

# Supply Chain and Open Innovation: the undeniable relationship

## Conceptions from a literature review

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**Fecha de recepción:** 18-11-2022

**Fecha de aceptación:** 22-01-2023

### Abstract

The consolidation of Open Innovation (OI) as necessary approach to understand the ability of firms to innovate has demanded more sustained efforts to unfold the continuous connection with other relevant actors across its systems of production (Arabshahi et al., 2014; Chesbrough, 2006; Jimenez-Jimenez et al., 2019). Central to this is the emphasis on a pursuit of knowledge and collaboration from components of the supply chain (SC) (Miyamoto, 2020). Despite the undeniable relationship between these two terms, authors have pointed out that not enough research has occurred (Ardito et al., 2020; Jimenez-Jimenez et al., 2019; R. A. E. Shamah & Elssawabi, 2015; Smith & Blundel, 2012). Therefore, this paper is intended to contribute to the research gap by examining on how the concepts of SC and OI are related in the current state-of-the-art. To accomplish it, a systematic literature review (SLR) is conducted.

**Keywords:** Innovation, extraction of data, journals, citation.

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## 1. Introduction

It has been extensively argued that the ability of firms to innovate is crucial for survival (Ardito *et al.*, 2020; Jimenez-Jimenez *et al.*, 2019). More recently, firms have begun to understand innovation as a process that demands continuous connection with other actors (Arabshahi *et al.*, 2014; Roldán Bravo *et al.*, 2016). It has resulted in the rise of a new paradigm termed Open Innovation (OI) (Chesbrough, 2006; West *et al.*, 2014). Central to OI is the stress on a search for knowledge and collaboration from members of the supply chain (SC) (Erzurumlu, 2010; Miyamoto, 2020; Wilhelm & Dolfsma, 2018).

The relevance of SC management is shared by most firms nowadays (Roldán Bravo *et al.*, 2016; R. A. E. Shamah & Elssawabi, 2015). Studies have argued that SC partners should develop strategic relationships to achieve a competitive advantage while improving organizational performance (Dalziel, 2012; Roldán Bravo *et al.*, 2017). In this sense, the relationship between SC and OI has been turned around by arguing that the former cannot be seen just as a source of ideas and knowledge, but also as a substantial terrain for improvement through collaborative OI (Bendavid & Cassivi, 2012; Koh *et al.*, 2013).

Despite the undeniable relationship between these two terms, insufficient research has been materialized (Ardito *et al.*, 2020; Jimenez-Jimenez *et al.*, 2019; R. A. E. Shamah & Elssawabi, 2015; Smith & Blundel, 2012). Therefore, this paper is intended to contribute to the research gap

by investigating on how the concepts of SC and OI are related in the current state-of-the-art. The present study seeks to answer the following question: How are the concepts of supply chain and open innovation linked in present business, management and accounting research?

After introducing the discussion in section 1, the following section will explain the research method applied. In addition to carrying out a systematic literature review (SLR), a qualitative analysis of contents included in the studies sampled is performed. Section 3 exposes the main results, concluding in section 4.

## 2. Methodology

### 2.1 Recognition, classification, and selection of publications

To explore the relationships between SC and OI, this work has first embraced the SLR approach and then carried out a qualitative examination of the articles sampled. Following Jesus & Jugend (2021), the paper implements the SLR in two different stages: (a) a bibliometric research (Fahimnia *et al.*, 2015), and (b) the analysis of the chosen articles' content (Bhimani *et al.*, 2019; Gaur & Kumar, 2018).

