sustainability

Article

Trends and New Challenges in the Green Supply Chain: The Reverse Logistics

José Antonio Plaza-Úbeda, Emilio Abad-Segura, Jerónimo de Burgos-Jiménez, Antoaneta Boteva-Asenova and Luis Jesús Belmonte-Ureña *

Economics and Business Department, University of Almeria, 04120 Almeria, Spain; japlaza@ual.es (J.A.P.-Ú.); eas297@ual.es (E.A.-S.); jburgos@ual.es (J.d.B.-J.); antoaneta.b.asenova@gmail.com (A.B.-A.)
* Correspondence: lbelmont@ual.es

Abstract: As members of society, companies are exposed to social changes and pressures. Hence, an interest to be more environmentally friendly appears and rises in their core. Therefore, the supply chain management concept became "greener" with the development, among other practices, of reverse logistics programs. Both external pressures and internal factors, such as reducing costs and increasing operational performance, are motivating companies to pay more attention to the reverse flow. Unfortunately, there are still many boundaries that hinder the implementation of reverse logistics. Some of these obstacles include additional costs, the desire for deep collaboration with suppliers and customers, and the belief of some managers that are managing reverse flow that it is not worth the trouble. On the contrary, those who have assimilated its importance and advantages are interested in new and innovative tools that could contribute to more effective and efficient results, including the role of RFID technology.

Keywords: sustainability; sustainable development; green supply chain; supply chain management; reverse logistics; RFID

Citation: Plaza-Úbeda, J.A.; Abad-Segura, E.; de Burgos-Jiménez, J.; Boteva-Asenova, A.; Belmonte-Ureña, L.J. Trends and New Challenges in the Green Supply Chain: The Reverse Logistics. *Sustainability* **2021**, *13*, 331. https://doi.org/10.3390/su13010331

Received: 2 December 2020
Accepted: 30 December 2020
Published: 31 December 2020

1. Introduction

All human behaviour experiences changes and evolves during history. Companies go through a similar process regarding their management strategies. The basic reasons that account for this evolution are due to changes in social mentality and the emergence of new ideas and problems since "the corporation is, firstly, a social institution" [1] and, as a consequence, "*antecedent to the mandate given to the managers by the shareholders is the mandate given to the entrepreneur by the society*" [2] (p. 12). The new ways of seeing what is around us consequently affect governmental policies and decisions, as well as, obviously, companies and their practices. The concept of Supply Chain Management (SCM) has also suffered modifications, adding a "greener" and more environmentally friendly vision [3]. This concept has started to appear in many research headlines and papers, but it has also attracted the attention of many companies since "competition is becoming less 'firm vs. firm' and more 'supply chain vs. supply chain'" [4] (p. 1047).

This work is focused on GSCH and Reverse Logistics (RL). There are numerous reasons that have made this issue interesting and attractive, not only for researchers, but also for managers. There are four primary factors creating pressure on companies to implement this kind of program: customers, suppliers, competitors, and government agencies [5,6]. Moreover, the major complexity of RL programs could be a source of difficult competitive advantage for the firm [7,8].

Despite all the advantages that RL could create for the firm, its implementation can find several barriers. We could mention the additional cost, the necessity of human resources [9], more planning complexity, and uncertainty [10,11], but maybe the most dangerous barrier is the underestimation of its importance and the idea that this is a process that "only" deals with the management of waste ("junk"); underestimating the important role of contribution to the environment [9,12].

The aim of this work is to present a review of RL definitions as well as place this concept in the supply chain (SCM) theory. The reasons to implement this kind of activity are analysed, as well as its advantages and difficulties for being implemented. Moreover, an analysis of the RL process is also analysed. Therefore, the contribution of the present study is not only to review the concepts of SCM and RL, but also the conglomeration of knowledge about the reasons to be more environmentally friendly. In addition, we deepen the Radio Frequency Identification (RFID) technology.

This manuscript is organized in two principal parts. The first pretends to place the RL process in the SC and to offer a review of the SCM concept, as well as related concepts. The second intended to offer a more detailed analysis of the RL and it is structured as follows: A review of the RL concept and its characteristics is offered. We discuss the reasons for the change towards more environmental policies, as well as the differences and synergies between forward and reverse flows. The RL process is examined and a brief reference to RFID application in RL activities is provided. Hence, some disadvantages and problems will be pointed out. Finally, we provide some conclusions and implications.

This paper reinforces the role of the supply chain in sustainability because it emphasizes the relevant role of RL as a tool for contributing to sustainability.

2. Methods

The objective of this work is to carry out a literature review based on two fundamental pillars, GSCH as a general scope of context and RL as a specific field to explain the contributions to GSCH during the last 30 years (based on the Web of Science and Scopus databases). Our work uses a literature review based in both seminal works as well as the more recent literature related to GSCM and RL. Our methodological approach is similar to that used by Williams and Hayes (2013) to explore the recent literature based on seminal papers. The search terms used were "supply chain management", "green supply chain management", "reverse logistic" and "green reverse logistic" and we selected specifically those journals focused on operations, environment management or sustainability and logistics issues, and general reviews treating management.

- FIRST STEP: Analysis of Seminal Works

The analysis of seminal works, sometimes called pivotal or landmark studies, is recognized in the literature review in management ([13–16]). Specifically, several related works recognize the usefulness of these works in both supply chain management literature [17] and reverse logistics [18]. This part of the analysis identifies the pillars of the literature and points out the main future lines of trends that have subsequently developed over the years [13]. This step contributes to knowledge structuring by a global vision that reflects the first contributions of this area of research. In order not to leave aside any relevant or potential seminal work, we carried out this first search for the works published until 2000. With this part of the review, we were able to synthesize the main lines of research papers that have been developed in the GSCH and RL. Some of these seminal papers are [19–22] or [5].

- SECOND STEP: Review of recent literature.

After the first step and selecting as search criteria those initially marked (search terms and journals), we reviewed the most recent works of the related literature in the last ten years (2011–2020), placing special emphasis on those works that had a focus on the review of the literature. Starting from the seminal works, we revise recent papers about GSCH and RCL that cited seminal papers in their most relevant arguments and in their discussion implications or conclusions. Some of these papers are [23–27], and with this step we have been able to complement the contribution of the seminal works.

- THIRD STEP: Reviewing the contribution of papers related

Once we revised both seminal and more recent papers, we complemented our review with the contributions of those papers focused on GSCM and RL, especially those that are being used as important references in recent years. This third step may be considered as a snowball technique, which is commonly used to consider relevant works in the literature review [28]. We focused this step on papers published from 2001–2010 and selecting those papers more relevant according to the same search criteria as above. This step contributes to our literature review with relevant papers that have been critical in the development of GSHM and RL (e.g., [29,30]) and, therefore, it consolidated literature review.

3. Green Supply Chain Management

RL is a part of the SC: a wide-ranging term that includes different processes and activities related. This term has its origins in the mid-1970s and became more relevant from the 1980s. [23]. The traditional SC is defined as an integrated manufacturing process wherein raw materials are manufactured into final products before delivering to customers with intermediaries, sellers of both [31]. Subsequently, the growing importance of environmental problems provoked an environmental awareness related with concern for waste as well as monitoring of information related. It was in 1999 when Beamon redefined the traditional SC and considered an extended one that included environmental issues. She suggested that the traditional performance measurement structure of the SC must be extended in order to include mechanisms for product recovery. In her opinion, the traditional SC included only activities related with manufacturing and needing to be modified. However, a new definition and wider view were necessary "due to recent changing environmental requirements affecting manufacturing operations" and "environmental management strategies for the SC" [31] (p. 1). She observed that "the current interest has sought to extend the traditional SC to include "reverse logistics", to include product recovery for the purposes of recycling, remanufacturing, and reuse" [32] (p. 2).

Several previous works pointed out the necessity of structuring SC concept [32–37]. Certainly, SC was a complex concept since it "is not a chain of businesses with one-to-one, business-to-business relationships, but a network of multiple businesses and relationships" [38] (p. 65). In most of the definitions, it is possible to observe the importance of terms related with the acquisition of raw material as the beginning of the process [32,39–41]. The role and implication of the information is also mentioned [36,39,40,42].

In Beamon's opinion, "two basic, integrated processes" form the SC and "provide the basic framework for the conversion and movement of raw materials into final products": "(1) the Production Planning and Inventory Control Process, and (2) the Distribution and Logistics Process" [32].

