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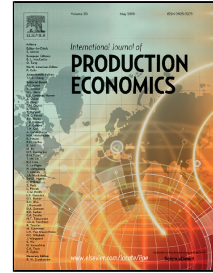


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Supply chain leadership: A systematic literature review and a research agenda

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Abstract

The main purpose of this study is to improve the understanding and comprehension of the supply chain leadership concept. To this aim, the paper systematically reviews and synthesises the current academic literature in this emerging field, unveiling research gaps and discussing a future research agenda. The review was performed by selecting papers from leading journals in the operations and supply chain management field (using the *Scopus* and *Web of Science* academic search engines). Overall, 51 relevant papers were identified through the review process.

After providing an overview of classical leadership theories, the paper introduces a definition for the supply chain leadership concept. The theoretical characterisation of such concept is then investigated, through the identification of dominant leadership theories employed to explain and characterise supply chain leadership. Also, the study provides a thematic analysis of supply chain leadership styles and their influence on supply chain practices. Employed research methodologies, along with geographical specificities and supply chain orientations of previous studies, are also scrutinised.

To the best of our knowledge, this is the first attempt to provide a holistic systematic literature review in the supply chain leadership domain. Therefore, this contribution is an important first step in order to establish robust theoretical frameworks involving the constructs of supply chain leadership and to provide a foundation for further studies in this field.

Keywords – Supply Chain Leadership, Performance Measurement, Supply Chain, Systematic Literature Review

Paper type – Literature review

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Supply chain leadership: A systematic literature review and a research agenda

Abstract

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1 Introduction

Globalisation has allowed firms to exploit international supply networks, increasing the need for improved coordination with suppliers. This phenomenon has changed the locus of competition from single firms to entire supply chains (Gosling et al., 2017). As the boundaries of supply chain networks have been broadened, competition has become more intense and the overall performance of firms now highly depends on the support of supply chain partners. Highly competitive business practices require a firm to extend supply chain management practices beyond traditional intra-firm boundaries and play a strategic role in improving connections with supply chain members (Nosella and Petroni, 2007; Maestrini et al., 2017). Due to this situation, a significant number of studies addressing the importance of inter-organisational management and partnerships have been published (Meqdadi et al., 2018; Um and Kim, 2018; Yawar and Seuring, 2018; Chen et al., 2017).

The need for inter-organisational management in a supply chain context has led to a proliferation of studies emphasising the role of a focal or buying firm in orchestrating supply chain members' activities across the network in order to achieve desirable and mutual goals for all parties (Dubey et al., 2018; Wilhelm et al., 2016; Hoejmose et al., 2012). However, the notion of a firm orchestrating and managing its supply chain members is not a new proposition in a supply chain context. Previous studies highlighted the crucial role of buying firms in supply chains through the provision of channel leadership (manufacturer-retailer relationships management), supply chain governance mechanisms (relational-based concepts such as inter-organisational trust, power, collaboration, long-term relationship), and institutional pressures (based on the isomorphism concept in influencing stakeholders) (see Gölgeci et al., 2018; Akhtar et al., 2016; Goffnett and Goswami, 2016; Cao and Lumineau, 2015; Zhu and Sarkis, 2007; Poppo and Zenger, 2002; DiMaggio and Powell, 1983; Etgar, 1978).

Supply chain leadership (SCL), focuses on firms' behaviours and has been formulated by the scholars based upon the classical leadership theory. As such this paper argues that SCL is concerned with the ability of one (or more) firm(s) to influence the actions, behaviours and performance of supply chain members (as also stated by: Ojha et al., 2018; Akhtar et al., 2017; Lockström et al., 2010; Defee et al., 2009).

The SCL concept extends across the boundaries of the firm in order to propagate across entire supply networks (Gong et al., 2018; Jia et al., 2018; Lockström and Lei, 2013). As such, this

paper argues that the SCL concept requires a firm to exhibit leadership style towards supply chain partners (including both upstream suppliers and downstream service providers) in order to act as a *supervisor* of its own supply chain. SCL has also been identified as the antecedent of strategic supply chain decisions and can contribute to the improvement of supply chain performance in terms of organisational learning (Hult et al., 2000a), purchasing cycle time (Hult et al., 2000b), supply chain efficiency (Defee et al., 2010), logistics operations (L'Hermitte et al., 2016), and sustainability (Meinlschmidt et al., 2018).

A greater comprehension of SCL mechanisms is therefore crucial, as SCL-related concepts have the potential for developing new theories that might improve supply chain practices. Such in-depth understanding is necessary for two main reasons. Firstly, despite the growing attention and studies devoted to SCL, the term is characterised by a rather inconsistent usage, involving **non-homogeneous** constructs and dimensions. Given that several leadership styles exist in the classical leadership literature, this study attempts to gain a detailed understanding of the leadership styles that have been adopted in the supply chain context and to acquire a detailed comprehension of the dimensions of SCL. Moreover, SCL-focused contributions towards supply chain practices are reviewed. Findings derived from this study are useful as a foundation for establishing a workable SCL theory. Secondly, while comprehensive literature reviews on channel leadership, supply chain governance and institutional pressures are available (for example: Delbufalo, 2012; Pilbeam et al., 2012; Guo et al., 2017), none of these explicitly mention the SCL concept. Also, an equivalent review on SCL concepts is currently absent; the only notable systematic literature review on SCL was published by Gosling et al. (2017). Unfortunately, the focus of this systematic literature review is limited to the role of SCL in promoting sustainability across supply chains. Therefore, there is a need to holistically review the current understanding and usage of the SCL concept at a more general level, and identify the gaps in the current literature. This is a crucial step in order to stimulate future research in the SCL area.

This study is aimed at addressing two main objectives, which are: (i) to provide a complete review of the current usage and penetration of the SCL concept (including SCL styles, dimensions and influences) based on the existing literature (ii); to set the direction for future research.

This paper is organised as follows: first, an overview of leadership theories and a background of the SCL concept are provided (Section 2). Then, the methods adopted for the literature review are illustrated (Section 3), along with descriptive findings (Section 4). Next, the paper discusses thematic analysis findings on the SCL styles and outcomes (Section 5). In section 6, future research directions are proposed and discussed. Finally, conclusions are provided in section 7.