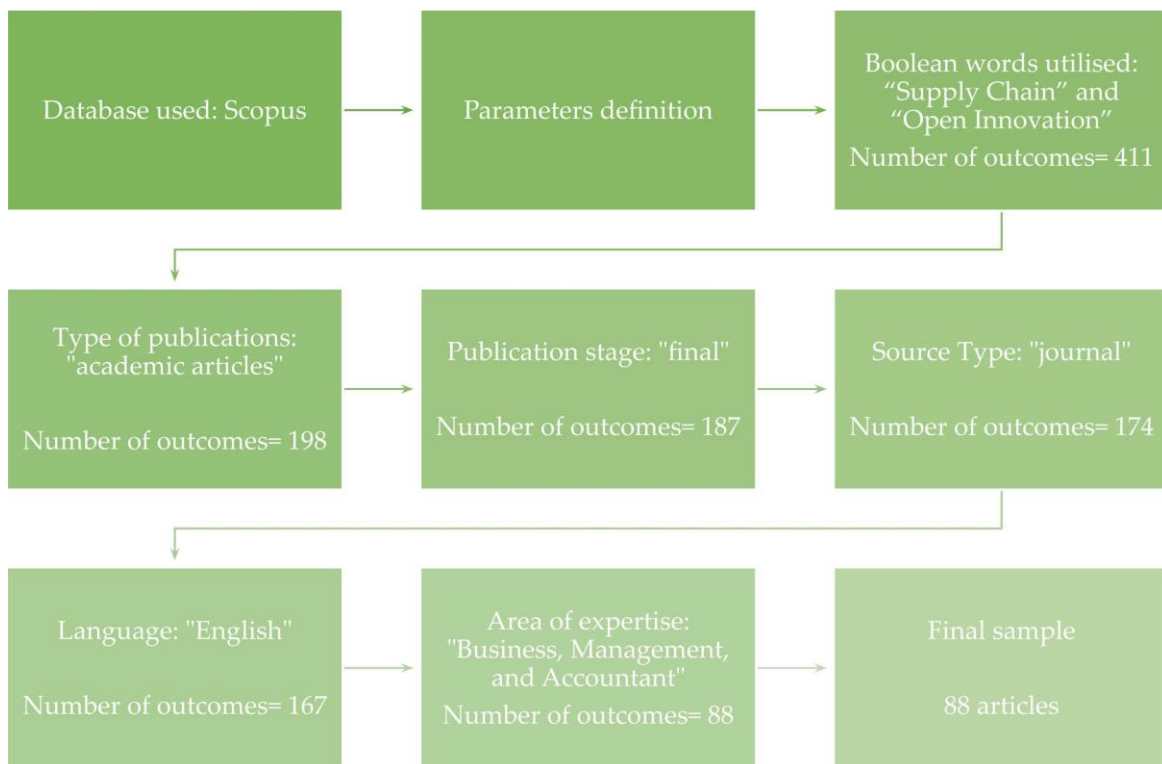
The identification of publications started by searching for relevant articles in the intertwine of the SC and OI, as the central terms, using the Web of Science (WoS), Scopus and Google Scholar (GS) databases. According to Chapman & Ellinger (2019) these are among the main scientific databases used for academic production. Therefore, the Boolean

terms chosen were “Supply Chain” and “Open Innovation”. Other parameters were applied based on previous SLR conducted such as articles in the final stage, published only in journals, and in English (Jabbour et al., 2020; Jesus & Jugend, 2021; Lu *et al.*, 2018). Since this literature review is conducted for

the purpose of specific areas of expertise, the search was focused in one broad research area: “business, management, and accountant” outlines the process of identification of relevant papers. As a result, 88 articles were identified as relevant for this SLR.

**Figure 1**

*Process of identification of relevant articles*



Following this, the 88 articles were analysed by using a text-analysis software named MAXQDA2022. This software offers the opportunity of conducting text-analysis

by combining three elements: documents, codes, and variables summarizes the MAXQDA2022 scores after uploading the final Scopus' outcome.

**Table 1**  
*MAXQDA22 scores*

Category	Score
Number of documents imported	88
Number of codes stated	21
Number of variables identified	27
Number of documents ignored	0

The purpose of this text-analysis was to exclude those articles that consider either one or both terms peripheral to their main discussion. Therefore, it is counted as a relevance-control-check procedure (RCCP). The RCCP is stated in 5 main steps.

**Figure 2**  
*Relevance cross check procedure*



## 2.2 Extraction of data

Based on Jesus & Jugend (2021), this study managed the extraction of data in two stages. First of all, bibliometric information was extracted and compared. In this stage, variables such as publication year, geographic affiliation of authors, journals of publication and number of citations were examined. Secondly, the articles were read entirely to better understand the relationship between SC and OI for the field of business, management, and accounting. Consequently, the following results are explored:

- a. Chronological distribution of publications
- b. Geographical distribution of research
- c. Journals and numbers of citations
- d. Research methods applied

