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Beyond corporate borders: Mapping the literature on alliance to promote corporate sustainability

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BEYOND CORPORATE BORDERS: MAPPING THE LITERATURE ON ALLIANCE TO PROMOTE CORPORATE SUSTAINABILITY

Abstract

Firms are being impelled to promote corporate sustainability, in other words, to consider not only economic issues, but also environmental and social impacts of their decisions and operations. Due to this extension of responsibility, it is not difficult to imagine that firms need to consider other players, such as clients, suppliers, non-profit organizations, government, research institutes and universities, etc.. In this context, the paper is based on the following research question: how can the academic literature study the main aspects of interorganizational alliance related to corporate sustainability? In order to answer it, a systematic literature review based on a bibliometric approach is chosen as research method. Descriptive statistics and network analysis bring interesting insight to academic field, such as: (i) the solid literature on supply chain management need to be used and adapted in order to contribute to corporate sustainability; (ii) the issue of partnerships for sustainability is far from being done; (iii) such partnerships can be supported by strategic arguments (specially the resource-based view); and (iv) the literature presents two approaches (one static view of alliances for sustainability that focuses on the characterization of the situation and another dynamic approach that engages itself to change and improvement such alliances).

Keywords: corporate sustainability, inter-organization partnership, bibliometric study



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1. Introduction

The discussion about sustainability and sustainable development in the corporate context has been criticized in the sense that companies have been using these terms to build corporate image before their customers and public opinion, but it is not necessarily associated with positive impacts for society and the environment. The responsibility of the firms is not restricted to their borders, since corporations can also be demanded and controlled by the impact of their actions on the natural environment and the society. One possible opportunity that firms have to implement sustainable business processes is to identify, use and promote interorganizational partnerships that are able to result in financial, environmental and social benefits. Supply chains can be managed to promote industrial symbiosis (Chertow, 2000), since there is potential to optimize resource and energy consumption, reduce carbon emission and minimize waste generation (Kannegiesser & Günther, 2013). Other initiatives, such as nonprofit organizations (Parker & Selsky, 2004), universities and research institutes and other non official community groups, are also able to build partnerships with firms that result in corporate sustainability, e.g., in economic, environmental and social benefits not only for the firm itself, but also for other organizations directly or indirectly related.

Focusing on the potentialities of using such collaborative partnerships that promote win-win relationship between the parties with benefits aligned with sustainable development, several aspects are to be considered, such as the drivers for firms to search and build such sustainability collaborations, the different business models needed to maintain these partnerships and the measurable benefits derived from these interorganizational relationships. Since these and several other elements are important to promote partnerships for sustainability, a structure literature analysis on this theme can reveal interesting insights. In this context, the research question for the proposed paper is: *how can the academic literature study the main aspects of interorganizational alliance related to corporate sustainability?*

To respond to this research questions, the present paper proposes a systematic literature review using a bibliometric approach. This research method is based on analysis of an article sample that was chosen combining two main ideas: interorganisational alliance and corporate sustainability. The first idea is that organizations can make use of external partners in order to fulfill a certain goal, in other words, that firms can (and should) go beyond their borders to find better solutions for their problems. Given this broad sense, the present research uses several terms of which meanings are not precisely equals, but will be used with no greater distinction: interorganizational alliance, partnership, supply chain management (SCM), relationship and network. These terms have in common that they represent meanings that go beyond corporate borders.

The second idea is also not easily defined (Dovers & Handmer, 1992; Funk, 2003) and are subjected to political (Funk, 2003; Wetherill, Rezgui, Boddy, & Cooper, 2007) and economic pressures (Wetherill et al., 2007). The well accepted approach of the triple bottom line (Elkington, 1997), which understands that sustainability is the capacity to consider simultaneously economic, environmental and social aspects. In this sense, the present research sees corporate sustainability as the ability of organizations to manage their business seeking not only to maximize firms' profit, but also to minimize negative impact on the natural environmental and to enhance positive benefits for society. In this sense, the firms are impelled to engage a collective way of doing business, in which it takes not only its own interests, but also of other stakeholders.

