Critical Review of Supply Chain Innovation Research (1999-2016)

Highlights

Purpose – This paper aims to systematically review the supply chain innovation literature over the last 18 years. It examines the development and current state of supply chain innovation research in management and identifies research gaps.

Design methodology/approach – A literature review is conducted to identify and analyze publications in peer-reviewed academic journals that include contributions from different strands of management research. This paper analyzes the theoretical contributions of the supply chain innovation literature using Gregor's (2006) framework of theory classification. It also evaluates the levels of analysis of the literature using the structural view model proposed by Skinner et al. (2006).

Findings – This research identified and analyzed various topics related to the supply chain innovation construct and showed that supply chain innovations can be studied at multiple analytical levels. It also revealed that the field has largely relied on manufacturing firm-based samples and U.S. samples, limiting the generalizability of the findings. The identification and analysis of relevant articles highlighted the need to conceptualize the supply chain innovation construct and develop measurement scales to operationalize it.

Research limitations/implications – Although the authors believe that the correct search terms were used, the choice of these terms may be a limitation of this study.

Practical implications – The results presented can be applied to the decision-making process of managers regarding supply chain innovations.

Originality/value – This literature review is the first to focus on supply chain innovations, summarizing the development of the last 18 years and providing fruitful opportunities for future research.

Keywords: Supply chain innovation, Supply chain research, Innovation

Paper type Literature review

Abstract

This paper aims to systematically review the supply chain innovation literature over the last 18 years. It examines the development and current state of supply chain innovation research in management and identifies research gaps. A literature review is conducted to identify and analyze publications in peer-reviewed academic journals that include contributions from different strands of management research. This paper analyzes the theoretical contributions of the supply chain innovation literature using Gregor's (2006) framework of theory classification. It also evaluates the levels of analysis of the literature using the structural view model proposed by Skinner et al. (2006). This research identified and analyzed various topics related to the supply chain innovation construct and showed that supply chain innovations can be studied at multiple analytical levels. It also revealed that the field has largely relied on manufacturing firm-based samples and U.S. samples, limiting the generalizability of the findings. The identification and analysis of relevant articles highlighted the need to conceptualize the supply chain innovation construct and develop measurement scales to operationalize it. This literature review is the first to focus on supply chain innovations, summarizing the development of the last 18 years and providing fruitful opportunities for future research. The results presented can be applied to the decision-making process of managers regarding supply chain innovations.

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1. Introduction

Supply chain innovations can be defined as complex processes that deal with environmental uncertainty and respond to customer needs by using new technologies to improve organizational processes in new ways (Lee et al., 2011). Ojha et al. (2016) stated that supply chain innovations are a relational phenomenon, cultural and cross-organizational, and that success ultimately leads to a "fairly continuous stream of innovations overtime." Isaksson et al. (2010) further illustrated that the realization of supply chain innovations in the service sector can show benefits to stable competitive advantage, sustainable development, and services. Bello et al. (2004) argued that supply chain innovations include distributing activity sets and new investments to channel participants, to increase revenue through high service effectiveness and maximize joint profits by reducing costs through greater operational efficiency.

Supply chain innovations can be defined in many ways. Coltman et al. (2010) stated that supply chain innovations are vital across all product and service categories for the provision of new services. Lee et al. (2014) proposed that supply chain innovations can be used as tools to improve organizational processes that require effective supply chain management through interactions between distributors, manufacturers, customers, and suppliers. Therefore, the flexibility needed to work with rapid changes in business environments, new operational strategies, cost, consistent quality provision, and lead-time reduction is required (Lee et al., 2014). Schoenherr and Swink (2012) further elaborated that a firm should be able to use its innovation skills if it has great process compliance, because company employees can access and share information easily and effectively through established rules, systems, procedures, and cross-functional relations. Supply chain firms can coordinate and prepare to maintain alternative configurations effectively. Cohen and Levinthal (1990) explained that supply chain innovations can be enhanced by process compliance, which is a way to effectively absorb (recognize, evaluate, assimilate, and apply) aspects of supply and demand-side competence from the absorptive capacity paradigm.

Regardless of how supply chain innovations are defined, the problems associated with these innovations are clearly multiple and varied. As such, researchers have studied supply chain innovations in the field of operations management, but also in marketing (Archer et al., 2008; Cai et al., 2009; Jajja et al., 2017), IS (Jean et al., 2012; Storer et al., 2014; Vickery et al., 2003), psychology (Aitken and Harrison, 2013), and other fields. The supply chain innovation concept has become increasingly important in business-to-business marketing research and practice, because of its potential effects on organizational outcomes, including operational efficiency (Ranganathana et al., 2011; Yaibuathet et al., 2008), service effectiveness (Claycomb et al., 2005; Coltman et al., 2010; Harland et al., 2003; Sampson and Spring, 2012), economic prosperity (Ageron et al., 2013; Huo et al., 2013), environmental protection (Melnyk et al., 2009; Miao et al., 2012), and social responsibility (Isaksson et al., 2010; Lee et al., 2011). In this paper, we explore the supply chain innovation construct in the domain of management with the following objective:

The purpose of this paper is to inform business-to-business marketers of the current state of supply chain innovation research in the management field through a systematic and comprehensive review of the literature.

This paper explores several contributions and provides several findings for the literature.

1. This structured literature review is the first to focus on supply chain innovations, summarizing the development of the past 18 years.

2. This research identified and analyzed various topics related to the supply chain innovation construct and showed that supply chain innovations can be studied at multiple analytical levels. Future research should consider multilevel effects and different levels of analysis for supply chain innovations (Caniato et al., 2014; Singh and Gregory, 2008).

3. We found that supply chain innovation research has heavily relied on manufacturing firm-based samples and U.S. samples, limiting the generalizability of the findings. Future research should consider using more diversity in sampling populations (Chen et al., 2011; Cheng et al., 2014).

4. We showed that a few studies on supply chain innovations have focused on conceptualizing the supply chain innovation construct, but have neglected the development of measurement scales for its operationalization. We suggest that future research considers developing an empirically reliable and valid measurement of supply chain innovations.

2. Literature Review

2.1 Review of Supply Chain Innovations

Supply chain innovations are a combination of information and related technology developments and new marketing and logistic procedures to enhance service effectiveness, improve operational efficiency, increase revenue, and maximize joint profits (Bello et al., 2004). Based on this definition and a resource-based view, supply chain innovations consist of three key innovation activities: logistics-oriented, marketing-oriented, and technological development-oriented innovation activities.

Logistics-oriented innovation activities pertain to logistics-related services that are helpful and new to a specific target audience. This audience can be external, wherein innovations serve customers better, or internal, wherein innovations improve operational efficiency (Flint et al., 2005; Grawe et al., 2009). According to Chen and Paulraj (2004), logistics that a) provides firms with space utilities and time, b) guarantees the quantity of goods needed at the right time and in the right place, and c) reduces organizational slack requires a close, intensive, and coordinated information exchange between supply chain partners. Eschenbacher et al. (2011) illustrated that supply chain innovation processes are a good example of inter-organizational and distributed innovation processes (DIPs). Indeed, the outside world is integrated into the innovation processes that lead to DIPs. Meanwhile, innovations are coordinated by a supply chain hub and this function is usually executed by a large company with full control.

Marketing-orientated innovation activities are inspirational customer research and innovative marketing-related services that meet customer needs (Desbarats et al., 1999; Chen and Paulraj, 2004). Desbarats et al. (1999) further elaborated that marketing fulfills the core strategic responsibility of the customer supplier relationship. The integration and collaboration of suppliers play a critical role in achieving supply chain innovation goals. If suppliers are not interested in innovations, companies are less likely to achieve supply chain innovations (Jajja et al., 2017).

Technological development-oriented innovation activities involve the creation of new knowledge and technical skills that can contribute to the development of new services and/or products for customers (Lee et al., 2011). Storer et al. (2014) pointed out that supply chain innovations often involve partnerships and collaborative relationships, particularly when using industry-wide and industry-led innovations, such as information systems and new technologies, that can be mutually beneficial.

According to Lee et al. (2014), supply chain innovations help organizations achieve supply chain efficiency for effective customer value creation, including rapid patient care processing, medical error reduction, and efficient data management, to positively influence organizational performance. Ireland and Webb (2007) further elaborated that firms tend to maximize these efficient relationships rather than seeking new or additional partners to increase their effectiveness. Cai et al. (2009) specified that an innovative supply chain pattern meets the needs of supply chain innovations. This is especially relevant for supply chain companies, which usually produce innovative products and face an uncertain market.

The in-depth literature review was conducted in different stages to explore the supply chain innovation construct in each reviewed journal. First, the theoretical contributions of the supply chain innovation literature were analyzed using Gregor's (2006) framework of theory classification to identify the type of theory used in the literature. Second, we evaluated the levels of analysis of the literature using the structural view model proposed by Skinner et al. (2006). In addition to the individual, group, and organizational levels proposed by Skinner et al. (2006), following Smith et al. (2011), the societal level was included to study supply chain innovations across cultural or national regions.

2.2 Research Methodology

The unit of analysis used in this review is supply chain innovations. In this paper, we review previous theoretical and empirical studies of supply chain innovations. The review covers the period from 1999 to the present, 1999 marking the publication of the first leading paper on the innovation supply chain (Desbarats et al., 1999). A search of the literature on supply chain, innovation, supply chain innovation, instrument development, scale validation, and measurement model was undertaken to identify the relevant studies. Conference proceedings and unpublished dissertations, theses, and working papers were excluded from our study. Only published journal articles were included. This paper is organized as follows. Section 2 provides an in-depth literature review and Section 3 presents our findings. Figure 1 shows the methodological framework of this research.

<< Insert Figure 1 in here >>

First, we identified and searched the supply chain innovation literature in well-known academic databases (ABI/INFORM Global, Academic Search Premier [EBSCO], Emerald Journals [Emerald], JSTOR Business, and SAGE Journals). "Innovative supply chain," "Innovation," "Supply chain," and "Supply chain innovation" were used as keywords, and approximately 2,881 articles listed were related to supply chain innovations.

Using the list of related studies and based on the definition of Bello et al. (2004), we extracted logistics-oriented innovation activities, marketing-oriented innovation activities, technological development-oriented innovation activities, operational efficiency, service effectiveness, and economic prosperity. We also extracted research related to environmental protection and social responsibility using the definition of Lee et al. (2011), which states that supply chain innovations guarantee the safety and environmental protection of delivered products. These eight areas were chosen because of their frequent recurrence in the supply chain innovation literature.

We eliminated articles with a table of contents, articles listed twice, and papers that did not focus on process innovation and product innovation published in journals with an innovation journal title at the time of the screening. After eliminating 2,726 articles, 155 remained. These articles were then coded according to their topic areas, theoretical contributions, and levels of analyses. The results are presented in appendices B and C.

3. Findings

Table 1 shows the distribution of the reviewed articles across leading journals. Appendix A lists the 155 journals found in our literature review.

<<Insert Table 1 in here >>

We found that the majority of supply chain innovation articles (61%) were published in *Industrial Marketing Management* (5%), *International Journal of Operations and Production Management* (6%), *International Journal of Production Economics* (13%), *Journal of Operations Management* (10%), *Journal of Supply Chain Management* (15%), and *Supply Chain Management: An International Journal* (12%).

The review revealed several important pieces of information on supply chain innovation research. First, various topics related to the supply chain innovation concept are of interest to business-to-business marketers. Second, previous research on supply chain innovations has rarely focused on the theoretical contributions of design and action and mainly on explaining and predicting contributions. Third, supply chain innovation research has largely relied on manufacturing firm-based samples and U.S. samples. Finally, supply chain innovations can be studied at multiple analytical levels. In the following sections, we further investigate each of these issues and discuss the implications of our findings.

<<Insert Table 2 in here >>

<<Insert Figure 2 in here >>

3.1 Gregor's (2006) theory classification in supply chain innovation research

By adapting Gregor et al.'s (2006) proposed framework to classify theories, we analyzed the theoretical contributions of the supply chain innovation articles, which identify different types of theories, i.e. analyzing, explaining, predicting, explaining/predicting, and design/action. Table 2 presents their definitions, which have been adapted for our research.

Figure 2 and Appendix B show the coding of each article in our review of theoretical contributions and Table 3 summarizes Appendix B in terms of theoretical contributions to supply chain innovation research. First, we found that supply chain innovation research has largely focused on explaining and predicting theoretical contributions, followed by an explanation of these theoretical contributions. In addition, only few articles discussed contributions of design and action. Although research on supply chain innovations has increased, which can be largely attributed to the astronomical efforts needed to develop and validate constructs and measures of supply chain management, a comprehensive approach to construct development and measurement remains non-existent (Chen and Paulraj, 2004). Govindarajan and Kopalle (2006) argued that without formalizing the concept of innovativeness with a reliable and valid measure, it will be difficult to conduct rigorous research to uncover

the causes of the innovator's dilemma and identify mechanisms to help incumbents develop such innovations.

As shown in Table 3, most research in logistics-oriented innovation activities, marketing-oriented innovation activities, technological development-oriented innovation activities, operational efficiency, service effectiveness, economic prosperity, social responsibility, and environmental protection has focused on explaining and predicting theories, with previous work mainly focusing on the development and testing of instruments (Cao and Zhang, 2010). Gregor et al. (2006) pointed out that theory development begins with domain analysis and continues with explaining and predicting theories. Supply chain innovation research has benefited from this approach as there are no standardized instruments for measuring supply chain innovations.

<<Insert Table 3 in here >>

Huo et al. (2013) revealed that supply chain innovations will be adopted because of economic advantages, which may explain why economic prosperity is highest in Table 3. We also found a high portion of articles on the study of environmental protection and social output published since 2007. This finding can be explained by firms' growing concern for their sustainable development and the measurement of the stable performance of supply chains, which can create transparency and initiate supply chain innovations (Beske-Janssen et al., 2015). Indeed, firms tap into their resources and capabilities to detect the potential of supply chain innovations to sustain development and often struggle to capitalize on supply chain innovations. Apple Inc. and Samsung are good examples (Gualandris and Kalchschmidt, 2016).

We found that the number of outputs for operational efficiency and service effectiveness was comparatively high and consistent with economic prosperity, as both operational efficiency and service effectiveness can lead to fruitful economic outcomes (Bello et al., 2004). In Table 3, we also obtained the same number of outputs for logistics-oriented innovation activities, marketing-oriented innovation activities, and technological development-oriented innovation activities when analyzing the theory type. Moreover, the number of outputs for logistics-oriented innovation activities was half that of marketing-oriented innovation activities and technological development-oriented innovation activities when explaining and predicting the theory type. This phenomenon is largely due to the analysis of technological development using patent reports, information that is easily accessible and publicly available (Benner and Tushman, 2002; Trautrims et al., 2017). Desbarats et al. (1999) explained that new products are delivered to the economy by professional teams from different disciplines. For example, marketing and sales teams focus on customers, whereas technical and creative teams focus on product specifications. Chen and Paulraj (2004) also argued that meeting customer needs is the main goal of marketing and the central purpose of any business. Moreover, Sarkis et al. (2012) proposed that supply chain innovations from knowledge flows are especially pertinent to small supply chain organizations, which typically lack knowledge resources about environmental actions for their operations. Archer et al. (2008) illustrated that both customers and suppliers of small- and medium-enterprises prefer to pursue traditional product issues (price, quality, support, reliability) and not the process issues that motivate supply chain innovations (value engineering, e-business, value analysis, time

to market, R&D, and procurement expertise). All of these factors may hinder the number of occurrences for logistics-oriented innovation activities. We believe and expect to find more explanation/prediction contributions in future supply chain innovation research. For example, Ferrer et al. (2011) pointed out that to pursue a continual value adding process and create supply chain innovation capacity, inter-organizational relationships resulting from cooperative and collaborative outcomes must be controlled. In terms of social aspects, He et al. (2017) suggested that although business practices are in urgent need of guidance and directions on how to create "real" sustainable supply chains, researchers are lagging behind. Therefore, there is a need for forward (deductive) research to predict new business trends and direct new sustainable supply chain innovations. In terms of environmental aspects, Melnyk et al. (2009) emphasized the need for further research in various areas, such as supply chain and environmental performance, the role of supply chain design/redesign to improve competitiveness, the role of supply chain in product/process/supply chain innovations, and realigning performance measures across the supply chain.