In this line, we can observe the common mistake of thinking that logistics and SC refer to the same concept. This error was analysed, and some works explained how logistics is only part of SC [38]. In addition, three degrees of complexity of SC were identified [36]: a "direct SC", an "extended SC" and an "ultimate SC". The first one is constituted by company, supplier, and a customer, whereas those in the "extended" one are added suppliers of immediate supplier and customers of immediate customer. The more complex is the "ultimate" one since it includes "all the organizations involved in all the upstream and downstream flows of products, services, finances and information from the ultimate supplier to the ultimate customer".

Around these processes, several characteristics of the process were found. On the one hand, a vertical integration was observed in SC activities, as well as in RL, because of the high cost [43]. It is also relevant to headline the relevance of SC members' collaboration. The literature has widely analysed this issue and has proposed the importance of collaborative efforts between the organization, its suppliers, and customers [44–46]. In this sense, the concept of SC Coordination is defined as "collaborative efforts of SC participants that include supplier development, coordination with suppliers and customers" [3,44]. Cooperation capabilities with other members of SCM has been another trend in the literature, which related that emphasized the importance of "capital" or "resource" as the key aspect for achieving "durable strategic advantage" [47]. Alliances and partnerships are two of the top five topics identified for SCM [48].

SCM Linkages definition is defined as: "Explicit and/or implicit connections that a firm creates with critical entities of its SC in order to manage the flow and/or quality of inputs from suppliers into the firm and of outputs from the firm to customers" [49]. They also pointed them out "as a resource and as a knowledge-acquisition capability that can promise either temporary or sustainable superior operational performance for a firm".

The concept of SCM a very important evolution in the literature (see Table 1). The term was introduced by consultants in the early 1980s [38,50]. Nowadays, we are talking about Green Supply Chain Management (GSCM) since "there is a growing need for integrating environmentally sound choices into supply-chain management research and practice" [3] (p. 53). In spite of reasons to add "green" to business, policies are further analysed, and in a subsequent part of this study, it is convenient to comment that motives of this evolution are basically the increasing deterioration of the environment [3,31,51] and the social and legal pressures [23,31,44,52]. The literature also analyses stakeholders' influence on SCM [53,54]. Furthermore, GSCM is considered as an environmental and organization innovation [55,56].

Table 1. SCM concept review.

[Reference]	Year	Author(s)	Definition
[57]	1985	Jones, T. C.; Riley, D. W.	SCM techniques deal with the planning and control of total materials flow from supplies to end users.
[58]	1988	Houlihan, J. B.	SCM differs from classical materials and manufacturing control in 4 ways: (1) The SC is seen as a single process. (2) SCM requires strategic decision making due to its impact on overall costs and market share. (3) SCM requires that inventories be viewed as a balancing mechanism of last resort. (4) A new integrating approach to systems is needed.
[59]	1989	Stevens, G. C.	The objective of managing the SC is to synchronize the requirements of the customer with the flow of materials from suppliers, in order to effect a balance between, what are often seen as conflicting goals of high customer service, low inventory management, and low unit cost.
[60]	1993	Cooper, M. C.; Ellram, L. M.	An integrating philosophy to manage the total flow of a distribution channel from supplier to ultimate customer.
[34]	1994	La Londe, B.; Masters, J.	(. . .) the strategy of applying integrated logistics management to all the elements of a SC.
[61]	1997	Giunipero, L. C.; Monczka, R. M.	SCM as the process based on external customer and implications on production to add value in a horizontal way.
[62]	1998	Lambert, D. M.; Cooper, M. C.; Pagh, J. D.	SCM is the integration of key business processes from end user through original suppliers that provides products, services and information that add value for customers and other stakeholders.
[63]	1998	Trent, R. J.; Monczka, R. M.	Supply management practices directly affect four components of material ordering cycle time: (1) transmission of requirements to suppliers, (2) the suppliers' ordering and manufacturing cycle time, (3) delivery from suppliers, and (4) incoming receiving and inspection.
[64]	1998	Monczka, R. M.; Petersen, K. J.; Handfield, R. B.; Ragatz, G. L.	The primary objective of SCM to integrate and manage the sourcing, flow, and control of materials using a total systems perspective across multiple functions and multiple tiers of suppliers.

Table 1. *Cont.*

[Reference]	Year	Author(s)	Definition
[3]	2007	Srivastava, S. K.	GSCM is defined as 'integrating environmental thinking into supply-chain management, including product design, material sourcing and selection, manufacturing processes, delivery of the final product to the consumers as well as end-of-life management of the product after its useful life.
[65]	2010	Council of Supply Chain Management Professionals (CSCMP)	SCM encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities [. . .] it also includes coordination and collaboration with channel partners [. . .]. It includes all activities noted above, as well as manufacturing operations, and it drives coordination of processes and activities with and across marketing, sales, product design, finance, and information technology.
[66]	2010	Free Logistics. The free Supply Chain portal	Physical and information flows management mode aiming at optimizing the ordering, the manufacturing, and the delivery processes. From the supplier to the final customer.
[67]	2018	De Angelis, R., Howard, M.; Miemczyk, J.	The SCM principle of controlling an end-to-end process to create a seamless flow of goods must be questioned, where assumptions over long-term stability no longer hold true.
[68]	2020	Gölgeci, I.; Kuivalainen, O.	Supply chains and firms operating have witnessed unprecedented levels of turbulence such as natural disasters, political upheavals, and cyber-attacks and market dynamism such as high demand variability and shortening product lifecycles in recent years.

Source: Own elaboration.

According to [38] "successful SCM requires cross-functional integration and marketing must play a critical role. The challenge is to determine how to successfully accomplish this integration". To implement SCM, it is necessary to define its key members, the processes that are going to be linked with each member, and the level/type of integration [28]. Modern SCM has also become more and more complex by the necessity to include RL operations and new related trends.

In this line, in the most recent literature on GSCM, the number of works that have structured the different concepts, that relate SCM with sustainability, is growing [24,25,27,69]. In fact, as these authors point out, the most recent trends place these works in the field of circular economy [70–72]. In addition, these works have managed to locate each of these concepts and establish clear definitions that explain the narrative of these works and the predominant considerations, to differentiate these related concepts. Table 2 synthesizes the main recent approaches in the definition of the related concepts to GSCM.

Table 2. New related concepts to GSCM.

[Reference]	Year	Author(s)	Concept	Definition
[24]	2018	Batista, L.; Bourlakis, M.; Smart, P.; Maull, R.	Sustainable Supply Chain Management (SSCM)	It engages broader corporate governance and management of social responsibility issues for supply chain operations.
[29]	2013	Ahi, P.; Searcy, C.	Sustainable Supply Chain Management (SSCM)	Creation of coordinated supply chains through the voluntary integration of economic, environmental, and social considerations with key inter-organizational business systems designed to efficiently and effectively manage the material, information, and capital flows associated with the procurement, production, and distribution of products or services in order to meet stakeholder requirements and improve the profitability, competitiveness, and resilience of the organization over the short- and long-term.

Table 2. *Cont.*

[Reference]	Year	Author(s)	Concept	Definition
[24]	2018	Batista, L.; Bourlakis, M.; Smart, P.; Maull, R.	Closed-Loop Supply Chains	Ideas that simultaneously consider forward and reverse supply chain operations.
[73]	2009	Guide Jr, V. D. R.;Van Wassenhove, L. N.	Closed-Loop Supply Chains	Design, control, and operation of a system to maximize value creation over the entire life cycle of a product with dynamic recovery of value from different types and volumes of returns over time. Expanding on reverse logistics, include remanufacturing, reuse, repair, refurbishment, and recycling.
[74]	2020	Hussain, M.; Malik, M.	Circular Supply Chain	Ideas that simultaneously consider forward and reverse supply chain operations.
[75]	2018	Kazancoglu, Y.; Kazancoglu, I.; Sagnak, M.	Green Supply Chain Management (GSCM)	GSCM is characterized by greenness in product design, selection and purchase of raw materials, production, distribution of final products, and after sale services.

Source: Own Elaboration.

4. Reverse Logistics: Literature Review

4.1. RL Concept and Characteristics

RL program "has gained increasing importance as a profitable and sustainable business strategy" [76]. According to [77], the conception of this term came about a long time ago. It is defined as a process in which the manufacturer accepts used products from consumers to recycle or remanufacture them [5,73,76]. Fortunately, the literature has pointed out a wide range of definitions of this concept (see Table 2), which also permits us to appreciate its main characteristics.