2 An Overview of Classical Leadership Theories

Leadership has been studied extensively in various perspectives and contexts, and different theoretical foundations and real-world applications have been provided (Horner, 1997). In the past 50 years, more than 65 theories have been introduced to define and explain leadership antecedents, traits or outcomes (Waters, 2013). Leadership studies can be traced back to classical Western and Eastern writings, in which the contribution of leadership towards organisational and societal functioning is evaluated (Day and Antonakis, 2012). To conceptualise and define leadership, several dimensions and attributes have been examined including power distribution, skills, personality traits and situation-based factors (Waters, 2013). However, Fiedler (1971) inferred that there are almost as many leadership definitions as there are leadership theories and psychologists in the field. Day and Antonakis (2012) argued that as leadership is complex in nature, a specific definition can never be found. Despite this absence of agreement towards the definition of leadership, a working definition is required to enable the foundation of leadership studies and identify the constructs or domains of leadership.

Leadership is typically characterised and defined by leaders' traits, qualities, personalities and behaviours. Scholars have agreed that leadership principles can be defined in terms of the influencing process initiated by the leaders to change followers' actions and behaviours to achieve desired goals and objectives (Day et al., 2014; Uhl-Bien et al., 2014; Bolden et al., 2003; Yukl, 1989). Leadership should be focussed on group activities which are based on social influence and revolve around common goals, objectives, visions or missions. Leadership is a process of social influence in which leaders should guide and motivate followers to act orderly in order to reach a goal (Day and Antonakis, 2012). In addition to definitional disputes, it is worth discussing the nature of leadership and the origins of leadership theory prior to defining and conceptualising SCL. To date, the leadership theories have been evolving from the seminal *great man theory* to the *transformational-transactional leadership theory*.

The Great man theory is one of the earliest theories in the leadership literature (Bolden et al., 2003). This theory infers that a leader is an exceptional person who is born with innate qualities (Day et al., 2014). Similarly, the trait theory of leadership argues that leaders were born with certain traits and only certain people possess those traits (Northouse, 2004). However, there is no clear answer on what traits are consistently associated with great leaders and how these are relevant to specific situations or functions (Horner, 1997). Nevertheless, leadership studies have also been examined based on behaviour approach of the leader.

Compared to the trait theory, behavioural approaches to leadership are more concerned with the actions of leaders rather than their personality traits (Day et al., 2014; Yukl, 1989). Under this approach, several leadership theories such as McGregor's Theory X and Y and Blake and Mouton's Managerial Grid were introduced (Bolden et al., 2003; Horner, 1997). Drawing upon these theories, several leadership styles including democratic, autocratic and participative leadership styles have been discussed in the literature (Harms et al., 2018; De Hoogh et al., 2015; Gastil, 1994; Lewin et al., 1939). However, there was an inconsistency in deciding on the leadership styles or behaviours to be implemented in different tasks or situations, which led to the combination of the behavioural and the contingency approach to leadership (Day and Antonakis, 2012; Gardner et al., 2010).

The contingency theory of leadership posited that there is no universal leadership approach that is suitable to all circumstances (Dinh et al., 2014; Gardner et al., 2010; Fiedler, 1964). Leadership should be directive or supportive and applied to certain or particular situations appropriately; leaders shall re-evaluate and refine their leadership styles based on their followers' competence and commitment. Fiedler (1971) suggested that leadership approaches should be based on specific situations including leader-follower relationships, task structure and power position. A different situation might force a leader to use different styles in order to influence and control the followers.

A new leadership theory, known as the relational theory of leadership, was introduced in the 1970s, devoting substantial attention and focus to the relationship between leaders and followers. The evolution of relational theory led to several developments, such as the vertical dyad linkage theory and the leader-member exchange (LMX) theory (Graen and Uhl-Bien, 1995; Dansereau et al., 1975). Both theories focus on the relationship between leaders and

followers, suggesting that a high-quality relationship generates positive interactions between both parties. Furthermore, relational theories of leadership posit that leaders and followers reciprocate the exchange in the relationships (Riggs and Porter, 2017).

The most recent major leadership approach is the one of transformational-transactional leadership theory. This leadership approach has been identified as the most popular approach and research focus since the early 1980s (Day et al., 2014; Dinh et al., 2014; Gardner et al., 2010; Northouse, 2004). Prior to the introduction of the transformational leadership concept, transactional leadership was the foundation for an effective leadership behaviour in organisations (Bass et al., 2003). Bass (1985), who expanded Burns's (1978) transactional leadership theory, deduced that transactional leaders clarify the expectation they demand from their followers and offer recognition when goals or objectives are attained. Put more simply, a transactional leadership style represents an exchange between leaders and followers so that each of them derives something of value for the organisation (Kuhnert and Lewis, 1987). On the other hand, transformational leadership style refers to a superior leadership performance that occurs when a leader expands the interests of their followers, generating acceptance and awareness of organizational visions and missions, and setting a sense of belonging which can go beyond self-interest for the sake of the common good of an organisation (Bass et al., 2003; Hartog et al., 1997; Bass and Avolio, 1990).

The phenomenon of SCL is derived from the concept of classical leadership theories. However, in contrast to the classical or traditional leadership theories (which focus on the inter-personal level), SCL focusses on the inter-organisational level. The systematic literature review presented in this paper was conducted based purely on the concept of leadership in a supply chain context, which relates to the relationship between a leading firm and its supply chain partners. Defee et al. (2010, pp. 766) defined SCL as:

... “a relational concept involving the supply chain leader and one or more supply chain follower organisations that interact in a dynamic, co-influencing process. The supply chain leader is characterised as the organisation that demonstrates higher levels of the four elements of leadership in relation to other member organisations (i.e. the organisation capable of greater influence, readily identifiable by its behaviours, creator of the vision, and that establishes a relationship with other supply chain organisations)”.

In the same vein, Lockström et al. (2010, pp. 251) defined SCL as the ability of a firm:

... “to influence a supplier to achieve a common goal within the supplier’s organisation”.