After the introduction with the research context, objective and main suppositions, the paper follows in chapter 2 with the research method, highlighting the main aspects of the bibliometric approach of the literature. Section 3 presents the results analysis and discussion, so that the conclusions can be presented in section 4.



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2. Research method

In order to answer the research question, systematic literature review based on a bibliometric approach is chosen as research method. Used in several knowledge fields (Carvalho, Fleury, & Lopes, 2013; Morioka & Carvalho, 2014; Neely, 2005), the bibliometric approach encompasses quantitative and qualitative analysis of a carefully chosen article sample, in order to obtain an overall map of the literature published about a specific theme.

Considering the step of (1) definition of article sample, the selection criteria are crucial, since they determine the article sample to be analyzed. Using ISI Web of Knowledge (Web of Science) database, the proposed filters are (please note that the symbol (*) includes any variation of the word):

- i. **Title:** (sustainability or "sustainable development" or "corporate social responsibility" or "triple bottom line" or environment*)
- ii. **Title:** ("supply chain" or allianc* or collaborat* or synerg* or symbios* or cooperat* or network*)
- iii. **Topic:** (strateg*)
- iv. **Topic:** (corporate* OR firm* OR organization* OR compan* OR industr* OR busines*)
- v. **Refined by:** only articles

The selection criteria resulted in 201 articles in the sample. With the article sample in hand, the (2) descriptive statistic offers an overview of the publications regarding aspects such as yearly distribution of the number of publications, most relevant journals and most cited papers. In the next step, the (3) network analysis uses the bibliometric software Sitkis (Schildt, 2002), with support of UCINET and NetDraw, to show the relationship between relevant references used by the article sample. It enables to extend to literature review encompassing not only the initial article sample, but also the references used by these studies. Another network built by the software illustrated the main keywords used by the article sample and their interrelation, e.g., it shows the keywords systematic together. At the end of the proposed research, it is expected that the paper is able to provide an encompassing overview of the literature about partnerships for corporate sustainability.

3. Analysis and discussions

3.1. Descriptive statistics

This section 3.1 is dedicated to discuss the descriptive statistics of the article sample. Figure 1 shows the distribution of publications over the years, showing evident growth of publications in the last years. As shown in Figure 3, the main journals that publish articles that concerns partnerships and sustainability have impact factor of at least 0.564, indicating that this research theme is relevant since is being discussed in relevant academic journals. The main journals are the Journal of Cleaner Production and the International Journal of Production Economics, both with relevant impact factors of 3.398 and 2.081, respectively (see Figure 2). The most frequent Web of Science categories include management/business, environmental science/engineering/studies, engineering manufacturing/industrial, operations research management science, computer science and planning development (see Figure 3). These categories include at least twelve articles of the sample.



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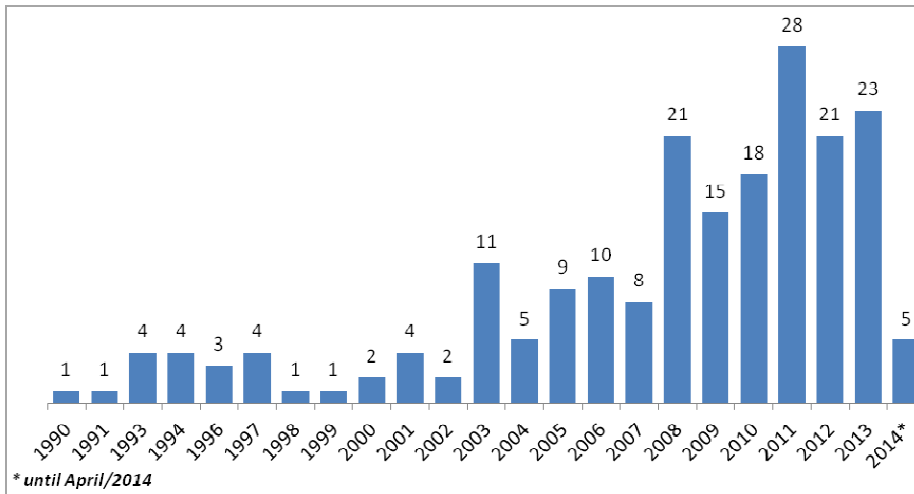


Figure 1. Publication year of the articles in the sample.