- This involves planning, implementing, and controlling.

In any process, to achieve desired results and efficiency, it is necessary to take in account these three phases. Previous knowledge is necessary before implementing RL: the resources (financial, material, human, time, and information) and the potential difficulties that could appear in the implementation process. The planning of RL processes requires identifications of each part that affect the process as well as their responsibilities and how collaboration is going to be implemented. Controlling is another essential phase, which has faced a large experimental evolution, and nowadays, controlling is understood as not only "the final step" but also the control during the process that contributes to reducing errors, economic wastes and increasing satisfaction (internal and external stakeholders involved).

- RL is focused on what happens with products after use.

The inputs for RL can be products as wells as parts of them, non-used products with some defect, expired date product or information.

- It is a reverse flow.

RL processes usually operate from the consumers (sometimes including the last user but not the final user; for example, the reason of recovery could be pas the expiry date. In this case, the product will be retired not from the final consumer but from the vendor) to the manufacturer.

- Recapturing value and respecting the environment are some of the aims of RL.

Table 3 lists the main meanings of the term, which over time present important changes.

Table 3. RL definition review.

[Reference]	Year	Author(s)	Definition
[19]	1981	Lambert, D. M.; Stock, J. R.	Going the wrong way on a one-way street because the great majority of product shipments flow in one direction.
[78]	1991	Murphy, P. R.; Poist, R. F.	Movement of goods from a consumer towards a producer in a channel of distribution.
[20]	1992	Stock, J. R.; Douglas, M. L.	(...) The term often used to refer to the role of logistics in recycling, waste disposal, and management of hazardous materials; a broader perspective includes all relating to logistics activities carried out in source reduction, recycling, substitution, reuse of materials and disposal.
[21]	1993	Christopher, M.	RL is a broad term referring to the logistics management and disposing of hazardous or non-hazardous waste from packaging and products. It includes reverse distribution. (. . .) which causes goods and information to flow in the opposite direction of normal logistics activities.
[22]	1998	Dekker, R.; Bloemhof-Ruwaard, J.; Fleischmann, M.; Nunen, J. V.; Laan, E. V. D.; Van Wassenhove, L. N.	The role of logistics in product returns, source reduction, recycling, materials substitution, reuse of materials, waste disposal and refurbishing, repair, and remanufacturing.
[5]	1998	Govindan, K.; Bouzon, M.	The process whereby companies can become more environmentally efficient through recycling, reusing, and reducing the number of materials used.
[76]	2000	Dowlatshahi, S.	RL is a process in which a manufacturer systematically accepts previously shipped products or parts from the point for consumption for possible recycling, remanufacturing, or disposal.
[9]	2001	Rogers, D.; Tibben-Lembke, R.	The process of planning, implementing and controlling the efficient, cost-effective flow of raw materials, in-process inventory, finished goods and related information from the point of consumption to the point of origin for the purpose of recapturing or creating value, or for proper disposal.
[56]	2003	Dobos, I.	The process of planning, implementing, and controlling flows of raw materials, in process inventory, and finished goods, from a manufacturing, distribution or use point, to a point of recovery or point of proper disposal.
[11]	2008	Srivastava, S.	The process of planning, implementing, and controlling the efficient, effective inbound flow, inspection and disposition of returned products and related information for the purpose of recovering value.
[65]	2010	Council of Supply Chain Management Professionals	A specialized segment of logistics focusing on the movement and management of products and resources after the sale and after delivery to the customer. Includes product returns for repair and/or credit.
[30]	2013	Bai, C.; Sarkis, J.	RL (or the reverse SC) features greater relative uncertainty when compared to forward logistics and supply chain flows. An effective way to manage uncertainty and variance in operational and organizational systems is by introducing greater flexibility.
[79]	2018	Zarbakhshnia, N.; Soleimani, H.; Ghaderi, H.	RL is the backward process of collecting and redistributing products at the end-of-life from customers to producers and manufacturers for reuse, remanufacturing, and disposal purposes. While RL brings several economic benefits, it seems to become a necessity for businesses to remain competitive in a world that environmental and social aspects of business activities are key to sustainable development.

Table 3. *Cont.*

[Reference]	Year	Author(s)	Definition
[24]	2020	Batista, L.; Bourlakis, M.; Smart, P.; Maull, R.	RL as . . . "other alternatives to disposal processes such as reuse, repairing, reconditioning and remanufacturing".
[27]	2020	González-Sánchez, R.; Settembre-Blundo, D.; Ferrari, A. M.; García-Muiña, F. E.	RL as "a reverse supply chain includes activities dealing with product design, operations, and end-of-life management in order to maximize value creation over the entire lifecycle through value recovery of after-use products either by the original product manufacturer or by a third party".

Source: Own elaboration.

Despite the similarity in the definitions, the evolution of the concept is important, but one very relevant evolution is the necessity of incorporating information in RL processes as well as the critical importance of incorporating environmental elements into the RL process [9].

The literature also distinguishes between the RL of products and RL of packaging [9]. In this line, we can understand RL flow as "Reusable packages return to the serviceable inventory in new products"; "Products after remanufacturing return to the serviceable inventory in "as good as new" products"; "Products after repair return to the serviceable inventory in new products" and/or "Recycled products provide raw materials to the inventory in materials" [80].

There are several reasons for a product to go in the reverse way: remanufacturing, refurbishing or because the customer returned it, whereas packaging RL derives from the possibility to reuse it. In 2001, the classification of the reasons for return was provided [9]. This classification incorporated the importance of distinguishing about the input of RL (the product or the package) and the start point of the process (the consumer or other stakeholder of SCM) [9]. Thus, consumers usually return a product because it is defective, or they do not want it anymore, because they still have the possibility to use the warranty period of the product due to recalls or for environmental reasons. On the other side, motives for partners of the SCM could be stock control, marketing returns or end of life/season of the product. As said before, both end-user and a partner could return packaging and, generally, the cause is the possibility to reuse them or disposal one.

Furthermore, [76] and other recent works [27] identify costs, overall quality, customer service, and environmental and legislative concerns as strategic factors in the RL system. In addition, they pointed out operational factors of this kind of system. Cost-benefit analysis, transportation, warehousing, supply management, remanufacturing and recycling, and packaging are also factors that have different weights in each organization.

4.2. Reasons and Differences between RL and Forward One

Adding "green" to SCM is a consequence of several factors. Literature talks about socio-political changes [55]. Nowadays, the growing importance of reducing the impact on the environment has increased the attention to RL.

Nowadays, firms, consumers and other stakeholders, such as governments, NGOs or communities, pay much more attention to production processes, and environment is also becoming in a source of potential competitive advantage.

In this line, the authors in [81] analyse the institutional theory and argue that environmental orientation can be predisposed by three pressures: normative, coercive, and mimetic. The first one is referred to organization's stakeholders. Company's image and social responsibility have a huge importance and, for example, for Japanese manufacturers, they are essential [21]. Coercive pressures basically consist of regulations. Although Europe has been the first in configuring environmental legislation, nowadays it is a worldwide awareness [82]. The last, mimetic pressures, are concerned with the influence of competitors since a successful result of their policies can be a motive for other firms to follow their steps.

Otherwise, the profitability of green policies saying that they can reduce costs and provide advantages for the company in terms of proactivity: "green firms can shape future regulations and reap first-mover advantages" [83]. The possibility of cost savings as other possible result of environment friendly policies [84]. New opportunities for competition and new ways to add value to core business programs may be originated [55]. Thereby, increase in competition between companies and in the ability of successful competency is another result of implementing environment policies. Environment is, at the same time, an opportunity but also a threat, and the company competitive position depends on its capacity to face up to environmental challenges [43]. It is interesting see "sustainable chain management as a catalyst of generating valuable inter-organizational resources and thus possible sustained inter-firm competitive advantage through collaboration on environmental and social issues" [85].

The positive relationship between environmental and business performance is confirmed in many empirical studies. Otherwise, the environmental management system in a company can also have positive results on operational performance [55,86].

Forces analysed earlier also affect the implementation of RL in particular: customer, suppliers, competitors, and government agencies are direct pressures. We could also mention the issue of resource scarcity. Resource reduction should be the goal for RL. A convenient RL framework would give a major opportunity for recycling and, as a consequence, for using fewer virgin materials. Because of resource reduction, both forward and reverse flows of materials are minimized [5].

