



HAL
open science

How Best Practices of SCOR DS Model Support Short Supply Chains Management: A Bibliometric Analysis

Gaia Sassone, Taha Arbaoui, Valérie Botta-Genoulaz

► To cite this version:

Gaia Sassone, Taha Arbaoui, Valérie Botta-Genoulaz. How Best Practices of SCOR DS Model Support Short Supply Chains Management: A Bibliometric Analysis. 25th IFIP Working Conference on Virtual Enterprises (PRO-VE 2024), Oct 2024, Albi, France. pp.259-273, <10.1007/978-3-031-71739-0_17>. <hal-04788957>

HAL Id: hal-04788957

<https://hal.science/hal-04788957v1>

Submitted on 18 Nov 2024

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire HAL, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons CC BY 4.0 - Attribution - International License

How Best Practices of SCOR DS Model Support Short Supply Chains Management: A Bibliometric Analysis

Gaia Sassone, Taha Arbaoui, Valérie Botta-Genoulaz

INSA Lyon, Université Lumière Lyon 2, Université Claude Bernard Lyon 1, Université
Jean Monnet Saint-Etienne, DISP UR4570, Villeurbanne, 69621, France
{gaia.sassone, taha.arbaoui, valerie.botta}@insa-lyon.fr

Abstract. Short Supply Chains are considered as one of the viable alternatives to reduce the environmental impact of economic activities. This work introduces a bibliometric analysis of short and classical supply chains using the 281 best practices from the new Supply Chain Operations Reference Digital Standard (SCOR DS) model. For each best practice, the number of papers related to short and classical supply chains is recorded from a literature analysis. Results show that the three most studied best practices are “Make Or Buy Analysis”, “Supply Market Research”, “Supply Chain Optimization”. Nevertheless, some best practices require further investigation of their applicability in short supply chains.

Keywords: Short Supply Chains, Classical Supply Chains, SCOR-DS Model, Best Practices, Bibliometric Analysis

1 Introduction

A supply chain is a complex system that consists of facilities converting raw materials into finished products and distributing them to end consumers [7]. Supply Chains (SC) encompass a broad spectrum of interconnected processes, spanning from raw material extractions to distribution while involving several actors.

In Classical Supply Chains (CSC), actors are generally spread across several continents which complicates the multi-actor collaboration. As a result, multi-actor collaboration is often limited to pairs of actors. On the other hand, Short Supply Chains (SSC), marked by proximity and a streamlined network and a reduced number of collaborative actors, play a pivotal role in meeting the demands of sustainable objectives and rapidly changing markets [8]. More generally, a supply chain can be defined as “short” when characterized by short physical distance or the involvement of at most one intermediary between producers and consumers [11].

The Supply Chain Operations Reference (SCOR) Model, developed by the Supply Chain Council in 1996, is now distributed by the Association of the Supply Chain Management [1]. It is a comprehensive framework designed to guide practitioners to better manage their supply chains and to gain competitive advantage [6, 10]. It provides managers and practitioners with collaborative practices that are based on digital

technologies for a better management of collaborative networks. The SCOR Model has experienced a profound transformation marked by the advent of the SCOR Digital Standard (SCOR DS) model, where the conventional processes Source, Make, Deliver, Return have been replaced by Source, Transform, Order, Fulfill, Return, and introducing a new innovative process Orchestrate [1]. This evolution represents a paradigm shift, providing organizations with a more comprehensive, strategic, and customer-focused framework for supply chain management. Becker's comprehensive analysis [2] critically evaluates the advantages and disadvantages of the SCOR DS model, comparing it with the older standard. The author emphasized some advantages such as the advent of process Orchestrate and a better integration of the digital world in the modeling of the supply chain. On the other hand, the author criticized the new structure that is less intuitive in terms of process alignment and material flow, particularly for practitioners that are used to the old SCOR model. The SCOR model provides Best Practices (BP) for each process and sub-process. The newest version, SCOR DS model, includes numerous changes compared to previous versions, namely adding a rich and diversified set of BPs and emphasizing sustainability and resilience as performance components.