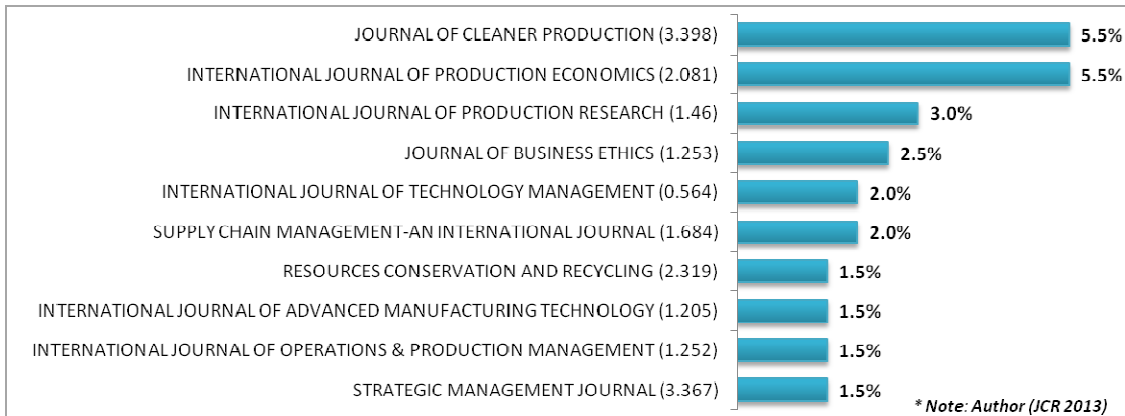


Figure 2. Main journals of the article sample (at least 3 articles).

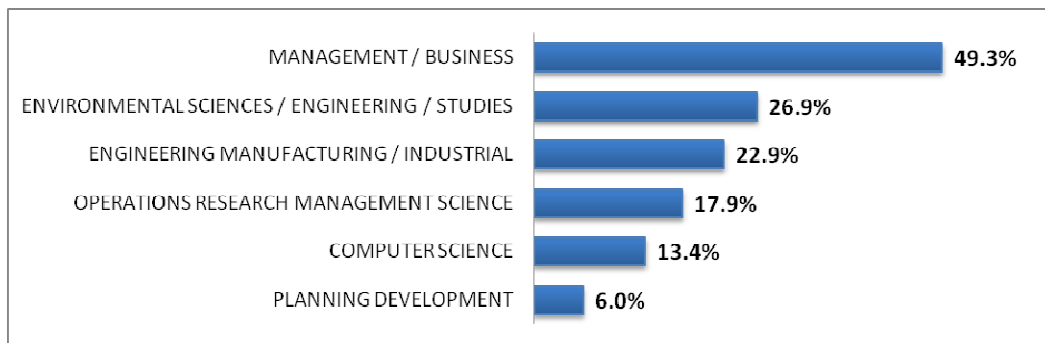


Figure 3. Main Web of Science categories of the article sample (at least 12 articles).

Table 1 brings the top 10 publications regarding number of total citations and number of citations per year. This second indicator enables that recent relevant publications are also identified, although they did not have time enough to gather many citations in absolute terms. As one can see in Table 1, several aspects of interorganizational relationship, such as:



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- Evaluation of the alliance (Dickson & Weaver, 1997; Gunasekaran, Patel, & Tirtiroglu, 2001; Klassen & Vachon, 2003; Klerkx, Aarts, & Leeuwis, 2010; Rondinelli & London, 2003);
- Change movements of the supply chain (B. R. Koka, Madhavan, & Prescott, 2006; Kraatz, 1998);
- Planning alliances (Hugo & Pistikopoulos, 2005; Balaji R. Koka & Prescott, 2008);
- Impact of the alliance for performance and decision making (Hutchins & Sutherland, 2008; Tate, Ellram, & Kirchoff, 2010; Vachon & Klassen, 2008; Vachon, 2007; Wong, Boon-itt, & Wong, 2011).

