

Supply Chain Management Operations Reference (SCOR): Study Bibliometric

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The reference model SCOR (Supply Chain Operations Reference Management) was built to represent, analyze, and configure the Supply Chain (SC), having as basic pillars: plan, supply, produce, deliver and return, in order to standardize processes along the supply chain. In this context, this article aims to review scientific literature related to the topic SCOR, published in the Emerald database. Using the word as a term SCOR, 150 articles were found, but only 61 articles obeyed the selection criteria, being included in the analysis. The items investigated, by year of publication, were: journal, study type, methodology, type of supply chain investigated and the main topics discussed. As the survey results, the year 2009 had the greatest number of publications, 16% in total; the research method most often used was the case study, with 57%; the performance management was the most investigated chain model, representing 28%; and the main theme stood between "performance", "knowledge management" and "framework and model". It follows, therefore, that studies related to SCOR are addressing relevant and actual topics; however they still need further research to unify the concepts focused on these subjects.

Keywords: SCOR, Reference Model SCOR, Supply Chain Operations Reference Management, Supply Chain Management, Research Bibliometric

INTRODUCTION

The concepts of supply chain and supply chain management have been set up as a means to make or keep businesses competitive in a challenging global environment (Cooper & Ellram, 1993). The traditional market competition where organizations competed individually has been complemented by competition between supply chains (Srai & Gregory, 2008).

However, it is necessary to manage these chains so that the expected results are achieved, and thus

came the term supply chain management (Supply Chain Management - SCM), which should focus on cooperation and trust among members, and the quest for the performance of the whole can be greater than the sum of the parts that constitute (Christopher & Ryals, 1999). In this sense, the collaboration between the links of the chain has become a strategy for companies to create competitive advantage.

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To help organizations increase the effectiveness of their supply chain to support the management of business processes based on the Supply-Chain Council - SCC (1996), along with other leading companies in the U.S. have the model SCOR (Supply Chain Operations Reference Model Management), which was tested and adjusted in different industry segments, and in 1997 became the reference model.

According to Stewart (1997) model provides common terminology and standardizes the description of processes. Similarly, Stadtler and Kilger (2005), argue that the less one is aware about the different usage of a term, the more likely mistakes occur. Thus, as the model uses standardized metrics to the procedures adopted and the activities, "processes can be measured, managed, controlled and redesigned to achieve a particular purpose," in the practice of management by processes in particular supply chain (Pires, 2011).

The SCOR is a process reference model designed for effective communication among supply chain partners (SCC, 2006). Thus, this study aims to analyze the scientific production related to the theme Supply Chain Management Operations Reference Model (SCOR) database published in Emerald.

The paper is structured as follows: first presents the main concepts of supply chain management and SCOR, followed by the description of methodological procedures. Subsequently, the results are presented and discussed. Finally conclusions are made about the findings in the research.

THEORETICAL

Supply Chain

In the past, the decision making process was usually decided within a single company, however, companies no longer compete individually as standalone units and started to compete between networks, which gave rise to forms of integration as the Supply Chain (Supply Chain) which highlights the need to break down the barriers between companies to expand

partnerships beyond its borders (Lambert & Cooper, 2000).

The supply chain can be defined as "a network of organizations that are involved through upstream and downstream linkages, the different processes and activities that produce value in the form of products and services in the hands of the end user" (Christopher, 1999). In a broader sense it can be said that the supply chain is two or more legally separate organizations, but are connected by flows of information, material and financial, in order to meet customer needs.

It is noteworthy that these companies may be producing parts, components and end products, logistics service providers, and even customers (end). This definition also includes the target group, ie, the end customer (Stadler, 2002).

Thus, in 1980, came the term Supply Chain Management (SCM) or Supply Chain Management, according to Lambert and Cooper (2000) is defined as "the integration of key business processes from end user to original suppliers that provide products, services and information that add value for customers and other stakeholders."

The SCM assumes cooperation between buyers, suppliers and service providers, which unite to find optimal solutions for the storage, transportation, information flow, among others, in addition, considers the behavioral and political confidence and power, conflict and dependency between supplier and buyer (Mills et al., 2004).