A sustainable supply chain is one that can generate profits over an extended period without harming the social or natural system (Pagell and Wu, 2009). In such a supply chain, customers are willing to do business forever (Schaltegger and Burritt, 2014). Masoumik et al. (2014a; 2014b) further elaborated that the core values of future positioning and supply chain innovations can be generated by the innovative sustainable supply chain. Previous studies have highlighted that key areas, such as logistics and customers, contribute significantly to achieving sustainable supply chains. Markley and Davis (2007) illustrated that logistics is crucial in implementing environmental strategy, from storage to transportation of raw materials to the delivery of products to the market. Svensson and Wagner (2012) further proposed that consumer perception of the sustainable supply chain is essential for a company. Pagell and Wu (2009) pointed out that organizational capacity to innovate is important to create a sustainable supply chain, as firms in a sustainable supply chain seek new market opportunities by redefining their supply chain or developing new radical products/processes (Pagell and Wu, 2009; Klassen and Vereecke, 2012; Marshall et al., 2015). As a result, radical sustainable supply chains and innovative business strategies are generated, providing win-win solutions for businesses (Khalid et al., 2015).

Gregor et al. (2006) emphasized that design and action theories will be followed by explaining and predicting theories. Our review revealed their occurrences in published supply chain innovation journal articles for marketing-oriented innovation activities, logistics-oriented innovation activities, technological development-oriented innovation activities, operational efficiency, service effectiveness, economic prosperity, environmental protection, and social responsibility. For example, Cao and Zhang (2010) showed that a scale to measure supply chain collaboration is beneficial. In addition, it is always advantageous to convert conceptual frameworks into real tools and then products because of the more practical implications for tools than frameworks. Holmstrom and Partanen (2014) used the F-18 Super Hornet as an example of integrating digital manufacturing technology to produce a subsystem. In fact, researchers must have access to tools to advance their work instead of constantly reinventing the wheel. Storer et al. (2014) shared a similar viewpoint. Basole et al. (2017) presented another visual analytic approach, arguing that researchers and decision makers are able to see patterns, digest data, identify outliers, and spot trends

effectively and rapidly, thereby improving memory, comprehension, the hypothesis-generating process, decision-making, and facilitating the proposition-generating process. To enable research to build on previous work, supply chain innovation research should be done in an open source environment, the advantage being that the code designed by one group can be expanded to others (Belanger and Crossler, 2011).

Researchers should explore ways to solve outcome issues (such as economic prosperity) for future commercial applications and services. For example, Hult et al. (2010) discussed three examples, explaining how Benetton, Whirlpool, and HP redesigned their supply chain processes to reduce supply chain costs for their own benefit. Similarly, Sawhney et al. (2006) pointed out that Zara redesigned its supply chain process to reduce inventory by showing up-to-date apparel styles for economic benefits.

Categorizing the type of innovation by supply chain stage in supply chain innovation research

Appendix B presents a classification of the supply chain innovation literature, wherein studies are categorized by type of innovation according to the supply chain stage. Table 4 presents a summary of the journal articles.

<<Insert Table 4 in here >>

Table 4 reveals that supply chain innovations have mainly occurred at the manufacturer, supplier, and "supplier + manufacturer" stages, with about 57% of the studies conducted at these stages. Only 9% of the studies have been conducted at the retailer and customer stages. This finding demonstrates that customers have more negotiating power than suppliers in general and identifies a tendency to shift downstream customer pressures to upstream suppliers (Yi et al., 2011). As shown in Table 4, supply chain innovations have mainly occurred in the areas of marketing-oriented innovation activities (64%), technological development-oriented innovation activities (61%), and logistic-oriented innovation activities (60%) at the supplier, manufacturer, and "supplier + manufacturer" stages. As a result, upstream suppliers or manufacturers transform their business models through supply chain innovations to regain competitive advantages (MacCarthy et al., 2016). They also improve their organizational process by using new technologies to meet their customers' needs (Lee et al., 2011).

Another finding of the review was that different supply chain stages can work together to achieve better and more prosperous economic results, such as "supplier + manufacturer + retailer" (5%), "supplier + manufacturer + customer" (7%), or even "supplier + manufacturer + retailer + customer" (5%). This finding may be the result of the growing globalization of the market, which forces supply chain competition to expand to interfirm competition. This situation requires collaboration between downstream distributors and upstream suppliers. Therefore, the concept of innovation should be extended from manufacturing to supply chain scenarios. A well-managed innovation process is important for a company. The shared processes of many firms within that company's supply chain network bring about the supply chain innovation concept by covering all innovative activities that increase the effectiveness of the company's supply chain and give the company a competitive advantage (Roy et al.,

2004).

3.3 Sample characteristics in supply chain innovation research

To classify the supply chain innovation literature, we examined the samples used for conceptual research by identifying the respondent type (manufacturing companies versus non-manufacturing companies), or the context used for conceptual research by identifying the respondent origin. As explained below, we revealed that supply chain innovation research has largely relied on manufacturing firm-based samples and U.S. samples, limiting the generalizability of the findings. Appendix C presents the detailed results.

3.3.1 Type of respondents

Supply chain innovation research has used samples from manufacturing firms typically used by business-to-business marketers to investigate different phenomena in the same situation. We found that 83% of previous studies used samples from manufacturing firms. Droge et al. (2003) pointed out that the business-to-business marketing literature tends to focus on the performance implications of supply chain innovations, and that innovation performance can be measured in terms of innovative inputs, such as R&D expenditures, or innovation outputs, such as patenting frequency. These arguments may explain the high number of articles found in the review. This can also help provide information on the locations of supply chain innovations (Trautrims et al., 2017)

We found that out of 79 empirical studies, eight focused on the automotive industry (10%) and six on the electronics industry (8%). One possible explanation is that supply chain innovations can satisfy customers and build brand loyalty (Aitken and Harrison, 2013). Ettlie and Pavlou (2006) further explained that the automotive industry is driven by complex new product introductions and a trend toward changing the locus of innovation in this sector of the economy that moves upstream in the supply chain from assembly (buyer) firms, such as General Motors Corporation and Toyota, to first-tier suppliers, such as Delphi and Visteon.

Laursen and Salter (2006) illustrated that biotechnology is an example of a single source of utmost importance in the context of radical innovations, in which universities are arguably the key source. Another example is scientific instruments, in which lead users play a key role, as almost 50% of innovations come from them. Business-to-business marketers often discuss how using samples from non-manufacturing firms can improve generalizability. We argue that studies focusing on manufacturing firms should be pursued as they provide valuable data and manufacturing firms are important stakeholders in supply chain innovations. However, manufacturing firms may have different concerns than retailers or wholesalers and may have different behaviors in supply chain innovations.

3.3.2 Origin of respondents

A comparatively large number of supply chain innovation studies have focused on the U.S. Indeed, we found that 40% of the studies were conducted on U.S. samples. We argue that different perceptions of supply chain innovations and their effects can be

obtained as individuals from different countries have different values, laws, and cultures. In addition, Anderson et al. (2014) demonstrated that team innovation has some cognitive styles that may facilitate idea generation, inhibit it, or facilitate idea implementation. Jajja et al. (2017) also suggested that longitudinal analysis across industries and countries can help understand whether the maturity and evolution of supply chain innovation processes and supply chain relationships differ or follow those observed in developed economies.

Yaibuathet et al. (2008) stated that the regulatory element of the institutional environment is delicate and limits the ability of domestic and foreign firms to adopt supply chain innovations in China. Our findings did not fully support this argument, as 8% of the studies were conducted using samples from China. Yaibuathet et al. (2008) also argued that managers in Japanese firms are unwilling or unable to accept the adaptive and flexible arrangement with non-members required by supply chain innovations, because of the reliability and centralized control of dominant firms on group loyalty in Japanese culture. Our findings supported this argument, as only 2% of the studies used samples from Japan.

We noticed that previous studies have also used samples from Taiwan (1%) and Thailand (1%). Jean et al. (2012) explained that members of the Taiwanese electronics industry actively participate in the world economy, are pioneers in the development of information technology, and champion cross-border relationships with European and U.S. industry leaders, thereby offering a valuable empirical context. Wong et al. (2013) also justified the choice of the Thai automotive industry as their research sample, as Thailand is one of the largest motor vehicle manufacturing bases in the world in terms of gross output and export value.

One interesting finding was that 80% of samples from other countries (vs 20% of U.S. samples) addressed environmental protection, and 77% of samples from other countries (vs 23% of U.S. samples) addressed social responsibility. We assume that both cases include a large portion of developing countries. Jajja et al. (2017) explained that expanding the analysis to emerging economies will enable the identification of patterns and diversities in the evolution of supply chain innovation practices across environments.

3.3.3 Non-sampled Studies

Most studies have discussed supply chain innovation evolution, concepts, and critical review research. However, no information was requested from the participants as no construct was tested.

3.3.4 Summary

This section demonstrates that innovation research has largely relied on manufacturing firm-based samples and U.S. samples, limiting the generalizability of the findings on supply chain innovation practices, consequences, and attitudes. One possible explanation is the type of journal sample used in our investigation, as only English language journals were included. We expect future research to focus on supply chain innovations from a sample perspective, as this topic is of great interest to business-to-business marketers.

3.4 Structural view of supply chain innovations

Appendix C presents a classification of the supply chain innovation literature based on the levels of analysis (using the structural view model proposed by Skinner et al. (2006)), and Table 5 provides a summary of the journal articles. In addition to the individual, group, and organizational levels proposed by Skinner et al. (2006), following Smith et al. (2011), the societal level was included to study supply chain innovations across cultural or national regions. We used the same concept as MIS studies to analyse supply chain innovation research. First, we found that most supply chain innovation research has been examined at the organizational level compared with other levels. Second, we found that supply chain innovation research has mainly been conducted at the "individual + organizational" level, even though it can be conceptualized as a multilevel concept.

<<Insert Table 5 in here >>

Levels of analysis in supply chain innovation research

Table 5 shows that supply chain innovation research has been conducted mainly at the organizational level or the "individual + organizational" level, with about 97% of the studies conducted at these levels. This may be due to the fact that collecting and analyzing data from a large number of individuals and organizations is easier through surveys or interviews. As shown in Table 5, we found that no studies have been conducted at the individual, group, "individual + societal," "group + societal," or "individual + group + societal" level of analysis for supply chain innovations. We also found that the number of outputs for the organizational level was slightly higher than that of the "organization + individual" level. These differences can be explained by various supply chain innovation concepts that are conceptualized and understood at the organizational level. For example, most people think that supply chain innovations occur at the organizational level. In addition, most papers at the "individual + organizational" level of analysis may be related to the management of the organization's development. Therefore, managers must understand the importance of good timing in managing the diffusion of innovations and cannot wait too long before shifting to new technologies and services because learning curves are steep (Lyytinen and Rose, 2003). Clearly, future research has many avenues. For example, we expect involvement of the CEO or top management in R&D to enhance supply chain innovations. In addition, metrics are needed to evaluate supply chain innovations from the perspective of the organization, as discussed in the following sections.

Table 5 presents two papers analyzed at the "individual + group + organizational + societal" level, which are not empirical studies. One interesting finding was that no studies have focused on the societal level of analysis for supply chain innovations, and only a few on the "organizational + societal" level of analysis. We believe that additional studies on supply chain innovations should be conducted at both levels. In such studies, one should prioritize the importance of the end customer due to low demand and strong competition at the international level against global competitors. The fact that international retail is an emerging discipline in the manufacturing sector, especially since the economic crisis of 2008, must also be considered (Caniato et al., 2014). Yaibuathet et al. (2008) stated that management and technological knowledge

differ in developed and developing countries, although both factors are essential for industrialization and modernization. Mechanized structures and cultures that are functionally oriented tend to discourage communication across functions and encourage the creation of measures optimized locally instead of globally (Pagell et al., 2004). All these points may encourage business-to-business marketers to deepen their knowledge at the societal and "organizational + societal" levels.

Another finding of the review was that in the supply chain innovation literature, few studies have focused on the "group + organization" or "group + organization +societal" level of analysis. We suggest that further studies be conducted in this category, for example, examining the unwillingness to change and doubts about unfamiliar practices among domestic channel members, resulting in inefficient and ineffective supply chain management when viewed from the supply chain innovation perspective (Yaibuathet et al., 2008). This may be due to the fact that members of a collective culture are more likely to subordinate their personal goals to those of the group and to prioritize the interests of the collective (Huo et al., 2013). Scholars have even argued that supply chain innovations may not be adopted because of these normative elements (Yaibuathet et al., 2008). We believe that there is a need for further studies and in-depth analyses of the effects of group culture and organizational culture on supply chain innovations (Miles and Huberman, 1994; Myers et al., 1997).

Other research has typically provided or discussed the types of organizations that can be adopted in supply chain innovations. For example, Samiee et al. (2008) demonstrated that by requiring their channel members to share benefits from supply chain innovations, Sony has created an efficient supply chain management system within and across its units, which incorporates upstream suppliers and downstream distributors and retailers. Similarly, Roy et al. (2004) illustrated that Dell and Toyota motivate their suppliers to seek new business opportunities and derive competitive strength from upstream supply chain innovations, creating sustainable buyer-seller relationships.

To conclude this section, we argue that future research should adopt a multilevel perspective and not solely an "individual + organizational" perspective. Several levels should be taken into account simultaneously. Establishing a multilevel theory building reveals supply chain dynamics and implications (Matthyssens et al., 2006). Gupta et al. (2007) proposed that the multilevel theory helps better understand how phenomena at one level of analysis are linked to those at another level. In doing so, we can provide a rich and comprehensive perspective of a given phenomenon, such as innovation. The introduction and implementation of SAP systems at Ralph Lauren (based on the Ralph Lauren Corporation Annual Report, April 1, 2017, 16) and ECCO (Munksgaard et al., 2014) are examples of supply chain innovations at the "individual + group + organizational" level, as staff, teams, and the entire organization are involved in process improvement by using new technologies to enhance operational efficiency and service effectiveness. Moreover, the IKEA GROUP's approaches to sustainability (based on the IKEA GROUP Sustainability Report FY16, August 31, 2016, 6), 3M, and Henkel (Hansen et al., 2009) are illustrative examples of supply chain innovations at the "individual + organizational + societal" level. Their CEOs involvement in the supply chain innovation process, especially for sustainability issues, are key to saving money and energy, which in turn benefits society.

Yin et al. (2018) also used concrete examples, such as Henry Ford who introduced the use of mass production assembly to address the shortage of supply in product volumes, and Taiichi Ohno who developed the Toyota production system to meet different customer interests in product variety. These are examples of supply chain innovations at the "individual + group + organizational + societal" level, as the introduction of new technologies not only brings organizational and supply chain improvements, but also benefits the entire automotive industry. Supply chains have evolved into a complex adaptive system from a linear structure to adapt to environmental changes (Wycisk et al., 2008). According to Wu et al. (2016), a smart supply chain is an interconnected business system. Guo et al. (2015) also argued that a smart supply chain is an instrumented and intelligent system. A smart supply chain is the outcome of supply chain innovations, some of which are innovations of processes, networks, systems, or technology (Wu et al., 2016). The volume of innovations and innovation-related activities are positively influenced by supply chain performance and supplier-customer collaborations (Modi and Mabert, 2010; Henke and Zhang, 2010). The characteristics of a smart supply chain, such as intelligent infrastructure, smart machines, Internet of Things, and its capabilities, such as interconnectivity and real-time communication, are features that fully enable data collection at all levels of the supply chain (Wu et al., 2016). Business intelligence software and a responsive decision-making system can help provide better services to customers.

3.5 Theories and models applied to supply chain innovation research in the literature

Theories and models can be used to explain a phenomenon or topic under study. They also work as paradigms to underpin a research design.
As shown in Appendix D, many theories and models have been used in previous supply chain innovation research. Some of the most essential theories/models have been used for further analysis, accounting for 64% of occurrences in the reviewed articles. We found that five major theoretical perspectives have been used in previous research, namely, resource-based view (21%), transaction cost economics (16%), relational theory (12%), knowledge-based theory (6%), and organizational theory (6%). Appendix E provides a brief introduction to these five theoretical perspectives.

4. Conclusions, research implications, and limitations

This paper presents a review of the supply chain innovation literature, focusing on research conducted over the last 18 years. We identified 155 studies that we aggregated and coded based on topic areas, key constructs, theoretical contributions, and methodologies. Our objective was to provide an overview of past and present supply chain innovation research to identify possible future research directions for new and established researchers.