On the other hand, as well as all advantages of GSCM, the literature also recognizes positives results on the environment and the economic performance of RL processes. RL programs can cause significant savings [87], taking into account the environmental and cost benefits [5]. The other potential advantage is the risk reduction in the potential impact of governments on those firms that are proactive with environmental performance by RL. Furthermore, it is also argued that implementing RL programs can lead to better corporate image [5].

Besides, we are yet to mention cost savings. The author of [11] considers that "a well-managed RL network can also help in customer retention", while increasing customer loyalty due to activities valued positively by customers, e.g., by repair services. Due to its major complexity in comparison with forward logistics, the reverse one could present a serious advantage not easily replicable by rival companies [7]. Then again, firms can obtain, from used products cheap, resources to carry out their production processes [82]. On the other hand, differences between two types of flow, forward and reverse, are not few. We can mention the major complexity of RL and the SCM they support in comparison with traditional manufacturing SCM [7].

"Higher system complexity" in RL processes is also mentioned by [88]. In their opinion, it is due to an increased goods flow and many interactions between them, besides the uncertainty that characterizes RL. What is more, they find plenty of differences between RL and forward flow as well. Environmentally drivers, besides cost and services, are pointed out and thought to be difficult in respect to the objective function [88]. A mismatch between supply and demand in RL is identified. Numerous suppliers and few customers seem to distinguish forward flow from RL too, since these raw materials (used goods) could come from many sources at low cost, or even for free. Finally, they consider unexplored market opportunities as another aspect that differences reverse from forward logistics.

There is a difference in the data-collection needs of RL and those of a forward distribution operation, which are identified too [89]. On the other hand, RL is considered as "much more reactive, with much less visibility" [90]. Furthermore, it is important to notice the studies of some researchers to find some synergies between forward flow and RL. It is a very relevant issue because it could be another motive for practitioners to implement and develop the RL process. The literature analyses the possibility of sharing equipment, facilities and personnel between forward flow and RL [91,92]. The results could be reduced costs and improved service levels.

4.3. What Is Returned, Which Activities Are Realized and What Technology Could Be Used?

The literature has also analysed which products are appropriate to take part in RL. Composition, deterioration, and use-pattern are some characteristics highlighted [93–96]. Hence, the authors in [93] talk about design for recycling (DFR) characteristics and suggest better choices for material selection, such that the processes of material separation and material recovery become more efficient.

These authors explain that the type of material of the product is not only important, but so are the number of composing parts and the way of putting them together. Thereby, making the product of homogeneous material or a smaller number of different materials and incorporating fewer parts in it facilitate the recovery and separation activities of the RL process. On the other hand, hazardous materials hinder those actions, since more attention and the taking of special measures will be required. The size of the product is another element to take into account. The authors in [97] analysed the volume relating to the physical size of the products for collection, as a dimension of collection-structure complexity. Geographical spread (dispersion of the products to be collected), number of sources of used products, quantity of products to be collected, and uncertainty associated with the timing and frequency of the required collection activity, are other analysed dimensions.

Deterioration is another relevant characteristic because the degree of product deterioration affects the choice of actions to be able to reuse it. In these terms, the literature examines three aspects: intrinsic deterioration, economic deterioration, and homogeneity of deterioration [77]. The first one refers to the proportion of the degree of ageing of the product with its use. For example, there are products that are consumed completely, whereas there are other ones that are not. Economic deterioration refers to the speed of losing value due to obsolescence. Finally, it is possible that some parts of a product do not age with the same intensity, giving the possibility to reuse them. This is what the literature named the homogeneity of deterioration [77].

Another issue to take in account is the use pattern. It is necessary to consider the location, intensity, and duration of use. Firstly, it is important to know if the consumer is an individual person or if it is an institution because it affects to the process of collection. Otherwise, collection difficulties could be greater if there is large distance between different product consumers and it affects the necessity of increasing the number of collection centres, resources and maybe consumer efforts. In reference to the intensity of use, as well as time we should consider the degree of consumption too.

In another way, the author of [11] offers a scheme of RL activities. Collection, inspection/sorting, preprocessing and logistics and distribution network design are identified by the literature as key functional aspects and essential activities in recovery networks [11,98]. It is necessary to collect used products. Hence, collection consists of all activities which pursues to reclaim used goods or parts of them and transport them to a facility where they will be examined [99]. This step is essential, and it may be the most difficult: it constitutes a significant part of the cost of closed-loop SC [82]. How can we recover used products or its parts? Is the firm responsible for RL and must oversee this process? Is it the consumer who should carry it out? How can we motivate individuals to take part in this process? These are some questions which must be resolved in the planning phase.

The authors in [100] analyse three decentralized models of collecting used products: the manufacturer is in charge of recovering used products (Model M-Manufacturer Collecting); the retailer takes part in the used product recollection (Model R-Retailer Collecting); a third party is contracted by the manufacturer just for collecting used products (Model 3P).

In model R, to stimulate a retailer to collect used products, the manufacturer offers him a price per product returned. The research made the conclusion that Model R is the most effective for the manufacturer, since to recollect used products, the one who is nearest to the consumer is the best option.

The author in [11] analyses the possibility of the existence a of collection centre: "a facility where customers bring their products for resolution". A pay-back price offered to the consumer and a nearby location are important factors to stimulate the consumer to collaborate [82].

Another main role is also the consumer's environmental awareness and knowledge of the importance of his/her cooperation. There are different behaviours of the end-users, depending on the demographic location. It causes differences in the number of returned products [101]. Thereby, environmental education at an early age of the individual could give positive results. The implication of families, colleges, governments, and other institutions is core to create a more conscious society.

To save costs, the authors in [82] comment on the possibility to install drop-points where the consumer can leave used products. This reduces the costs of transportation, but it is necessary to stock used products. Another possibility to reduce costs is the use of synergies between the distribution of new goods and the collection of used product processes.

The inspection and classification of returned products are other essential activities in the process of RL. In these processes, the quality of products is a key characteristic. Employees have to own the necessary knowledge on how to manipulate returns, not only to sort them, depending on their condition and way of reusing them, but also to protect themselves, their colleagues and the setting from any negative characteristics. Disassembly, shredding, testing, sorting, and storage are steps that the inspection and separation processes should include [84].

The separation made by the consumer or centralized separation of used products determines the different collection schemes [3,102]. The authors in [82] consider that involving the consumer in the collection process could help to the process. Individual collection reduces complexity and reduces transportation costs. Therefore, these authors point out the importance for minimising costs of trade-off between the convenient separation of reusable and nonreusable parts, and the costs of transportation.

Transformation of used products into other ones is the result of the RL process and the effective sorting of used products preprocessing (reprocessing) helps the transformation processes. Used products will be sent to "rework centres: A facility where returned products are refurbished/remanufactured" [11]. Hence, the "second life" of used products could be achieved because of recycling, repair, or remanufacturing [98]. The said processes, repair, refurbish and remanufacturing, and the technology and skills determine two types of rework centres: repair and refurbishing centres and remanufacturing centres [11].

Activities, such as cleaning, replacement and reassembly, may take part in the reprocessing [98]. Otherwise, inspection and sorting steps may occur as a result of a product that cannot be reused, so it is necessary to proceed to its disposal, not only for technical but also for economic reasons, e.g., if the employee decides that the transformation of the used product would be very expensive, or that the final product would not have utility and market potential. Transportation, landfilling, and incineration are some activities, which may be needed in this phase [98]. GSCM have focused on minimizing disposal [3].

The market is the destination of the result of the reprocessing processes. Used products without any transformation could be placed on the second market, but also reprocessed products resulting from repair and refurbishing centres or remanufacturing centres. These rework sites could also place their products on the primary market [11]. Nevertheless, redistribution activity will always be necessary to direct reusable products to the potential market and to transport them. Hence, sales, transportation and storage activities could take place in this process [87]. The network needed in this stage resembles the forward one [82].

In recent years, there has been a huge awareness not only of environment pollution, but also about how to combine its preservation and firms' profits. Hence, technology has developed a lot to find ways of improving processes along the SCM. One of the creations and an actual trend is the RFID [103]. "Radio frequency identification is a powerful emerging technology that enables companies to achieve total business visibility. By knowing the identity, location and conditions of assets, tools, inventory, people and more, companies can optimize business processes and reduce operational costs" [104]. It provides an individual identification through an individual number ID (ID number) [105].