Structure of the supply chain

The structure of the supply chain consists of member companies and their linkages, considering all firms in the chain, from supplying raw materials to the end consumer. Licking and Cooper (2000) emphasize that the closeness of the relationship between the companies will differ and management will be responsible for choosing the appropriate level of partnership for each connection.

Noting that the members of a supply chain include all companies with which the focal company interacts directly or indirectly through its suppliers

or customers, from point of origin the point of consumption (Figure 1). Thus, the analysis of the supply chain occurs from the focal firm.

FIGURE 1 HERE

According Stadler (2002) there are two ways to improve the competitiveness of a chain. One is to promote greater integration between the organizations involved and the second is to establish better coordination of information flows, material and financial links between. Thus, it is necessary to apply a method that identifies chain processes, to identify the chain of activities between companies, a model can be proposed SCOR (SUPPLY CHAIN OPERATIONS REFERENCE MODEL).

Supply Chain Operations Reference Model

Supply Chain Operations Reference Model was developed by the Supply Chain Council (SCC). The model was initially created by two private companies research and consulting U.S. – the Pitiglio Rabin Todd & McGrath (PRTM and Advanced Manufacturing Research (AMR) of 1996. Earlier the model was tested by a group of administrators who worked in leading companies in the U.S. In the same year, other companies in the group and formed the Supply Schain Council (SCC), a private company based in the U.S. After again be tested and adjusted in different segments of the industry, it became in 1997, the reference model supported and directed by Supply Chain Council (Stewart, 1997; Stadtler & Kilger, 2005; Pires, 2011).

The SCOR integrates the concepts of business process reengineering, benchmarking and process measurement into a multifunctional structure (SCC, 2006), and defined by Lambert (2006) and Morais (2008) as:

- a) Re-engineering of business processes, a technique used to "capture" the natural state of processes ("as-is"), from it and allow the design of the desired future state ("to-be");
- b) Benchmarking, used to measure the operating performance of similar companies and establish

objective values for internal performance indicators;

- c) Analysis of best practices, which helps identify management practices and software solutions used successfully in similar companies, considered "top performers".

The Supply Chain Management is critical to the improvement of internal processes for any company to maintain competitive advantage. Thus, the operations of the supply chain for the SCOR model is based on five elements of core business processes, which are: planning, supply, make, deliver and return. According Supply-Chain Council (2006, version 8.0) and Pires (2011) the five business processes are defined as follows:

- a) plan: covers the processes that aims at balancing resource capacity with demand across the supply chain. Also part of this process, performance measurement, inventory management, asset and transportation, among others.
- b) source: provides the supply of materials to produce the modalities: MTS (Make-to-Stock), MTO (Make-to-Order), ETO (Engineering-to-Order), as well as the selection of suppliers, delivery, receipt of product and process payment authorization providers.
- c) make: in that process, is what comes to internal programming of production in the company in the short term, given the current demand and planned. Still, according to Pires (2011), the process is responsible for issues such as receipt of goods, manufacturing and testing of products, packaging, storage and dispatch of finished products;
- d) deliver: is the process includes all necessary measures for the management of applications, from the production company to the end consumer.
- e) returns: is the process that has reverse supply chain and is subdivided into two stages: the first deals with the returns of production in the distribution chain (contemplates from the end consumer to the supplier) and the second deals with the returns of material supply in step

(contemplates from the company to the point of origin of the supply chain) (Pires, 2011), also covers the management policies for the return of goods, performance measurement, manage inventories and finally collects the data.

The aim of the SCOR model, is to improve the alignment between the market and the strategic reaction of a supply chain, in search of a higher performance with the effective management of the five key processes through performance indicators (Rodrigues et al., 2006).

MATERIALS AND METHODS

This study was developed from a bibliometric survey, seeking to expand knowledge regarding publications related to the topic: SCOR (Supply Chain Management Operations Reference) in the database Emerald in the period 1997-2012. We performed the analysis of scientific publications, reviewed and indexed in databases Emerald, where the literary search was conducted through a qualitative approach (Gil, 1999; Malhotra, 2005). Was used as the source for data collection database Emerald due to its importance in academic science in the area of Social and Applied Sciences.