1. We identified various topics related to supply chain innovations and revealed that supply chain innovations exist at multiple analytical levels. We recommend that future research consider different analytical levels together with the multilevel effects of supply chain innovations;

2. We found that supply chain innovation research has heavily relied on manufacturing firm-based samples and U.S. samples, limiting the generalizability of the findings. We suggest that future research uses broader and more diverse sampling populations;

3. We revealed that supply chain innovation research has mainly used the resource-based view because supply chain innovations are valuable, inimitable, rare, and non-substitutable resources. In addition, firms that realize supply chain innovations generally outperform their competitors (Barney et al., 1991; Barney et al., 2001).

Supply chain innovations are a complex construct of great interest to business-to-business marketers. The previous literature has shown that this construct has received more attention in the areas of practice and research for business-to-business marketing because of its potential to affect organizational outcomes, such as operational efficiency, service effectiveness, economic prosperity, environmental protection, and social responsibility. Based on the theoretical contributions of the supply chain innovation literature, few studies have focused on the conceptualization of the supply chain innovation construct and no studies have discussed the development of measurement scales to operationalize this construct. Insufficient research may be due to the lesser importance of supply chain innovations compared with traditional innovation topics, such as radical innovation, incremental innovation, or administrative innovation. We also believe that inconsistencies in the conceptualization and operation of supply chain innovations in the extant literature may have contributed to the slow progress in these areas. As the need for reliable and valid instruments to assess supply chain innovations has become crucial with firms relying more and more on innovations to help them effectively and efficiently compete, researchers should consider developing an empirically reliable and valid instrument for measuring supply chain innovations. In addition, we suggest developing a typology to label the supply chain innovation construct and a method to conceptualize and operationalize this construct.

This study has some limitations. First, the literature review in this research focuses on academic journals only. Therefore, new research in the same research area or a similar field may also appear in conference papers and books, which we disregarded. Second, we limited the search for articles to five online databases. Other academic journals may provide a comprehensive picture of articles on supply chain innovations. Finally,

non-English publications were excluded from this study. We believe that supply chain innovation research has also been discussed and published in other languages.

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References

Alexander, L., & Van Knippenberg, D. (2014). Teams in pursuit of radical innovation: A goal orientation perspective. Academy of Management Review, 39(4), 423-438.

Anderson, N., Potočnik, K., & Zhou, J. (2014). Innovation and creativity in organizations: A state-of-the-science review, prospective commentary, and guiding framework. Journal of Management, 40(5), 1297-1333.

Arend, R. J., & Levesque, M. (2010). Is the resource-based view a practical organizational theory?, Organization Science, 21(4), 913-930.

Armstrong, C. P., & Sambamurthy, V. (1999). Information technology assimilation in firms: The influence of senior leadership and IT infrastructures. Information Systems Research, 10(4), 304-327.

Arrow, K. J. (1971). The economic implications of learning by doing. In Readings in the Theory of Growth (pp. 131-149). Palgrave Macmillan, London.

Argote, L., McEvily, B., & Reagans, R. (2003). Managing knowledge in organizations: n integrative framework and review of emerging themes. Management Sscience, 49(4), 571-582.

Barczak, G., Griffin, A., & Kahn, K. B. (2009). Perspective: Trends and drivers of success in NPD practices: Results of the 2003 PDMA best practices study. Journal of Product Innovation Management, 26(1), 3-23.

Bagozzi, R.P., and Baumgartner, H. The evaluation of structural equation models and hypothesis testing. In R.P. Bagozzi (ed.), Principles of Marketing Research. Oxford, UK: Blackwell, 1994, pp. 386–422.

Baker, G., Gibbons, R., & Murphy, K. J. (2002). Relational Contracts and the Theory of the Firm. The Quarterly Journal of Economics, 117(1), 39-84.

Barney, J. (1991). Firm resources and sustained competitive advantage. Journal of Management, 17(1), 99-120.

Barney, J. B. (2001). Is the resource-based "view" a useful perspective for strategic management research? Yes. Academy of Management Review, 26(1), 41-56.

Bélanger, F., & Crossler, R. E. (2011). Privacy in the digital age: a review of information privacy research in information systems. MIS Quarterly, 35(4), 1017-1042.

Benner, M. J., & Tripsas, M. (2012). The influence of prior industry affiliation on framing in nascent industries: the evolution of digital cameras. Strategic Management Journal, 33(3), 277-302.

Camisn, C., & Villar-López, A. (2011). Non-technical innovation: organizational memory and learning capabilities as antecedent factors with effects on sustained competitive advantage. Industrial Marketing Management, 40(8), 1294-1304.

Chen, W. R., & Miller, K. D. (2007). Situational and institutional determinants of firms' R&D search intensity. Strategic Management Journal, 28(4), 369-381.

Churchill Jr, G. A. (1979). A paradigm for developing better measures of marketing constructs. Journal of Marketing Research, 16(1), 64-73.

Clark, T. D., Jones, M. C., & Armstrong, C. P. (2007). The dynamic structure of management support systems: theory development, research focus, and direction. MIS Quarterly, 31(3), 579-615.

Coase, R. H. (1937). The nature of the firm. Economica, 4(16), 386-405.

Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. Administrative Science Quarterly, 35(1), 128-152.

Droge, C., Claycomb, C., & Germain, R. (2003). Does knowledge mediate the effect of context on performance? Some initial evidence. Decision Sciences, 34(3), 541-568.

Dyer, J. H., & Singh, H. (1998). The relational view: Cooperative strategy and sources of interorganizational competitive advantage. Academy of Management Review, 23(4), 660-679.

Edmondson, A. C. (2003). Speaking up in the operating room: How team leaders promote learning in interdisciplinary action teams. Journal of Management Studies, 40(6), 1419-1452.

Flint, D. J., Larsson, E., Gammelgaard, B., & Mentzer, J. T. (2005). Logistics innovation: a customer value-oriented social process. Journal of Business Logistics, 26(1), 113-147.

Garriga, H., Von Krogh, G., & Spaeth, S. (2013). How constraints and knowledge impact open innovation. Strategic Management Journal, 34(9), 1134-1144.

Grant, R. M. (1996). Toward a knowledge-based theory of the firm. Strategic Management Journal, 17(S2), 109-122.

Gregor, S., & Benbasat, I. (1999). Explanations from intelligent systems: Theoretical foundations and implications for practice. MIS Quarterly, 497-530.

Gregor, S. (2006). The nature of theory in information systems. MIS Quarterly, 611-642.

Guo, Z. X., Ngai, E. W. T., Yang, C., & Liang, X. (2015). An RFID-based intelligent decision support system architecture for production monitoring and scheduling in a distributed manufacturing environment. International Journal of Production

Economics, 159, 16-28.

Henke, J. W., & Zhang, C. (2010). Increasing supplier-driven innovation. MIT Sloan Management Review, 51(2), 41-46.

Hill, C. W., & Rothaermel, F. T. (2003). The performance of incumbent firms in the face of radical technological innovation. Academy of Management Review, 28(2), 257-274.

Hitt, M. A., Bierman, L., Shimizu, K., & Kochhar, R. (2001). Direct and moderating effects of human capital on strategy and performance in professional service firms: A resource-based perspective. Academy of Management Journal, 44(1), 13-28.

Hoskisson, R. E., Hitt, M. A., Wan, W. P., & Yiu, D. (1999). Theory and research in strategic management: Swings of a pendulum. Journal of Management, 25(3), 417-456.

Hulsheger, U. R., Anderson, N., & Salgado, J. F. (2009). Team-level predictors of innovation at work: a comprehensive meta-analysis spanning three decades of research. Journal of Applied psychology, 94(5), 1128-1145.

Jerez-Gomez, P., Céspedes-Lorente, J., & Valle-Cabrera, R. (2005). Organizational learning capability: a proposal of measurement. Journal of Business Research, 58(6), 715-725

Kamann, D. J., & Van Nieulande, V. (2010). A Four-Filter Method for Outsourcing to Low-Cost Countries. Journal of Supply Chain Management, 46(2), 64-79.

Khalid, R. U., Seuring, S., Beske, P., Land, A., Yawar, S. A., & Wagner, R. (2015). Putting sustainable supply chain management into base of the pyramid research. Supply Chain Management: An International Journal, 20(6), 681-696.

Klassen, R. D., & Vereecke, A. (2012). Social issues in supply chains: Capabilities link responsibility, risk (opportunity), and performance. International Journal of Production Economics, 140(1), 103-115.

Klein, R., & Rai, A. (2009). Interfirm strategic information flows in logistics supply chain relationships. MIS Quarterly, 735-762.

Kogut, B., & Zander, U. (1992). Knowledge of the firm, combinative capabilities, and the replication of technology. Organization Science, 3(3), 383-397.

Laursen, K., & Salter, A. (2006). Open for innovation: the role of openness in explaining innovation performance among UK manufacturing firms. Strategic Management Journal, 27(2), 131-150.

Lederer, A. L., & Sethi, V. (1992). Root causes of strategic information systems planning implementation problems. Journal of Management Information Systems, 9(1), 25-45.

Leidner, D. E., & Kayworth, T. (2006). A review of culture in information systems research: Toward a theory of information technology culture conflict. MIS Quarterly, 30(2), 357-399.

Levinthal, D., & March, J. G. (1981). A model of adaptive organizational search. Journal of Economic Behavior & Organization, 2(4), 307-333.

Lewis, B. R., Snyder, C. A., & Rainer Jr, R. K. (1995). An empirical assessment of the information resource management construct. Journal of Management Information Systems, 12(1), 199-223.

Malhotra, M. K., & Grover, V. (1998). An assessment of survey research in POM: from constructs to theory. Journal of Operations Management, 16(4), 407-425.

Markley, M. J., & Davis, L. (2007). Exploring future competitive advantage through sustainable supply chains. International Journal of Physical Distribution & Logistics Management, 37(9), 763-774.

Marshall, D., McCarthy, L., McGrath, P., & Claudy, M. (2015). Going above and beyond: how sustainability culture and entrepreneurial orientation drive social sustainability supply chain practice adoption. Supply Chain Management: An International Journal, 20(4), 434-454.

Masoumik, S. M., Abdul-Rashid, S. H., Olugu, E. U., Ghazilla, R., & Ariffin, R. (2014a). Sustainable supply chain design: a configurational approach. The Scientific World Journal, 2014, 1-16.

Masoumik, S. M., Abdul-Rashid, S. H., & Udoncy Olugu, E. (2014b). Gaining competitive advantage through strategic green supply chain management: From a literature review towards a conceptual model. International Journal of Supply Chain Management, 3(3), 49-58.

Mesquita, L. F., Anand, J., & Brush, T. H. (2008). Comparing the resource-based and relational views: knowledge transfer and spillover in vertical alliances. Strategic Management Journal, 29(9), 913-941.

Miles, M. B., & Huberman, A. M. (1994). Qualitative data analysis: An expanded sourcebook. Sage.

Myers, M. D. (1997). Qualitative research in information systems. Management Information Systems Quarterly, 21(2), 241-242.

Nohria, N., & Gulati, R. (1996). Is slack good or bad for innovation?. Academy of Management Journal, 39(5), 1245-1264.

Nonaka, I. (1991). The Knowledge-Creating Company Harvard Business Review November-December 1991, 96-104.

Osborn, R. N., & Hagedoorn, J. (1997). The institutionalization and evolutionary dynamics of interorganizational alliances and networks. Academy of Management Journal, 40(2), 261-278.

Pagell, M., & Wu, Z. (2009). Building a more complete theory of sustainable supply chain management using case studies of 10 exemplars. Journal of Supply Chain Management, 45(2), 37-56.

Peteraf, M. A., & Barney, J. B. (2003). Unraveling the resource-based tangle. Managerial and Decision Economics, 24(4), 309-323.

Priem, R. L., & Butler, J. E. (2001a). Is the resource-based "view" a useful perspective for strategic management research?. Academy of Management Review, 26(1), 22-40.

Priem, R. L., & Butler, J. E. (2001b). Tautology in the resource-based view and the implications of externally determined resource value: Further comments. Academy of Management Review, 26(1), 57-66.

Rainer, R. K., & Harrison, A. W. (1993). Toward development of the end user computing construct in a university setting. Decision Sciences, 24(6), 1187-1202.

Skinner, G., Han, S., & Chang, E. (2006). An information privacy taxonomy for collaborative environments. Information Management & Computer Security, 14(4), 382-394.

Sethi, V., & King, W. R. (1991). Construct measurement in information systems research: An illustration in strategic systems. Decision Sciences, 22(3), 455-472.

Sethi, V., & King, W. R. (1994). Development of measures to assess the extent to which an information technology application provides competitive advantage. Management Science, 40(12), 1601-1627.

Sherif, K., Zmud, R. W., & Browne, G. J. (2006). Managing peer-to-peer conflicts in disruptive information technology innovations: the case of software reuse. MIS Quarterly, 30(2), 339-356.

Smith, H. J., Dinev, T., & Xu, H. (2011). Information privacy research: an interdisciplinary review. MIS Quarterly, 35(4), 989-1016.

Stroeken, J. H. (2001). Information technology, innovation and supply chain structure. International Journal of Services Technology and Management, 2(3-4), 269-288.

Svensson, G., & Wagner, B. (2012). Implementation of a sustainable business cycle: the case of a Swedish dairy producer. Supply Chain Management: An International Journal, 17(1), 93-97.

Thompson, M., & Walsham, G. (2004). Placing knowledge management in context. Journal of Management Studies, 41(5), 725-747.

Von Hippel, E. (1976). The dominant role of users in the scientific instrument innovation process. Research Policy, 5(3), 212-239.

Walker, G., & Weber, D. (1987). Supplier competition, uncertainty, and make-or-buy decisions. Academy of Management Journal, 30(3), 589-596.

Wallenburg, C. (2009). Innovation in logistics outsourcing relationships: proactive improvement by logistics service providers as a driver of customer loyalty. Journal of Supply Chain Management, 45(2), 75-93.

Williamson, O. E. (1979). Transaction-cost economics: the governance of contractual relations. The Journal of Law and Economics, 22(2), 233-261.

Williamson, O. E. (2008). Outsourcing: Transaction cost economics and supply chain management. Journal of Supply Chain Management, 44(2), 5-16.

Wu, L., Yue, X., Jin, A., & Yen, D. C. (2016). Smart supply chain management: a review and implications for future research. The International Journal of Logistics Management, 27(2), 395-417.

Wycisk, C., McKelvey, B., & Hülsmann, M. (2008). "Smart parts" supply networks as complex adaptive systems: analysis and implications. International Journal of Physical Distribution & Logistics Management, 38(2), 108-125.

Yin, Y., Stecke, K. E., & Li, D. (2018). The evolution of production systems from Industry 2.0 through Industry 4.0. International Journal of Production Research, 56(1-2), 848-861.

Appendix A - Papers collected in literature review

[A1] Ageron, B., Lavastre, O., & Spalanzani, A. (2013). Innovative supply chain practices: the state of French companies. Supply Chain Management: An International Journal, 18(3), 265-276.

[A2] Aitken, J., & Harrison, A. (2013). Supply governance structures for reverse logistics systems. International Journal of Operations & Production Management, 33(6), 745-764.

[A3] Allred, C. R., Fawcett, S. E., Wallin, C., & Magnan, G. M. (2011). A dynamic collaboration capability as a source of competitive advantage. Decision Sciences, 42(1), 129-161.

[A4] Amit, R., & Zott, C. (2001). Value creation in e-business. Strategic Management Journal, 22(6-7), 493-520.

[A5] Anderson, E. J., Coltman, T., Devinney, T. M., & Keating, B. (2011). What drives the choice of a third-party logistics provider?. Journal of Supply Chain Management, 47(2), 97-115.

[A6] Archer, N., Wang, S., & Kang, C. (2008). Barriers to the adoption of online supply chain solutions in small and medium enterprises.Supply Chain Management: An International Journal, 13(1), 73-82.

[A7] Arend, R. J., & Wisner, J. D. (2005). Small business and supply chain management: is there a fit?. Journal of Business Venturing, 20(3), 403-436.

[A8] Arlbjorn, J. S., & Paulraj, A. (2013). Special topic forum on innovation in business networks from a supply chain perspective: current status and opportunities for future research. Journal of Supply Chain Management, 49(4), 3-11.

[A9] Azadegan, A. (2011). Benefiting from supplier operational innovativeness: The influence of supplier evaluations and absorptive capacity. Journal of Supply Chain Management, 47(2), 49-64.

[A10] Basole, R. C., Bellamy, M. A., & Park, H. (2017). Visualization of innovation in global supply chain networks. Decision Sciences, 48(2), 288-306.