From the academic point of view, numerous papers have explored the supply chain BPs, and their benefits. Cuthbertson and Piotrowicz [5] analysed literature-based case studies presented as BPs for managing supply chains. The findings highlight a focus on economic and operational aspects, revealing a dearth of shared inter-organizational measures and limited attention to social and environmental factors. Schoenherr and Tummala [12] presented an implementation-decision framework to effectively manage supply chains. This framework, linking Supply Chain Management (SCM) goals, enablers, initiatives, activities, and performance measures, draws on best-practice examples from SCM literature to aid companies in making informed decisions. Chardine-Baumann and Botta-Genoulaz [4] developed a framework for sustainable performance assessment of SCM practices. The framework is developed to characterize a company's sustainable performance in the economic, environmental and social fields. Moreover, they analysed relationships between SCM practices and their impacts on performance. Blanchard [3] offers a comprehensive exploration of BPs in SCM, providing valuable insights and practical guidance for practitioners navigating the complexities of modern supply chains.

While various studies have delved into BPs in SCM, exploring their impact and implementation across diverse industries and business sizes, there exists a notable gap in the literature regarding a comparative analysis between BPs in CSC and SSC: some BPs are more suitable for CSC than for SSC. For example, Sales & Operations Planning, which is of real interest to CSC, is of less interest to SSC.

Some research have contributed valuable insights into the comparative analysis of CSCs and SSCs, shedding light on diverse dimensions and implications, particularly in the food sector. Thomé et al. [13] challenged the conventional narrative by presenting a coexistence framework that goes beyond the typical opposition between classical and short food supply chains. Majewski et al. [9] explored the eco-efficiency of food chains in selected EU countries, challenging the widely held assumption that SSCs are inherently more environmentally sustainable due to reduced physical distance.

Pedreschi et al. [11] delve into the avocado supply chain, comparing short (Spanish) and long (Chilean) chains, revealing nuanced insights into the impact of transport and supply chain conditions on primary and secondary metabolites. These comparative studies do not clearly identify the BPs to promote or to avoid in SSCs.

Based on a quantitative literature review, the aim of this paper is to identify the BPs provided by the SCOR DS that are most suitable for SSC. The remainder of the paper is as follows. In the next section, the methodology used to elaborate the review is presented. Section 3 details the results and discusses the research gaps in the literature regarding the BPs for SSCs. Finally, Section 4 concludes and proposes some perspectives.

2 Methodology

2.1 The SCOR DS structure

The new SCOR Digital Standard (SCOR DS) model was published by the Association of Supply Chain Management (ASCM) in September 2022 [1]. It is the 14th version of the SCOR model. The association has chosen the Digital Standard naming to highlight the change in the new version: the model focuses both on the physical and digital world of the supply chain.

The structure of the model has seen a change in its representation. While the old model was represented by arrows that followed each other, each arrow representing a process, the new version represents the processes in loops (or infinity) signaling the constant flow of information between the processes.

Another major change is the naming of level-1 processes. While processes Plan, Source and Return are kept, process Deliver is split between processes Order and Fulfill. Process Make has been renamed to Transform and process Orchestrate has been introduced to take into account the strategic and enable features of SCM.

The new model has four levels, namely 0, 1, 2 and 3. Orchestrate is the only level-0 process. The remaining processes, Plan, Order, Source, Transform, Fulfill, and Return are all level-1. Each process has its level-2 sub-processes and level-3 sub-processes. For example, process Order has three sub-processes: O1 Order B2C, O2 Order B2B, O3 Order Intra-Company. The sub-process O3 has 6 sub-processes: O3.1 Generate Stock Transfer Order (STO), O3.2 Confirm Availability and Delivery Date, O3.3 Apply Allocation Rules, O3.4 Confirm Order, O3.5 Transmit Order, and O3.6 Receive and Process Cancellation. Each process or sub-process is characterized by indicators to measure process performance and best practices allowing the practitioners to improve the process's performance.

The SCOR DS model provides 281 BPs that are associated with processes or sub-processes. Some BP are associated with several processes or sub-processes, indicating that they are transverse. A BP can be associated with a process but not with its sub-process. Each BP is provided with a description allowing its implementation. BPs are also categorized within 19 categories that relate to different aspects of the supply chain: Planning and Forecasting, Material Handling, Reverse Logistics, etc. We refer the reader to the SCOR DS website for a thorough description of the new version SCOR DS [1].