Lockström et al. (2010) further explained that the leadership style of a firm is pivotal as it has the ability to improve a firm’s relational capital including suppliers’ commitment and supply chain relationships. Drawing upon these two definitions, this study considers SCL as *a set of behaviours exhibited by a firm in influencing and orchestrating the actions and behaviours of its own supply chain partners*. It is worth noting that even though focal firms could be acting as a supply chain leader (in the following, also defined as *leading firm*), they always encounter difficulties in managing sub-suppliers (tier-2 supplier onwards) due to limited control, information and contractual relationships (Wilhelm et al., 2016). Hence, multiple organisations might be taking up leadership roles within the same supply chain (Mokhtar et al., 2019). Also, it must be highlighted that leadership behaviours are aimed at the whole supply chain, including the influence of SCL on both upstream and downstream partners and on both traditional (forward) and reverse supply chain practices. As such, this conceptualisation extends the definitions of SCL provided in the current literature by providing a holistic and broader perspective in order to ensure that the SCL concept can be referred to complex contemporary multi-tier supply chains (including upstream and downstream partners as well as forward and reverse performance orientations).

3 Methodology

In order to address the research objectives, a systematic review of the literature in the SCL domain was performed. A systematic literature review is useful for locating, selecting, analysing, appraising and evaluating the literature that is relevant to a particular research question (Denyer and Tranfield, 2009). The review was performed through the web-based tools SCOPUS and Web of Science. SCOPUS and Web of Science were used as both databases have been considered as the largest databases of peer-reviewed journals and store a broad range of scientific papers (Centobelli et al., 2018). Furthermore, both databases have been used extensively in producing systematic literature papers in the fields of operations management and supply chain (Shashi et al., 2018; Govindan and Hasanagic, 2018; Centobelli et al., 2017; Chen et al., 2017; Maestrini et al., 2017; Cerchione and Esposito, 2016). The main purpose of

using two different databases was to provide a high level of rigour in searching and selecting the papers to be included in the subsequent analysis (Shashi et al., 2018; Centobelli et al., 2017). The review consisted of the four main steps suggested by Maestrini et al. (2017): (i) source identification, (ii) source selection, (iii) source evaluation, and (iv) data analysis. The overview of the article search process is presented in Figure 1 and explained in the following subsections.

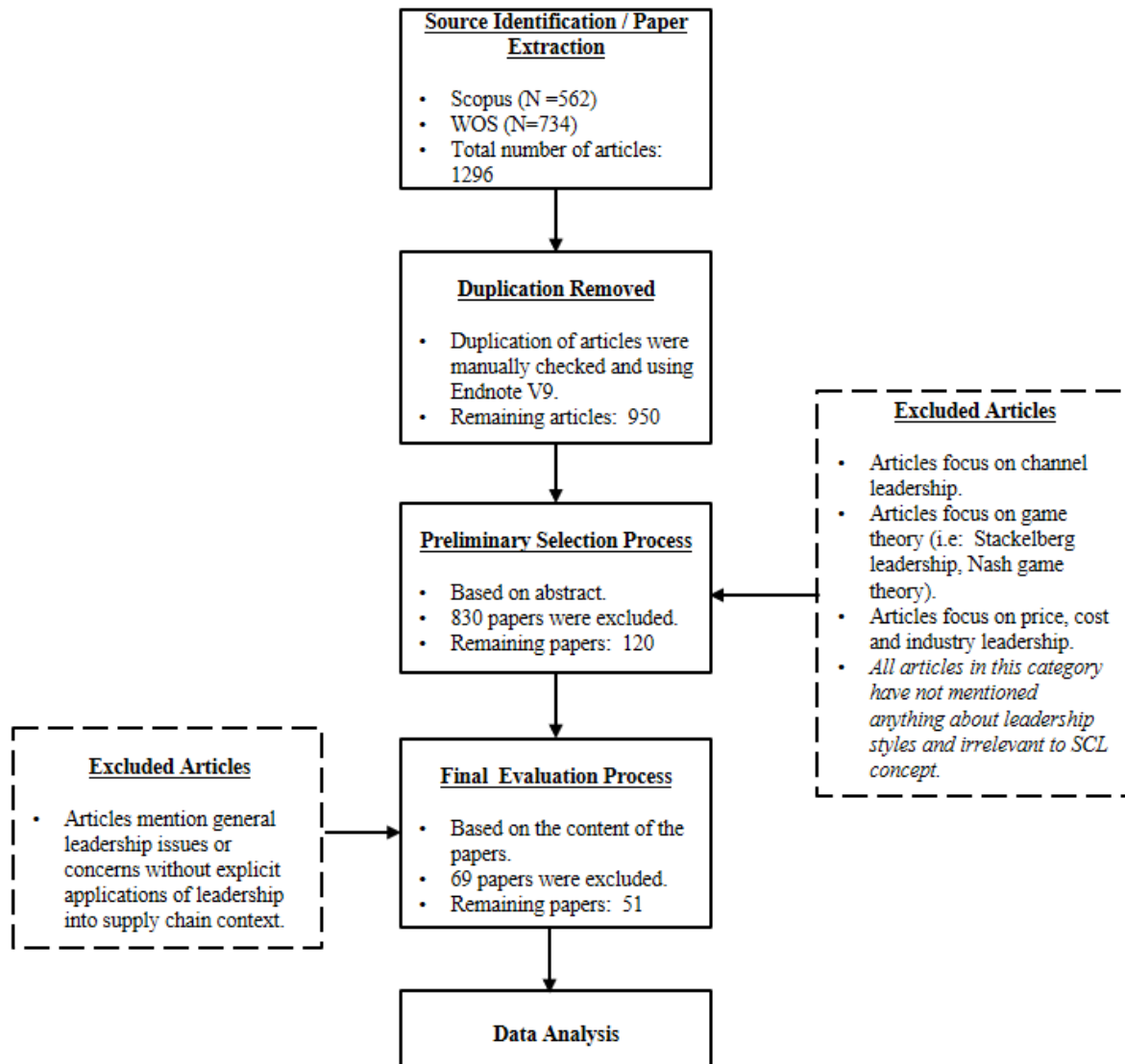


Figure 1: Article Search and Evaluation Process

3.1 Source Identification

The first step in the systematic literature review was a keyword-based search using the SCOPUS and Web of Science databases. In order to maximise the number of available resources, the following generic keywords combination was used:

leader AND "supply chain*"*

This very generic keywords combination allowed the study to retrieve as many SCL related articles as possible. These generic keywords were also used to overcome the limitations of having too specific and rigid keywords which could lead to exclusion of potential SCL related articles. During multiple stages of data collection, alongside “leader*” and “supply chain*” keywords, several potential keywords such as “top management”, “inter-organisational leader*” and “inter-organisation*” were considered. Unfortunately, most of the related resulting articles appear to be concerned with intra-organisational leadership. This would have affected the focus of the paper, as the main objective was considered SCL as an inter-organisational concept. Furthermore, the usage of “leader*” as the keyword is consistent with a similar appraisal of SCL literature (which is focusing only on SCL and sustainability learning) provided by Gosling et al. (2017). However, the study used more specific leadership styles related keywords such as “supply chain leadership”, “transformational leadership”, “transactional leadership”, “group leadership” and “focal firm leadership”.