[A11] Bastl, M., Johnson, M., & Choi, T. Y. (2013). Who's seeking whom? Coalition behavior of a weaker player in buyer–supplier relationships. Journal of Supply Chain Management, 49(1), 8-28.

[A12] Beh, L. S., Ghobadian, A., He, Q., Gallear, D., & O'Regan, N. (2016). Second-life retailing: a reverse supply chain perspective. Supply Chain Management: An International Journal, 21(2), 259-272.

[A13] Bello, D. C., Lohtia, R., & Sangtani, V. (2004). An institutional analysis of supply chain innovations in global marketing channels. Industrial Marketing Management, 33(1), 57-64.

[A14] Bendoly, E., Bharadwaj, A., & Bharadwaj, S. (2012). Complementary Drivers of New Product Development Performance: Cross-Functional Coordination, Information System Capability, and Intelligence Quality. Production and Operations Management, 21(4), 653-667.

[A15] Berghman, L., Matthyssens, P., & Vandenbempt, K. (2012). Value innovation, deliberate learning mechanisms and information from supply chain partners. Industrial Marketing Management, 41(1), 27-39.

[A16] Beske-Janssen, P., Johnson, M. P., & Schaltegger, S. (2015). 20 years of performance measurement in sustainable supply chain management–what has been achieved? Supply Chain Management: An International Journal, 20(6), 664-680.

[A17] Billington, C., & Davidson, R. (2013). Leveraging open innovation using intermediary networks. Production and Operations Management, 22(6), 1464-1477.

[A18] Bitner, M. J., Ostrom, A. L., & Morgan, F. N. (2008). Service blueprinting: a practical technique for service innovation. California Management Review, 50(3), 66-94.

[A19] Blome, C., Schoenherr, T., & Kaesser, M. (2013). Ambidextrous governance in supply chains: The impact on innovation and cost performance. Journal of Supply Chain Management, 49(4), 59-80.

[A20] Boddy, D., Macbeth, D., & Wagner, B. (2000). Implementing collaboration between organizations: an empirical study of supply chain partnering. Journal of Management studies, 37(7), 1003-1018.

[A21] Borgatti, S. P., & Li, X. (2009). On social network analysis in a supply chain context. Journal of Supply Chain Management, 45(2), 5-22.

[A22] Brun, A., & Castelli, C. (2008). Supply chain strategy in the fashion industry: developing a portfolio model depending on product, retail channel and brand. International Journal of Production Economics, 116(2), 169-181.

[A23] Brun, A., Caniato, F., Caridi, M., Castelli, C., Miragliotta, G., Ronchi, S., ... & Spina, G. (2008). Logistics and supply chain management in luxury fashion retail: Empirical investigation of Italian firms. International Journal of Production Economics, 114(2), 554-570.

[A24] Cabigiosu, A., Zirpoli, F., & Camuffo, A. (2013). Modularity, interfaces definition and the integration of external sources of innovation in the automotive industry. Research Policy, 42(3), 662-675.

[A25] Cai, J., Liu, X., Xiao, Z., & Liu, J. (2009). Improving supply chain performance management: A systematic approach to analyzing iterative KPI accomplishment. Decision Support Systems, 46(2), 512-521.

[A26] Caniato, F., Caridi, M., Moretto, A., Sianesi, A., & Spina, G. (2014). Integrating international fashion retail into new product development. International Journal of Production Economics, 147, 294-306.

[A27] Cao, M., & Zhang, Q. (2010). Supply chain collaborative advantage: A firm's perspective. International Journal of Production Economics, 128(1), 358-367.

[A28] Cao, M., & Zhang, Q. (2011). Supply chain collaboration: Impact on collaborative advantage and firm performance. Journal of Operations Management, 29(3), 163-180.

[A29] Caridi, M., Pero, M., & Sianesi, A. (2012). Linking product modularity and innovativeness to supply chain management in the Italian furniture industry. International Journal of Production Economics, 136(1), 207-217.

[A30] Carnovale, S., & Yeniyurt, S. (2014). The role of ego networks in manufacturing joint venture formations. Journal of Supply Chain Management, 50(2), 1-17.

[A31] Carnovale, S., & Yeniyurt, S. (2015). The role of ego network structure in facilitating ego network innovations. Journal of Supply Chain Management, 51(2), 22-46.

[A32] Chen, I. J., & Paulraj, A. (2004). Towards a theory of supply chain management: the constructs and measurements. Journal of Operations Management, 22(2), 119-150.

[A33] Chen, J. S., Tsou, H. T., & Ching, R. K. (2011). Co-production and its effects on service innovation. Industrial Marketing Management, 40(8), 1331-1346.

[A34] Cheng, J. H., Chen, M. C., & Huang, C. M. (2014). Assessing inter-organizational innovation performance through relational governance and dynamic capabilities in supply chains. Supply Chain Management: An International Journal, 19(2), 173-186.

[A35] Choi, T. Y., & Krause, D. R. (2006). The supply base and its complexity: Implications for transaction costs, risks, responsiveness, and innovation. Journal of Operations Management, 24(5), 637-652.

[A36] Chong, A. Y. L., & Zhou, L. (2014). Demand chain management: Relationships between external antecedents, web-based integration and service innovation performance. International Journal of Production Economics, 154, 48-58.

[A37] Claycomb, C., Iyer, K., & Germain, R. (2005). Predicting the level of B2B e-commerce in industrial organizations. Industrial Marketing Management, 34(3), 221-234.

[A38] Cohen, M. A., Cull, C., Lee, H. L., & Willen, D. (2000). Saturn's supply-chain innovation: High value in after-sales service. MIT Sloan Management Review, 41(4), 93.

[A39] Coltman, T., Gattorna, J., & Whiting, S. (2010). Realigning service operations strategy at DHL express. Interfaces, 40(3), 175-183.

[A40] Craighead, C. W., Hult, G. T. M., & Ketchen, D. J. (2009). The effects of innovation–cost strategy, knowledge, and action in the supply chain on firm performance. Journal of Operations Management, 27(5), 405-421.

[A41] Daugherty, P. J., Chen, H., & Ferrin, B. G. (2011). Organizational structure and logistics service innovation. The International Journal of Logistics Management, 22(1), 26-51.

[**A42**] Desbarats, G. (1999). The innovation supply chain. Supply Chain Management: An International Journal, 4(1), 7-10.

[A43] Eschenbächer, J., Seifert, M., & Thoben, K. D. (2011). Improving distributed innovation processes in virtual organisations through the evaluation of collaboration intensities. Production Planning & Control, 22(5-6), 473-487.

[A44] Ettlie, J. E., & Pavlou, P. A. (2006). Technology-based new product development partnerships. Decision Sciences, 37(2), 117-147.

[A45] Ferrer, M., Santa, R., Storer, M., & Hyland, P. (2011). Competences and capabilities for innovation in supply chain relationships. International Journal of Technology Management, 56(2/3/4), 272-289.

[A46] Fine, C. (2013). Intelli-Sourcing to Replace Offshoring as Supply Chain Transparency Increases. Journal of Supply Chain Management, 49(2), 6-7.

[A47] Gadde, L. E. (2013). Moving corporate boundaries: Consequences for innovative redesign. Journal of Supply Chain Management, 49(4), 12-26.

[A48] Gebauer, H. (2011). Exploring the contribution of management innovation to the evolution of dynamic capabilities. Industrial Marketing Management, 40(8), 1238-1250.

[A49] Gligor, D. M., & Holcomb, M. C. (2012). Understanding the role of logistics capabilities in achieving supply chain agility: a systematic literature review. Supply Chain Management: An International Journal, 17(4), 438-453.

[A50] Gnyawali, D. R., & Srivastava, M. K. (2013). Complementary effects of clusters and networks on firm innovation: A conceptual model. Journal of Engineering and Technology Management, 30(1), 1-20.

[A51] Golgeci, I., & Y. Ponomarov, S. (2013). Does firm innovativeness enable effective responses to supply chain disruptions? An empirical study. Supply Chain Management: An International Journal, 18(6), 604-617.

[A52] Grawe, S. J. (2009). Logistics innovation: a literature-based conceptual framework. The International Journal of Logistics Management, 20(3), 360-377.

[A53] Gualandris, J., & Kalchschmidt, M. (2014). Customer pressure and innovativeness: Their role in sustainable supply chain management. Journal of Purchasing and Supply Management, 20(2), 92-103.

[A54] Gualandris, J., & Kalchschmidt, M. (2016). Developing environmental and social performance: the role of suppliers' sustainability and buyer–supplier trust. International Journal of Production Research, 54(8), 2470-2486.

[A55] Gunasekaran, A., Lai, K. H., & Cheng, T. E. (2008). Responsive supply chain: a competitive strategy in a networked economy. Omega, 36(4), 549-564.

[A56] Hansen, E. G., Grosse-Dunker, F., & Reichwald, R. (2009). Sustainability innovation cube—a framework to evaluate sustainability-oriented innovations. International Journal of Innovation Management, 13(04), 683-713.

[A57] Harland, C., Brenchley, R., & Walker, H. (2003). Risk in supply networks. Journal of Purchasing and Supply management, 9(2), 51-62.

[A58] Hazen, B. T., Overstreet, R. E., & Cegielski, C. G. (2012). Supply chain innovation diffusion: going beyond adoption. The International Journal of Logistics Management, 23(1), 119-134.

[A59] He, Y., Lai, K. K., Sun, H., & Chen, Y. (2014). The impact of supplier integration on customer integration and new product performance: the mediating role of manufacturing flexibility under trust theory. International Journal of Production Economics, 147, 260-270.

[A**60]** He, Y. (2017). Supply risk sharing in a closed-loop supply chain. International Journal of Production Economics, 183, 39-52.

[A61] Holmström, J., & Partanen, J. (2014). Digital manufacturing-driven transformations of service supply chains for complex products. Supply Chain Management: An International Journal, 19(4), 421-430.

[A62] Homburg, C., Krohmer, H., & Workman, J. P. (2004). A strategy implementation perspective of market orientation. Journal of Business Research, 57(12), 1331-1340.

[A63] Hoole, R. (2005). Five ways to simplify your supply chain. Supply Chain Management: An International Journal, 10(1), 3-6.

[A64] Hsieh, K.N. and Tidd, J. (2012), "Open versus closed new service development: the influences of project novelty", Technovation, Vol. 32 No. 11, pp. 600-608.

[A65] Hult, G. T. M., Ketchen, D. J., & Nichols, E. L. (2002). An examination of cultural competitiveness and order fulfillment cycle time within supply chains. Academy of Management Journal, 45(3), 577-586.

[A66] Hult, G. T. M., Craighead, C. W., & Ketchen Jr, D. J. (2010). Risk uncertainty and supply chain decisions: A real options perspective. Decision Sciences, 41(3), 435-458.

[A67] Huo, B., Han, Z., Zhao, X., Zhou, H., Wood, C. H., & Zhai, X. (2013). The impact of institutional pressures on supplier integration and financial performance: Evidence from China. International Journal of Production Economics, 146(1), 82-94.

[A68] Ireland, R.D. & Webb, J.W. (2007) "A multi-theoretic perspective on trust and power in strategic supply chains", Journal of Operations Management, 25(2), 482-497.

[A69] Isaksson, R., Johansson, P., & Fischer, K. (2010). Detecting supply chain innovation potential for sustainable development. Journal of Business Ethics, 97(3), 425-442.

[A70] Isaksson, O. H., Simeth, M., & Seifert, R. W. (2016). Knowledge spillovers in the supply chain: Evidence from the high tech sectors. Research Policy, 45(3), 699-706.

[A71] Jajja, M. S. S., Kannan, V. R., Brah, S. A., & Hassan, S. Z. (2017). Linkages between firm innovation strategy, suppliers, product innovation, and business performance: insights from resource dependence theory. International Journal of Operations & Production Management, 37(8), 1054-1075.

[A72] Jayaram, J., & Pathak, S. (2013). A holistic view of knowledge integration in collaborative supply chains. International Journal of Production Research, 51(7), 1958-1972.

[A73] Jayaraman, V., & Luo, Y. (2007). Creating competitive advantages through new value creation: a reverse logistics perspective. The Academy of Management Perspectives, 21(2), 56-73.

[A74] Jean, R. J., Kim, D., & Sinkovics, R. R. (2012). Drivers and performance outcomes of supplier innovation generation in customer–supplier relationships: The role of power-dependence. Decision Sciences, 43(6), 1003-1038.

[A75] Jean, R. J., Sinkovics, R. R., & Hiebaum, T. P. (2014). The effects of supplier involvement and knowledge protection on product innovation in customer–supplier relationships: a study of global automotive suppliers in China. Journal of Product Innovation Management, 31(1), 98-113.

[A76] Johnsen, T. E. (2011). Supply network delegation and intervention strategies during supplier involvement in new product development. International Journal of Operations & Production Management, 31(6), 686-708.

[A77] Juttner, U., & Maklan, S. (2011). Supply chain resilience in the global financial crisis: an empirical study. Supply Chain Management: An International Journal, 16(4), 246-259.

[A78] Kache, F., Kache, F., Seuring, S., & Seuring, S. (2017). Challenges and

opportunities of digital information at the intersection of Big Data Analytics and supply chain management. International Journal of Operations & Production Management, 37(1), 10-36.

[A79] Kang, S. C., Morris, S. S., & Snell, S. A. (2007). Relational archetypes, organizational learning, and value creation: Extending the human resource architecture. Academy of Management Review, 32(1), 236-256.

[A80] Khan, O., Christopher, M., & Creazza, A. (2012). Aligning product design with the supply chain: a case study. Supply Chain Management: An International Journal, 17(3), 323-336.

[A81] Kim, B., & Oh, H. (2005). The impact of decision-making sharing between supplier and manufacturer on their collaboration performance. Supply Chain Management: An International Journal, 10(3), 223-236.

[A82] Kim, D., & Lee, R. P. (2010). Systems collaboration and strategic collaboration: Their impacts on supply chain responsiveness and market performance. Decision Sciences, 41(4), 955-981.

[A83] Koufteros, X. A., Cheng, T. E., & Lai, K. H. (2007). "Black-box" and "gray-box" supplier integration in product development: Antecedents, consequences and the moderating role of firm size. Journal of Operations Management, 25(4), 847-870.

[A84] Koufteros, X., Vickery, S. K., & Dröge, C. (2012). The effects of strategic supplier selection on buyer competitive performance in matched domains: does supplier integration mediate the relationships?. Journal of Supply Chain Management, 48(2), 93-115.

[A85] Kuhne, B., Gellynck, X., & Weaver, R. D. (2013). The influence of relationship quality on the innovation capacity in traditional food chains. Supply Chain Management: An International Journal, 18(1), 52-65.

[A86] Lau, A. K., Yam, R. C., & Tang, E. P. (2007). Supply chain product co-development, product modularity and product performance: empirical evidence from Hong Kong manufacturers. Industrial Management & Data Systems, 107(7), 1036-1065.

[A87] Lau, A. K. (2011). Supplier and customer involvement on new product performance: Contextual factors and an empirical test from manufacturer perspective. Industrial Management & Data Systems, 111(6), 910-942.

[A88] Lee, S. M., Lee, D., & Schniederjans, M. J. (2011). Supply chain innovation

and organizational performance in the healthcare industry. International Journal of Operations & Production Management, 31(11), 1193-1214.

[A89] Lee, V. H., Ooi, K. B., Chong, A. Y. L., & Seow, C. (2014). Creating technological innovation via green supply chain management: An empirical analysis. Expert Systems with Applications, 41(16), 6983-6994.

[A90] Li, S., Ragu-Nathan, B., Ragu-Nathan, T. S., & Rao, S. S. (2006). The impact of supply chain management practices on competitive advantage and organizational performance. Omega, 34(2), 107-124.

[A91] Liao, S. H., & Kuo, F. I. (2014). The study of relationships between the collaboration for supply chain, supply chain capabilities and firm performance: A case of the Taiwan′ s TFT-LCD industry. International Journal of Production Economics, 156, 295-304.

[A92] Lui, A. K., Ngai, E. W., & Lo, C. K. (2016). Disruptive information technology innovations and the cost of equity capital: The moderating effect of CEO incentives and institutional pressures. Information & Management, 53(3), 345-354.

[A93] MacCarthy, B. L., Blome, C., Olhager, J., Srai, J. S., & Zhao, X. (2016). Supply chain evolution–theory, concepts and science. International Journal of Operations & Production Management, 36(12), 1696-1718.