Figure 4 shows the distribution of the number of citations over the years, giving evidence of the tendency of relevance over the years. Although Gunasekaran et al. (2001) is a relatively old article, its influence compared to the top cited articles is still relevant. On the contrary, Kraatz (1998) seems to be losing relevance, specially facing Vachon and Klassen (2008) and Hutchins and Sutherland (2008).

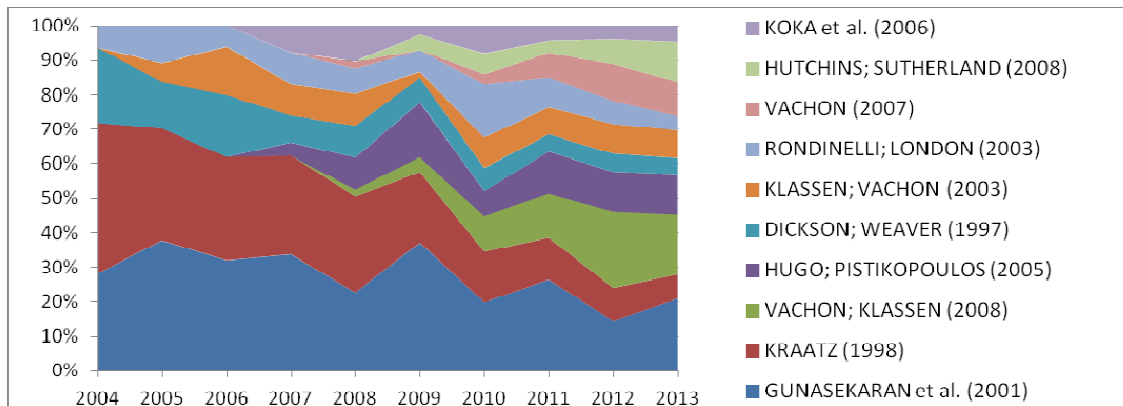


Figure 4. Citations distribution of the most cited articles in the sample.



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AUTHOR (YEAR)	TITLE	JOURNAL	TOTAL CITATIONS (Rank)	CITATION/ YEAR (Rank)
Gunasekaran et al. (2001)	Performance measures and metrics in a supply chain environment	International Journal Of Operations & Production Management	289 (01)	22.2 (01)
Kraatz (1998)	Learning by association? Interorganizational networks and adaptation to environmental change	Academy Of Management Journal	227 (02)	14.2 (03)
Vachon; Klassen (2008)	Environmental management and manufacturing performance: The role of collaboration in the supply chain	International Journal Of Production Economics	132 (03)	22.0 (02)
Hugo; Pistikopoulos (2005)	Environmentally conscious long-range planning and design of supply chain networks	Journal Of Cleaner Production	102 (04)	11.3 (05)
Dickson; Weaver (1997)	Environmental determinants and individual-level moderators of alliance use	Academy Of Management Journal	98 (05)	5.8 (18)
Klassen; Vachon (2003)	Collaboration and evaluation in the supply chain: The impact on plant-level environmental investment	Production And Operations Management	88 (06)	8.0 (11)
Rondinelli; London (2003)	How corporations and environmental groups cooperate: Assessing cross-sector alliances and collaborations	Academy Of Management Executive	87 (07)	7.9 (12)
Vachon (2007)	Green supply chain practices and the selection of environmental technologies	International Journal Of Production Research	58 (08)	8.3 (10)
Hutchins; Sutherland (2008)	An exploration of measures of social sustainability and their application to supply chain decisions	Journal Of Cleaner Production	57 (09)	9.5 (08)
Koka et al. (2006)	The evolution of interfirm networks: Environmental effects on patterns of network change	Academy Of Management Review	57 (10)	7.1 (16)
Wong et al. (2011)	The contingency effects of environmental uncertainty on the relationship between supply chain integration and operational performance	Journal Of Operations Management	36 (21)	12.0 (04)
Klerkx et al. (2010)	Adaptive management in agricultural innovation systems: The interactions between innovation networks and their environment	Agricultural Systems	42 (15)	10.5 (06)
Tate et al. (2010)	Corporate Social Responsibility Reports: A Thematic Analysis Related To Supply Chain Management	Journal Of Supply Chain Management	40 (17)	10.0 (07)
Koka; Prescott (2008)	Designing alliance networks: The influence of network position, environmental change, and strategy on firm performance	Strategic Management Journal	51 (11)	8.5 (09)