A total of 562 and 734 potential relevant articles were retrieved from SCOPUS and Web of Science respectively. The details of the search protocols are provided in Table 1. A cross-checking process was conducted manually and using Endnote V9 so as to eliminate duplicated results between the databases, reducing the total number of articles to 950. As suggested by Maestrini et al. (2017), all members in the research team (four in total) conducted the overall process independently. Several meetings were held to consolidate the findings between team members, starting from the articles searching process until the selection of the reviewed articles.

Table 1: Articles Searching Protocols

Database	Field	Subject Area / Research Domain	Document Types	Language	Total	Total Both	Duplicate	Remaining
<i>Scopus</i>	Article title, Abstract, Keywords	Business, Management and Accounting; Social Sciences	Article; Review	English	562	1296	346	950
<i>WOS</i>	Topic	Social Sciences	Article; Review	English	734			

3.2 Source Selection

After the retrieval of the relevant articles from the databases, the next fundamental step was concerned with drawing the boundaries of the analysis (Denyer and Tranfield, 2009; Maestrini et al., 2017). In line with the SCL concept, only articles discussing leadership issues in supply a chain context were used in the subsequent analysis. Therefore, the abstracts of the 950 articles were read carefully and classified into papers to be utilised for the subsequent analysis and papers to be excluded. This process was conducted independently by each research team member. In order to assure inter-rater reliability, a quantitative measure reporting the number of disagreements (defined as cases in which the judgement about the inclusion or not of a paper had not been unanimous) over the total number of papers to be classified was developed. The process resulted in a number of disagreement lower than two per cent. All the disagreement cases were discussed individually in order to reach a final consensus.

It has to be reported that a large number of articles discussing concepts related to channel leadership (see Genc and De Giovanni, 2017) were excluded. The SCL concept is much broader than a power or domination-based concept of channel leadership as it focuses on the collaborative behaviours of a firm which seeks to improve the performance of the entire supply chain (Defee et al., 2009; Defee, 2007). Nonetheless, it should be noted that channel leadership concept focuses very much on the downstream element in a supply chain, with particular emphasis on the marketing and distribution functions (Fang et al., 2018; Genc and Giovanni, 2017; Guo et al., 2017). As such, it can be seen as operating on a 'subset' of the whole spectrum of action of SCL as per our definition; thus, the channel leadership concept lacks the *holistic* perspective which is intrinsic to the SCL concept. In addition, the channel leadership concept (as defined in the marketing literature) emphasises the role of a single focal firm (typically a manufacturer) in maximising their performance regardless of the negative impacts on other channel members or on the supply chain as a whole (Defee et al. 2009; Defee, 2007). Furthermore, equating the channel leadership concept with SCL is not appropriate as studies on channel leadership or channel captain are focused around the concept of dominating the channel members so as to improve the focal firms' performance, where the channel captain is characterised by the most powerful and dominant member in the supply chain (Gölgeci et al., 2018; Kozlenkova et al., 2015; Choi et al., 2013; Barnett and Arnold, 1989; Etgar, 1978).

Also, papers presenting mathematical modelling approaches (see Yan et al. (2016) and his application of Stackelberg leadership; Hou et al., 2017). In addition to this, articles referring to price, industry or cost leadership were excluded. This process resulted in the reduction in the number of the reviewed articles to be considered to 120.

3.3 Source Evaluation

The remaining 120 articles were further analysed in relation to their relevance based on the inclusion and exclusion criteria in Table 2. This was to ensure that all dimensions discussed by previous scholars were properly captured and reviewed in this study. The selection was based on three main criteria:

- i) Studies defining specific styles, types and dimensions of leadership in supply chain management (35 articles) were *included* in the analysis. The specific leadership styles were classified based on the existing and established leadership theories and styles in the literature (Day et al., 2014; Gardner et al., 2010; Judge and Piccolo, 2004; Northouse, 2004; Wong, 2001; Avolio et al., 1999). Specific leadership styles include autocratic, democratic, participative, integrative, transformational and transactional leadership. For example, Roman (2017) employed a transformational leadership style to discuss the role of SCL on sustainable procurement, while Akhtar et al. (2017) explained the influence of autocratic and participative leadership styles towards buying firms' financial performance within supplier-buyer relationships.
- ii) Studies dealing with general leadership constructs and dimensions in supply chain management (16 articles) were also *included* in this systematic literature review analysis. Papers in this category utilise a general concept of leadership, without mentioning or adopting specific leadership styles that have been introduced or discussed in the literature of leadership studies. Furthermore, articles in this category do not link leadership styles with existing leadership theories literature (such as theory X and Y, transformational-transactional leadership, or leader and member exchange (LMX) theory). For example, L'Hermitte et al., (2016) did not mention any specific leadership style but used generic characteristics to measure SCL including leading firms' purposefulness, action-focused approach, collaborative strategies and learning environment.

- iii) Studies mentioning leadership without clear applications to supply chain management (69 articles) were *excluded* from the analysis. For example, the study by Smith et al. (2016) was excluded as it discusses the role of political will and leadership on sustainable public sector food procurement. There is no discussion of leadership styles of focal or even of buying firms (within direct buyer-supplier relationships) in this paper. Similarly, Ambe and Maleka (2016) mentioned in the introduction section of their paper that supply chain malfunctioning can be caused by lack of a leadership and governance. However, the discussion of leadership stops there without any further explanation in the paper.

As suggested by Maestrini et al. (2017), all members in the research team (four in total) conducted the overall process independently, defining the three criteria and assigning each paper to each category. In order to assure inter-rater reliability, a quantitative measure reporting the number of disagreements (defined as cases in which the classification of a paper had not been unanimous) over a total number of papers to be classified was developed. The process resulted in a number of disagreement lower than five per cent. Subsequently, all the disagreement cases were individually discussed and solved through a consensus-reaching process which involved all team members.