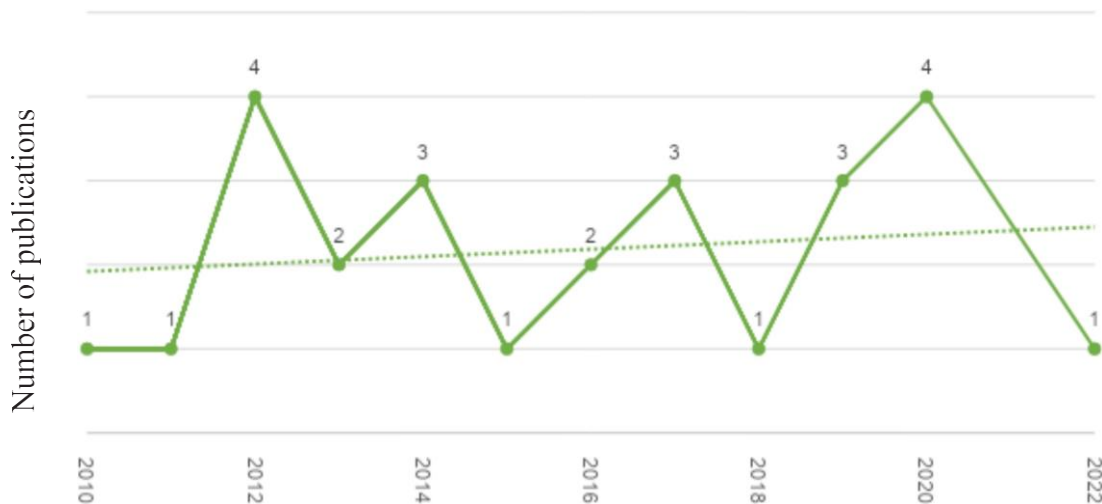
- e. Content analysis – themes addressed
- f. Content analysis – themes mapping
- g. Direction of the relationship

## 3. Results

### 3.1 Chronological distribution of publications

The first article was published in 2010. It may be showing that the integration of Supply Chains and OI has not been addressed by academic publications for a long time, covering- it relationship for a bit longer than a decade. However, the number of publications has not increased significantly since the first publication. There is an evident fluctuation in the number of publications that have been achieved.

**Figure 3**  
*Publications per year*



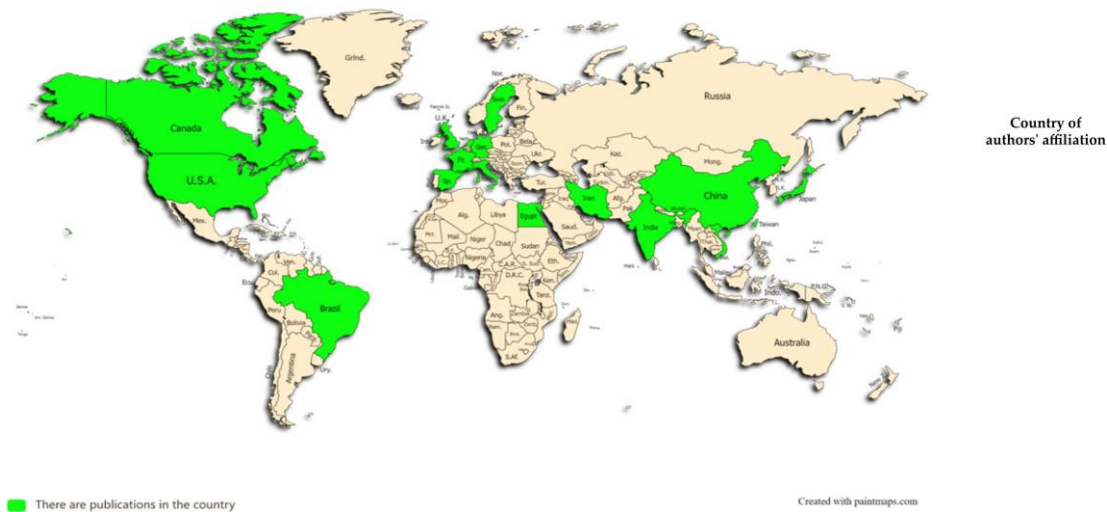
### 3.2 Geographical distribution

The authors' affiliation was analysed in order to explore where the combination of both topics

has taken the attention of scholars (Figure 4).

**Figure 4**

*Countries with publications*



Although there are scholars working on these two topics in a wide variety of regions across the globe, the involvement of central European scholars is observed in 54% of them. Scholars affiliated in European institutions take part in 13 publications. The American continent has representatives in 6 publications, while academics in Asian have been part of 5 publications on the theme. Even scholars from Africa have been publishing relating both topics, in particular from Egypt. Relating the year of publication to the context of the research, we observed that while these issues have been addressed in developed countries since 2010, developing countries' scholars have joined them a few years later (2014). It is possible

that advanced industrialized countries had faced problems demanding the intertwining of both fields of study at an early stage than less developed ones.