[A94] Malhotra, A., Gosain, S. & El Sawy, O.A. (2005) "Absorptive capacity configurations in supply chains: gearing for partner-enabled market knowledge creation", MIS Quarterly, 29(1), 145-187.

[A95] McIvor, R., & Humphreys, P. (2004). Early supplier involvement in the design process: lessons from the electronics industry. OMEGA, 32(3), 179-199.

[A96] Melnyk, S. A., Lummus, R. R., Vokurka, R. J., Burns, L. J., & Sandor, J. (2009). Mapping the future of supply chain management: a Delphi study. International Journal of Production Research, 47(16), 4629-4653.

[A97] Melnyk, S. A., Davis, E. W., Spekman, R. E., & Sandor, J. (2010). Outcome-driven supply chains. MIT Sloan Management Review, 51(2), 33-38.

[A98] Miao, Z., Cai, S., & Xu, D. (2012). Exploring the antecedents of logistics social responsibility: A focus on Chinese firms. International Journal of Production Economics, 140(1), 18-27.

[A99] Modi, S. B., & Mabert, V. A. (2010). Exploring the relationship between

efficient supply chain management and firm innovation: an archival search and analysis. Journal of Supply Chain Management, 46(4), 81-94.

[A100] Munksgaard, K. B., Stentoft, J., & Paulraj, A. (2014). Value-based supply chain innovation. Operations Management Research, 7(3-4), 50-62.

[A101] Narasimhan, R., & Narayanan, S. (2013). Perspectives on supply network–enabled innovations. Journal of Supply Chain Management, 49(4), 27-42.

[A102] Ojha, D., Shockley, J., & Acharya, C. (2016). Supply chain organizational infrastructure for promoting entrepreneurial emphasis and innovativeness: The role of trust and learning. International Journal of Production Economics, 179, 212-227.

[A103] Oke, A., Prajogo, D. I., & Jayaram, J. (2013). Strengthening the innovation chain: The role of internal innovation climate and strategic relationships with supply chain partners. Journal of Supply Chain Management, 49(4), 43-58.

[A104] Pagell, M. (2004). Understanding the factors that enable and inhibit the integration of operations, purchasing and logistics. Journal of Operations Management, 22(5), 459-487.

[A105] Peng, D. X., Verghese, A., Shah, R., & Schroeder, R. G. (2013). The relationships between external integration and plant improvement and innovation capabilities: The moderation effect of product clockspeed. Journal of Supply Chain Management, 49(3), 3-24.

[A106] Pero, M., Abdelkafi, N., Sianesi, A., & Blecker, T. (2010). A framework for the alignment of new product development and supply chains. Supply Chain Management: An International Journal, 15(2), 115-128.

[A107] Petersen, K. J., Handfield, R. B., & Ragatz, G. L. (2005). Supplier integration into new product development: coordinating product, process and supply chain design. Journal of Operations Management, 23(3), 371-388.

[A108] Radas, S. and Bozic, L. (2009), "The antecedents of SME innovativeness in an emerging transition economy", Technovation, Vol. 29 Nos 6/7, pp. 438-450.

[A109] Ranganathan, C., Teo, T. S., & Dhaliwal, J. (2011). Web-enabled supply chain management: Key antecedents and performance impacts. International Journal of Information Management, 31(6), 533-545.

[A110] Robertson, P. W., Gibson, P. R., & Flanagan, J. T. (2002). Strategic supply chain development by integration of key global logistical process linkages. International Journal of Production Research, 40(16), 4021-4040.

[A111] Roh, J., Hong, P., & Min, H. . (2014). Implementation of a responsive supply chain strategy in global complexity: The case of manufacturing firms. International Journal of Production Economics, 147, 198–210.

[A112] Roy, S., & Sivakumar, K. (2010). Innovation generation in upstream and downstream business relationships. Journal of Business Research, 63(12), 1356-1363.

[A113] Roy, S., Sivakumar, K., & Wilkinson, I. F. (2004). Innovation generation in supply chain relationships: A conceptual model and research propositions. Journal of the Academy of Marketing Science, 32(1), 61-79.

[A114] Saenz, M. J., Revilla, E., & Knoppen, D. (2014). Absorptive capacity in buyer–supplier relationships: empirical evidence of its mediating role. Journal of Supply Chain Management, 50(2), 18-40.

[A115] Salvador, F., & Villena, V. H. (2013). Supplier integration and NPD outcomes: Conditional moderation effects of modular design competence. Journal of Supply Chain Management, 49(1), 87-113.

[A116] Samiee, S. (2008). Global marketing effectiveness via alliances and electronic commerce in business-to-business markets. Industrial Marketing Management, 37(1), 3-8.

[A117] Sampson, S. E., & Spring, M. (2012). Customer roles in service supply chains and opportunities for innovation. Journal of Supply Chain Management, 48(4), 30-50.

[A118] Sanders, N. R. (2005). IT alignment in supply chain relationships: A study of supplier benefits. Journal of Supply Chain Management, 41(2), 4-13.

[A119] Sanders, N. R. (2008). Pattern of information technology use: The impact on buyer–suppler coordination and performance. Journal of Operations Management, 26(3), 349-367.

[A120] Sarkis, J. (2012). A boundaries and flows perspective of green supply chain management. Supply Chain Management: An International Journal, 17(2), 202-216.

[A121] Sawhney, M., Wolcott, R. C., & Arroniz, I. (2006). The 12 different ways for companies to innovate. MIT Sloan Management Review, 47(3), 75-81.

[A122] Schaltegger, S., & Burritt, R. (2014). Measuring and managing sustainability performance of supply chains: Review and sustainability supply chain management framework. Supply Chain Management: An International Journal, 19(3), 232-241.

[A123] Schoenherr, T., & Swink, M. (2012). Revisiting the arcs of integration: Cross-validations and extensions. Journal of Operations Management, 30(1), 99-115.

[A124] Khalili Shavarini, S., Salimian, H., Nazemi, J., & Alborzi, M. (2013). Operations strategy and business strategy alignment model (case of Iranian industries). International Journal of Operations & Production Management, 33(9), 1108-1130.

[A125] Singh Srai, J., & Gregory, M. (2008). A supply network configuration perspective on international supply chain development. International Journal of Operations & Production Management, 28(5), 386-411.

[A126] Singhal, J., & Singhal, K. (2002). Supply chains and compatibility among components in product design. Journal of Operations Management, 20(3), 289-302.

[A127] Skippari, M., Laukkanen, M., & Salo, J. (2017). Cognitive barriers to collaborative innovation generation in supply chain relationships. Industrial Marketing Management, 62, 108-117.

[A128] Soosay, C. & Hyland, P. (2008) "Exploration and exploitation: the interplay between knowledge and continuous innovation", International Journal of Technology Management, 42(1/2), 20-35.

[A129] Soosay, C. A., Hyland, P. W., & Ferrer, M. (2008). Supply chain collaboration: capabilities for continuous innovation. Supply Chain Management: An International Journal, 13(2), 160-169.

[A130] Storer, M., Hyland, P., Ferrer, M., Santa, R., & Griffiths, A. (2014). Strategic supply chain management factors influencing agribusiness innovation utilization. The International Journal of Logistics Management, 25(3), 487-521.

[A131] Tan, K. H., Zhan, Y., Ji, G., Ye, F., & Chang, C. (2015). Harvesting big data to enhance supply chain innovation capabilities: An analytic infrastructure based on deduction graph. International Journal of Production Economics, 165, 223-233.

[A132] Teichert, T., & Bouncken, R. B. (2011). Rigidities considered: Supplier strategies for integrated innovation. International Journal of Innovation Management, 15(01), 95-119.

[A133] Trautrims, A., MacCarthy, B. L., & Okade, C. (2017). Building an innovation-based supplier portfolio: The use of patent analysis in strategic supplier selection in the automotive sector. International Journal of Production Economics, 1-9.

[A134] Turkulainen, V., & Swink, M. L. (2017). Supply chain personnel as knowledge resources for innovation—a contingency view. Journal of Supply Chain Management, 53(3), 41-59.

[A135] Tomlinson, P. R., & Fai, F. M. (2013). The nature of SME co-operation and innovation: A multi-scalar and multi-dimensional analysis. International Journal of Production Economics, 141(1), 316-326.

[A136] Tracey, M., & Neuhaus, R. (2013). Purchasing's role in global new product-process development projects. Journal of Purchasing and Supply Management, 19(2), 98-105.

[A137] Vanpoucke, E., Boyer, K. K., & Vereecke, A. (2009). Supply chain information flow strategies: an empirical taxonomy. International Journal of Operations & Production Management, 29(12), 1213-1241.

[A138] Vickery, S. K., Jayaram, J., Droge, C., & Calantone, R. (2003). The effects of an integrative supply chain strategy on customer service and financial performance: an analysis of direct versus indirect relationships. Journal of Operations Management, 21(5), 523-539.

[A139] von Massow, M., & Canbolat, M. (2014). A strategic decision framework for a value added supply chain. International Journal of Production Research, 52(7), 1940-1955.

[A140] Wagner, S. M., & Bode, C. (2014). Supplier relationship-specific investments and the role of safeguards for supplier innovation sharing. Journal of Operations Management, 32(3), 65-78.

[A141] Wagner, S. M. (2010). Supplier traits for better customer firm innovation performance. Industrial Marketing Management, 39(7), 1139-1149.

[A142] Wagner, S. M. (2012). Tapping supplier innovation. Journal of Supply Chain Management, 48(2), 37-52.

[A143] Wakolbinger, T., & Cruz, J. M. (2011). Supply chain disruption risk management through strategic information acquisition and sharing and risk-sharing contracts. International Journal of Production Research, 49(13), 4063-4084.

[A144] Wang, L., Yeung, J. H. Y., & Zhang, M. (2011). The impact of trust and contract on innovation performance: The moderating role of environmental uncertainty. International Journal of Production Economics, 134(1), 114-122.

[A145] Wong, C. Y., Boon-Itt, S., & Wong, C. W. (2011). The contingency effects of environmental uncertainty on the relationship between supply chain integration and operational performance. Journal of Operations Management, 29(6), 604-615.

[A146] Wong, C. W., Wong, C. Y., & Boon-itt, S. (2013). The combined effects of internal and external supply chain integration on product innovation. International Journal of Production Economics, 146(2), 566-574.

[A147] Wu, Y., Cegielski, C. G., Hazen, B. T., & Hall, D. J. (2013). Cloud computing in support of supply chain information system infrastructure: understanding when to go to the cloud. Journal of Supply Chain Management, 49(3), 25-41.

[A148] Wynstra, F., Von Corswant, F., & Wetzels, M. (2010). In chains? An empirical study of antecedents of supplier product development activity in the automotive industry. Journal of Product Innovation Management, 27(5), 625-639.

[A149] Yaibuathet, K., Enkawa, T., & Suzuki, S. (2008). Influences of institutional environment toward the development of supply chain management. International Journal of Production Economics, 115(2), 262-271.

[A150] Yeniyurt, S., Henke, J. W., & Yalcinkaya, G. (2014). A longitudinal analysis of supplier involvement in buyers' new product development: working relations, inter-dependence, co-innovation, and performance outcomes. Journal of the Academy of Marketing Science, 42(3), 291-308.

[A151] Yeung, A. C. (2008). Strategic supply management, quality initiatives, and organizational performance. Journal of Operations Management, 26(4), 490-502.

[A152] Yin, Y., Stecke, K. E., & Li, D. (2018). The evolution of production systems from Industry 2.0 through Industry 4.0. International Journal of Production Research, 56(1-2), 848-861.

[A153] Young, R. R. (2000). Managing residual disposition: Achieving economy, environmental responsibility, and competitive advantage using the supply chain framework. Journal of Supply Chain Management, 36(4), 57-66.

[A154] Zhang, Q., Vonderembse, M. A., & Lim, J. S. (2002). Value chain flexibility: a dichotomy of competence and capability. International journal of production research, 40(3), 561-583.

[A155] Zimmermann, R., Ferreira, L. M. D. F., & Moreira, A. C. (2016). The influence of supply chain on the innovation process: a systematic literature review. Supply Chain Management: An International Journal, 21(3), 289-304.

Appendix E - Theoretical perspectives

The five theoretical perspectives proposed to account for the phenomena of supply chain innovations:

- *Knowledge-based theory*
- *Organizational theory*
- *Transaction cost economics*
- *Relational theory*
- *Resource-based theory*

Below is a brief description of each theory.

Knowledge-based theory

The knowledge-based view sees knowledge as the strategic resource of the firm (Nonaka et al., 1991; Kogut and Zander, 1992; Thompson and Walsham, 2004; Grawe et al., 2009; Jayaram and Pathak, 2013). Proponents of this theory argue that knowledge-based resources are socially complex and have heterogeneous knowledge bases. They are difficult to imitate and lead to varying firms' capabilities (Grant et al., 1996). For example, managerial IT knowledge is one of the critical resources for effective IT diffusion/assimilation among/within firm networks (Armstrong and Sambamurthy, 1999; Ranganathan et al., 2011). The theory suggests that organizational capabilities integrate knowledge externally and internally to perform different productive tasks (Kogut and Zander, 1992; Peng et al., 2013).

Organizational theory

Organizational learning is defined as the capability of an organization to process knowledge, namely, to transfer, acquire, integrate, and create knowledge and modify its behavior to reflect new cognitive situations to enhance its performance (Jerez-Gomez et al., 2005). Camison and Villar-Lopez (2011) showed that the openness of firms resembles a climate in which they welcome new internal and external ideas and perspectives. This culture promotes creativity, agility, and innovativeness as ways to improve the work process.

Another important topic in organizational learning is the complex link between innovation and knowledge search (Levinthal and March, 1981; Nohria et al., 1996). The organizational learning literature based on the behavioral theory of a firm has argued that a firm's contextual factors and its environment influence the search for external knowledge (Chen and Miller, 2007). Specifically, this context affects the availability of resources and limits their applications, similar to the abundance of external knowledge that can be used for innovations. Both of these factors can affect a firm's search strategy, as advanced in the organizational learning literature (Argote et al., 2003). Search depth/search breadth are also relevant concepts (Garriga et al., 2003).

Organizations learn when they encode inferences from experiences into conceptual

frameworks and eventually into routines that guide their behavior (Arrow et al., 1962). Sherif et al. (2006) also illustrated that successful disruptive IT innovations require paying active attention to organizational learning with resources and to invest time in such learning activities.

Relational theory

Mesquita et al. (2008) discussed relational theory as an inter-organizational theory, suggesting that buyers and suppliers must invest efforts to enhance joint performance outcomes in product development. Azadegan et al. (2011) also argued that sharing interfirm resources leads to "jointly generated supernormal benefits," while buyers' and suppliers' commitments to people, time, effort, and funding represent their significant investments (Osborn and Hagedoorn, 1997; Petersen et al., 2005).

Resource-based theory

The focus of resource-based theory is internal to the firm and considers the firm as a bundle of resources (Priem and Butler, 2001a). This theory has been widely advocated (Barney et al., 1991; Barney et al., 2001) and researchers have considered a firm's internal technology resource base as the key driver of innovation (Benner and Tripsas, 2012; Hitt et al., 2001; Hoskisson et al., 1999). Firms with non-substitutable, valuable, and scarce resources can gain a sustainable competitive advantage.

Transaction cost economics

Transaction cost economics (TCE) is related to almost all "make or buy" decisions in various economic situations (Walker and Weber, 1987; Williamson et al., 2008; Wallenburg et al., 2009; Kamann and Van Nieulande, 2010; Anderson et al., 2011). This theory focuses on certain characteristics of transactions that determine how transactions are pursued (Coase et al., 1937; Williamson et al., 1975; Williamson et al., 1979; Arend and Wsnet, 2005). In addition, TCE suggests that uncertainty should lead to vertical integration as internalization reduces transaction costs and uncertainty in transactions (Williamson et al., 1975; Peng et al., 2013). It provides distinct recommendations for efficient boundary setting on the basis of the interplay between uncertainty, opportunism, bounded rationality, frequency of transactions, and asset specificity (Gadde et al., 2013).