The possible benefits for SC could be related to the speed, accuracy, efficiency, and security of information. The update of SC data is effectively allowed [106]. Reception and exchange of information in real time is possible, and so the improvement of SC administration could be achieved [107]. Otherwise, RFID technology contributes to reducing or eliminating human errors, product accounting and inventory realization [108]. RFID contributes to information barriers that appear when companies collaborate in SCM [99,106] and the implementation of this technology has basically increased by the reduction in costs [109].

RFID technology consists of the use of radio waves to identify objects automatically [103,104]. An RFID system entails a tag, which consists of a small silicon microchip attached to an antenna (RSA Laboratories) [110]. The microchip can be read-only or read–write, and contains information of a product, and the antenna conducts waves to the antenna of the reader so, in this way, it enables one to transmit information to the reader [111], that then transmits the information on a middleware [108]. Finally, the information is processed in an administration system and can be used in different processes.

The tag can be active or passive depending on if it has a battery to power the microchip circuitry and broadcast signals to the reader (active tag) or if it is the reader, which sends out electromagnetic waves to induce a current in the tag antenna (passive tag). A semipassive tag uses batteries and waves sent out by the reader [111]. In comparison with barcodes, RFID tags are reusable, so companies can recover its costs throughout a long period of time [106]. Another advantage of RFID technology consists of the ease of programming and speed of use, since it is possible to read multiple tags simultaneously. Additionally, an RFID tag can include much more information than barcode and it can be used in a harsh environment where bar codes and light-emitting devices could have issues working [109]. Additionally, finally, RFID technology does not need line-of-sight scanning as bar codes do [112]. Reader power and frequency used to communicate are factors that influence the "read range" of the tag [111].

RFID was implemented in several industries, such as pharmaceutical, automotive, cosmetics and other industries [103,113]. Moreover, it has huge applications in packaging treatments and traceability, as well as in the payment system [114]. Nevertheless, besides all advantages of RFID technology, it is necessary to also notice some of the problems and disadvantages it has.

In this sense, the authors in [112] identify a lack of coding standard, which hinders its international use from one country to another. There are not enough RFID standards, although some additional activities need to be adopted to obtain national and international synergies and achieve better collaboration. It is confirmed that there is the existence of a "big number of standards" and the need of acceleration in the "harmonization process within Europe" [115].

In addition, RFID is a costlier technology than bar codes, because tags and readers are more expensive than bar codes and bar-code scanners. In another way, the adaptation of information SC systems is required, as well as infrastructure development, in order to process the major flow of information. Another difficulty could come from the need of agreements between all members of one SCM. The risk of hacker sabotage, which can lead to stolen information and even falsified data is analysed. Therefore, protecting mechanisms are required to avoid it. The negative effect of environment conditions that can hinder the transmission of information is also possible. Other risks, such as readers or tag collision, incompatibility between RFID technology and the one existing in the company, lack of employee preparation and consequently errors, are denoted in the literature. "Electromagnetic Shielding" is another problem to solve, since it produces reading difficulties when a conductive material gets in the way between a tag and a reader [114].

4.4. Disadvantages and Problems

One of the main barriers for implementing RL is the need for additional resources, not only financial resources, but also an extra effort on planning and collaboration. "Paperwork and poor workflow processes tend to plague RL operations" [116]. Furthermore, convenient personnel training and motivation are essential. A cooperation between two markets, a "disposer" one and "reused market", is the key to carrying out the recovery processes [82], a fact that may originate in another boundary for RL implementation.

Furthermore, the authors in [9] identified some boundaries for executing RL in different sectors. The more representative barriers were the importance of RL relative to other issues, company policies, lack of systems, competitive issues, management inattention, personnel resources, financial resources and legal issues.

Another issue is the value of information. SCM suffers from an important lack of information, which increases the uncertainly of decisions. Srivastava explained the potential benefits of systems information to SCM and RL [11]. The lack of information is observed in "timing, quality, quantity and variety of returns; estimation of operation and cost related parameters for RL networks", which constitutes some of the risks related to product recover [11]. Supply uncertainty in recovery networks, in terms of quality and availability, originates in the importance of separation and inspection processes [82]. The implementation of RFID systems improves these problems of uncertainty and lack of information.

In another way, [99] pointed out some of the most frequent mistakes of firms—RL design. The authors considered that product design must be taken in account from the beginning. This idea is also defended by Srivastava, who includes green design in the concept of GSCM and considers that it should take in account the whole life-cycle cost of the product [3]. Focusing on "out-of pocket costs only" and "negligence of sustainability as an optimization issue" are other frequent mistakes [81].

According to the authors in [117], some symptoms show that returns have become a problem. When returns arrive faster than processing or disposal, difficulties appear. The existence of a large returns inventory in the warehouse, as well unidentified or unauthorized returns, are other indicators that something is going wrong. Moreover, lengthy cycle processing times, unknown total cost of the returns process and loss of customers' confidence in the repair activity are pointed out too.

5. Conclusions

The first conclusion of this paper is to emphasize the great evolution that literature focused on GSCM and RL has experimented with in the last 30 years [25]. The initial concept of supply chain management has also been connected with sustainability, and in this process, several related concepts have contributed to structure different contributions that have been published. Nowadays, these concepts, such as *reverse logistic*, *green supply chain management*, *circular supply chain*, are converging on Circular Economy [19].

As society changes, and new values and awareness appear, management concepts adapt and develop. Several factors, such as the increasing environmental awareness, the preferences of the society, as well as the legal framework, have created the necessity of introducing more environmental business practices. In this respect, GSCM and RL have experienced an obvious increase in importance and attention. Unfortunately, due to the major complexity of the reverse flow, companies are exposed to many boundaries. The necessity of stable networks and relationships between SC members is becoming more and more obvious. What is more, the final consumer has become a key part of the SC, due to its essential role in the RL process.

One important issue is the difference between forward and reverse flows. The major complexity of the latter creates the necessity for strong collaboration and relationships between the participants in this process. It is necessary to develop relations between forward and reverse flows to achieve more synergies and facilitate processes. By now, sharing equipment, facilities, and personnel are one of the most frequent synergies, but companies are willing to find other ones. Hence, both researchers and firms may work hard on this challenge.

The RL process offers the possibility to improve environmental policies of the company in different ways, since it is not applicable only on products but on packaging too. Furthermore, these practices could be used for a wide range of products, beginning with short-life goods, such as the alimentary ones, for example, and finishing with long-life products from the automotive, and electrical industry, etc. RL is not only necessary to achieve more environmentally friendly SC, but it is also applicable in stock control management. Otherwise, it is convenient to mention the relevance of technology since, as in many other fields, technology development offers the opportunity to improve processes while achieving better results in the short term. For example, researchers and managers welcome the possibility of stronger control offered by RFID technology.

Regarding the weaknesses of the present study, we could say that the most important issue is the lack of empirical study that nowadays continues to be necessary. On the other hand, a deeper review of empirical works would be useful to complement the analysis of the research papers.

Despite the important evolution of RL, deeper consideration is needed from both researchers and managers. In reference to the first, and to offer some ideas for future research, a wider range of empirical studies that could include a considerable number of companies from different countries is required. This would enable general conclusions about the reality of business practices. Furthermore, a detailed analysis of the RL process, in all business sectors, is required to discover the characteristics and necessities in order to create the opportunity to improve activities and efficiency.

Despite of the evolution of RL, many firms still do not appreciate its relevance, but a change in mentality is in progress. Perhaps deeper contact between companies and researchers could be useful to achieve this kind of management transformation.

Finally, it is necessary to implement the concepts identified in the literature, as some recent works claim [37], as well as putting them into practice in order to improve the circular economy (GSCH and RL mainly in this paper). We think that papers similar to this one should be developed in the future. The contributions of these types of papers are not only based on the identification of some new aspects that appear, but also by highlighting the growing contribution of related literature. In our opinion, these type of works are necessary in order to emphasize the extensive work done by others researchers in order to consolidate Circular Economy Theory and, therefore, for overcoming new challenges in productive activities focused on sustainability.