### 3.3 Journals and number of citations

Table 1 displays the ranking of the three most-cited articles in the Scopus databases. In general terms, recent papers get more citations than early ones. The 24 articles used as a sample were published in 20 different journals. This means that authors find opportunities for publishing on these topics in a wide variety of sources.

**Table 1**  
*Most cited articles*

Author	Main contribution of the research	Journal	Country	Year	Citations
Lenny Koh, S. C., Genovese, A., Acquaye, A. A., Barratt, P., Rana, N., Kuylenstiema, J., Gibbs, D.	They demonstrate the application of supply chain environmental analysis tool (SCEnAT), especially the advantage of using a robust carbon accounting methodology, to a Supply Chain case study.	International Journal of Production Research	UK	2013	60
Ardito, L., Messeni Petruzzelli, A., Dezi, L., Castellano, S.	Based on a sample of 5897 firms that participated in the Italian Innovation Survey (IIS)(2008-2010), we reveal that sourcing knowledge from suppliers, customers, and competitors has a positive influence on innovation ambidexterity	Journal of Business Research	Italy France	2020	51
Jimenez-Jimenez, D., Martínez-Costa, M., Sanchez-Rodríguez, C.	The paper shows that information technology (IT) directly enhances both types of product innovation (incremental and radical) indirectly through supply chain collaboration by using data collected from a sample of 200 manufacturing firms.	Journal of Knowledge Management	Spain Canada	2019	41

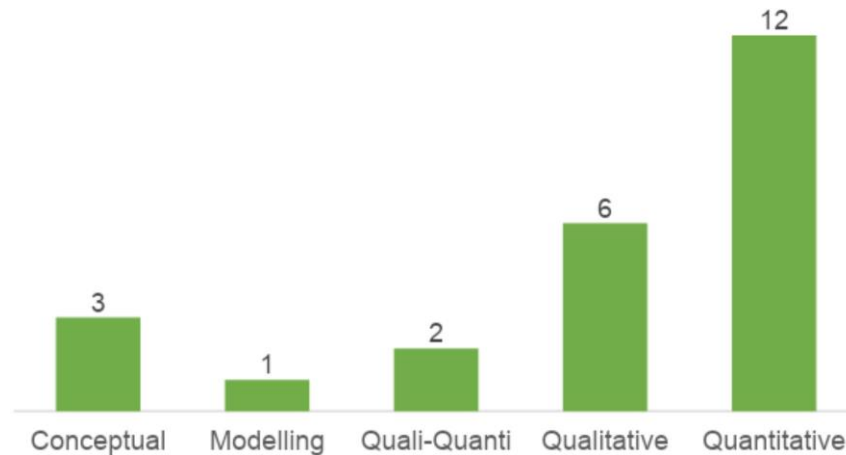
### 3.4 Research method applied

Figure 5 shows that the most used research method within the sample is the quantitative approach (12), which doubled the number of papers that conducted qualitative methods

(6). There is a vast variety of methods being applied, which also includes conceptual approaches, modelling and 2 papers that deployed quantitative and qualitative methods along.

**Figure 5**

*Research methods used*



### 3.5 Content analysis – themes addressed

Contents were also analysed according to the issues that the papers are intended to address. Consequently, 22 themes were identified after reading the papers. The related issues and the number of papers addressing them are listed in.

Industrial performance, innovation and organizational studies are those themes that came up in a larger number of articles. For instance, Arabshahi *et al.* (2014) state that open innovation practices conducted along the supply chain may have a direct and strong effect over industrial performance. In addition, Ardito *et al.*, (2020) prove that open innovation can be considered a path towards ambidexterity, something that is

nowadays required for firms in order to be competitive in the short- and long-run. The external source of knowledge needed can be found along the companies' supply chain partners (Benitez *et al.*, 2022).

In terms of innovation and organizational studies, Wilhelm & Dolfma, (2018) discuss the unchallenged assumption in the open innovation literature that organizational boundaries become “porous” after adopting this approach. Therefore, the authors propose a deeper analysis on the organizational boundaries that may prevent companies from moving forward in their innovation capacity by integrating SC actors. In addition, Roldán Bravo *et al.*, (2016) attempt to explain how orientation to open innovation and open



innovativeness, advances an organization's functioning in the context of SC management.