Therefore, initially we selected the articles in the database, using as search term keyword: SCOR, delimiting the search for the period 1997-2012, resulting in 150 articles. Then, followed the reading of selected articles and filtering based on the alignment with the research topic.

Some criteria were used to classify the articles in this study. The first parameter used to identify the referred journals and authors who have published on this subject in the database. The second parameter was related to the methodology of these studies, being separated into two major classes: theoretical work, ie, those who had type theoretical research conceptual (conceptual discussions and literature reviews) and practical work including research type experimental, surveys, case studies and action research. All use the practice to test or validate a given concept. The third category was used in classifying the type of supply chain where the study was conducted. Finally, the fourth parameter of the classification was proposed in

relation to the scope of study of articles that have integrated this sample.

Data for analysis were extracted from the selected articles and recorded in the structured spreadsheet software Excel – Microsoft 2007, containing the following variables: authors, year of publication, journal, type of supply chain, methodology, implementation and review of the literature.

RESULTS

The search in the database Emerald, available at: <http://www.emeraldinsight.com>, was held on September 13, 2012 with the following search term: SCOR. The search resulted in 150 articles. After excluding articles that did not fit with the proposed goal, by reading the title and abstract, 61 remained in the sample analyzed.

Regarding the journals that published more about SCOR, can be seen in Figure 2 that Supply Chain Management: An International Journal, the paper which was published many articles over to SCOR, totaling 13 articles. Then, Benchmarking: An International Journal 8 and International Journal of Productivity and Performance Management with 6 articles.

FIGURE 2 HERE

The first publication on the subject recorded in the database was investigated in 1997, there is an increase of articles related to SCOR from 2000. Since the year 2009 was the highest number of publications on the topic in this database.

Observing Figure 3 in which is described the year in which the articles were published in journals, there is a clear manifestation of the studies related to the topic especially in the years 2009 (10 articles), 2007 (9 articles), 2010 (8 articles) e 2008 (7 articles). The low number of publications in the first four years presented in Table 1 is believed to be due to the applicability of the model has started its test phase only 1997, when it was supported and indicated by Supply-Chain Council. Stewart (1997) was the first to make a study and exploration of the conceptual model, when the basics of SCOR were only four (plan, source, make e return), being referenced by most researched

articles. Hollingum (2000) commented on the model at a conference; Landeghem Persoons (2001) performed the first case study; and the authors Li; Kumar; Lim (2002) the first review of the literature.

FIGURE 3 HERE

Regarding the number of articles per author, it can be seen in Table 1 that there is a multiplicity and diversity as to the authorship of the works, since most authors have only one article on this subject, published in this database. Since the author who leads this list is Kevin McCormack with 4 published articles.

TABLE 1 HERE

Of the studies reviewed, it appears that 35 (57%) performed a case study, applying SCOR reference model in some kind of supply chain. It is also noted that 18 (30%) performed a literature review about the model and other forms of study 6 (10%) (Table 2). This result confirms what is said by Yin (2005) recommends that the case studies, although criticized by some researchers, continue to be used extensively in research in the social sciences, is a method frequently used in theses, dissertations and articles published.

TABLE 2 HERE

Furthermore, it is noteworthy that only 2 (3%) of the 61 studies addressed the Brazilian supply chain, one published in 2008 and another in 2012, being prepared by the same authors: Marcelo Bronzo Ladeira, Marcos Paulo Valadares de Oliveira and Kevin McCormack. The first study, in 2008, was the "supply chain maturity and performance in Brazil"; the second (2012) was conducted in Brazilian companies with industrial segment. This result reflects a lack of scientific articles published in international journals covering SCOR supply chain in Brazil (Table 2).

The third criterion of this study were the types of chains studied by the authors, showed that 12 (20%) of the 61 articles conducted studies in the supply chain industry, followed by supply chain technology with 8 items and service with 7 items (Table 3).