Table 2: Criteria for Selecting Studies / Papers

No	Criteria	Number of Study	Relevancy
1	Studies defining <i>specific types and dimension</i> of leadership in a supply chain context	35	Included
2	Studies dealing with <i>general leadership constructs and dimensions</i> in a supply chain context	16	Included
3	Studies just mentioning general leadership issues or concerns <i>without</i> explicit applications of leadership to supply chains	69	Excluded

3.4 Data Analysis

The final step of the systematic literature review was the critical analysis of the articles. The main and ultimate objective is to summarise the findings from the articles and to highlight the key messages that require further attention from the scholars and practitioners. The data analysis was performed by using Microsoft Excel to identify the trends, themes and relevant findings. These include the historical series of SCL publications, academic journals publishing SCL studies, countries where SCL studies are taking place, employed research methodologies,

supply chain orientations and supply chain relationships. The details of the reviewed papers are presented in Appendix 1.

4 Descriptive Findings

4.1 Historical Series

Figure 2 shows that 51 papers related to SCL were retrieved and considered relevant. Most of the 51 have been published in recent years (from 2015 – 2017). The chart shows the distribution of publications per year across the period of study. The first paper on SCL retrieved in this study is the one from Hult et al. (2000b); this is consistent with the argument provided by Williams et al. (2002) that SCL research takes off after year 2000. Though there were no papers in 2003, 2005, 2006 and 2008, there has been a gradual increase in the number of studies on SCL from 2009-2017. Based on the recent trend, it is expected that more SCL studies will be published in upcoming years especially on the role of SCL styles in promoting supply chain sustainability practices (Gong et al., 2018; Jia et al., 2018).

4.2 Academic Journals

Figure 2 shows the journals that published SCL-related articles from 2000 to 2017. The figure only reports journals publishing at least two papers. The top contributor is the International Journal of Production Economics (8 papers), followed by the International Journal of Physical Distribution and Logistics Management (4 papers), the Journal of Cleaner Production (4 papers), the International Journal of Production Research (3 papers) and Supply Chain Management: An International Journal (3 papers). Looking at rankings provided by SCImago in order to measure the scientific influence of journals, all the mentioned journals in Figure 3 are in the Quartile 1 (Q1) group except for Global Business Review (Q2) and the International Journal of Logistics Systems and Management (Q3).

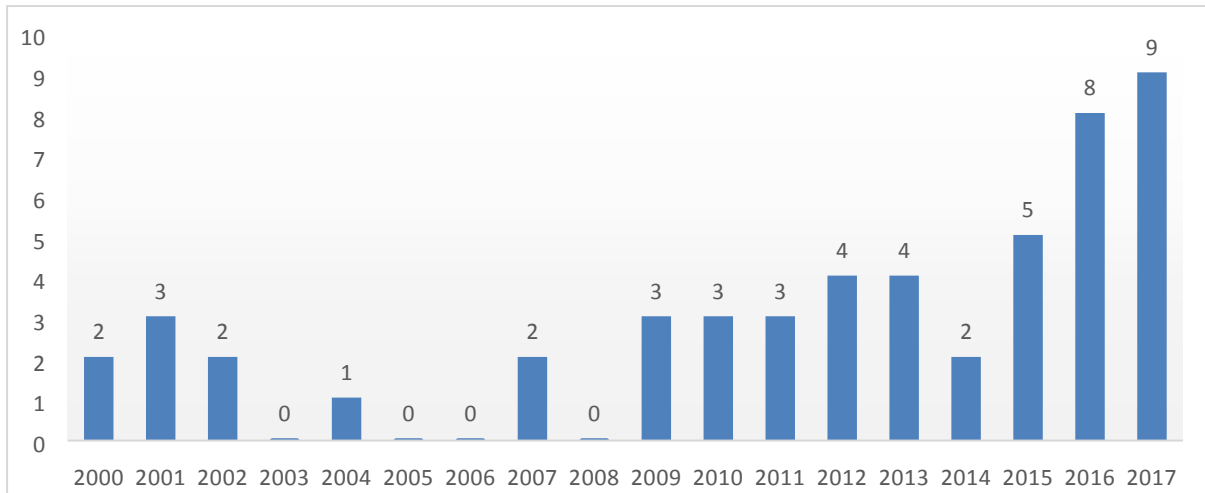


Figure 2: Historical Series of SCL Literature



Figure 3: Journal Publishing SCL Articles

4.3 Geographical focus

Figure 4 classifies the papers according to the country where the data was collected or the research related to the presented empirical cases was conducted. The top contributing countries are the United States of America (12 papers), followed by China (4 papers), India (4 papers), Brazil (3 papers), the United Kingdom (3 papers) and Germany (2 papers). 3 further papers report multi-country case studies. Based on the review, it can be concluded that the concept of SCL is extensively researched in developed rather than emerging countries. In particular, SCL

seems to be quite USA-centric at the moment. The ‘no country’ category is devoted to conceptual papers which do not show any geographical focus.