Table 1. Most relevant articles in the sample by number of total citations and citations per year.



3.2. Network analysis

Figure XX shows the article to reference network, which illustrates the relationship between the main references used by the article sample, indicating which papers cited these references. The content of these main references are shown below, as they represent the theoretical basis of the papers published about partnerships and corporate sustainability.

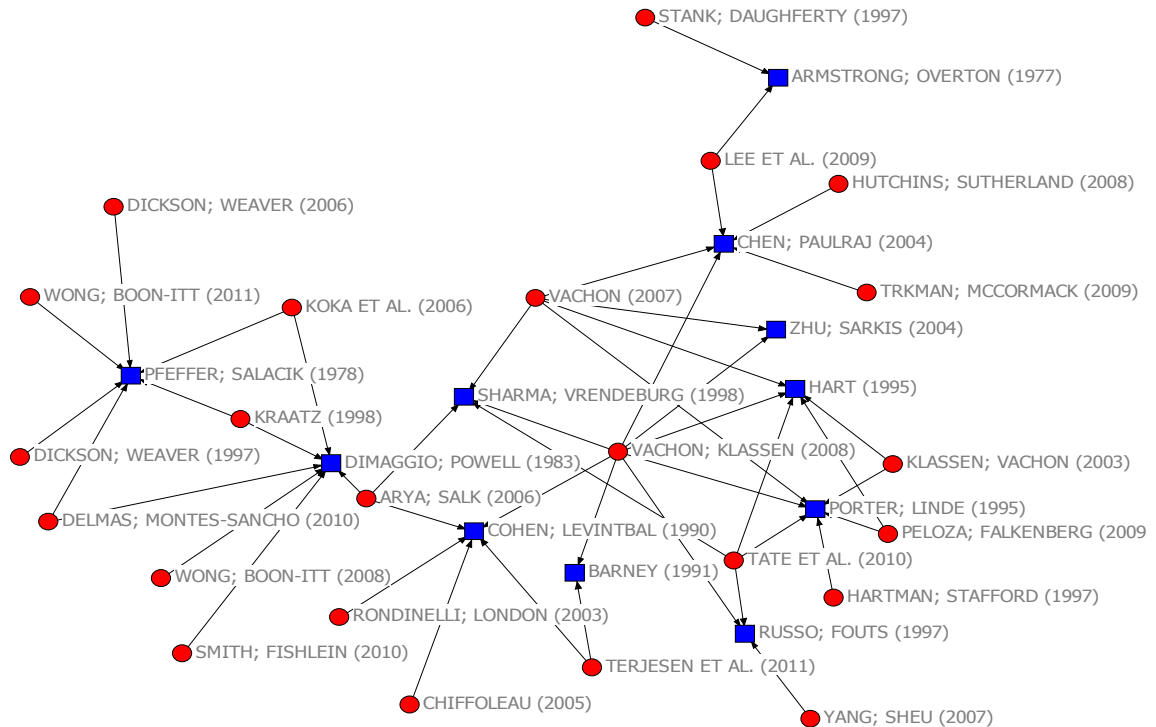


Figure 1. Network representing articles of the sample and the main references used.

First, one can notice that there is a references with focus on quantitative research method, discussing nonresponse bias (Armstrong & Overton, 1977).

The book of Pfeffer and Salancik (1978) bring an encompassing overview of external control of organizations, considering the interdependencies with their context. Also considering the influence of external issues to internal decision making process, DiMaggio and Powell (1983) concludes the tendency for organizations to become similar to each other. In this sense, the authors propose three isomorphic processes (coercive, mimetic and normative) that explain this similarities between organizations.