TABLE 3 HERE

As for the main topic addressed by the selected articles were listed 14 codes containing the main scopes checked, as can be seen in Table 4.

Thus it can be seen that most of the articles had scoped to study the performance of the supply chain. This result corroborates the findings of the literature which emphasize that the changes in the business environment there is an increase in competitiveness among all sectors, making it necessary to evaluate and measure the performance of the chain, strategies and to assist in decision making, in order to ensure that the objectives are achieved, and to promote systemic improvements to the links (Krause & Ellram, 1997).

In addition to demonstrating consistency with the object of this study the SCOR model, since it uses standardized metrics to manage the supply chain and thus improve the performance of the supply chain (Pires, 2011).

It is noteworthy that the second issue addressed by most studies was related to knowledge management (Figure 4), which also is in line with what is recommended in the literature, which highlights that knowledge is the only source to ensure competitive advantage and sustainable economic growth (Spender, 2008). According Chiva and Alegre (2005) the company is an institution for integrating knowledge, and the key to efficiency and competitive advantage is the efficient integration of expertise among members. Similarly, the practice of knowledge sharing between the links of the supply chain has become common since stimulates the competitive advantage of the chain as a whole (Espallardo et al, 2010).

The third issue addressed by most studies evaluated was the proposal of a framework, Rowley and Slack (2004) claim that the representation framework is the way researchers develop their understanding of certain subject, may be helpful for the systematic review. In this sense, the large number of studies on this subject is mainly due to the fact that SCOR is a recent issue, formulated in 1997, gaining notoriety in subsequent years (Pires, 2011), containing also a

lack of consistency in the use of the term, where different concepts associated with the term (Dubois et. al.; 2004).

TABLE 4 HERE

It can be seen by reading the articles, there is initiative to produce knowledge on the SCOR model, but that is still very nascent compared to the topic supply chain. Thus, becomes necessary to conduct studies that address the application of this model in various types of supply chains, serving subsidies both for companies and for the academic, providing information about their strengths and weaknesses.

CONCLUSIONS

Over the last few years, several approaches are used in supply chains in order to increase the competitiveness of companies, seen the current business environment requires organizations immediate responses to the needs demanded by customers.

Studies are conducted and published, on the topic management and performance management of the supply chain, and thus increases the understanding of the subject and broadens the research base. This study aimed to investigate in depth the research related to the topic in the SCOR database EMERALD.

The SCOR model is the acronym of Supply Chain Operations Reference Model which was developed by the Supply-Chain Council (SCC), map the having as proposed processes all types of supply chain. In this regard, Cardoso (2008) presented the following definition: reference models are standardized templates and generics, which play a reference role for agents who take decision regarding practices to be employed in operations and organizational processes.

Thus, as a result of this research it was found a large number of studies published in the journal Supply Chain Management: An International Journal at 13 (21,3%), which according Malafaia (2010) are factors that contribute to visibility of the journal the means of publishing manuscripts of high quality and efficient editorial process.

In summary, it is observed that the theme "reference model", had its highlight in 2009 (16%), however, keeping emerging between the years 2007 to 2010, which indicates the lack of studies on the application of that model in supply chain today.

It was observed also in the search results that the authors of the 61 selected articles, 35 (57%) used as a research method the "case study", but of these, only 39 (64%) were able to identify the type of chain addressed; 21 (36%) the amount is not clearly identifiable, and is thus a limitation in the study.

Still, it was possible to identify only two articles with the participation of Brazilian authors, it was a study of supply chain maturity and performance in Brazil and another was in a generic supply chain industries Brazilian, be a future opportunity of new publications internationally.

The field of study of the SCOR reference model, is still fragmented, which can be clearly seen from the existence of several groups of authors. It is emphasized that this is a critical point, because it hinders the sharing of ideas. This would facilitate the development of the strategy together, ie, that network members collectively combine strategic objectives for the network and the means of achieving them (Christopher, 2011). The lack of research planning possibly generates fragmentation and second Bulgacov & Verdu (2001).

We also conclude that in Brazil there is a lack of relevant studies that employ this model in supply chain. Thus, it becomes essential investment in research to apply this reference model serving subsidies for future research, better clarifying the relationship between a good chain performance and use of these tools.