A number articles discuss the relationship between SC and OI from a Knowledge flow perspective, by assuming the former as a source of knowledge for firms through

the practicability of the latest (Alletto *et al.*, 2017; Ardito *et al.*, 2020; Pellegrini & Lazzarotti, 2019; Rahmzadeh *et al.*, 2020; Roldán Bravo *et al.*, 2016; J. Song *et al.*, 2022; Wilhelm & Dolfsma, 2018).

**Table 2**  
*Themes addressed*

Themes	Number of articles
Industrial performance	10
Innovation	10
Organizational studies	9
Knowledge flow	7
Collaboration	6
Trust	5
Globalization	4
Competitiveness	3
Research & Development (R&D)	3
SME	3
Strategic Management Decision (SDM)	3
Information Technology (IT)	2
Sustainability	2
Value Chain	2
Behavioural theory	1
E-commerce	1
Family firms	1
Industry 4.0	1
Institutional theories	1
Living laboratory	1
Social Capital	1

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A number articles discuss the relationship between SC and OI from a Knowledge flow perspective, by assuming the former as a source of knowledge for firms through the practicability of the latest (Alletto *et al.*, 2017; Ardito *et al.*, 2020; Pellegrini & Lazzarotti, 2019; Rahmanzadeh *et al.*, 2020; Roldán Bravo *et al.*, 2016; J. Song *et al.*, 2022; Wilhelm & Dolfmsa, 2018).

Erzurumlu, (2010) explores the strategic impact of open innovation, in particular through partners' collaboration, and supplier integration on the profits and decisions of the supply chain participants. In addition, collaboration across the SC is seen as central element of firms catch up with innovation (Jimenez-Jimenez *et al.*, 2019; Miyamoto, 2020). However, a considerable amount of articles pointing out the challenges of trusteeship among supply chain actors (Abu El-Ella *et al.*, 2016; Beckeman *et al.*, 2013; Roldán Bravo *et al.*, 2017; R. A. E. Shamah & Elssawabi, 2015; R. A. M. Shamah & Elsayaby, 2014). For instance, Abu El-Ella *et al.* (2016) provide solid insights on how trust enables the information flow through OI, and show how trust is becoming increasingly intermediated along the SC.

Dalziel (2012) asserts that the era of OI establishes multiples ways for companies to be part of global markets. The author identifies the explore-exploit continuum as a dimension along which the strategies of high-growth companies from developing countries will fluctuate, pointing out that exploitation specialists influence low cost inputs to participate in international SCs on the basis of superior efficiencies of globalization (Dalziel, 2012). At the other side of the stream, authors discuss over competitiveness in certain territories by arguing that OI practices enhanced by SC partners can be central to regional development (Abu El-Ella *et al.*, 2016; Smith & Blundel, 2012; H. Song *et al.*, 2020). Accordingly, the literature also highlights the increasing recognition of the Small-medium Enterprises' (SME) role in

innovation (Benitez *et al.*, 2022; Pellegrini & Lazzarotti, 2019; Smith & Blundel, 2012; H. Song *et al.*, 2020). For those looking global, as well as for authors searching at the local level, both R&D and SMD seem to be relevant topics that come across SC and OI (Bendavid & Cassivi, 2012)