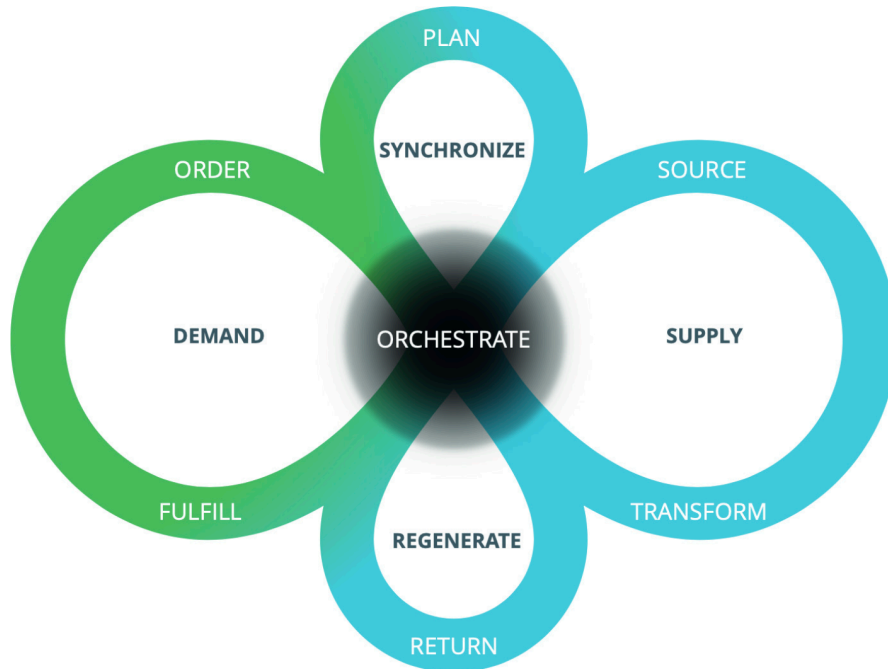


Fig. 1. Structure of the new SCOR DS model [1].

2.2 Bibliometric analysis

A systematic approach to analyse existing literature on the application of the 281 BPs of SCOR DS model in both CSCs and SSCs is used. The Web of Science Database served as the primary source for research. Figure 2 shows the different steps followed in the methodology.

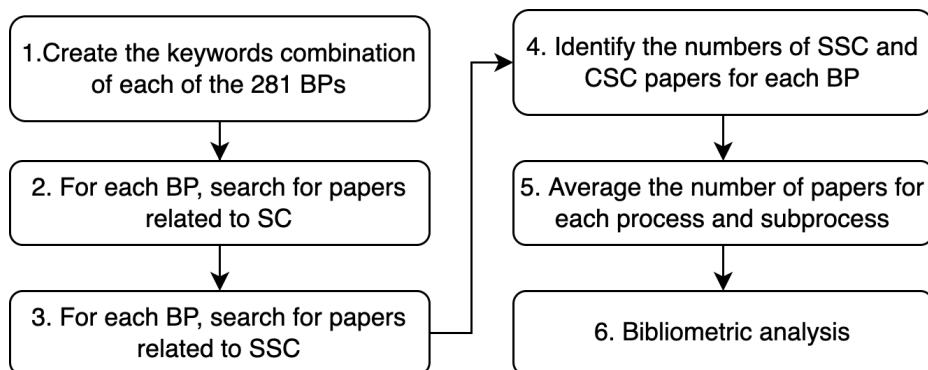


Fig. 2. The different steps of the methodology.

2.3 Illustrative example of the analysis on a Process

Process Order is associated with 6 BPs: BP.326 *Online catalogs*, BP.327 *Online order processing*, BP.328 *Online Order Configurability*, BP.329 *Lead capture and profiling*, BP.332 *Sales Process/Activity Management* and BP.333 *Quotation Management*. For each of these BPs, two search queries are conducted on Web of Science using the keywords of the BP and “supply chain” for the query and “short supply chain” for the second query in the topic search category (topic includes title, abstract and author keywords). For example, for BP.326 Online Catalogs, the first query is “*online catalogs*” AND “*supply chain*” while the second is “*online catalogs*” AND “*short supply chain*”. For the first query, 3 articles were found. For the second query, 0 articles were found (see Table 3). Next, the title and the abstract of the articles are examined to check whether the articles concern BP.326 since the used keywords might appear in the title or the abstract but not necessary linked to the studied BP. Once the figures are obtained for all the BPs of the process, the average number of articles is computed for each process for both CSC and SSC.