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APPENDIX

TABLE 1

Table 1: Number of articles by authors.

Number of articles	Authors
4	Kevin McCormack
3	Ramaswami Sridharan, Togar M. Simatupang
2	Archie Lockamy III, C. Clifford Defee, Herbert Kotzab, Jitesh Thakkar, John T. Mentzer, Mike J. Gregory, R. Glenn Richey, Ruey-Kei Chiu, S.G. Deshmukh, Umit S. Bititci, A. Makui, A.H.M. Shamsuzzoha, Adisak Theeranuphattana, Ajay Sharma, Alexander Pflaum, Amik Garg, Andrew Potter, Angel Rafael Martínez-Lorente, Arun Kanda, Bhaskar Patel, Bongsug (Kevin) Chae, Brent Williams, Byung Seok Choi, Carol L. Monroe, Cesar Toscano, Chen Chung, Chunguang Bai, Colin B. Gabler, Craig Shepherd, Cristina Giménez, Cristóbal Sánchez-Rodríguez, D.K. Banwet, D.R. Towill, Damian Stantchev, Damien Power, Dan L. Shunk, Daniel A., David B. Grant, David C.H. Vuong, Don Malzahn, Douglas W. Frye, E. Teimoury, Elizabeth Barber, Erlend Alfnes, Euthemia Stavroulaki, F. Jalalvand, G. Frizelle, Ge Wang, Gerry Frizelle, Glaser-Segura, Gordon Stewart, Günter Prockl, Hannes Günter, Heiko Thimm, Helena Forslund, Helena R. Lourenço, Heriberto Garcia Reyes, Hong Mo Yang, Horatiu Cirtita, Hyung Jin Park, I. Nyoman Pujawan
1	Ilyas R. Mohammed, J. Efstathiou, J. Troy Carpenter, Jaana Auramo, Jagjit, Singh Srail, Jalal Ashayeri, James C. Brau, James H. Foggin, James R. Stock, James S. Keebler, Jason C.H. Chen, Jesper Aastrup, Joachim van den Bergh, Joakim Wikner, Johannes Schmitz, John C. S. Tang, John Hovis, John Mills, Jorge Caldera-Serrano, Joseph R. Carter, Joseph Sarkis, Jouni Kauremaa, Jurgen Willems, K. Persoons, Karen Spens, Kari Tanskanen, Karsten Boye Rasmussen, Kevin Burgess, Kobe Naesens, Kuan Yew Wong, Larry E. Whitman, Laudine H. Geraldin, Lauren R. Skinner, Liliane Pintelon, Linda Hendry, Ludo Gelders, Maike Scherrer-Rathje, Marcelo Bronzo Ladeira, Marcos Paulo Valadares de Oliveira, Mark Davis, Mark Johnson, Mihalios Giannakis, Mohamed Sulaiman, Mohammed Saad, Murali Sambasivan, Natalia Kitaygorodskaya, Nucharee Supatn, Ou Tang, P. Childerhouse, P.R.C. Gopal, Pankaj Raj Sinha, Paolo Gaiardelli, Patricia Loh, Patrik Jonsson, Paul T. Bryant, Pavel Albores, Pedro Sena Ferreira, Pei-Ni Huang, Peter Tatham, Peter Westort, Petri Helo, Pichawadee Kittipanya-ngam, Pichet Kunadhamraks, Pnina Soffer, Prakash J. Singh, Preetpreem Nonthaleerak, Premkumar Rajagopal, R. Van Landeghem, Ravi Shankar, Remko van Hoek, Rhonda R. Lummus, Richard Cummings, Richard E., Plank, Rick Hoole, Robert J. Vokurka, Robert Ogulin, Ronald Giachetti, Russ Kashian, Ruth Banomyong, S. Sivadasan, S.C. Lenny Koh, Samuel H. Huan, Sergio Cavalieri, Shamsuddin Ahmed, Shiao-Ping Yu, Shinya Hanaoka, Stefan E. Genchev, Stefan Holmberg, Stefanie L. Boyer, Stefano Ierace, Suhaiza Zailani, Sunil K. Sheoran, Tamer Chavusholu, Tamizarasu Nandan, Terry L. Esper, Thomas Gullledge, Thomas J. Goldsby, Thomas Neubauer, Thomas R. Gullledge, Tim S. McLaren, Todd A. Boyle, Tommi Tuominen, Torbjörn H. Netland, Vasco Sanchez Rodrigues, Veronica Martinez, Wai Peng Wong, Wesley S. Randall, Willem Selen, Xiaopeng Wei, Xun Li, Yair Wand, Yee Ming Chen, Yildirim Yilmaz, Yongjiang Shi, Zainal Abidin Mohamed