Author Contributions: Conceptualization, J.A.P.-Ú., E.A.-S., J.d.B.-J., A.B.-A. and L.J.B.-U.; formal analysis, J.A.P.-Ú., E.A.-S., J.d.B.-J., A.B.-A. and L.J.B.-U.; investigation, J.A.P.-Ú., E.A.-S., J.d.B.-J., A.B.-A. and L.J.B.-U.; methodology, J.A.P.-Ú., E.A.-S., J.d.B.-J., A.B.-A. and L.J.B.-U.; supervision, J.A.P.-Ú., E.A.-S., J.d.B.-J., A.B.-A. and L.J.B.-U.; validation, J.A.P.-Ú., E.A.-S., J.d.B.-J., A.B.-A. and L.J.B.-U.; writing—original draft, J.A.P.-Ú., E.A.-S., J.d.B.-J., A.B.-A. and L.J.B.-U.; writing—review and editing, J.A.P.-Ú., E.A.-S., J.d.B.-J., A.B.-A. and L.J.B.-U. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Data sharing not applicable.

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

References

1. Davis, K.; Bromstrom, R.L. Implementing the Social Audit in an Organization. *Bus. Soc.* **1975**, *16*, 13–18. [CrossRef]
2. Breton, G.; Pesqueux, Y. Business in society or an integrated vision of governance. *Soc. Bus. Rev.* **2006**, *1*, 7–27. [CrossRef]
3. Srivastava, S.K. Green supply-chain management: A state-of-the-art literature review. *Int. J. Manag. Rev.* **2007**, *9*, 53–80. [CrossRef]

4. Hult, G.T.M.; Ketchen, D.J.; Arrfelt, M. Strategic supply chain management: Improving performance through a culture of competitiveness and knowledge development. *Strateg. Manag. J.* **2007**, *28*, 1035–1052. [CrossRef]
5. Govindan, K.; Bouzon, M. From a literature review to a multi-perspective framework for reverse logistics barriers and drivers. *J. Clean. Prod.* **2018**, *187*, 318–337. [CrossRef]
6. Jawla, P.; Singh, S.R. A reverse logistic inventory model for imperfect production process with preservation technology investment under learning and inflationary environment. *Uncertain Supply Chain Manag.* **2016**, *1*, 107–122. [CrossRef]
7. Amini, M.M.; Retzlaff-Roberts, D.; Bienstock, C.C. Designing a reverse logistics operation for short cycle time repair services. *Int. J. Prod. Econ.* **2005**, *96*, 367–380. [CrossRef]
8. Gukaliuk, A.; Katsma, V. Logistic resource management as a part of logistic management of enterprise. *Econ. Anal.* **2017**, *27*, 130–138. [CrossRef]
9. Rogers, D.; Tibben-Lembke, R. An examination of reverse logistics practices. *J. Bus. Logist.* **2001**, *22*, 129–148. [CrossRef]
10. Fleischmann, M. Inventory Systems with Reverse Logistics. In *Quantitative Models for Reverse Logistics*; Springer Nature: Cham, Switzerland; Volume 3, pp. 89–103. [CrossRef]
11. Srivastava, S. Network design for reverse logistics. *Omega* **2008**, *36*, 535–548. [CrossRef]
12. Šomplák, R.; Pavlas, M.; Nevrlý, V.; Touš, M.; Popela, P. Contribution to Global Warming Potential by waste producers: Identification by reverse logistic modelling. *J. Clean. Prod.* **2019**, *208*, 1294–1303. [CrossRef]
13. Haunschild, R.; Marx, W. Discovering seminal works with marker papers. *Scientometrics* **2020**, 1–15. [CrossRef]
14. Williams, R.; Hayes, J. Literature review: Seminal papers on shared value. *EPS-PEAKS*. 2013. Available online: http://partnerplatform.org (accessed on 30 December 2020).
15. Pettit, T.J.; Croxton, K.L.; Fiksel, J. The evolution of resilience in supply chain management: A retrospective on ensuring supply chain resilience. *J. Bus. Logist.* **2019**, *40*, 56–65. [CrossRef]
16. Cox, A. What are communities of practice? A comparative review of four seminal works. *J. Inf. Sci.* **2005**, *31*, 527–540. [CrossRef]
17. Kouvelis, P.; Chambers, C.; Wang, H. Supply chain management research and production and operations management: Review, trends, and opportunities. *Prod. Oper. Manag.* **2006**, *15*, 449–469. [CrossRef]
18. Rubio, S.; Jiménez-Parra, B. Reverse logistics: Overview and challenges for supply chain management. *Int. J. Eng. Bus. Manag.* **2014**, *6*, 12. [CrossRef]
19. Lambert, D.M.; Stock, J.R. *Strategic Physical Distribution Management*; Richard, D., Ed.; Irwin Inc.: Homewood, CA, USA, 1982.
20. Stock, J.R.; Douglas, M. L Becoming a "World Class" Company with Logistics Service Quality. *Int. J. Logist. Manag.* **1992**, *3*, 73–81. [CrossRef]
21. Christopher, M. Logistics and competitive strategy. *Eur. Manag. J.* **1993**, *11*, 258–261. [CrossRef]
22. Dekker, R.; Bloemhof-Ruwaard, J.; Fleischmann, M.; Nunen, J.V.; Laan, E.V.D.; Van Wassenhove, L.N. Operational research in reverse logistics: Some recent contributions. *Int. J. Logist. Res. Appl.* **1998**, *1*, 141–155. [CrossRef]
23. Masudin, I. A Literature Review on Green Supply Chain Management Adoption Drivers. *J. Ilm. Tek. Ind.* **2019**, *18*, 103–115. [CrossRef]
24. Batista, L.; Bourlakis, M.; Smart, P.; Maull, R. In search of a circular supply chain archetype—A content-analysis-based literature review. *Prod. Plan. Control* **2018**, *29*, 438–451. [CrossRef]
25. Seuring, S.; Yawar, S.A.; Land, A.; Khalid, R.U.; Sauer, P.C. The application of theory in literature reviews–illustrated with examples from supply chain management. *Int. J. Oper. Prod. Manag.* **2020**. [CrossRef]
26. Dobos, I. Optimal production–inventory strategies for a HMMS-type reverse logistics system. *Int. J. Prod. Econ.* **2003**, *81*, 351–360. [CrossRef]
27. González-Sánchez, R.; Settembre-Blundo, D.; Ferrari, A.M.; García-Muiña, F.E. Main dimensions in the building of the circular supply chain: A literature review. *Sustainability* **2020**, *12*, 2459. [CrossRef]
28. Hepplestone, S.; Holden, G.; Irwin, B.; Parkin, H.J.; Thorpe, L. Using technology to encourage student engagement with feedback: A literature review. *Res. Learn. Technol.* **2011**, 19. [CrossRef]
29. Ahi, P.; Searcy, C. A comparative literature analysis of definitions for green and sustainable supply chain management. *J. Clean. Prod.* **2013**, *52*, 329–341. [CrossRef]
30. Bai, C.; Sarkis, J. Flexibility in reverse logistics: A framework and evaluation approach. *J. Clean. Prod.* **2013**, *47*, 306–318. [CrossRef]
31. Beamon, B.M. Designing the green supply chain. *Logist. Inf. Manag.* **1999**, *12*, 332–342. [CrossRef]
32. Beamon, B. Supply Chain Design and Analysis: Models and Methods. *Int. J. Prod. Econ.* **1998**, *55*, 281–294. [CrossRef]
33. Lee, H.-Y.; Seo, Y.-J.; Dinwoodie, J. Supply chain integration and logistics performance: The role of supply chain dynamism. *Int. J. Logist. Manag.* **2016**, *27*, 668–685. [CrossRef]
34. La Londe, B.; Masters, J. Emerging logistics strategies: Blueprints for the next century. *Int. J. Phys. Distrib. Logist. Manag.* **1994**, *24*, 35–47. [CrossRef]
35. Liu, G.; Yang, T.; Wei, Y.; Zhang, X. Coordination and Decision of Supply Chain Under. *Int. J. Inf. Syst. Supply Chain Manag.* **2019**, *12*, 21–46. [CrossRef]
36. Mentzer, J.T.; DeWitt, W.; Keebler, J.S.; Min, S.; Nix, N.W.; Smith, C.D.; Zacharia, Z.G. Defining Supply Chain Management. *J. Bus. Logist.* **2001**, *22*, 1–25. [CrossRef]
37. Hames, R.D. Total Quality Management: The Strategic Advantage. *Int. J. Phys. Distrib. Logist. Manag.* **1991**, *21*, 9–14. [CrossRef]
38. Lambert, D.M.; Cooper, M.C. Issues in Supply Chain Management. *Ind. Mark. Manag.* **2000**, *29*, 65–83. [CrossRef]