3 Results

Two analyses have been conducted to assess the effort of research on each BP (Section 3.1) and on each process (Section 3.2) for both CSC and SSC. The process-centric analysis is based on the results of the BP-centric analysis by showing the research effort given towards each process based on its BPs. Together, these analyses enable the identification of BPs that are more suitable for SSC based on a bibliometric observation.

3.1 BP-Centric Analysis

In this section, we are interested in identifying the BPs that have attracted research effort for SSC and CSC for each main process of the SCOR DS model (Orchestrate, Plan, Order, Source, Transform, Fulfill, Return). Tables 2, 3, 4, 5 and 6, provide, for each BP, the number of papers found for both SSCs (second column) and CSCs (third column) for a given process. As BPs associated with processes Plan and Transform are the same, results are grouped in a single table.

Processes Plan and Transform are associated with exactly the same BPs, as well as process Orchestrate except for the BP.185 Cost of Quality Measurement (Table 2). In processes Orchestrate, Plan and Transform, strategic BPs have been identified as the most studied since they play an important role in shaping the decision of companies. For SSCs, the most studied BPs are Life Cycle Assessment (BP.288), Traceability (BP.300) and Sustainability Reporting (BP.294), playing a crucial role in shaping the overall orchestration of supply chains. However, for CSCs, in addition to Traceability (BP.300) Emission reduction (BP.295) is in the top 3 because of the number of actors in CSCs. It is worth noting that Product-as-a-Service (BP.283), a relatively new BP, appears in multiple processes (Orchestrate, Plan, etc.) but no papers were found for both SSCs and CSCs.

Table 2. Average Number of Papers for BPs of Processes Orchestrate, Plan and Transform.

	SSC avg	CSC avg
OE Orchestrate Supply Chain	3.38	420.53
P Plan / T Transform	3.14	395.50
BP.185 Cost of Quality Measurement (only for processes Plan & Transform)	0	70
BP.282 Circular economy	3	831
BP.283 Product-as-a-Service	0	0
BP.285 Material Passport	0	2
BP.286 Sharing platforms	0	335
BP.288 Life Cycle Assessment	12	835
BP.289 Eco-design	2	87
BP.290 Material Efficiency Management	0	268
BP.291 Energy Efficiency Management	1	288
BP.292 Water efficiency Management	0	65
BP.294 Sustainability reporting	9	307
BP.295 Emission reduction	5	1088
BP.296 Carbon removal/offsetting	2	129
BP.300 Traceability	10	1232

Concerning process Order, managing sales is the main focus for most companies. This is why Sales Process/Activity Management (BP. 332) stands out as the sole BP that received research effort for this process both for SSC and CSC. The other BPs have received less attention until now despite their relevance to SSCs.

Regarding process Fulfill, in addition to Traceability (BP.300), Digital Supply Chain (BP.181) is the BPs that received most of the research effort for both SSC and CSC, followed by Sustainability reporting (BP.294) for SSC and Emission reduction (BP.295) for CSC. We note that these BPs play a crucial role not only in process Transform but in the fulfillment process as well.

Table 3. Average Number of Papers for BPs of Process Order.

O Order	SSC avg	CSC avg
	1.66	378.16
BP.326 Online catalogs	0	3
BP.327 Online order processing	1	46
BP.328 Online Order Configurability	0	0
BP.329 Lead capture and profiling	0	1
BP.332 Sales Process/Activity Management	9	2200
BP.333 Quotation Management	0	19

Table 4. Average Number of Papers for BPs of Process Fulfill.

F Fulfill	SSC avg	CSC avg
	4.33	609.44
BP.181 Digital Supply Chain	9	1277
BP.282 Circular economy	3	831
BP.290 Material Efficiency Management	0	268
BP.291 Energy Efficiency Management	1	288
BP.292 Water efficiency Management	0	65
BP.294 Sustainability reporting	9	307
BP.295 Emission reduction	5	1088
BP.296 Carbon removal/offsetting	2	129
BP.300 Traceability	10	1232