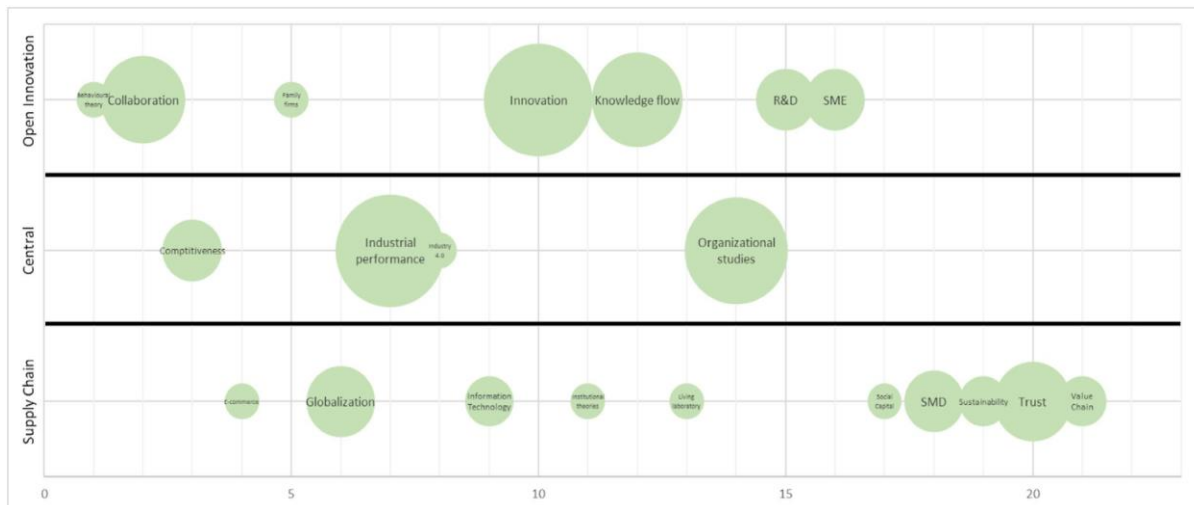
Finally, within the SC and OI dialogue, the literature sampled offers insights from a wide range of other topics such as IT (Jimenez-Jimenez *et al.*, 2019; Yan *et al.*, 2019), sustainability (Koh *et al.*, 2013; Rahmanzadeh *et al.*, 2020), value chains (Beelaerts van Blokland *et al.*, 2012; Lee & Schmidt, 2017),

behavioural theory (Pellegrini & Lazzarotti, 2019), and e-commerce (Yan *et al.*, 2019) among others.

### 3.6 Content analysis – themes mapping

Figure 6 shows the addressed themes in relation to the two principal concepts: SC and OI. After reading the articles, themes were directed towards the term that was most relevant to their discussion. Several of them are relevant for both SC and OI, however, the classification was made considering just the articles analysed. The size of each dot is according to the number of papers that address this issue.

**Figure 6**  
*Themes mapping*



### 3.7 Direction of the relationship

The last element evaluated in terms of contents is the direction that the main concepts are related to each other. 20 out of 24

articles consider the SC as a relevant source of knowledge for OI enhancement. Only 4 papers approach these terms assuming that the later would improve the former.

**Table 3***Direction of the relationship between SC and OI*

Direction of the relationship	Number of articles
From SC to OI	20
From OI to SC	4
Total	24

**4. Discussion**

This paper has intended to contribute to the literature by investigating on how the concepts of SC and OI are related in the current state-of-the-art. In addition to carrying out a SLR, a qualitative analysis of the articles has been accomplished. Results have shown that relevant research in this theme has been produced since 2010, in a wide range of regions across the globe, and sourced by a variety of journals. Although different research designs have been deployed, quantitative methods are the most used by academics in this field. In the junction of these two topics several other issues have been addressed. The great

majority of the studies analysed consider the SC as a relevant source of knowledge for OI enhancement.

One the main limitation for this research the number of Boolean terms used which can be enlarged to take into consideration a more extensive literature that discusses this undeniable relationship between supply chains and open innovation. Furthermore, the fact that this research has taken into consideration only academic articles written in English can be seen as a main limitation. To explore the academic production addressing the relationship between supply chains and open innovation in other languages such as Spanish can be beneficial for future research.

**5. References**

- Abu El-Ella, N.; Bessant, J. & Pinkwart, A. (2016). Revisiting the Honorable Merchant: The Reshaped Role of Trust in Open Innovation: TRUST IN OPEN INNOVATION. *Thunderbird International Business Review*, 58(3), 261–275. <https://doi.org/10.1002/tie.21774>
- Alletto, A.; Bruccoleri, M.; Mazzola, E. & Ramanathan, U. (2017). Collaboration experience in the supply chain of knowledge and patent development. *Production Planning and Control*, 28(6–8), 574–586. Scopus. <https://doi.org/10.1080/09537287.2017.1309712>