Figure 1. Methodology framework for research

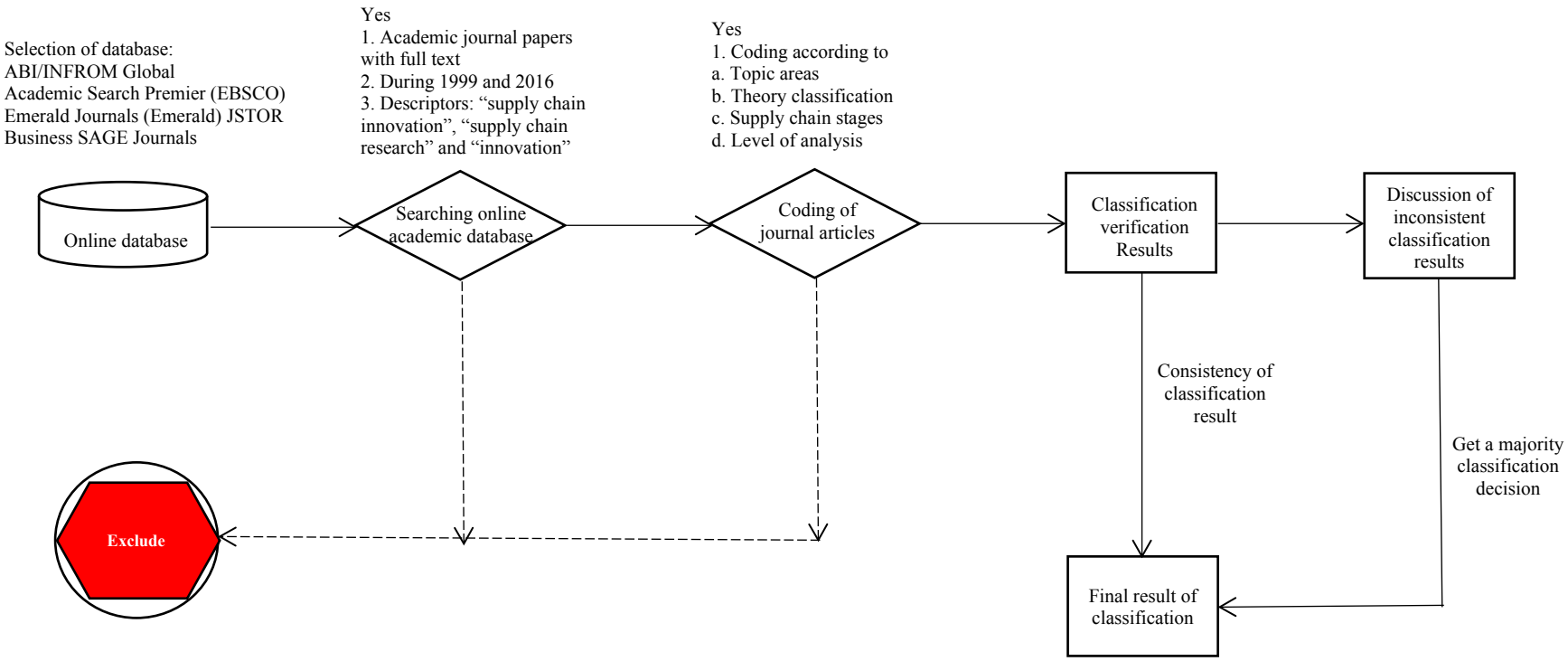

Figure 2. Summary of theoretical classifications for supply chain innovation literature

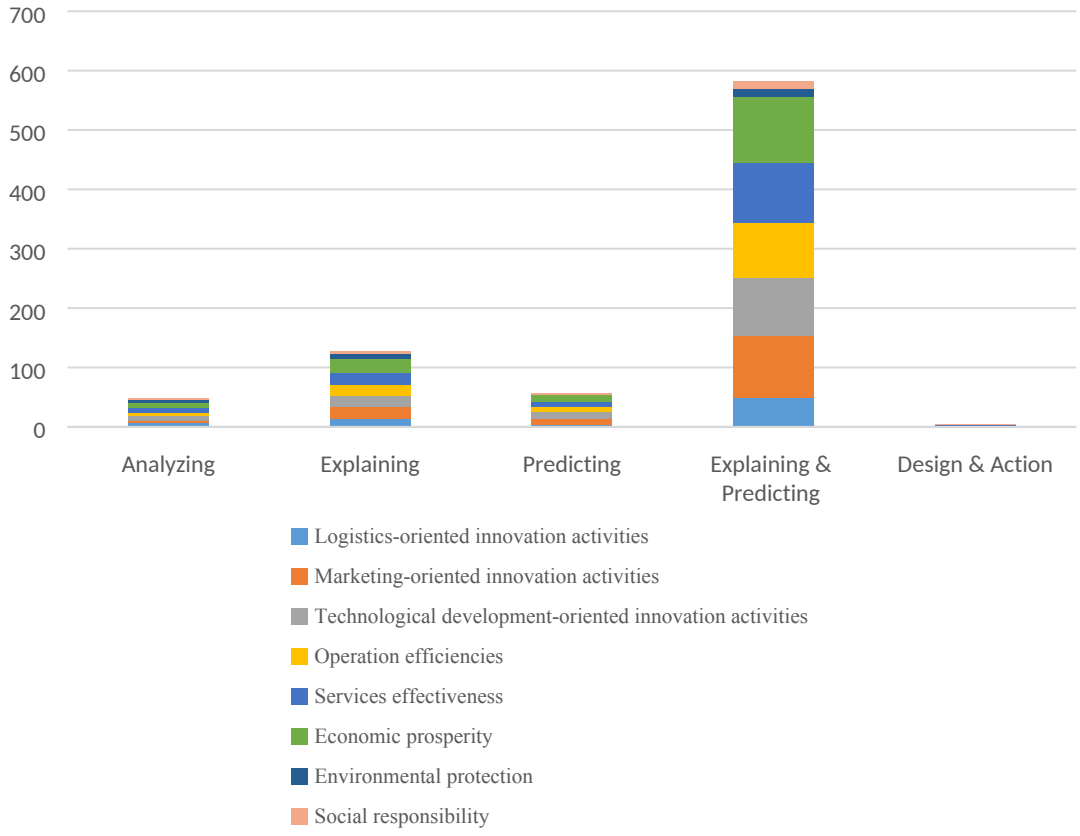

Table 1. Distribution of reviewed articles from leading journals	
Journal	**Number of Articles**
Academy of Management Journal	1
Academy of Management Perspectives	1
Academy of Management Review	1
California Management Review	1
Decision Sciences	6
Decision Support Systems	1
Expert Systems with Applications	1
Information & Management	1
International Journal of Information Management	3
The International Journal of Logistics Management	4
International Journal of Operations and Production Management	9
International Journal of Production Economics	20
International Journal of Production Research	7
International Journal of Technology Management	2
Industrial Management and Data Systems	2
Industrial Marketing Management	8
Interfaces	1
Journal of The Academy of Marketing Science	2
Journal of Business Ethics	1
Journal of Business Research	2
Journal of Business Venturing	1
Journal of Engineering and Technology Management	1
Journal of Management Studies	1
Journal of Operations Management	15
Journal of Product Innovation Management	2
Journal of Purchasing and Supply Management	4
Journal of Supply Chain Management	22
MIS Quarterly	1
MIT Sloan Management Review	3
The International Journal of Management Science	3
Operations Management Research	1
Production and Operations Management	2
Production Planning and Control	1
Research Policy	2
Supply Chain Management: An International Journal	19
Strategic Management Journal	1
Technovation	2
Total =	155

Table 2. Contributions to Theory: Definitions (Adapted from Gregor et al. 2006)	
Theory	**Type Definition**
Analyzing	Describe the state of supply chain innovation or the need for supply chain innovation research.
Explaining	Explain what is occurring but do not provide testable predictions.
Predicting	Provide testable predictions without well-developed causal relationships
Explaining and Predicting	Explain what is occurring and provide testable predictions with causal explanations.
Design and Action	Specifically design a framework/ tool for evaluating supply chain innovation.

Table 3. Theoretical contributions in supply chain innovation literature (Adapted from Belanger and Crossler, 2011)

Theory type	Topic areas*							
	Organizational action			Outcome				
	Logistics-oriented innovation activities	Marketing-oriented innovation activities	Technological development-oriented innovation activities	Operation Efficiencies	Services Effectiveness	Economic Prosperity	Environment Protection	Social Responsibility
Analyzing	6	5	7	6	8	9	4	3
Explaining	14	20	18	19	21	22	8	5
Predicting	4	10	11	8	10	11	1	2
Explaining & Predicting	50	103	99	91	101	112	14	13
Design & Action	0	1	0	1	1	1	0	0
Number of (total) occurrence	74	139	135	125	141	155	27	23

* Some articles counted more than once because they cover more than one topic.

Table 4. Summary of topic areas per supply chain stage in supply chain innovation research

Supply chain stage	Topic areas*							
	Organizational action			Outcome		Output		
	Logistics-oriented innovation activities	Marketing-oriented innovation activities	Technological development-oriented innovation activities	Operation Efficiencies	Services Effectiveness	Economy	Environment	Social
Supplier	9	32	31	25	30	33	4	2
Manufacturer	25	38	33	39	39	44	11	10
Retailer	7	9	7	8	10	10	1	2
Customer	2	3	3	3	3	3	0	0
Supplier + Manufacturer	9	19	18	17	18	21	7	5
Supplier + Retailer	3	3	3	2	2	3	0	1
Supplier + Customer	3	7	9	5	9	9	1	0
Manufacturer + Retailer	2	3	6	5	3	6	0	1
Supplier + Manufacturer + Retailer	2	7	7	7	7	7	0	0
Supplier + Manufacturer + Customer	7	10	9	9	10	10	3	1
Supplier + Retailer + Customer	1	2	2	1	2	2	0	0
Supplier + Manufacturer + Retailer + Customer	4	6	8	5	8	8	0	1
Number of (total) occurrence	74	139	135	125	141	155	27	23

* Some articles are counted more than once because they cover more than one topic.

Table 5. Summary of topic areas per levels of analysis in supply chain innovation research

Level of analysis	Topic areas*							
	Organizational action			Outcome				
Demographics	Logistics-oriented innovation activities	Marketing-oriented innovation activities	Technological development-oriented innovation activities	Operation Efficiencies	Services Effectiveness	Economic Prosperity	Environment Protection	Social Responsibility
Individual	0	0	0	0	0	0	0	0
Group	0	0	0	0	0	0	0	0
Organization	37	69	69	62	67	78	12	14
Societal	0	0	0	0	0	0	0	0
Individual + Group	0	0	0	0	0	0	0	0
Individual + Organization	31	63	58	56	66	69	12	5
Individual + Societal	0	0	0	0	0	0	0	0
Group + Organization	0	1	1	1	1	1	1	1
Group + Societal	0	0	0	0	0	0	0	0
Organization + Societal	1	2	2	1	2	2	0	0
Individual + Group + Organization	1	1	1	1	1	1	0	0
Individual + Organization + Societal	1	0	1	1	1	1	1	1
Individual + Group + Societal	0	0	0	0	0	0	0	0
Group + Organization + Societal	1	1	1	1	1	1	0	1
Individual + Group + Organization + Societal	2	2	2	2	2	2	1	1
Number of (total) occurrence =	74	139	135	125	141	155	27	23

* Some articles counted more than once because they cover more than one topic.

Appendix B - Coded articles: Contributions to theory classification, topic areas & supply chain stages

Author	Coding	Types of theoretical contribution					Supply Chain Stages				Topic areas							
											Organizational action			Outcome		Output		
		Analyzing	Explaining	Predicting	Explaining & Predicting	Design & Action	Supplier	Manufacturer	Retailer	Customer	Logistics-oriented innovation activities	Marketing-oriented innovation activities	Technological Development-oriented innovation activities	Operation Efficiencies	Services Effectiveness	Economy	Environment	Social
Ageron et al. (2013)	A1				x		x	x	x	x	x	x	x	x	x	x		
Aitken and Harrison (2013)	A2				x		x	x			x	x	x	x	x	x	x	x
Allred et al. (2011)	A3				x		x	x	x			x	x	x	x	x		
Amit and Zott (2001)	A4				x		x					x	x			x		
Anderson et al. (2011)	A5				x		x				x	x	x	x	x	x		
Archer et al. (2008)	A6				x		x	x	x			x	x	x	x	x		
Arend and Wisner (2005)	A7				x			x			x	x	x	x	x	x		
Arlbjorn and Paulraj (2013)	A8	x					x			x		x	x		x	x		
Azadegan et al. (2011)	A9				x		x	x				x	x	x		x		
Basole et al. (2016)	A10				x		x	x				x	x		x	x		
Bastl et al. (2013)	A11			x			x					x	x		x	x		
Beh et al. (2016)	A12				x				x		x	x	x	x	x	x	x	x
Bello et al. (2004)	A13		x						x		x	x	x	x	x	x		x
Bendoly et al. (2012)	A14				x		x	x	x			x	x	x	x	x		
Berghman et al. (2012)	A15				x		x	x	x	x		x	x		x	x		

Beske-Janssen et al. (2015)	A16	x					x				x	x		x	x	x	x	x
Billington and Davidson (2013)	A17				x		x						x	x		x	x	
Bitner et al. (2008)	A18				x		x					x	x	x	x	x		
Blome et al. (2013)	A19				x			x				x		x	x	x		
Boddy et al. (2000)	A20				x		x			x			x		x	x		
Borgatti and Li (2009)	A21		x				x			x		x	x		x	x		
Brun and Castelli (2008)	A22				x				x			x	x	x	x	x		
Brun et al. (2008)	A23				x				x		x	x	x	x	x	x		
Cabigiosu et al. (2013)	A24				x		x	x				x	x		x	x		
Cai et al. (2009)	A25		x						x		x	x		x	x	x		
Caniato et al. (2014)	A26				x				x			x	x		x	x		
Cao and Zhang (2010)	A27					x		x				x		x	x	x		
Cao and Zhang (2011)	A28				x			x			x	x		x	x	x		
Caridi et al. (2012)	A29				x			x			x		x	x		x		
Carnovale and Yeniyurt (2014)	A30				x			x				x			x	x		
Carnovale and Yeniyurt (2015)	A31				x		x	x				x	x		x	x		
Chen and Paulraj (2004)	A32				x					x	x	x	x	x	x	x		
Chen et al. (2011)	A33				x				x			x	x	x	x	x		
Cheng et al. (2014)	A34				x			x				x	x	x	x	x		x
Choi and Krause (2006)	A35			x			x					x	x	x		x		
Chong and Zhou (2014)	A36				x		x			x	x	x	x	x	x	x		
Claycomb et al. (2005)	A37				x			x			x	x	x	x	x	x		
Cohen et al. (2000)	A38		x						x		x	x		x	x	x		
Coltman et al. (2010)	A39		x				x				x	x	x	x	x	x		
Craighead et al. (2009)	A40				x		x		x	x	x	x	x	x	x	x		
Daugherty et al. (2011)	A41				x			x			x	x		x	x	x		
Desbarats et al. (1999)	A42	x					x	x	x	x	x	x	x	x	x	x		
Eschenbacher et al. (2011)	A43		x				x	x				x	x		x	x		
Ettlie and Pavlou (2006)	A44				x		x	x				x	x	x	x	x		
Ferrer et al. (2011)	A45				x		x		x		x	x	x	x		x		
Fine et al. (2013)	A46	x							x		x				x	x		

Gadde et al. (2013)	A47			x			x	x	x			x	x	x	x	x		
Gebauer et al. (2011)	A48				x			x			x	x	x	x	x	x		
Gligor and Holcomb (2012)	A49		x				x				x	x	x	x	x	x		
Gnyawali and Srivastava (2013)	A50			x			x	x	x	x			x		x	x		
Golgeci and Ponomarov (2013)	A51				x			x			x	x	x	x	x	x	x	
Grawe et al. (2009)	A52			x			x				x	x	x	x	x	x		
Gualandris and Kalchschmidt (2014)	A53				x			x			x	x	x	x	x	x	x	x
Gualandris and Kalchschmidt (2016)	A54				x			x				x	x	x	x	x	x	x
Gunasekaran et al. (2008)	A55		x				x	x			x	x	x	x	x	x	x	
Hansen et al. (2009)	A56		x				x	x			x		x	x	x	x	x	x
Harland et al. (2003)	A57				x		x					x	x		x	x		x
Hazen et al. (2012)	A58	x					x	x	x	x			x		x	x		
He et al. (2014)	A59				x			x				x	x	x	x	x		
He et al. (2017)	A60		x				x	x				x		x	x	x	x	
Holmstrom and Partanen (2014)	A61		x				x	x			x	x	x	x	x	x		
Homburg et al. (2004)	A62				x		x	x				x		x	x	x		
Hoole et al. (2005)	A63	x								x	x	x	x	x	x	x		
Hsieh and Tidd (2012)	A64				x		x		x		x	x	x		x	x		
Hult et al. (2002)	A65				x		x	x				x	x	x		x		
Hult et al. (2010)	A66				x			x	x		x		x	x		x		
Huo et al. (2013)	A67				x			x				x	x	x	x	x	x	x
Ireland and Webb (2007)	A68			x				x				x	x	x	x	x		
Isaksson et al. (2010)	A69		x				x	x			x	x	x	x	x	x	x	x
Isaksson et al. (2016)	A70				x		x			x		x	x		x	x		
Jajja et al. (2017)	A71				x		x	x		x		x	x	x	x	x		
Jayaram and Pathak (2013)	A72				x			x				x	x	x	x	x		
Jayaraman and Luo (2007)	A73		x				x	x			x	x	x	x	x	x	x	x
Jean et al. (2012)	A74				x		x					x	x	x	x	x		
Jean et al. (2014)	A75				x		x					x	x	x	x	x		