TABLE 2

Table 2: **Research methodology used in the studies of the reference model**

Year	No Articles Searches	Case Study	Literature review	Other	Study in Brazil
1997	1			1	
2000	1			1	
2001	1	1			
2002	1		1		
2004	5	3	2		
2005	5	3	2		
2006	2		2		
2007	9	6	3		
2008	7	2	2	2	1
2009	10	7	3		
2010	8	5	2	1	
2011	5	4		1	
2012	6	4	1		1
Total Geral	61	35	18	6	2
	100%	57%	30%	10%	3%

TABLE 3

Table 3: Types of supply chains identified in the articles surveyed

Year	No Articles Searches	A	B	C	D	E	F	G	H	I	J	K
1997	1	1										
2000	1				1							
2001	1			1								
2002	1									1		
2004	5	1				1					3	
2005	5			1				1		1	2	
2006	2						1				1	
2007	9	2	1		3			1				2
2008	7	1		1	1						3	1
2009	10	3		1					2		3	1
2010	8	2			3				1		2	
2011	5			1				1		1	2	
2012	6	2		2							1	1
Total Geral	61	12	1	7	8	1	1	3	3	3	17	5
	100%	20%	2%	11%	13%	2%	2%	5%	5%	5%	28%	8%

A – Industry; B -Trade, C - Service, D -Technology, E - Aerospace, F - Tourism; G – Public; H - Humanitarian; I – Collaborative; J - Performance Management, K – Other.

TABLE 4

Table 4: The main themes in the literature of SCOR

Item	Main Themes	Related Articles
1	Framework	Stewart, 1997; Li, Kumar and Lim, 2002; Huan, Sheran and Wang, 2004; Lockamy III and McCormack 2004; Burgess and Singh 2005; Soffer and Wand, 2005; Yilmaz and Bititci, 2006; Barros, 2007; Theeranuphattana and Tang, 2008; Wong e Wong, 2008; Cuthbertson and Piotrowicz, 2008; Thakkar, Kanda and Deshmukh, 2009; Reyes and Giachetti, 2010; Blecken, 2010; Giannakis, 2011; Meng-xing, Chun-xiao and Yong, 2010;
2	Strategy	Hollingum, 2000; Naesens, Gelders, Pintelon, 2007; Cavalieri, Gaiardelli and Ierace, 2007; Stavrulaki, Davis, 2010; Hofmann, 2010; Farris II, 2010;
3	Benchmarking	Landeghem, 2001; Persoons, 2001; Simatupang and Sridharan, 2005; Keebler and Plank, 2009; Tuominen, Kitaygorodskaya and Helo, 2009; Soni and Kodali, 2010;
4	Risk	Sinha, Whitman and Malzahn, 2004; Kayis and Karningsih, 2012;
5	Plan	Lockamy III and McCormack, 2004; Ahmed, 2009; Kristianto, Ajmal and Helo, 2011; Bronzo, Oliveira and McCormack, 2012;
6	Implementation	Power, 2005
7	Performance	Lockamy III and McCormack, 2004; Shepherd and Günter, 2006; Sharif, Irani and Lloyd, 2007; Morgan, 2007 Theeranuphattana and Tang, 2008; McCormack, Ladeira and Oliveira, 2008; Wong and Wong, 2008; Cuthbertson and Piotrowicz, 2008; Chae, 2009; Thakkar, Kanda and Deshmukh, 2009; Keebler and Plank, 2009; Kovács and Tatham, 2009; Schulz and Heigh, 2009; Forslund and Jonsson, 2009; Forslund, 2010; Soni and Kodali, 2010; Cirtita, Daniel A. and Glaser-Segura, 2012; Arlbjørn and Lüthje, 2012 Bai, Sarkis, Wei and Koh, 2012; Gopal and Thakkar, 2012; Bronzo, Oliveira and McCormack, 2012
8	Metrics	Cavalieri, Gaiardelli and Ierace, 2007; ; Naesens, Gelders, Pintelon, 2007
9	Inovation	Yang, Choi, Park et.al. 2007; Barros, 2007
10	Logistics	Gulledge, Chavusholu, 2008; Keebler, Plank, 2009; Kovács and Tatham, 2009; Schulz and Heigh, 2009; Tatham and Spens, 2011;
11	Knowledge Management	Sharif, Irani and Lloyd, 2007; Barros, 2007; McLaren and Vuong, 2008; Tatham and Spens, 2011; Kayis and Karningsih, 2012; Lockamy III and McCormack, 2004 ; Kotzab and Otto, 2004; Power, 2005; Yilmaz and Bititci, 2006; Yang, Choi, Park et.al. 2007; Sharif, Irani and Lloyd, 2007; Hassini, 2008; Schulz and Heigh, 2009; Forslund and Jonsson, 2009; Forslund, 2010; Meng-xing, Chun-xiao and Yong, 2010; Hofmann,2010; Giannakis, 2011; Tatham and Spens, 2011; Bai, Sarkis, Wei and Koh, 2012