Resource based view (RBV) is also present in the references used by the article sample, as represented, for example, by Barney (1991). Cohen and Levintbal (1990) considers a specific type of capability, the absorptive capability of a firm. It is considered by the authors as the “ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends” (COHEN; LEVINTBAL, 1990, p. 128). The authors propose that R&D spending depends on competitor interdependence, technological opportunity and appropriability, given firm’s absorptive capabilities.

Another important reference shown in Figure XX is the study conducted by Sharma and Vredenburg (1998), in which the authors used the resource based view to discuss the firm’s capabilities to develop strategies for proactive environmental responsiveness. The relationship between environmental and economic performance considering RBV is also discussed by



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Russo and Fouts (1997). In this sense, it is worth to note the idea proposed by Hart (1995), the natural-resource-based view, a theory of competitive advantage based upon the firm's relationship to the natural environment. This view encompasses three strategic capabilities: pollution prevention, product stewardship and sustainable development.

Also exploring the strategic aspects of the relationship between environmental and economic performance, Porter and Linde (1995) highlights the need for technological innovation to develop solution not only for new regulations, but also for promoting better resource engagement and, consequently, stronger competitive advantage. In this context, the approach green supply chain management (GSCM) is gaining evidence in the academy, as discussed by Zhu and Sarkis (2004). In order to contribute to research on supply chain, Chen and Paulraj (2004) propose and validate the following constructs: environmental uncertainty, customer focus, top management support, competitive priorities, information technology, strategic purchasing, supply chain network structure, logistic integration and supplier-buyer performance.

Figure 2 presents the keywords network, in which the nodes represent the keywords that were used at least by eight articles in the sample and the lines connect keywords that were used by the same article. Thicker lines in Figure 2 illustrate stronger relation between the nodes in terms of number of times the keywords were used simultaneously. The network shows the main themes that approached by the article sample, including aspects such as: (1) innovation, (2) strategy and governance, (3) uncertainty and (4) performance (see Figure 2).