Process Source appears as the most important process in the SCOR DS model, given the number of associated BPs at the first level (82 BPs). Make Or Buy Analysis (BP.256) received most of the research effort for both SSC and CSC. It can be explained by the waves of outsourcing and in-sourcing that companies faced these last years. Supply Market Research (BP.241) is the second place for SSC due to the inherent nature of SSC. Supply Chain Risk Management (BP.001) and Supply Chain Optimization (BP.024) are in the second place for CSC and to a lesser extent for SSC. Next comes Supply Network Planning (BP.016/BP.086) for SSC and to a lesser extent for CSC. The effort of research is higher for SSC due to the reduced number of actors to be coordinated. Then, Traceability (BP.300) and Digital Supply Chain (BP.181) appears important for SSC as well as CSC. On the other hand, Life Cycle Assessment (BP.288) and Sustainability reporting (BP.294) are much more important for SSC compared to CSC. The last two BPs that stand out for CSC are Risk Management Strategies (BP.002) and Blockchain (BP.178) due to the complexity of the supply network.

Process Return is also a process that gathers many BPs in the new SCOR DS model (33 BPs). Supply Chain Optimization (BP.024) is the most studied for both SSC (19) and CSC (7241), as it is strategic for both and has a considerable impact on the decision making. Life Cycle Assessment (BP.288), Traceability (BP.300), Digital Supply Chain (BP.181) and Sustainability reporting (BP.294) are in the second set of BPs receiving considerable research effort for SSC. Network Optimization (BP.029) appeared in the second set for CSC. This BPs is naturally important for CSC. We note that, in this process, two BPs, namely Inventory Optimization (BP.028) and Risk Management Strategies (BP.002), have received considerable research effort in CSC but not in SSC as explained previously.

Table 5. Average Number of Papers for BPs of Process Source.

S Source	SSC avg	CSC avg
	3.58	715.37
BP.001 Supply Chain Risk Management (SCRM)	10	4799
BP.002 Risk Management Strategies	3	1578
BP.004 Network Prioritization for Risk Identification	0	3
BP.016 Supply Network Planning	11	1692
BP.021 Sales and Operations Planning (S&OP)	0	101
BP.023 Business Rule Management	0	100
BP.024 Supply Chain Optimization (SCO)	19	7241
BP.026 Improve Sales and Operations Planning (S&OP) Process	0	16
BP.049 Lean Planning	0	80
BP.062 Master Data Accuracy	0	2
BP.068 Supplier Performance Reporting	1	137
BP.080 Enterprise Performance Management	0	1276
BP.082 Continuous Improvement	0	233
BP.083 Project Management	2	1205
BP.086 Supply Network Planning	11	1692
BP.100 Strategic Sourcing	1	394
BP.101 Purchasing and Procurement Strategy	0	79
BP.126 Supply Chain Control Towers	0	10
BP.138 Theory of Constraints (TOC)	1	276
BP.149 Supply Chain Risk Management (SCRM) Strategy Implementation and Analysis	0	79
BP.150 Maintain Supply Chain Risk Register	0	0
BP.155 Standard Operating Procedures	0	16
BP.156 Collaborative Planning, Forecasting and Replenishment (CPFR)	0	60
BP.160 Lean	2	775
BP.161 Spend Analysis	0	42
BP.162 Long-Term Supplier Agreement or Partnership	5	876
BP.163 Supply Base Rationalization	0	14
BP.166 Document Management System	0	115
BP.173 Supply Chain Risk Monitoring	0	281
BP.174 Supply Chain Risk Assessment	2	931
BP.178 Blockchain	4	1647
BP.179 Demand-Driven Material Requirements Planning (DDMRP)	0	0
BP.180 Demand-Driven Sales and Operations Planning (DDS&OP)	0	1
BP.181 Digital Supply Chain	9	1277
BP.182 Internet of Things (IOT)	2	816
BP.183 Integrated Business Planning (IBP)	1	209
BP.184 Scenario Planning	0	616
BP.185 Cost of Quality Measurement	0	70
BP.187 Supply Chain Finance	8	1375
BP.189 Augmented Reality	0	35

Table 5 continued. Average Number of Papers for BPs of Process Source.