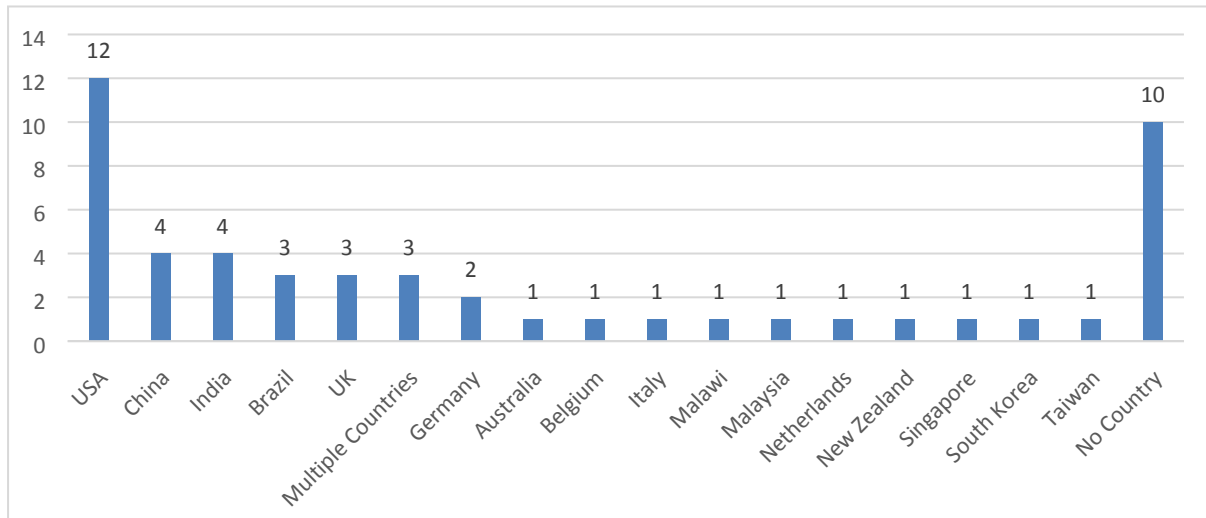


Figure 4: Papers Classified by Country of Research

4.4 Research Methodologies Employed

Figure 5 provides an overview of the research methodologies employed in SCL papers (see Appendix 1 for a detailed classification of each paper¹). Four different categories of research methodologies are found:

- i) Quantitative research (47%) – this category is characterised by the studies that use a quantitative research method and data analysis. All papers in this category use survey research. Several techniques such as co-variance based structural equation modelling (CB-SEM), partial least square structural equation modelling (PLS-SEM), multiple regression, correlations study, analytical hierarchical process (AHP) and simulation are used. For example, Roman (2017) used a survey method and CB-SEM to examine the causal relationship between SCL and organisational sustainable procurement practises. On the other hand, Kuei et al. (2011) used a survey method – also involving Analytic Hierarchy Process – in order to propose the highest priority factor in enhancing supply chain quality management. Defee et

¹ Also in this case, in order to assure inter-rater reliability, a quantitative measure reporting the number of disagreements (defined as cases in which the judgement about the methodological classification of a paper was not unanimous) over the total number of papers to be classified was developed. The process resulted in no disagreements.

- al. (2010) used interactive simulation to observe the role of several firms in their supply chain functions including raw material procurement, logistics, production, manufacturing, warehousing and customer service. Defee et al., (2010) argue that this is a robust technique to observe the real phenomenon of SCL and supply chain practises.
- ii) Qualitative research (29%) – This category is characterised by studies employing qualitative research methods and data analysis. All papers in this category used a case study method and interviews for data collection. The analysis was done using several techniques such as content and thematic analysis. For example, Gabler (2017) used a case study method and interviewed 15 experts in manufacturing industry to propose and develop an environmental sustainability plan. Lockström et al. (2010) used the China automotive industry as a case study and interviewed 30 participants to determine the antecedents of supplier integration.
- iii) Mixed method research (4%) – this category is characterised by the studies that use both quantitative and qualitative research methods in one study. For example, Melnyk et al. (2009) used literature review content analysis and a Delphi study, while (McAdam and Brown, 2001) used survey research (questionnaires) and case study (semi-structured interviews).
- iv) Conceptual papers (20%) – this category is characterised by conceptual papers. Papers in this category provide no empirical data but discuss potential research focuses or topics related to SCL. Also the paper from Gosling et al. (2017), providing a systematic literature review on supply chain leadership in sustainability learning, was included in this category.

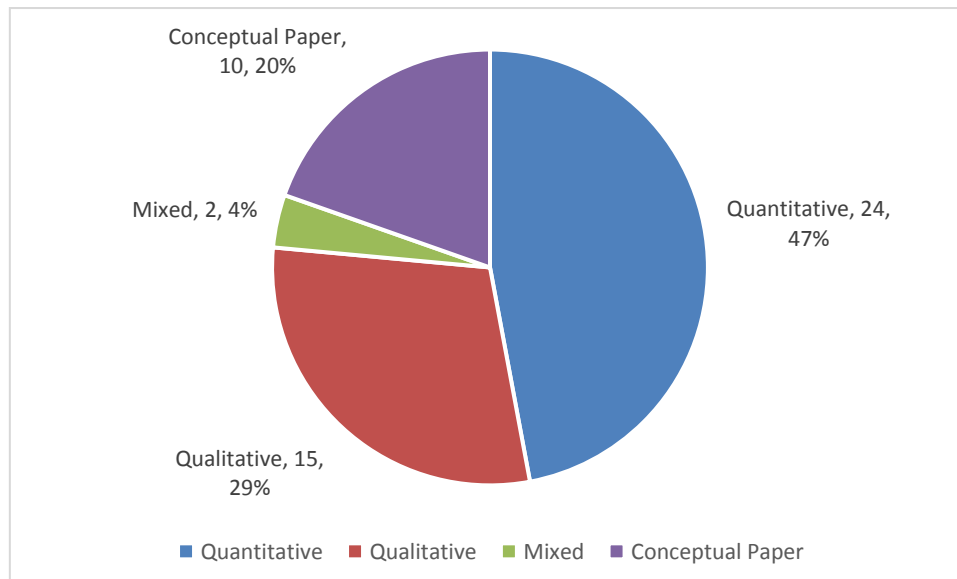


Figure 5: Employed Research Methodologies

4.5 Supply Chain Relationships

As shown in Figure 6, the relationships between supply chain members in supply networks can be categorised into three main orientations: (i) dyadic relationships; (ii) triadic relationships; (iii) myriad or multi-level relationship. The retrieved SCL papers were classified into their respective categories² so that the extent to which a multi-tier perspective is being addressed in the current characterisation of the SCL concept can be assessed.

Figure 7 shows that the role of SCL has been extensively studied based on dyadic (one-to-one) relationships, either between buyer-supplier or between buyer-retailer/distributor/logistics service providers (LSPs). Birasnav et al. (2015) proposed the influence of SCL on immediate upstream suppliers, looking at phenomena like information exchange and knowledge sharing. Sinha et al. (2016) investigated the concept of SCL based on the relationship between the original equipment manufacturers (OEMs) and their tier-1 suppliers, and its influence on quality improvement, suppliers' motivation and change management. The concept of SCL in dyadic relationships is also observed in supply chain integration issues such as supply chain

² Also in this case, in order to assure inter-rater reliability, a quantitative measure reporting the number of disagreements (defined as cases in which the judgement about the type of supply chain relationship investigated in the paper was not unanimous) over the total number of papers to be classified was developed. The process resulted in no disagreements.

partnering (Venselaar et al., 2015), alliancing (Tamburro and Wood, 2014) and strategic planning (Lockström et al., 2010).