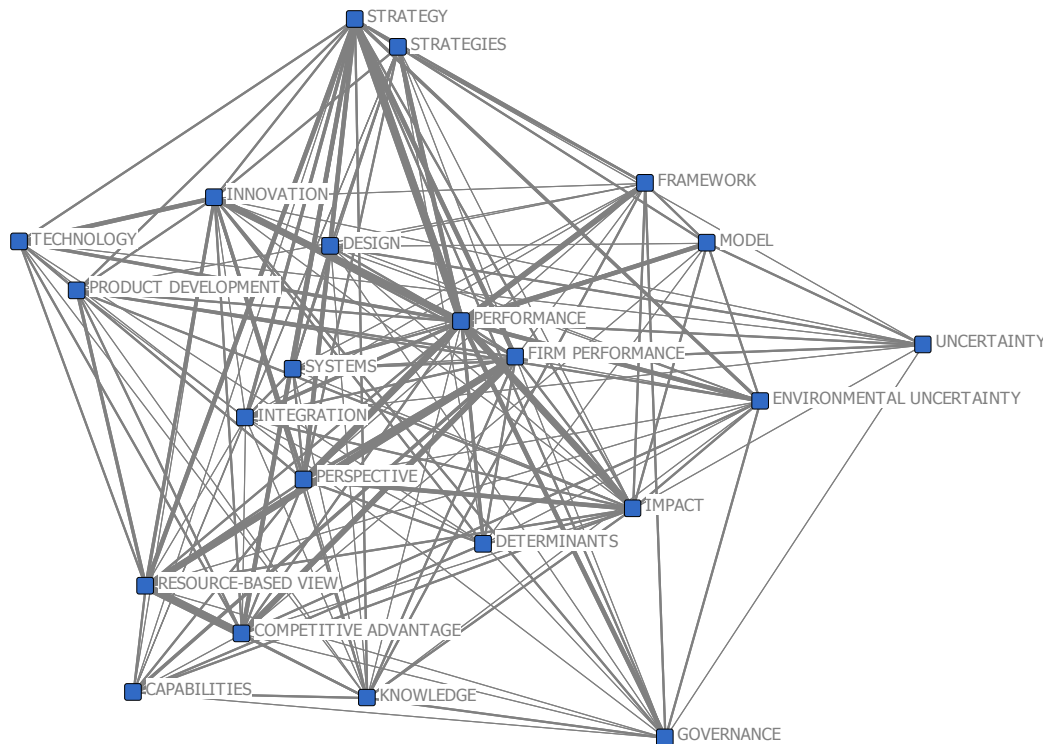


Figure 2. Network representing the relations between the main keywords used by the article sample.

** Note: The size of the lines represents the intensity of the relations between the keywords, in terms of number of times that the keywords were used by the same article.*



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4. Conclusions, limitations and contributions for further research

The present paper seeks to bring a systematic overview of the literature on interorganizational alliance, including issues such as collaboration and supply chain management, and corporate sustainability, under perspective of triple bottom line (Elkington, 1997). As presented in the paper, the literature analyzed presents several relevant publications on supply chain management (SCM), since it is as more mature literature, compared to publications on corporate sustainability. So, the contributions on SCM can be used as basis for extending the knowledge on corporate sustainability. The research shows also that the theoretical basis to build new knowledge on partnerships that promote corporate sustainability can rely not on the publication of SCM, but also on the literature on strategy (Porter & Linde, 1995) and RVB (Barney, 1991; Sharma & Vredenburg, 1998) and on innovation processes (Klerkx et al., 2010; Porter & Linde, 1995; Vachon, 2007).

In great lines, the literature of partnerships and sustainability can be considered according to two approaches. The first is the static approach that considers a picture of the alliances with social and environmental benefits, regarding issues such as the constructs to evaluate the situation (Chen & Paulraj, 2004; Gunasekaran et al., 2001; Rondinelli & London, 2003), the consequences of the partnerships for the organization performance (Vachon & Klassen, 2008; Wong et al., 2011) and the interaction between organization and its context (DiMaggio & Powell, 1983; Pfeffer & Salancik, 1978; Wong et al., 2011). The second approach is focused on a more dynamic aspect of the alliance and it can be associated, for example, with the need for changes and partnerships evolution (B. R. Koka et al., 2006; Kraatz, 1998) and alliance planning (Hugo & Pistikopoulos, 2005; Balaji R. Koka & Prescott, 2008). It is natural that both approaches interact with each other, since a stable situation that suffers a perturbation leads to a dynamic process towards a new picture. This distinction can be beneficial, because the approaches have different priorities of challenge. While the first is focused on understanding the constructs and relationships between them that explains the picture, the second is more concerned with the mechanisms and factors that influences changes in these constructs and their relationships. In this sense the approaches are complementary.

On limitation that is worth mentioning is that the meaning of the term “environment*” is broad. It can be used as synonym for “context” or, as intended in the present paper, as the same as “natural environment”. Despite of this ambiguity, it was not possible to disregard this term as one of the parameters for reaching the article sample analyzed. It is because the most consolidated contributions for corporate sustainability tend to be focused on the ecological (environmental) pillar of sustainability and the intention was to include such literature.

Still regarding the meaning of the terms, the research discusses together two issues that are very broad and hard to define: partnerships and sustainability. In the attempt to diminish this limitation, the introduction section presents the work definition used for both terms.

Another limitation is that the research is restricted to the article sample and the references used by it. The literature is obviously broader, but a limited number of articles had to be chosen, in order to enable the conduction of the present research, in hopes that the sample is a acceptable representation of the whole population.

Despite the research limitations, it brings benefits for the academy due to its systematic approach. It enlarges the chances that the contributions of the most relevant publications on alliance with environmental and social benefits are not “forgotten” by next publication. In this sense, further research can use the systematic compilation of this bibliometric research to build knowledge on a specific focus of the literature discussed, considering the main publications already identified on the topic.



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