39. Cluley, R. What Makes a Management Buzzword Buzz? *Organ. Stud.* **2013**, *34*, 33–43. [CrossRef]
40. Lummus, R.R.; Vokurka, R.J. Defining supply chain management: A historical perspective and practical guidelines. *Ind. Manag. Data Syst.* **1999**, *99*, 11–17. [CrossRef]
41. Helms, M.M.; Ettkin, L.P.; Chapman, S. Supply chain forecasting—Collaborative forecasting supports supply chain management. *Bus. Process Manag. J.* **2020**, *6*, 392–407. [CrossRef]
42. Abad-Segura, E.; Morales, M.E.; Cortés-García, F.J.; Belmonte-Ureña, L.J. Industrial Processes Management for a Sustainable Society: Global Research Analysis. *Processes* **2020**, *8*, 631. [CrossRef]
43. Tachizawa, E.M.; Wong, C.Y. The Performance of Green Supply Chain Management Governance Mechanisms: A Supply Network and Complexity Perspective. *J. Supply Chain Manag.* **2015**, *51*, 18–32. [CrossRef]
44. Hong, P.; Kwon, H.; Jungbae Roh, J. Implementation of strategic green orientation in supply chain. *Eur. J. Innov. Manag.* **2009**, *12*, 512–532. [CrossRef]
45. Rajaguru, R.; Matanda, M.J. Role of compatibility and supply chain process integration in facilitating supply chain capabilities and organizational performance. *Supply Chain Manag. Int. J.* **2019**, *24*, 301–316. [CrossRef]
46. Lumineau, F.; Oliveira, N. Reinvigorating the Study of Opportunism in Supply Chain Management. *J. Supply Chain Manag.* **2020**, *56*, 73–87. [CrossRef]
47. Chen, I.J.; Paulraj, A.; Lado, A.A. trategic purchasing, supply management, and firm performance. *J. Oper. Manag.* **2004**, *22*, 505–523. [CrossRef]
48. Rungtusanatham, M.; Salvador, F.; Forza, C.; Choi, T.Y. Supply-chain linkages and operational performance: A resource-based-view perspective. *Int. J. Oper. Prod. Manag.* **2003**, *23*, 1084–1099. [CrossRef]
49. Rungtusanatham, M.J.; Choi, T.Y.; Hollingworth, D.G.; Wu, Z.; Forza, C. Survey research in operations management: Historical analyses. *J. Oper. Manag.* **2003**, *21*, 475–488. [CrossRef]
50. Plaza Úbeda, J.A.; de Burgos Jiménez, J.; Belmonte Ureña, L.J. Grupos de interés, gestión ambiental y resultado empresarial: Una propuesta integradora. *Cuadernos de Economía y Dirección de la Empresa* **2011**, *14*, 151–161. [CrossRef]
51. Min, H.; Galle, W.P. Green Purchasing Strategies: Trends and Implications. *Int. J. Purch. Mater. Manag.* **1997**, *33*, 10–17. [CrossRef]
52. Huang, X.; Tan, B.L.; Ding, X. Green supply chain management practices: An investigation of manufacturing SMEs in China. *Int. J. Technol. Manag. Sustain. Dev.* **2012**, *11*, 139–153. [CrossRef]
53. Clifton, D.; Amran, A. The Stakeholder Approach: A Sustainability Perspective. *J. Bus. Ethics* **2011**, *98*, 121–136. [CrossRef]
54. Isaksson, R.; Johansson, P.; Fischer, K. Detecting Supply Chain Innovation Potential for Sustainable Development. *J. Bus. Ethics* **2010**, *97*, 425–442. [CrossRef]
55. Zhu, Q.; Geng, Y.; Fujita, T.; Hashimoto, S. Green supply chain management in leading manufacturers. *Manag. Res. Rev.* **2010**, *33*, 380–392. [CrossRef]
56. Setyadi, A. Does green supply chain integration contribute towards sustainable performance? *Uncertain Supply Chain Manag.* **2019**, *7*, 121–132. [CrossRef]
57. Jones, T.C.; Riley, D.W. Using Inventory for Competitive Advantage through Supply Chain Management. *Int. J. Phys. Distrib. Mater. Manag.* **1985**, *15*, 16–26. [CrossRef]
58. Houlihan, J.B. International Supply Chains: A New Approach. *Manag. Decis.* **1988**, *26*, 13–19. [CrossRef]
59. Stevens, G.C. Integrating the Supply Chain. *Int. J. Phys. Distrib. Mater. Manag.* **1989**, *19*, 3–8. [CrossRef]
60. Cooper, M.C.; Ellram, L.M. Characteristics of Supply Chain Management and the Implications for Purchasing and Logistics Strategy. *Int. J. Logist. Manag.* **1993**, *4*, 13–24. [CrossRef]
61. Giunipero, L.C.; Monczka, R.M. Organizational approaches to managing international sourcing. *Int. J. Phys. Distrib. Logist. Manag.* **1997**, *27*, 321–336. [CrossRef]
62. Lambert, D.M.; Cooper, M.C.; Pagh, J.D. Supply Chain Management: Implementation Issues and Research Opportunities. *Int. J. Logist. Manag.* **1998**, *9*, 1–20. [CrossRef]
63. Trent, R.J.; Monczka, R.M. Purchasing and Supply Management: Trends and Changes Throughout the 1990s. *Int. J. Purch. Mater. Manag.* **1998**, *34*, 2–11. [CrossRef]
64. Monczka, R.M.; Petersen, K.J.; Handfield, R.B.; Ragatz, G.L. Success Factors in Strategic Supplier Alliances: The Buying Company Perspective. *Decis. Sci.* **1998**, *29*, 553–577. [CrossRef]
65. Council of Supply Chain Management Professionals (CSCMP). Available online: https://cSCMp.org/CSCMP/Academia/SCM_Definitions_and_Glossary_of_Terms/CSCMP/Educate/SCM_Definitions_and_Glossary_of_Terms.aspx?hkey=60879588-f65f-4ab5-8c4b-6878815ef921 (accessed on 29 November 2020).
66. Free Logistics. The Free Supply Chain Portal. Available online: https://www.free-logistics.com/ (accessed on 30 November 2020).
67. De Angelis, R.; Howard, M.; Miemczyk, J. Supply chain management and the circular economy: Towards the circular supply chain. *Prod. Plan. Control* **2018**, *29*, 425–437. [CrossRef]
68. Gölgeci, I.; Kuivalainen, O. Does social capital matter for supply chain resilience? The role of absorptive capacity and marketing-supply chain management alignment. *Ind. Mark. Manag.* **2020**, *84*, 63–74. [CrossRef]
69. Lambrechts, W. Ethical and Sustainable Sourcing: Towards Strategic and Holistic Sustainable Supply Chain Management. In *Decent Work and Economic Growth*; Springer Nature: Cham, Switzerland, 2020; pp. 1–13.
70. Isernia, R.; Passaro, R.; Quinto, I.; Thomas, A. The reverse supply chain of the e-waste management processes in a circular economy framework: Evidence from Italy. *Sustainability* **2019**, *11*, 2430. [CrossRef]