S Source	SSC avg	CSC avg
BP.194 Predictive Analytics	0	268
BP.195 Digital Twin	0	113
BP.196 Smart Contracts	2	376
BP.197 Advanced Data Visualization	0	0
BP.204 Machine Learning	1	354
BP.206 Virtual Reality	0	27
BP.232 Green Procurement	1	176
BP.233 Ethical Procurement	0	14
BP.241 Supply Market Research	55	2831
BP.244 Sustainable Specification Development	1	7
BP.245 Supplier Certification Program	0	17
BP.246 Sustainable Procurement Strategy	2	68
BP.256 Make Or Buy Analysis	62	11167
BP.257 Outsourcing	1	711
BP.263 E-Catalogs	0	3
BP.282 Circular economy	3	831
BP.283 Product-as-a-Service	0	0
BP.285 Material Passport	0	2
BP.286 Sharing platforms	0	335
BP.288 Life Cycle Assessment	12	835
BP.289 Eco-design	2	87
BP.290 Material Efficiency Management	0	268
BP.291 Energy Efficiency Management	1	288
BP.292 Water efficiency Management	0	65
BP.294 Sustainability reporting	9	307
BP.295 Emission reduction	5	1088
BP.296 Carbon removal/offsetting	2	129
BP.300 Traceability	10	1232
BP.301 Proof of concept	0	73
BP.302 Social Procurement	0	163
BP.305 Digital Invoice and Payments Processing	0	0
BP.306 Digital Contract Management	1	64
BP.307 Web Services	0	263
BP.309 Data master file management	0	0
BP.314 Metadata management	0	13
BP.318 Engineer Trading Partner Processes	0	0
BP.319 Internal Infrastructure and System Re-engineering	0	0
BP.320 e-Application Architecture	0	0
BP.321 Web-Based Applications	0	53
BP.326 Online catalogs	0	3
BP.327 Online order processing	1	46
BP.330 Contact Management	1	70

Table 6. Average Number of Papers for BPs of Process Return.

R Return	SSC avg	CSC avg
	2.58	752.48
BP.002 Risk Management Strategies	3	1578
BP.014 Demand Planning and Forecasting	1	238
BP.024 Supply Chain Optimization (SCO)	19	7241
BP.028 Inventory Optimization	2	1804
BP.029 Network Optimization	7	3381
BP.074 Process and Metrics Alignment	0	10
BP.113 Cross-Functional Teams	0	23
BP.145 Supplier Collaboration	3	812
BP.181 Digital Supply Chain	9	1277
BP.185 Cost of Quality Measurement	0	70
BP.195 Digital Twin	0	113
BP.196 Smart Contracts	2	376
BP.197 Advanced Data Visualization and Visibility	0	0
BP.219 Service Request Management	0	35
BP.223 Service Knowledge Management System	0	169
BP.224 Service Validation and Testing Management	0	8
BP.226 Service Design Management	2	1363
BP.227 Service Transition Management	0	43
BP.228 Service Problem Management	0	678
BP.229 Continual Service Improvement	0	2
BP.282 Circular economy	3	831
BP.283 Product-as-a-Service	0	0
BP.285 Material Passport	0	2
BP.286 Sharing platforms	0	335
BP.288 Life Cycle Assessment	12	835
BP.289 Eco-design	2	87
BP.290 Material Efficiency Management	0	268
BP.291 Energy Efficiency Management	1	288
BP.292 Water efficiency Management	0	65
BP.294 Sustainability reporting	9	307
BP.295 Emission reduction	5	1088
BP.296 Carbon removal/offsetting	2	129
BP.300 Traceability	10	1232

3.2 Process-Centric Analysis

Some processes include BPs that have attracted significant research attention, obtaining averages above the global average. In contrast, other processes encapsulate BPs that have not received as much attention, obtaining averages below the global average. Table 7 presents, row by row, the average number of papers obtained for each process and sub-process of the SCOR DS model. In the first column, the name of the process

or sub-process is provided. The second column (respectively third column) is dedicated to the average number of papers tackling the BPs in SSCs (respectively CSCs). The first row of Table 7 presents the Global Average, 1.79 for SSC and 412.67 for CSC. The average number of papers tackling the BPs of sub-process “O1 Order B2C” is 1.67 for SSC and 439.33 for CSC. As BPs related to a sub-process are not necessarily associated with the process itself (see Table 1), the average number of papers tackling all BPs of each process and its sub-processes is given on the first row of each process, as a “grouped” process. For example, we have an average of 2.57 papers per BP for all BPs associated with the grouped process Order (O, O1, O2 and O3).

