantor, D.E.; Morrow, P.C.; Montabon, F. Engagement in Environmental Behaviors among Supply Chain Management Employees: An Organizational Support Theoretical Perspective. *J. Supply Chain Manag.* **2012**, *48*, 33–51. [CrossRef]
172. Chkanikova, O.; Mont, O. Corporate supply chain responsibility: Drivers and barriers for sustainable food retailing. *Corp. Soc. Responsib. Environ. Manag.* **2015**, *22*, 65–82. [CrossRef]
173. Cosimato, S.; Troisi, O. Green supply chain management. *TQM J.* **2015**, *27*, 256–276. [CrossRef]
174. Dzung, V.A.; Khoi, N.V. Green supply chain management towards sustainability: The case of Ajinomoto in Vietnam. *Econ. Ann. XXI* **2014**, *11–12*, 101–105.
175. Giunipero, L.C.; Hooker, R.E.; Denslow, D. Purchasing and supply management sustainability: Drivers and barriers. *J. Purch. Supply Manag.* **2012**, *18*, 258–269. [CrossRef]
176. Gold, S.; Hahn, R.; Seuring, S. Sustainable supply chain management in "Base of the Pyramid" food projects-A path to triple bottom line approaches for multinationals? *Int. Bus. Rev.* **2013**, *22*, 784–799. [CrossRef]
177. Govindan, K.; Azevedo, S.G.; Carvalho, H.; Cruz-Machado, V. Impact of supply chain management practices on sustainability. *J. Clean. Prod.* **2014**, *85*, 212–225. [CrossRef]

178. Govindan, K.; Kaliyan, M.; Kannan, D.; Haq, A.N. Barriers analysis for green supply chain management implementation in Indian industries using analytic hierarchy process. *Int. J. Prod. Econ.* **2014**, *147*, 555–568. [CrossRef]
179. Hall, J.; Matos, S. Incorporating impoverished communities in sustainable supply chains. *Int. J. Phys. Distrib. Logist. Manag.* **2010**, *40*, 124–147. [CrossRef]
180. Jabbour, A.B.L.D.S.; Frascareli, F.C.D.O.; Jabbour, C.J.C. Green supply chain management and firms' performance: Understanding potential relationships and the role of green sourcing and some other green practices. *Resour. Conserv. Recycl.* **2015**, *104*, 366–374. [CrossRef]
181. Kagawa, S.; Suh, S.; Hubacek, K.; Wiedmann, T.; Nansai, K.; Minx, J. CO_2 emission clusters within global supply chain networks: Implications for climate change mitigation. *Glob. Environ. Chang.* **2015**, *35*, 486–496. [CrossRef]
182. Liu, Z.; Anderson, T.D.; Cruz, J.M. Consumer environmental awareness and competition in two-stage supply chains. *Eur. J. Oper. Res.* **2012**, *218*, 602–613. [CrossRef]
183. Mangla, S.; Madaan, J.; Sarma, P.R.S.; Gupta, M.P. Multi-objective decision modelling using interpretive structural modelling for green supply chains. *Int. J. Logist. Syst. Manag.* **2014**, *17*, 125–142. [CrossRef]
184. McKinnon, A.C. Product-level carbon auditing of supply chains: Environmental imperative or wasteful distraction? *Int. J. Phys. Distrib. Logist. Manag.* **2010**, *40*, 42–60. [CrossRef]
185. Svensson, G. Aspects of sustainable supply chain management (SSCM): Conceptual framework and empirical example. *Supply Chain Manag.* **2007**, *12*, 262–266. [CrossRef]
186. Swami, S.; Shah, J. Channel coordination in green supply chain management. *J. Oper. Res. Soc.* **2013**, *64*, 336–351. [CrossRef]
187. Thun, J.-H.; Müller, A. An empirical analysis of green supply chain management in the German automotive industry. *Bus. Strategy Environ.* **2010**, *19*, 119–132. [CrossRef]
188. Tian, Y.; Govindan, K.; Zhu, Q. A system dynamics model based on evolutionary game theory for green supply chain management diffusion among Chinese manufacturers. *J. Clean. Prod.* **2014**, *80*, 96–105. [CrossRef]
189. Walker, H.; Jones, N. Sustainable supply chain management across the UK private sector. *Supply Chain Manag.* **2012**, *17*, 15–28. [CrossRef]
190. White, G.R.T.; Wang, X.; Li, D. Inter-organisational green packaging design: A case study of influencing factors and constraints in the automotive supply chain. *Int. J. Prod. Res.* **2015**, *53*, 6561–6566. [CrossRef]
191. Wiengarten, F.; Fynes, B.; Onofrei, G. Exploring synergetic effects between investments in environmental and quality/lean practices in supply chains. *Supply Chain Manag.* **2013**, *18*, 148–160. [CrossRef]
192. Wu, Z.; Pagell, M. Balancing priorities: Decision-making in sustainable supply chain management. *J. Oper. Manag.* **2011**, *29*, 577–590. [CrossRef]
193. Yang, C.L.; Sheu, C. The effects of environmental regulations on green supply chains. *Afr. J. Bus. Manag.* **2011**, *5*, 10601–10614.
194. Zhu, Q.; Sarkis, J.; Geng, Y. Green supply chain management in China: Pressures, practices and performance. *Int. J. Oper. Prod. Manag.* **2005**, *25*, 449–468. [CrossRef]
195. Zhu, Q.; Sarkis, J.; Lai, K.-H.; Geng, Y. The role of organizational size in the adoption of green supply chain management practices in China. *Corp. Soc. Responsib. Environ. Manag.* **2008**, *15*, 322–337. [CrossRef]
196. Zhu, Q.; Sarkis, J.; Cordeiro, J.J.; Lai, K.-H. Firm-level correlates of emergent green supply chain management practices in the Chinese context. *Omega* **2008**, *36*, 577–591. [CrossRef]