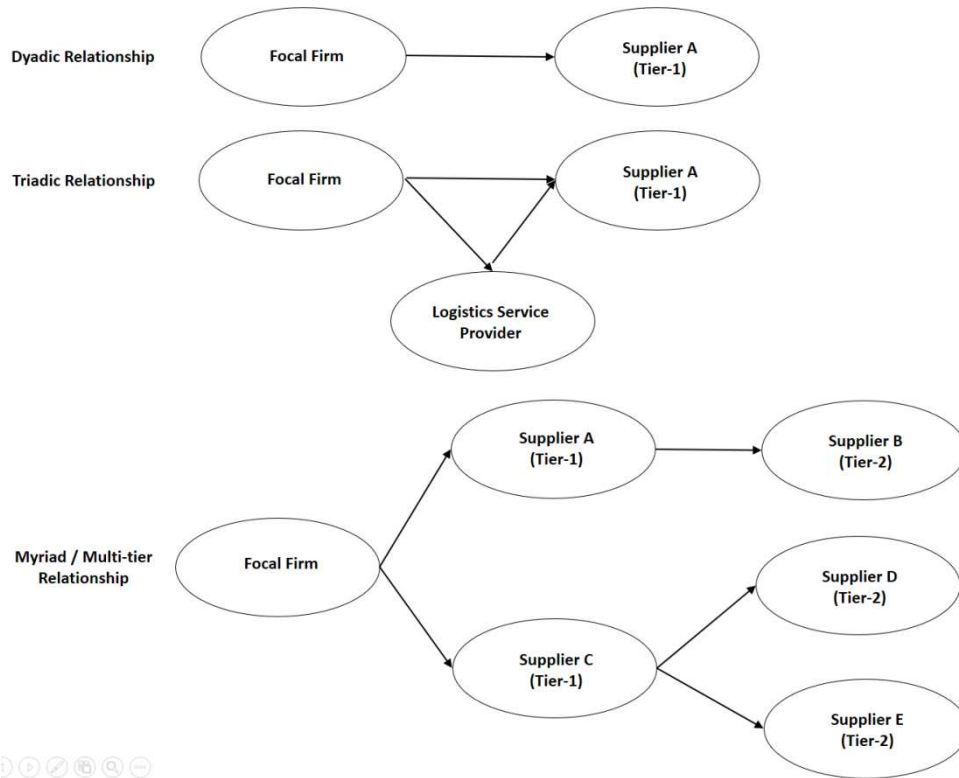


Figure 6: Supply Chain Relationships Types

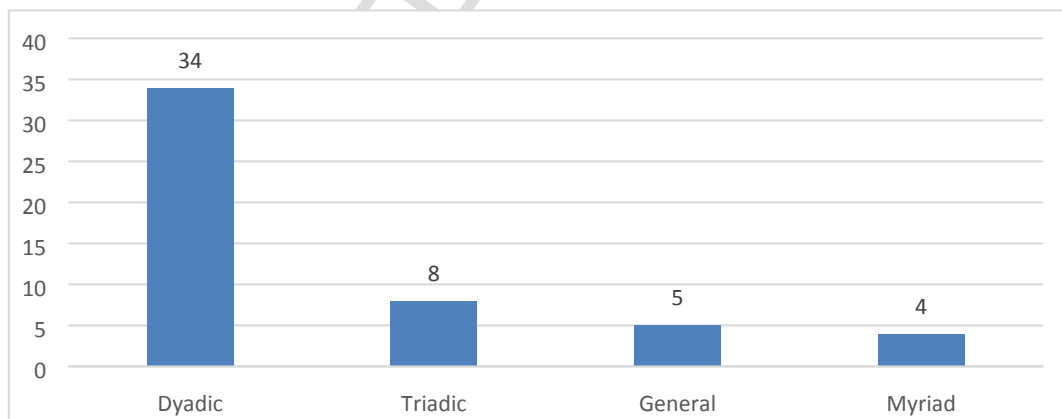


Figure 7: Papers classification based on type of studied Supply Chain Relationship

The analysis also revealed that the role of SCL has been examined beyond the dyadic relationship; specifically, the influence of leadership styles in coordinating supply chain activities based on triadic (9 papers) or myriad relationships (4 papers) has been investigated. In triadic relationships, focal firms are responsible for integrating processes and activities between their upstream partners (such as raw materials suppliers) and LSPs in order to improve quality and delivery performance (Kuei et al., 2011), sales and operations planning (Tuomikangas and Kaipia, 2014), and supply chain learning (Wamba and Chatfield, 2009). In papers investigating myriad-based relationships, the concept of SCL has been extended beyond tier-1 suppliers. In these papers, focal firms are seen as responsible for ensuring close partnerships with and among their suppliers in all tiers to improve supply chain coordination (Sharif and Irani, 2012; Müller-Seitz and Sydow, 2012; Da Cruz and Paulillo, 2016) as well as environmental and social sustainability (Mzembe et al., 2016). Finally, the general category includes a few papers (6) that do not provide a clear relationship discussion in their papers (see Gosling et al., 2017; Melnyk et al., 2009). Most of these papers provide a discussion on the role of SCL in improving supply chain practises but do not provide specific applications to dyadic, triadic or multi-tier contexts.

Such findings show how the SCL concept can be extended beyond a dyadic relationship, to describe the process through which a firm (for instance, the focal firm) orchestrates the whole supply chain by influencing supply chain members' actions and behaviours. The classification of each retrieved paper based on the type of relationship studied is shown in Appendix 1.

5 Thematic Analysis and Main Findings

5.1 Leadership Theories in SCL Studies

Table 3 shows the leadership theories used to explain SCL styles that appeared in the reviewed articles. There are three main leadership theories that have been utilised in the supply chain domain, namely (i) transformational and transactional leadership (ii) general leadership and (iii) behaviourist leadership. The classification of each retrieved paper based on the adopted leadership theory is shown in Appendix 1³.

³ Also in this case, in order to assure inter-rater reliability, a quantitative measure reporting the number of disagreements (defined as cases in which the judgement about the methodological classification of a paper was not unanimous) over the total number of papers to be classified was developed. The process resulted in a number of disagreements lower than five per cent of the total cases; all the disagreement cases were discussed individually in order to reach a final consensus.