Johnsen et al. (2011)	A76				x		x					x	x	x	x	x		
Juttner and Maklan (2011)	A77				x			x			x			x	x	x		
Kache and Seuring (2017)	A78				x			x			x	x	x	x	x	x		
Kang et al.(2007)	A79		x					x				x	x	x	x	x		
Khan et al. (2012)	A80				x				x		x	x	x	x	x	x		
Kim and Oh (2005)	A81				x		x	x				x		x	x	x		
Kim et al. (2010)	A82				x			x	x		x	x	x	x	x	x		
Koufteros et al. (2007)	A83				x		x					x	x	x	x	x		
Koufteros et al. (2012)	A84				x		x					x	x		x	x		
Kuhne et al. (2013)	A85				x		x	x		x		x			x	x		
Lau et al. (2007)	A86				x		x	x		x	x	x	x	x	x	x		
Lau et al. (2011)	A87				x		x			x	x	x	x	x	x	x		
Lee et al. (2011)	A88				x		x				x	x	x	x	x	x	x	
Lee et al. (2014)	A89				x			x			x	x	x	x	x	x	x	x
Li et al. (2006)	A90				x		x	x		x	x	x	x	x	x	x		
Liao and Kuo (2014)	A91				x		x	x			x	x	x	x	x	x		
Lui et al. (2016)	A92				x			x					x	x	x	x	x	x
MacCarthy et al. (2016)	A93			x				x			x	x	x	x	x	x	x	x
Malhotra et al. (2005)	A94				x		x	x	x			x	x	x	x	x		
Mclvor and Humphreys (2004)	A95				x		x					x	x		x	x		
Melnyk et al. (2009)	A96				x		x	x		x	x	x	x	x	x	x	x	
Melnyk et al. (2010)	A97		x				x	x		x	x	x	x	x	x	x	x	
Miao et al. (2012)	A98				x			x			x	x			x	x	x	x
Modi and Mabert (2010)	A99				x			x			x			x		x		
Munksgaard et al. (2014)	A100			x			x	x		x	x	x	x	x	x	x		
Narasimhan and Narayanan (2013)	A101		x				x					x	x	x	x	x	x	
Ojha et al. (2016)	A102				x			x	x			x	x	x	x	x		
Oke et al. (2013)	A103				x			x				x	x		x	x		
Pagell et al. (2004)	A104				x			x			x	x	x	x	x	x		

Peng et al. (2013)	A105				x			x				x	x	x	x	x		
Pero et al. (2010)	A106				x		x	x			x	x	x	x	x	x		
Petersen et al. (2005)	A107				x		x					x	x	x	x	x		
Radas and Bozic (2009)	A108				x			x	x			x	x		x	x		
Ranganathan et al. (2011)	A109				x		x	x	x		x	x	x	x	x	x		
Robertson et al. (2002)	A110				x			x			x	x	x	x	x	x		
Roh et al. (2014)	A111				x			x			x	x	x	x	x	x		
Roy and Sivakumar (2010)	A112			x			x		x	x		x	x		x	x		
Roy et al. (2004)	A113			x			x			x		x	x	x	x	x		
Saenz et al. (2014)	A114				x		x					x	x	x	x	x		
Salvador and Villena (2013)	A115				x		x					x	x	x	x	x		
Samiee et al. (2008)	A116		x				x		x		x	x	x	x	x	x		x
Sampson and Spring (2012)	A117				x					x		x	x	x	x	x		
Sanders et al. (2005)	A118				x		x					x	x	x	x	x		
Sanders et al. (2008)	A119				x		x				x	x	x	x	x	x		
Sarkis et al. (2012)	A120	x					x	x		x	x	x	x	x	x	x	x	x
Sawhney et al. (2006)	A121				x		x	x	x	x	x	x	x	x	x	x		
Schaltegger and Burritt (2014)	A122	x					x	x					x	x		x	x	x
Schoenherr and Swink (2012)	A123				x		x				x	x		x	x	x		
Shavarini et al. (2013)	A124				x		x					x	x	x	x	x		
Singh and Gregory (2008)	A125				x		x	x			x	x	x	x	x	x		
Singhal and Singhal (2002)	A126		x				x	x		x		x	x	x	x	x		
Skippari et al. (2017)	A127				x		x	x	x		x	x	x	x	x	x		
Soosay and Hyland (2008)	A128				x			x				x	x	x		x		
Soosay et al. (2008)	A129				x			x			x	x	x	x	x	x	x	
Storer et al. (2014)	A130				x		x	x	x	x		x	x	x	x	x		x
Tan et al. (2015)	A131				x			x				x	x	x	x	x		
Teichert and Bouncken (2011)	A132				x		x					x	x		x	x		
Trautrims et al. (2017)	A133				x		x					x	x	x	x	x		
Turkulainen and Swink (2017)	A134				x			x			x	x	x	x	x	x		

Tomlinson and Fai (2013)	A135				x			x			x	x	x		x	x		
Tracey and Neuhaus (2013)	A136		x				x	x		x	x	x	x	x	x	x		
Vanpoucke et al. (2009)	A137				x			x			x	x	x	x	x	x		
Vickery et al. (2003)	A138				x		x				x	x	x	x	x	x		
von Massow and Canbolat (2014)	A139		x					x				x			x	x	x	
Wagner and Bode (2014)	A140				x		x					x	x	x	x	x		
Wagner et al. (2010)	A141				x		x			x		x	x	x	x	x		
Wagner et al. (2012)	A142				x		x					x	x	x	x	x		
Wakolbinger and Cruz (2011)	A143		x					x	x				x	x		x		
Wang et al. (2011)	A144				x			x				x	x	x	x	x		
Wong et al. (2011)	A145				x			x			x	x		x	x	x		
Wong et al. (2013)	A146				x		x	x				x	x	x	x	x		
Wu et al. (2013)	A147				x			x	x				x	x		x		x
Wynstra et al. (2010)	A148				x		x					x	x		x	x		
Yaibuathet et al. (2008)	A149				x			x			x	x	x	x	x	x		x
Yeniyurt et al. (2014)	A150				x		x					x	x		x	x		
Yeung et al. (2008)	A151				x			x			x	x		x	x	x		
Yin et al. (2018)	A152		x				x	x	x	x	x	x	x	x	x	x		
Young et al. (2000)	A153				x			x					x	x		x	x	
Zhang et al. (2002)	A154			x				x			x	x	x	x	x	x		x
Zimmermann et al. (2016)	A155	x					x			x	x	x	x	x	x	x	x	

Appendix C - Coded articles: Topic areas and Level of analysis

Author	Sample origin	Respondent Origin	Respondent Type	Contribution											
				Perspective											
				Level of analysis				Topic areas							
				Demographic				Organizational action			Outcome				
				Individual	Group	Organization	Societal	Logistics-oriented innovation activities	Marketing-oriented innovation activities	Technological development-oriented innovation activities	Operation Efficiencies	Services Effectiveness	Economic Prosperity	Environmental Protection	Social Responsibility
Ageron et al. (2013)	Case study: 50 interviews supply chain managers	Not specified	Manufacturing and others	x		x		x	x	x	x	x	x		
Aitken and Harrison (2013)	Case study: Car crash repair sector	U.K.	Manufacturing			x		x	x	x	x	x	x	x	x
Allred et al. (2011)	Survey: 505 firms involved; Case study: 51 for Period 1 (58 for Period 2)	Global	Manufacturing/ Retailing/ Servicing			x			x	x	x	x	x		
Amit and Zott (2001)	Case study: 59 e-business firms	Europe/ U.S.	Servicing			x			x	x			x		

Anderson et al. (2011)	Survey: 309 firms - customers of large multinational 3PL providers	Australia/ China/ Hong Kong/ India/ Japan /New Zealand/ South Korea/ Singapore	Not specified			x		x	x	x	x	x	x		
Archer et al. (2008)	Survey: 173 Canadian small and medium-sized enterprises	Canada	Distribution/ Manufacturing/ Retailing			x			x	x	x	x	x		
Arend and Wisner (2005)	Survey: 421 managers of supply and production	Europe/ Mexico/ U.S.	Manufacturing			x		x	x	x	x	x	x		
Arlbjorn and Mikkelsen (2014)	Survey: 843 manufacturing companies	Denmark	Manufacturing			x				x	x		x		
Azadegan et al. (2011)	Survey: 136 manufacturers & 272 of their suppliers	U.S.	Manufacturing			x			x	x	x		x		
Basole et al. (2016)	Supply chain networks using SDC Platinum (SDC) and Connexiti data from 2005 to 2009; Using actual patent data from the USPTO and Classification and Search Support Information System (CASSIS) Database	U.S.	Not specified			x			x	x		x	x		
Bastl et al. (2013)						x			x	x		x	x		
Beh et al. (2016)	Case study: interviews with Managers of 2 second-life retailers	Malaysia	Manufacturing			x		x	x	x	x	x	x	x	x

Bello et al. (2004)						x		x	x	x	x	x	x		x
Bendoly et al. (2012)	Survey: 169 unique publicly traded firms	Not specified	Manufacturing	x		x			x	x	x	x	x		
Berghman et al. (2012)	Survey: 182 marketing manager (large organizations)/ CEO (small companies)	Netherlands	Not specified			x			x	x		x	x		
Beske-Janssen et al. (2015)						x		x	x		x	x	x	x	x
Billington and Davidson (2013)	Case study: 16 multi-national companies and 2 NGO companies	Not specified	Servicing	x		x				x	x		x	x	
Bitner et al. (2008)	Case study: YRC Worldwide	U.S.	Servicing			x			x	x	x	x	x		
Blome et al. (2013)	Survey: 238 manufacturing firms	Germany	Manufacturing			x			x		x	x	x		
Boddy et al. (2000)	Case study: two companies - customer and supplier - for Sun Microsystems	U.S.	Manufacturing			x				x		x	x		
Borgatti and Li (2009)						x			x	x		x	x		
Brun and Castelli (2008)	Case studies: 3 brands - Fratelli Rossetti, Bric's, Parah	Italy	Retailing			x			x	x	x	x	x		
Brun et al. (2008)	Multiple case studies - 12 retailers	Italy	Retailing			x		x	x	x	x	x	x		
Cabigiosu et al. (2013)	Multiple case studies - 2 similar auto air conditioning system's development projects carried out by Denso Thermal System (DNTS) for two competing	Not specified	Manufacturing			x			x	x		x	x		

	carmakers, 12 interviews conducted.														
Cai et al. (2009)						x		x	x		x	x	x		
Caniato et al. (2014)	Case study, 13 fashion company	Italy	Retailing			x	x		x	x		x	x		
Cao and Zhang (2010)	Survey: 211 manufacturing Firms	U.S.	Manufacturing			x			x		x	x	x		
Cao and Zhang (2011)	Survey: 211 manufacturing Firms	U.S.	Manufacturing			x		x	x		x	x	x		
Caridi et al. (2012)	Survey: 54 manufacturing firms in furniture	Italy	Manufacturing			x		x		x	x		x		
Carnovale and Yeniyurt (2014)	Survey: 217 firms in Automotive Industry	Global	Manufacturing	x		x			x			x	x		
Carnovale and Yeniyurt (2015)	Construct a manufacturing joint venture network by using 1,158 automotive manufacturers/ parts suppliers over a 19-year period (1985-2003)	U.S.	Manufacturing			x			x	x		x	x		
Chen and Paulraj (2004)	Survey: 221 buying firms' top purchasing/supply management executives	U.S.	Buying	x		x		x	x	x	x	x	x		
Chen et al. (2011)	Survey: 157 IT services companies	Taiwan	Servicing			x			x	x	x	x	x		
Cheng et al. (2014)	Survey: 260 senior managers/purchasing managers/ experienced	Taiwan	Manufacturing			x			x	x	x	x	x		x

	managers of manufacturing firms														
Choi and Krause (2006)						x			x	x	x		x		
Chong and Zhou (2014)	Survey: 256 companies in healthcare industry	Malaysia	Servicing			x		x	x	x	x	x	x		
Claycomb et al. (2005)	Survey: 152 U.S. Manufacturers	U.S.	Manufacturing			x		x	x	x	x	x	x		
Cohen et al. (2000)						x		x	x		x	x	x		
Coltman et al. (2010)				x		x		x	x	x	x	x	x		
Craighead et al. (2009)	Survey: 489 firms	Not specified	Not specified	x		x		x	x	x	x	x	x		
Daugherty et al. (2011)	Survey: 304 executives of firms	China	Logistics/ Manufacturing/ Marketing/ Operations/ Supply chain	x		x		x	x		x	x	x		
Desbarats et al. (1999)						x		x	x	x	x	x	x		
Eschenbacher et al. (2011)				x		x			x	x		x	x		
Ettlie and Pavlou (2006)	Survey: 72 auto company managers	Not specified	Manufacturing	x		x			x	x	x	x	x		
Ferrer et al. (2011)	Case study: Road freight service firms	Australia	Servicing			x		x	x	x	x		x		
Fine et al. (2013)						x		x				x	x		

Gadde et al. (2013)						x			x	x	x	x	x		
Gebauer et al. (2011)	Multiple case studies - eight captial goods manufacturing companies	Europe	Manufacturing	x		x		x	x	x	x	x	x		
Gligor and Holcomb (2012)						x		x	x	x	x	x	x		
Gnyawali and Srivastava (2013)				x		x				x		x	x		
Golgeci and Ponomarov (2013)	Survey: 114 management executives	Europe/ U.S.	Logistics/ Operations/ Purchasing	x		x		x	x	x	x	x	x	x	
Grawe et al. (2009)						x		x	x	x	x	x	x		
Gualandris and Kalchschmidt (2014)	Survey: 77 manufacturing firms	Italy	Manufacturing	x		x		x	x	x	x	x	x	x	x
Gualandris and Kalchschmidt (2016)	Survey: 86 manufacturing firms	Italy	Manufacturing	x		x			x	x	x	x	x	x	x
Gunasekaran et al. (2008)				x		x		x	x	x	x	x	x	x	
Hansen et al. (2009)				x		x	x	x		x	x	x	x	x	x
Harland et al. (2003)	Case study: 4 four case studies in electronics sector	Germany/ U.S.	Distributions/ Manufacturing/ Operations			x			x	x		x	x		x

Hazen et al. (2012)				x		x				x		x	x		
He et al. (2014)	Survey: 320 CEO/ general managers	Global	Manufacturing/ Operation			x			x	x	x	x	x		
He et al. (2017)				x		x			x		x	x	x	x	
Holmstrom and Partanen (2014)						x		x	x	x	x	x	x		
Homburg et al. (2004)	Survey: 280 U.S. & 234 German marketing managers	Germany/ U.S.	Not specified	x		x			x		x	x	x		
Hoole et al. (2005)						x		x	x	x	x	x	x		
Hsieh and Tidd (2012)	Case study: 52 interviews for firms	Taiwan	Servicing			x		x	x	x		x	x		
Hult et al. (2002)	Survey: transportation company, USA - 141 internal customers, 115 corporate buyer, 58 external supplier	U.S.	Servicing			x			x	x	x		x		
Hult et al. (2010)	Survey: 273 supply chain manager	Not specified	Manufacturing/ Servicing			x		x		x	x		x		
Huo et al. (2013)	Survey: 617 manufacturers in China	China	Manufacturing			x			x	x	x	x	x	x	x
Ireland and Webb (2007)						x			x	x	x	x	x		
Isaksson et al. (2010)				x		x		x	x	x	x	x	x	x	x
Isaksson et al. (2016)	Survey: 230 firms in Hi-Tech sectors	U.S.	Manufacturing			x			x	x		x	x		