	Oriented	
12	Processes	Kotzab and Otto, 2004;
13	Business Processes	Lockamy III and McCormack, 2004; Soffer and Wand, 2005; Frye and Gulledge, 2000; Barros, 2007;
14	Generic	Hoole, 2005; Ming Chen and Huang, 2007, 2007a; Hassini, 2008; Jalalvand, Teimoury, Makui et.al, 2009; Fang,, Lee, Aryanezhad, Jolai, 2009; Netland and Alfnes, 2011; Kuik, Nagalingam and Amer, 2011; Hassini, 2008

FIGURE 1

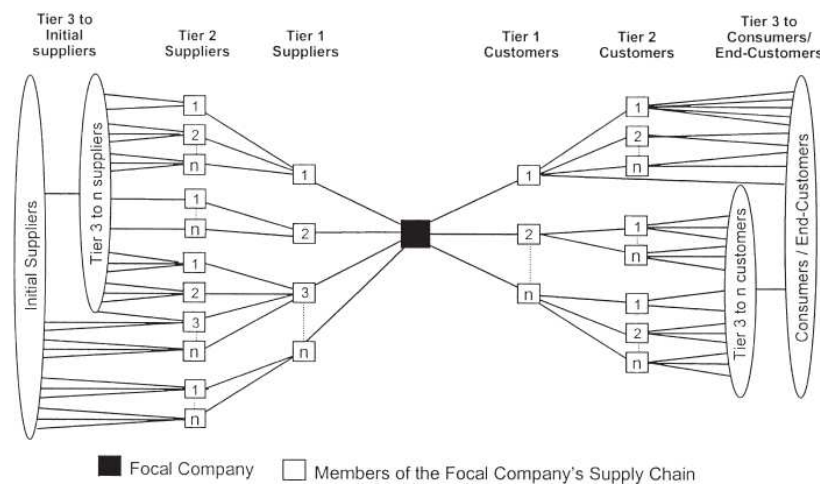


Figure 1: Structure of the supply chain network.