- Arabshahi, G. A.; Arabshahi, M. & Zaafarian, R. (2014). A study on how open innovation influences on supply chain behavior. *Uncertain Supply Chain Management*, 2(4), 271–274. Scopus. <https://doi.org/10.5267/j.uscm.2014.7.001>
- Ardito, L.; Messeni Petruzzelli, A.; Dezi, L. & Castellano, S. (2020). The influence of inbound open innovation on ambidexterity performance: Does it pay to source knowledge from supply chain stakeholders? *Journal of Business Research*, 119, 321–329. <https://doi.org/10.1016/j.jbusres.2018.12.043>
- Beckeman, M.; Bourlakis, M. & Olsson, A. (2013). The role of manufacturers in food innovations in Sweden. *British Food Journal*, 115(7), 953–974. Scopus. <https://doi.org/10.1108/BFJ-09-2010-0164>
- Beelaerts van Blokland, W. W. A.; Fiksiński, M. A.; Amoa, S. O. B.; Santema, S. C.; van Silfhout, G.-J. & Maaskant, L. (2012). Measuring value-leverage in aerospace supply chains. *International Journal of Operations and Production Management*, 32(8), 982–1007. Scopus. <https://doi.org/10.1108/01443571211253155>
- Bendavid, Y. & Cassivi, L. (2012). A ‘living laboratory’ environment for exploring innovative RFID-enabled supply chain management models. *International Journal of Product Development*, 17(1–2), 94–118. Scopus. <https://doi.org/10.1504/IJPD.2012.051150>
- Benitez, G. B.; Ferreira-Lima, M.; Ayala, N. F. & Frank, A. G. (2022). Industry 4.0 technology provision: The moderating role of supply chain partners to support technology providers. *Supply Chain Management: An International Journal*, 27(1), 89–112. <https://doi.org/10.1108/SCM-07-2020-0304>
- Bhimani, H.; Mention, A.-L. & Barlatier, P.-J. (2019). Social media and innovation: A systematic literature review and future research directions. *Technological Forecasting and Social Change*, 144, 251–269. <https://doi.org/10.1016/j.techfore.2018.10.007>
- Chapman, K. & Ellinger, A. E. (2019). An evaluation of Web of Science, Scopus and Google Scholar citations in operations management. *The International Journal of Logistics Management*, 30(4), 1039–1053. <https://doi.org/10.1108/IJLM-04-2019-0110>
- Chesbrough, H. (2006). Open Innovation: A New Paradigm for Understanding Industrial Innovation. In H. Chesbrough, W. Vanhaverbeke, & J. West (Eds.), *Open Innovation: Researching a New Paradigm* (p. 27). Oxford University Press.
- Dalziel, M. (2012). Strategies for challenger firms from emerging economies in the era of open innovation. *International Journal of Technological Learning, Innovation and Development*, 5(4), 331. <https://doi.org/10.1504/IJTLID.2012.050736>

- Erzurumlu, S. (2010). Collaborative product development with competitors to stimulate downstream innovation. *International Journal of Innovation Management*, 14(4), 573–602. Scopus. <https://doi.org/10.1142/S1363919610002787>
- Fahimnia, B.; Sarkis, J. & Davarzani, H. (2015). Green supply chain management: A review and bibliometric analysis. *International Journal of Production Economics*, 162, 101–114. <https://doi.org/10.1016/j.ijpe.2015.01.003>
- Gaur, A. & Kumar, M. (2018). A systematic approach to conducting review studies: An assessment of content analysis in 25 years of IB research. *Journal of World Business*, 53(2), 280–289. <https://doi.org/10.1016/j.jwb.2017.11.003>
- Jabbour, A. B.; Fiorini, P. D.; Wong, C. W.; Jugend, D.; Jabbour, C. J. C.; Seles, B. M.; Pinheiro, M. A. & Da Silva, H. M. (2020). First-mover firms in the transition towards the sharing economy in metallic natural resource-intensive industries: Implications for the circular economy and emerging industry 4.0 technologies. *Resources Policy*, 66. <https://doi.org/101596>.
- Jesus, G. M. K. & Jugend, D. (2021). How can open innovation contribute to circular economy adoption? Insights from a literature review. *European Journal of Innovation Management, ahead-of-print*(ahead-of-print). <https://doi.org/10.1108/EJIM-01-2021-0022>
- Jimenez-Jimenez, D.; Martínez-Costa, M., & Sanchez Rodriguez, C. (2019). The mediating role of supply chain collaboration on the relationship between information technology and innovation. *Journal of Knowledge Management*, 23(3), 548–567. <https://doi.org/10.1108/JKM-01-2018-0019>
- Koh, S. C. L.; Genovese, A.; Acquaye, A. A.; Barratt, P.; Rana, N.; Kuylenstierna, J. & Gibbs, D. (2013). Decarbonising product supply chains: Design and development of an integrated evidence-based decision support system – the supply chain environmental analysis tool (SCEnAT). *International Journal of Production Research*, 51(7), 2092–2109. <https://doi.org/10.1080/00207543.2012.705042>
- Lee, H. L. & Schmidt, G. (2017). Using Value Chains to Enhance Innovation. *Production and Operations Management*, 26(4), 617–632. Scopus. <https://doi.org/10.1111/poms.12665>
- Lu, Y.; Papagiannidis, S. & Alamanos, E. (2018). Internet of Things: A systematic review of the business literature from the user and organisational perspectives. *Technological Forecasting and Social Change*, 136, 285–297. <https://doi.org/10.1016/j.techfore.2018.01.022>