Jajja et al. (2017)	Survey: 296 firms (automotive/ chemical process/ engineering/ fast moving consumer goods/ pharmaceutical/ textile/ telecommunications)	Pakistan/ India	Manufacturing	x		x			x	x	x	x	x		
Jayaram and Pathak (2013)	Survey: 432 manufacturing firms (high value-added/ high technology products)	Not specified	Manufacturing	x		x			x	x	x	x	x		
Jayaraman and Luo (2007)						x		x	x	x	x	x	x	x	x
Jean et al. (2012)	Survey: 236 Taiwanese executives in electronic industry	Taiwan	Manufacturing	x		x			x	x	x	x	x		
Jean et al. (2014)	Survey: 170 multinational automobile suppliers	China	Manufacturing	x		x			x	x	x	x	x		
Johnsen et al. (2011)	Case study: 3 in-depth case studies of NPD projects (39 semi-structured interviews in automotive/ telecommunications)	Not specified	Manufacturing	x		x			x	x	x	x	x		
Juttner and Maklan (2011)	Case study: 28 semi-structured interviews of three global supply chains from different industries - cabling/specialty chemical products/wood/timber wholesaler.	Europe	Not specified	x		x		x			x	x	x		
Kache and Seuring (2017)	Delphi study: 20 international experts (management consulting companies)	Not specified	Not specified	x		x		x	x	x	x	x	x		
Kang et al.(2007)						x			x	x	x	x	x		

Khan et al. (2012)	Case study: interviews supply chain managers, design mangers, key personnel in design, procurement, sourcing and logistics of a fashion retailer	U.K.	Retailing			x		x	x	x	x	x	x		
Kim and Oh (2005)	Case study: Korean telecommunications company	Korea	Not specified	x		x			x		x	x	x		
Kim et al. (2010)	Survey: 184 companies	Not specified	Manufacturing/ Retailing	x		x		x	x	x	x	x	x		
Koufteros et al. (2007)	Survey: 157 films	U.S.	Manufacturing			x			x	x	x	x	x		
Koufteros et al. (2012)	Survey: 157 films	U.S.	Manufacturing	x		x			x	x		x	x		
Kuhne et al. (2013)	Survey: 270 firms	Europe	Customer/ Manufacturer/ Supplier	x		x			x			x	x		
Lau et al. (2007)	Survey: 251 manufacturing firms (Electronics/ Plastics/ Toys)	Hong Kong	Manufacturing	x		x		x	x	x	x	x	x		
Lau et al. (2011)	Survey: 251 manufacturing firms (Electronics/ Plastics/ Toys)	Hong Kong	Manufacturing	x		x		x	x	x	x	x	x		
Lee et al. (2011)	Survey: 243 hospitals	South Korea	Servicing			x		x	x	x	x	x	x	x	
Lee et al. (2014)	Survey: 133 firms	Malaysia	Manufacturing	x		x		x	x	x	x	x	x	x	x
Li et al. (2006)	Survey: 196 organizations	U.S.	Manufacturing			x		x	x	x	x	x	x		
Liao and Kuo (2014)	Survey: 127 firms of Thin-Film Transistor Liquid Crystal Display (TFT-LCD) industry	Taiwan	Manufacturing			x		x	x	x	x	x	x		

Lui et al. (2016)	Survey: 146 U.S. listed firms (adopted radio frequency identification, RFID)	U.S.	Manufacturing	x		x				x	x	x	x	x	x
MacCarthy et al. (2016)						x		x	x	x	x	x	x	x	x
Malhotra et al. (2005)	Case study: 13 IT enterprises	Not specified	Servicing			x			x	x	x	x	x		
Mclvor and Humphreys (2004)	Case study: 35 companies in electronic component sector	Not specified	Manufacturing	x		x			x	x		x	x		
Melnyk et al. (2009)	Survey: 45 respondents (22 academicians 23 practitioners)	Not specified	Not specified	x		x		x	x	x	x	x	x	x	
Melnyk et al. (2010)				x		x		x	x	x	x	x	x	x	
Miao et al. (2012)	Survey: 157 mid-management in firms	China	Manufacturing			x		x	x			x	x	x	x
Modi and Mabert (2010)	Survey: 148 firms (had at least one patent in each year over the years 1987-96)	U.S.	Manufacturing			x		x			x		x		
Munksgaard et al. (2014)	Case study: 4 case study companies (all running supply chain innovation projects)	Danish/ Denmark/ Sweden	Manufacturing/ Servicing	x	x	x		x	x	x	x	x	x		
Narasimhan and Narayanan (2013)						x			x	x	x	x	x	x	
Ojha et al. (2016)	Survey: 128 firms	U.S.	Manufacturing/ Servicing	x		x			x	x	x	x	x		
Oke et al. (2013)	Survey: 207 manufacturing firms	Australia	Manufacturing	x		x			x	x		x	x		

Pagell et al. (2004)	Case study: 11 different plants from 11 distinct companies	U.S.	Manufacturing			x		x	x	x	x	x	x		
Peng et al. (2013)	Survey: 238 manufacturing plants	Austria/ Finland/ Sweden, Germany/ Italy/ Japan/ Korea/ U.S.	Manufacturing	x		x			x	x	x	x	x		
Pero et al. (2010)	Multiple case studies - electric car & alternators, worldwide electro-valve producer, worldwide apparel industry, weapon producers	Not specified	Manufacturing	x		x		x	x	x	x	x	x		
Petersen et al. (2005)	Survey: 134 firms	Global	Manufacturing/ Non-manufacturing			x			x	x	x	x	x		
Radas and Bozic (2009)	Survey: 448 SMEs	Croatia	Manufacturing/ Servicing	x		x			x	x		x	x		
Ranganathan et al. (2011)	Survey: 249 firms	Canada/ U.S.	Manufacturing/ Servicing	x		x		x	x	x	x	x	x		
Robertson et al. (2002)	Case study: international steel manufacturer	Australia/ New Zealand/ South Asia/ South-east Asia	Manufacturing			x		x	x	x	x	x	x		
Roh et al. (2014)	Survey: 559 manufacturing firms	Global	Manufacturing	x		x		x	x	x	x	x	x		
Roy and Sivakumar (2010)				x		x			x	x		x	x		

Roy et al. (2004)				x		x			x	x	x	x	x		
Saenz et al. (2014)	Case study: 23 semi-structured interviews including focal buyers/ strategic suppliers	Not specified	Not specified	x		x			x	x	x	x	x		
Salvador and Villena (2013)	Survey: 238 plant directors in electronics/ machinery/ transportation equipment	Austria/ Germany/ Finland Italy/ Japan/ South Korea/ Sweden/ U.S.	Manufacturing			x			x	x	x	x	x		
Samiee et al. (2008)				x		x		x	x	x	x	x	x		x
Sampson and Spring (2012)	Survey: 1,380 customer roles survey responses	Not specified	Servicing	x		x			x	x	x	x	x		
Sanders et al. (2005)	Survey: 242 first-tier OEM suppliers (electronic computer industry)	U.S.	Manufacturing	x		x			x	x	x	x	x		
Sanders et al. (2008)	Survey: 241 first-tier OEM suppliers (electronic computer industry)	U.S.	Manufacturing	x		x		x	x	x	x	x	x		
Sarkis et al. (2012)				x	x	x	x	x	x	x	x	x	x	x	x
Sawhney et al. (2006)	Survey: 54 managers (a large public company in energy industry/ a midsize private firm in food industry)	Not specified	Not specified			x		x	x	x	x	x	x		

Schaltegger and Burritt (2014)						x				x	x		x	x	x
Schoenherr and Swink (2012)	Survey: 403 supply chain executives/ managers	Global	27 Industries including Manufacturing/ Retail etc	x		x		x	x		x	x	x		
Shavarini et al. (2013)	Survey: 160 companies for food industry and chemical industry (detergents)	Iran	Manufacturing			x			x	x	x	x	x		
Singh and Gregory (2008)	Multiple case studies - 11 supply networks sectors	Global	OEM/ Manufacturing/ Retailing/ Servicing			x	x	x	x	x	x	x	x		
Singhal and Singhal (2002)						x			x	x	x	x	x		
Skippari et al. (2017)	Case study: firms from all parts of supply chains	Finland	Brand owner/ Manufacturing/ Retailing/ Servicing/ Producing	x		x		x	x	x	x	x	x		
Soosay and Hyland (2008)	Case study, Australian engineering firm	Australia	Manufacturing			x			x	x	x		x		
Soosay et al. (2008)	Case study: interviews 23 managers in 10 case studies					x		x	x	x	x	x	x	x	
Storer et al. (2014)	Survey: 412 respondents Australian supply chain	Australia	Manufacturing			x			x	x	x	x	x		x
Tan et al. (2015)	Case study: leading eyeglasses manufacturer	China	Manufacturing			x			x	x	x	x	x		

Teichert and Bouncken (2011)	Survey: 241 small- and mid-sized companies (high-tech sector)	Not specified	Not specified	x		x			x	x		x	x		
Trautrims et al. (2017)	Case study: a premium car manufacturer	Europe	Manufacturing	x		x			x	x	x	x	x		
Turkulainen and Swink (2017)	Survey: 203 firms (various industries)	Not specified	Manufacturing	x		x		x	x	x	x	x	x		
Tomlinson and Fai (2013)	Survey: 371 SMEs	U.K.	Manufacturing	x		x		x	x	x		x	x		
Tracey and Neuhaus (2013)				x		x		x	x	x	x	x	x		
Vanpoucke et al. (2009)	Survey: 300 firms in primary goods/ chemical/ pharmaceutical/ consumer goods/ media & informatics industries	Not specified	Manufacturing	x		x		x	x	x	x	x	x		
Vickery et al. (2003)	Survey: 57 firms (automotive industry)	U.S.	Manufacturing	x		x		x	x	x	x	x	x		
von Massow and Canbolat (2014)				x		x			x			x	x	x	
Wagner and Bode (2014)	Survey: 367 firms (Automotive/ Chemicals/pharmaceuticals/ Consumer goods/ Electronics/ Industrial machinery)	Germany	Manufacturing	x		x			x	x	x	x	x		
Wagner et al. (2010)	Survey: 45 firms; Analysis: PLS structural model	Not specified	Manufacturing	x		x			x	x	x	x	x		

Wagner et al. (2012)	Survey: 67 supplier integration projects in 16 firms	Not specified	Manufacturing			x			x	x	x	x	x		
Wakolbinger and Cruz (2011)				x		x				x	x		x		
Wang et al. (2011)	Survey: 315 firms	China	Manufacturing	x		x			x	x	x	x	x		
Wong et al. (2011)	Survey: 151 Thailand's automotive manufacturing plants	Thailand	Manufacturing	x		x		x	x		x	x	x		
Wong et al. (2013)	Survey: 151 first-tier automotive suppliers & automakers	Thailand	Manufacturing	x		x			x	x	x	x	x		
Wu et al. (2013)	Survey: 289 firms	U.S.	Manufacturing/ Retailing			x				x	x		x		x
Wynstra et al. (2010)	Survey: 161 companies (production suppliers to car/ truck manufacturers)	Sweden	Manufacturing	x		x			x	x		x	x		
Yaibuathet et al. (2008)	Survey: 458 firms	China/ Japan/ Thailand	Manufacturing		x	x	x	x	x	x	x	x	x		x
Yeniyurt et al. (2014)	Survey: 144 firms (Tier 1 production suppliers of Original Equipment Manufacturers(OEMs))	U.S.	Manufacturing			x			x	x		x	x		
Yeung et al. (2008)	Survey: 225 electronics manufacturing firms	Hong Kong	Manufacturing	x		x		x	x		x	x	x		
Yin et al. (2018)				x	x	x	x	x	x	x	x	x	x		
Young et al. (2000)	Case study: furniture, industrial printing,	Not specified	Manufacturing	x		x				x	x		x	x	

	electronic component, pharmaceutical companies														
Zhang et al. (2002)						x		x	x	x	x	x	x		x
Zimmermann et al. (2016)						x		x	x	x	x	x	x	x	

Appendix D - Theories and models used in the past process innovation research

Theory and Models	References	N
Absorptive capacity theory	[A147]	1
Agency theory	[A92], [A93]	2
Ambidexterity theory	[A145], [A146]	2
Capability-based theory	[A48], [A93], [A124], [A154]	4
Cognitive theory	[A18]	1
Coalition theory	[A11], [A87]	2
Complementarity theory	[A19]	1
Competence theory	[A154]	1
Contingency theory	[A26], [A64], [A81], [A93], [A134], [A144], [A145], [A146]	8
Coordination theory	[A120]	1
Innovation theory*	[A4], [A37], [A58], [A147]	4
Dynamic capabilities theory	[A51]	**1**
Ecological modernization theory	[A12], [A120]	2
Emerging theory	[A82]	1
Institutional theory	[A13], [A34], [A66], [A75], [A92], [A93], [A120], [A122]	8
Interaction theory	[A113]	1
Internalization theory	[A93]	1
Knowledge-based theory**	[A8], [A52], [A72], [A79], [A103], [A105], [A109], [A112], [A114], [A142], [A155]	11

Knowledge transfer theory	[A17]	1
Network theory* **	[A4], [A21], [A29], [A31], [A74], [A76], [A83], [A107], [A113], [A122], [A155]	11
Organizational information processing theory	[A94], [A105], [A111], [A123], [A137], [A145], [A146]	7
Organizational theory** **	[A14], [A15], [A24], [A32], [A76], [A87], [A104], [A107], [A119], [A142]	10
Random utility theory	[A5]	1
Real options theory	[A66]	1
Relational theory*** **	[A2], [A9], [A13], [A28], [A54], [A93], [A107], [A112], [A113], [A145], [A146], [A155]	12
Resource advantage theory	[A3], [A5], [A31], [A52]	4
Resource-based theory**** **	[A3], [A4], [A12], [A28], [A33], [A37], [A41], [A45], [A47], [A51], [A52], [A53], [A54], [A56], [A59], [A65], [A73], [A84], [A86], [A87], [A91], [A93], [A102], [A105], [A109], [A111], [A120], [A123], [A124], [A128], [A130], [A132], [A142], [A151], [A154], [A155]	36
Resource dependence theory	[A8], [A15], [A68], [A71], [A74], [A103], [A137]	7
Reverse logistics theory	[A73]	1
Situated learning theory	[A113]	1
Social capital theory	[A8], [A68], [A103]	3
Social exchange theory	[A150]	1
Stakeholder theory	[A53], [A120]	2
Strategic choice theory***** **	[A32], [A40], [A41], [A49]	4
Structural holes theory	[A31]	1
Supply network theory	[A125]	1

System dynamics theory	[A96]	1
Theory of combinatorial technological evolution	[A61]	1
Theory of constraints	[A25], [A55]	2
Theory of modular systems	[A115]	1
Theory of partner selection	[A33]	1
Theory of swift and even flow	[A99]	1
Transaction cost economics	[A2], [A4], [A5], [A7], [A8], [A28], [A35], [A47], [A59], [A68], [A75], [A86], [A87], [A93], [A102], [A105], [A106], [A107], [A113], [A116], [A118], [A119], [A137], [A138], [A140], [A142], [A151], [A155]	28
Trust theory	[A60]	1
Unified service theory	[A117]	1
Value-chain analysis	[A4], [A93]	2

* “Innovation theory” includes “Diffusion of innovation theory”/ “Innovation theory”/ “Innovation diffusion theory”/ “Schumpeter's theory of innovation”

** “Knowledge-based theory” includes “Knowledge-based theory”/ “Knowledge-based view”

*** “Network theory” includes “Network theory”/ “Network governance model”/ “Social network theory”

**** “Organizational theory” includes “Organizational theory”/ “Organizational design theory”/ “Organizational behavior theory”/ “Organizational learning theory”

***** “Relational theory” includes “Relational theory”/ “Relational contracting theory”/ “Relational exchange theory”/ “Relational marketing theory”/ “Relational view theory”/ “Relationship theory”

****** “Resource-based theory” includes “Resource-based theory”/ “Resource-based view”

******* “Strategic choice theory” includes “Strategic choice theory”/ “Strategic management theory”/ “Strategic structure-performance framework/ theory”
# Some articles counted more than once because they apply more than one theory.