We have seen in the previous section that there is a noticeable difference between SSCs and CSCs, since SSCs have been recently investigated in research. There are also some differences between the processes. For SSC, we notice that the average number of papers for main processes alone (Orchestrate, Plan, Source, Transform, Fulfill and Return) is higher than the one of the grouped processes, except for process Order. This means that the research effort has been mainly directed to BPs associated with main processes. For CSCs, the same trend can be noticed only for processes Fulfill, Source and Return. This may be due to the keyword combination of BPs associated with these processes which often includes the term supply chain.

Table 7. Average Number of Papers Per Processes and Sub-processes.

SCOR DS Model Category	SSC Avg	CSC Avg
Global Average	1.79	412.67
Grouped Orchestrate	2.56	555.03
OE Orchestrate	3.38	420.53
OE1 Supply Chain Strategy	3.21	449.43
OE2 Business Rules	0.86	324.86
OE3 Performance and Continuous Improvement	0.97	377.83
OE4 Data, Information, and Technology	4.19	742.81
OE5 Human Resources	2.00	638.26
OE6 Contracts and Agreements	1.14	331.86
OE7 Network Design	3.88	847.92
OE8 Regulatory and Compliance	0.00	365.50
OE9 Risk	4.54	975.30
OE10 Environment, Social, and Governance	2.13	341.17
OE11 Enterprise Business Planning	1.00	101.00
OE12 Segmentation	2.13	541.10
OE13 Circular Supply Chain Management	2.53	336.79
Grouped Plan	2.64	635.63
P Plan	3.14	395.50
P1 Plan Supply Chain	2.90	778.75
P2 Plan Order	2.50	400.42
P3 Plan Source	2.38	674.29
P4 Plan Transform	2.19	491.26
P5 Plan Fulfill	2.85	763.66
P6 Plan Return	2.30	504.53

Table 7 continued. Average Number of Papers Per Processes and Sub-processes.

SCOR DS Model Category	SSC Avg	CSC Avg
Grouped Order	2.57	410.17
O Order	1.66	378.16
O1 Order B2C	1.67	439.33
O2 Order B2B	2.81	448.62
O3 Order Intra-Company	2.00	347.67
Grouped Source	2.77	566.51
S Source	3.58	715.37
S1 Strategic Source	2.61	691.18
S2 Direct Procure	1.41	361.46
S3 Indirect Procure	1.80	444.35
S4 Source Return	1.73	430.80
Grouped Transform	2.05	475.56
T Transform	3.14	395.50
T1 Transform Product	2.00	398.27
T2 Transform Service	2.50	323.44
T3 Transform Maintenance, Repair, and Overhaul (MRO)	2.60	617.83
Grouped Fulfill	2.11	579.84
F Fulfill	4.33	609.44
F1 Fulfill B2C	2.13	542.74
F2 Fulfill B2B	2.13	603.13
F3 Fulfill Intra-company	2.67	515.22
Grouped Return	2.03	559.48
R Return	2.58	752.48
R1 Return Product	2.06	516.67
R2 Return Service	2.04	525.79
R3 Return MRO	1.98	495.78

Within process Orchestrate, the BPs of the OE9 Risk process has received the most research effort for both SSC and CSC (figures 4.57 and 975.30 are close to double the average 3.58 and 825.34 respectively). This can be explained by the nature of these processes directly related to the client satisfaction. In second position, we found the BPs of the OE7 Network Design in CSC because of the complexity of such supply chains, and OE4 concerning Data, Information and Technologies in SSC as information flows are core components of SSC. There is only one BP related to OE8, for which no papers have been found in SSC.

For process Plan, the BPs related to sub-processes P1 and P5 are the most frequent in the literature for CSC (figures are close to double the average). Concerning process Order, it is worth noting that the contrast between the research effort in BPs related to process Order B2B and process Order B2C is important in SSC (2.81 vs 1.67) whereas it is negligible in CSC (448 vs 439). Concerning process Fulfill, the BPs associated with sub-process F3 Fulfill Intra-company has been studied more in the case of SSC

whereas the BPs associated with process F2 Fulfill B2B have been studied more in CSC. Concerning process Source, for both SSC and CSC, the strategic dimension has received more research attention (S1 Strategic Source). For both SSCs and CSCs, the BPs associated with the Maintenance, Repair and Overhaul (MRO) are the most studied in the case of process Transform but the least studied in the case of process Return. This analysis shows that processes Source and Fulfill have the most studied BPs for SSC (3.58 and 4.33 respectively, more than double the Global Average).