71. Uriarte-Miranda, M.L.; Caballero-Morales, S.O.; Martínez-Flores, J.L.; Cano-Olivos, P.; Akulova, A.A. Reverse logistic strategy for the management of tire waste in Mexico and Russia: Review and conceptual model. *Sustainability* **2018**, *10*, 3398. [CrossRef]
72. Krikke, H. Value Creation in a Circular Economy: An Interdisciplinary Approach. In *Decent Work and Economic Growth*; Springer Nature: Cham, Switzerland, 2020; pp. 1–15. [CrossRef]
73. Guide, V.D.R., Jr.; Van Wassenhove, L.N. The evolution of closed-loop supply chain research. *Oper. Res.* **2009**, *57*, 10–18. [CrossRef]
74. Hussain, M.; Malik, M. Organizational enablers for circular economy in the context of sustainable supply chain management. *J. Clean. Prod.* **2020**, *256*, 120375. [CrossRef]
75. Kazancoglu, Y.; Kazancoglu, I.; Sagnak, M. A new holistic conceptual framework for green supply chain management performance assessment based on circular economy. *J. Clean. Prod.* **2018**, *195*, 1282–1299. [CrossRef]
76. Dowlatshahi, S. Developing a Theory of Reverse Logistics. *Interfaces* **2000**, *30*, 143–155. [CrossRef]
77. De Brito, M.P.; Dekker, R. A Framework for Reverse Logistics. In *Reverse Logistics*; Dekker, R., Fleischmann, M., Inderfurth, K., Van Wassenhove, L.N., Eds.; Springer: Berlin, Germany, 2004; pp. 3–27. [CrossRef]
78. Murphy, P.R.; Poist, R.F. Skill Requirements of Senior-level Logisticians: Practitioner Perspectives. *Int. J. Phys. Distrib. Logist. Manag.* **1991**, *21*, 3–14. [CrossRef]
79. Zarbakhshnia, N.; Soleimani, H.; Ghaderi, H. Sustainable third-party reverse logistics provider evaluation and selection using fuzzy SWARA and developed fuzzy COPRAS in the presence of risk criteria. *Appl. Soft Comput.* **2018**, *65*, 307–319. [CrossRef]
80. Georgiadis, P.; Vlachos, D. Decision Making in Reverse Logistics Using System Dynamics. *Yugosl. J. Oper. Res.* **2004**, *14*, 259–272. [CrossRef]
81. DiMaggio, P.J.; Powell, W.W. The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *Am. Sociol. Rev.* **1983**, *48*, 147. [CrossRef]
82. Fleischmann, M.; Beullens, P.; Bloemhof-Ruwaard, J.; Van Wassenhove, L. The impact of product recovery on logistics network design. *Prod. Oper. Manag.* **2001**, *10*, 156–173. [CrossRef]
83. Porter, M.; Van der Linde, C. Toward a New Conception of the Environment-Competitiveness Relationship. *J. Econ. Perspect.* **1995**, *9*, 97–118. [CrossRef]
84. 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.* **2011**, *21*, 1–16. [CrossRef]
85. 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]
86. Shimomura, T. Certification and Operational Performance of ISO 14001. *Jpn. Tappi J.* **2001**, *55*, 52–58. [CrossRef]
87. Checkland, K.; Coleman, A.; Harrison, S. When is a saving not a saving? The micro-politics of budgets and savings under practice-based commissioning. *Public Money Manag.* **2011**, *31*, 241–248. [CrossRef]
88. Sheu, J.-B. Green supply chain management, reverse logistics and nuclear power generation. *Transp. Res. Part E Logist. Transp. Rev.* **2008**, *44*, 19–46. [CrossRef]
89. Jaaron, A.A.M.; Backhouse, C. A systems approach for forward and reverse logistics design. *Int. J. Logist. Manag.* **2016**, *27*, 947–971. [CrossRef]
90. Tibben-Lembke, R.; Rogers, D. Differences between forward and reverse logistics in a retail environment. *Supply Chain Manag.* **2002**, *7*, 271–282. [CrossRef]
91. Puzio, E. The significance of reverse logistics for the waste management system. *Transp. Econ. Logist.* **2018**, *78*, 147–155. [CrossRef]
92. Ossa, A.; García, J.L.; Botero, E. Use of recycled construction and demolition waste (CDW) aggregates: A sustainable alternative for the pavement construction industry. *J. Clean. Prod.* **2016**, *135*, 379–386. [CrossRef]
93. Gungor, A.; Gupta, S. Issues in environmentally conscious manufacturing and product recovery: A survey. *Comput. Ind. Eng.* **1999**, *36*, 811–853. [CrossRef]
94. Mahadevan, K. Collaboration in reverse: A conceptual framework for reverse logistics operations. *Int. J. Product. Perform. Manag.* **2019**, *68*, 482–504. [CrossRef]
95. Lambert, S.; Riopel, D.; Abdul-Kader, W. A reverse logistics decisions conceptual framework. *Comput. Ind. Eng.* **2011**, *61*, 561–581. [CrossRef]
96. Rogers, D.S.; Melamed, B.; Lembke, R.S. Modeling and Analysis of Reverse Logistics. *J. Bus. Logist.* **2012**, *33*, 107–117. [CrossRef]
97. Goggin, K.; Browne, J. Towards a taxonomy of resource recovery from end-of-life products. *Comput. Ind.* **2000**, *42*, 177–191. [CrossRef]
98. Fleischmann, M.; Krikke, H.; Dekker, R.; Flapper, S. A characterization of logistics networks for product recovery. *Omega* **2000**, *28*, 653–666. [CrossRef]
99. Perego, A.; Perotti, S.; Mangiaracina, R. ICT for logistics and freight transportation: A literature review and research agenda. *Int. J. Phys. Distrib. Logist. Manag.* **2011**, *41*, 457–483. [CrossRef]
100. Savaskan, R.; Bhattacharya, S.; Van Wassenhove, L. Closed-Loop Supply Chain Models with Product Remanufacturing. *Manag. Sci.* **2004**, *50*, 239–252. [CrossRef]
101. Hanafi, J.; Kara, S.; Kaebernick, H. Reverse logistics strategies for end-of-life products. *Int. J. Logist. Manag.* **2008**, *19*, 367–388. [CrossRef]
102. Xu, W.; Chen, P.-K.; Ye, Y. Effective Improvement in Supply Chain Integration through a Revised Taxonomy. *IEEE Eng. Manag. Rev.* **2020**, *48*, 127–144. [CrossRef]

103. Lee, C.K.M.; Chan, T.M. Development of RFID-based Reverse Logistics System. *Expert Syst. Appl.* **2009**, *36*, 9299–9307. [CrossRef]
104. Agrawal, T. Role of Rfid To Minimize Reverse Logistics: A Case Study Perspective. *IOSR J. Bus. Manag.* **2012**, *1*, 44–51. [CrossRef]
105. Zhang, S.; Chen, H. Lightweight security authentication protocol for radio frequency identification. *J. Comput. Appl.* **2013**, *32*, 2010–2014. [CrossRef]
106. Jones, P.; Clarke-Hill, C.; Shears, P.; Comfort, D.; Hillier, D. Radio frequency identification in the UK: Opportunities and challenges. *Int. J. Retail Distrib. Manag.* **2004**, *32*, 164–171. [CrossRef]
107. Drożdż, W.; Kuczkowski, R. Economic opportunities of radio-frequency identification technology usage in power distribution sector. *Eur. J. Serv. Manag.* **2018**, *28*, 117–123. [CrossRef]
108. Rahmadya, B.; Wang, J.; Kong, F.; Takeda, S.; Kagoshima, K.; Umehira, M. Ultra-High Frequency Band Radio Frequency Identification Tag Enabling Color-Change for Inventory Management Systems: A Color-Change Tag. *IEEE J. Radio Freq. Identif.* **2020**, *4*, 101–106. [CrossRef]
109. Besiou, M.; Van Wassenhove, L.N. Closed-Loop Supply Chains for Photovoltaic Panels: A Case-Based Approach. *J. Ind. Ecol.* **2015**, *20*, 929–937. [CrossRef]
110. RSA Laboratories. From FAQ on RFID and RFID Privacy. Available online: http://www.rsa.com/rsalabs/node.asp?id=2120#1 (accessed on 30 November 2020).
111. Angeles, R. RFID Technologies: Supply-Chain Applications and Implementation Issues. *Inf. Syst. Manag.* **2005**, *22*, 51–65. [CrossRef]
112. Higgins, L.N.; Cairney, T. RFID opportunities and risks. *J. Corp. Account. Financ.* **2006**, *17*, 51–57. [CrossRef]
113. Mwakalonge, J.L.; Perkins, J.A.; Jones, E.C. Investigating Radio Frequency Identification (RFID) for Linear Asset Management. *Public Work. Manag. Policy* **2013**, *19*, 164–179. [CrossRef]
114. Jing, H. Application of radio frequency identification (RFID) technology in wireless communication network maintenance. *Res. Wirel. Commun.* **2020**, *2*, 1–7. [CrossRef]
115. Kwak, S.-Y.; Cho, W.-S.; Seok, G.-A.; Yoo, S.-G. Intention to Use Sustainable Green Logistics Platforms. *Sustainability* **2020**, *12*, 3502. [CrossRef]
116. Nahavandi, N.; Haghighirad, F.; Farokhi, S. A Dual Model for Describing of Reverse Logistics Inventory Systems. *Int. J. Model. Optim.* **2011**, *1*, 174–179. [CrossRef]
117. Ye, Y.-S.; Ma, Z.-J.; Dai, Y. The price of anarchy in competitive reverse supply chains with quality-dependent price-only contracts. *Transp. Res. Part E Logist. Transp. Rev.* **2016**, *89*, 86–107. [CrossRef]