- Miyamoto, T. (2020). An Examination of Inter-Organisational Learning and R&D Capability through Open Innovation. *The Electronic Journal of Knowledge Management*, 18(1), 80–88.
- Pellegrini, L. & Lazzarotti, V. (2019). How governance mechanisms in family firms impact open innovation choices: A fuzzy logic approach. *Creativity and Innovation Management*, 28(4), 486–500. <https://doi.org/10.1111/caim.12331>
- Rahmanzadeh, S.; Pishvae, M. S. & Rasouli, M. R. (2020). Integrated innovative product design and supply chain tactical planning within a blockchain platform. *International Journal of Production Research*, 58(7), 2242–2262. Scopus. <https://doi.org/10.1080/00207543.2019.1651947>
- Roldán Bravo, M. I.; Lloréns Montes, F. J. & Ruiz Moreno, A. (2017). Open innovation in supply networks: An expectation disconfirmation theory perspective. *Journal of Business & Industrial Marketing*, 32(3), 432–444. <https://doi.org/10.1108/JBIM-07-2016-0150>
- Roldán Bravo, M. I.; Ruiz Moreno, A. & Llorens-Montes, F. J. (2016). Supply network-enabled innovations. An analysis based on dependence and complementarity of capabilities. *Supply Chain Management: An International Journal*, 21(5), 642–660. <https://doi.org/10.1108/SCM-02-2016-0062>
- Shamah, R. A. E. & Elssawabi, S. M. (2015). Facing the open innovation gap: Measuring and building open innovation in supply chains. *Journal of Modelling in Management*, 10(1), 50–75. Scopus. <https://doi.org/10.1108/JM2-02-2013-0009>
- Shamah, R. A. M. & Elsayaby, S. M. M. (2014). Trust as a nucleus key for open innovation. *Journal of Business and Retail Management Research*, 9(1), 110–127. Scopus. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85006003364&partnerID=40&md5=ea1657624fa93bdc28b93cafe38663c5>
- Smith, D. J. & Blundel, R. K. (2012). Improvisation and entrepreneurial bricolage versus rationalisation: A case-based analysis of contrasting responses to economic instability in the UK brass musical instruments industry. *Journal of General Management*, 40(1), 14. <https://doi.org/10.1504/IJTLID.2012.050736>
- Song, H.; Chen, S. & Ganguly, A. (2020). INNOVATIVE ECOSYSTEM IN ENHANCING HI-TECH SME FINANCING: MEDIATING ROLE OF TWO TYPES OF INNOVATION CAPABILITIES. *International Journal of Innovation Management*, 24(02), 2050017. <https://doi.org/10.1142/S1363919620500176>

- Song, J.; Lee, K.-B.; Zhou, Z.; Jia, L.; Cegielski, C. & Shin, S. I. (2022). Enhancing supply chain sensing capability through social media: An environmental scanning perspective. *Information Technology and People*, 35(1), 367–391. Scopus. <https://doi.org/10.1108/ITP-11-2019-0609>
- West, J.; Salter, A.; Vanhaverbeke, W. & Chesbrough, H. (2014). Open innovation: The next decade. *Research Policy*, 43(5), 805–811. <https://doi.org/10.1016/j.respol.2014.03.001>
- Wilhelm, M. & Dolfsma, W. (2018). Managing knowledge boundaries for open innovation – lessons from the automotive industry. *International Journal of Operations & Production Management*, 38(1), 230–248. <https://doi.org/10.1108/IJOPM-06-2015-0337>
- Yan, M.-R.; Tran-Danh, N. & Hong, L.-Y. (2019). Knowledge-based decision support system for improving e-business innovations and dynamic capability of IT project management. *Knowledge Management Research and Practice*, 17(2), 125–136. Scopus. <https://doi.org/10.1080/14778238.2019.1601507>