4 Conclusion

This paper presents a bibliometric comparative analysis of research effort related to the 281 BPs of the SCOR DS model in the context of SSCs and CSCs. Using a BP-centric following by a process-centric analysis, it was possible to identify BPs that have received most of the research effort in the context of SSCs or CSCs. Four BPs stand out for both SSC and CSC: Make Or Buy Analysis (BP.256), Supply Market Research (BP.241), Supply Chain Optimization (BP.024), Supply Chain Risk Management (BP.001). Two additional BPs appear important for SSC: Life Cycle Assessment (BP.288), Supply Network Planning (BP.016/086) and one BP for CSC: Emission reduction (BP.295). The analysis of research effort by BP reveals certain processes such as S Source, F Fulfill, OE4 Data, Information, and Technology, OE7 Network Design and OE9 Risk for SSC. The last two processes also emerge for CSC. It is worth noting that the leading BPs for SSC are collaborative BPs.

This analysis lays the ground for future research to identify the BPs of the SCOR DS model to be more studied. Several BPs, such as Risk Management Strategies (BP.002), Demand Planning and Forecasting (BP.014), Inventory Optimization (BP.028), Service Design Management (BP.226) and Emission reduction (BP.295), have received considerable research effort in CSCs but not for SSCs. Thus, studying their applicability in SSCs can be of interest for future works.

References

1. ASCM: SCOR Model DS (2022), <https://scor.ascm.org/>
2. Becker, T.: Improving the SCOR model: Is the new SCOR Digital Standard a better process reference model? *Journal of Supply Chain Management, Logistics and Procurement* **6**(2), 155–167 (2023)
3. Blanchard, D.: *Supply chain management best practices*. John Wiley & Sons (2021)
4. Chardine-Baumann, E., Botta-Genoulaz, V.: A framework for sustainable performance assessment of supply chain management practices. *Computers & Industrial Engineering* **76**, 138–147 (2014)
5. Cuthbertson, R., Piotrowicz, W.: Supply chain best practices—identification and categorisation of measures and benefits. *International Journal of Productivity and Performance Management* **57**(5), 389–404 (2008)

6. Delipinar, G.E., Kocaoglu, B.: Using SCOR model to gain competitive advantage: A literature review. *Procedia-Social and Behavioral Sciences* **229**, 398–406 (2016)
7. Ganeshan, R.: An introduction to supply chain management. <http://lcm.csa.iisc.ernet.in/scm/supplychainintro.html> (1995)
8. Kneafsey, M., Venn, L., Schmutz, U., Balazs, B., Trenchard, L., Eyden-Wood, T., Bos, E., Sutton, G., Blackett, M.: Short food supply chains and local food systems in the eu. a state of play of their socio-economic characteristics. *JRC scientific and policy reports* **123**, 129 (2013)
9. Majewski, E., Komerska, A., Kwiatkowski, J., Malak-Rawlikowska, A., Was, A., Sulewski, P., Golas, M., Pogodzinska, K., Lecoeur, J.L., Tocco, B., et al.: Are short food supply chains more environmentally sustainable than long chains? a life cycle assessment (LCA) of the eco-efficiency of food chains in selected EU countries. *Energies* **13**(18), 4853 (2020)
10. Nicoletti, B.: *Supply Network 5.0: How to Improve Human Automation in the Supply Chain*. Springer Nature (2023)
11. Pedreschi, R., Ponce, E., Hernandez, I., Fuentealba, C., Urbina, A., Gonzalez-Fernandez, J.J., Hormaza, J.I., Campos, D., Chirinos, R., Aguayo, E.: Short vs. long-distance avocado supply chains: Life cycle assessment impact associated to transport and effect of fruit origin and supply conditions chain on primary and secondary metabolites. *Foods* **11**(12), 1807 (2022)
12. Schoenherr, T., Tummala, V.: Best practices for the implementation of supply chain management initiatives. *International Journal of Logistics Systems and Management* **4**(4), 391–410 (2008)
13. Thomé, K.M., Cappellesso, G., Ramos, E.L.A., de Lima Duarte, S.C.: Food supply chains and short food supply chains: Coexistence conceptual framework. *Journal of Cleaner Production* **278**, 123207 (2021)