Source: Lampert e Cooper (2000)

FIGURE 2

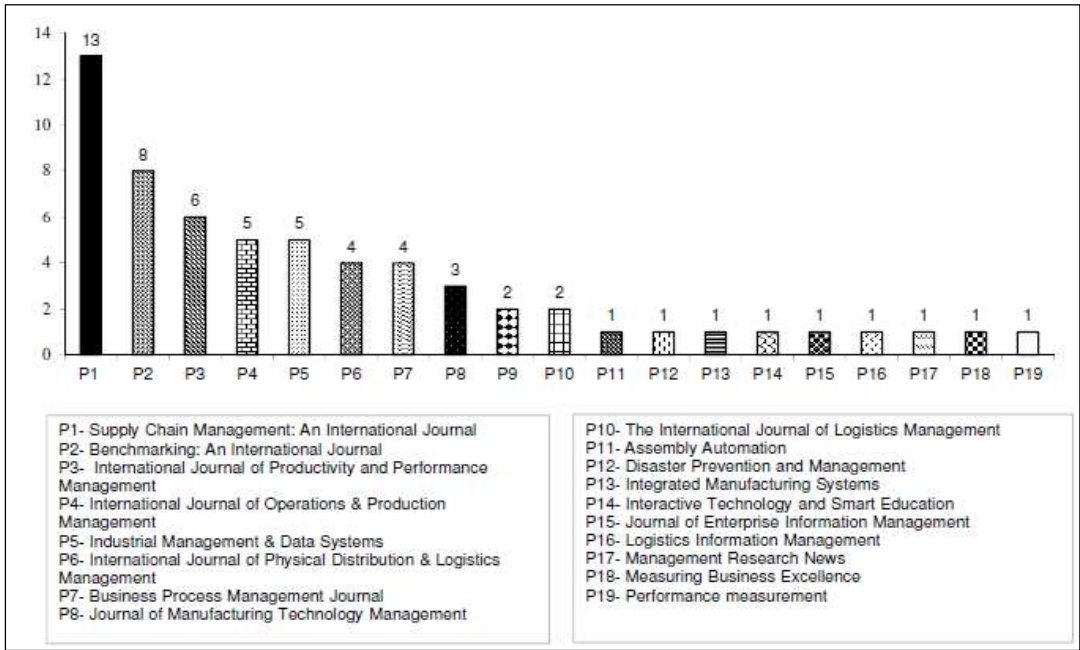


Figura 2: Number of articles per Journals

FIGURE 3

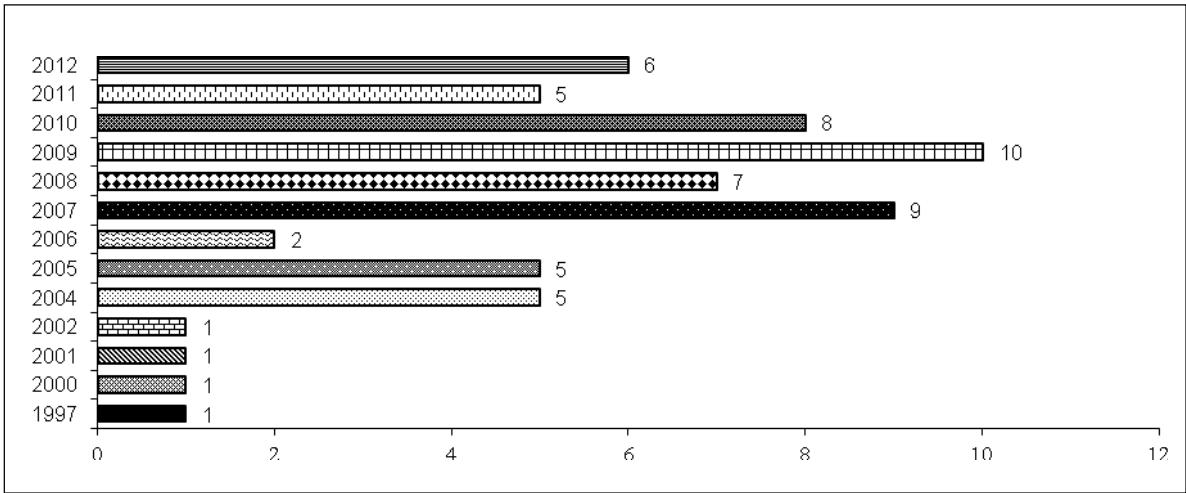


Figura 3: Studies of the evolution of SCOR