Table 3: SCL Theories in the Literature

SCL Styles	Paper
Transformational and transactional leadership	24
General leadership	22
Behaviourist leadership	5

5.1.1 Transformational and Transactional SCL

The most dominant leadership theory used in dealing with SCL is the one based on transformational and transactional leadership theory (24 articles; see Appendix 1 for a full classification). This approach emphasises the relationship between a the supply chain leader(s) and supply chain partners based on two approaches which are (i) reward, recognition, punishment, monitoring and auditing schemes (transactional) and (ii) envisioning, organisational, transformation and performance (transformational) (Agi and Nishant, 2017; Gosling et al., 2017; Roman, 2017; Dubey et al., 2015; Birasnav et al., 2015; Defee et al., 2010; Lockström et al., 2010; Defee et al., 2009). It has to be highlighted that, within this theoretical domain, SCL scholars tend to focus much more on the application transformational leadership to a supply chain setting (17 papers), with only 7 dealing at the same time with a simultaneous application of transformational and transactional leadership in their SCL dimensions and discussions (see Appendix 1). For example, Mzembe et al. (2016) examined the role of transformational SCL styles towards the implementation of corporate social responsibility in Malawi's agricultural supply chains. On the other hand, Hult et al. (2000a) investigated the impact of firms' transformational and transactional SCL on the partnership and commitment of the suppliers.

In general, transactional leadership refers to the leadership style that clarifies and defines supply chain members' role and requirements to be implemented throughout the supply chain's activities. Furthermore, transactional SCL identifies supply chain members' needs and requirements, and figures out how they could be satisfied if they achieved the necessary efforts or accomplishment (Hult et al., 2000b; Birasnav et al., 2015). Transactional SCL occurs when the supply chain members' actions, behaviours or performance are evaluated, and then rewarded or punished by the leading firm (for instance, the focal firm or the buying firm in a dyadic supplier-buyer relationship) in order to improve adherence and compliance. Transactional SCL represents an exchange between the leading firm and its supply chain members so that each of them derives something of value for their organisation (Gosling et al., 2017). The exchange values might range from tangible forms (quality award) to intangible ones

(commitment or respect). By exhibiting this approach, a firm is able to influence supply chain members as they are trying to secure and sustain their future business opportunities and relationships (Dubey et al., 2015a). In addition, a firm which is practising transactional SCL is highly likely to be committed toward controlling and monitoring their supply chain members, for example, by holding frequent inspections and auditing of suppliers' production activities (Birasnav et al., 2015) or sustainability practices (Agi and Nishant, 2017).

The concept of transformational SCL emphasises the need for charismatic attributes in the leadership approach of a firm, in such a way that supply chain members can emulate their decisions (Roman, 2017; Hult et al., 2000a; Hult et al., 2000b). Transformational SCL requires a firm to influence their supply chain members' actions and behaviours through the necessary support and motivation. Transformational SCL has been characterised as the ability of a firm to act as an inspirational behaviour role model to their supply chain members. The ability of a leading firm to exhibit transformational SCL will enhance the supply chain partners' compliance and imitation of the firm's initiatives such as corporate social responsibility (Mzembe et al., 2016) and technology adoption (Wamba and Chatfield, 2009). Moreover, a firm that exhibits transformational SCL is focusing on articulating its missions across the supply chain and on stimulating innovation in its supply chain members (Defee et al., 2010). **In contrast to transactional SCL, a firm that implements this leadership style tends to rely on long-term relationships and the development of its suppliers while using less control mechanisms (Birasnav et al., 2015).**

5.1.1.1 Dimensions of Transactional and Transformational Supply Chain Leadership

As mentioned previously, this systematic literature review found that the most studied and measured SCL constructs and dimensions are based on a transformational leadership style. However, the concepts of transformational and transactional leadership should be tested together as they are inter-related and both contribute to supply chain performance (Hult et al., 2007; Birasnav et al., 2015). Moreover, in intra-organisational leadership studies, both leadership styles have been tested together by numerous scholars who have used several quantitative methods (such as factor analysis and structural equation modelling) in order to ensure the reliability and validity of the constructs (Bass and Bass, 2008; Judge and Piccolo, 2004; Avolio et al., 1999; Lowe et al., 1996; Yammarino et al., 1993; Podsakoff et al., 1990). The analysis of SCL trends also revealed that the attention towards transactional leadership in

supply chain context has recently increased (since 2015). Hence, as illustrated in Table 4, this study supports and extends Hult et al. (2007) and Birasnav et al., (2015) ideas by proposing that the SCL dimensions shall include both transformational (idealised influence, inspirational motivation, intellectual stimulation and individualised consideration) and transactional leadership (contingent reward and management by exception) to measure the SCL constructs.

Table 4: The Dimensions of Transformational and Transactional SCL

Style	Dimension	Description
Transformational Leadership	Idealised Influence (II)	A leading firm acts and behaves in ways that their followers will see them as a role model. Such a firm is required to lead by example, which results admiration, respect and trust from supply chain followers (Hult et al., 2000a; Hult et al., 2007; Birasnav et al., 2015).
	Inspirational Motivation (IM)	Leading firms should be able to motivate and inspire their supply chain members by providing meaning and suggestion. By demonstrating motivational and inspirational concepts in the leader's management style, a leading firm will be able to generate team spirit, enthusiasm and optimism among its supply chain partner (Hult et al., 2000a; Hult et al., 2007; Birasnav et al., 2015).
	Intellectual Stimulation (IS)	Leading firms should be able to stimulate followers' intellectual capacity to be more innovative and creative. There are a few ways of stimulating supply chain members' intellectual capacity including questioning assumptions, reframing and redefining problems or issues, and providing new ways of approaching old practises (Hult et al., 2000a; Hult et al., 2007; Birasnav et al., 2015).
	Individualised Consideration (IC)	Leading firms also focus on followers' individual needs, particularly for achievement and growth. Followers' individual needs can be achieved in several ways including the leader acting as a coach or mentor. Individualised consideration is important in promoting new learning opportunities supply chain partners (Hult et al., 2000a; Hult et al., 2007; Birasnav et al., 2015).
Transactional Leadership	Contingent Reward (CR)	Contingent reward has been identified as a reasonably effective construct in motivating followers to achieve higher levels of performance and development that can contribute to organisational growth and competencies. By using this method, a leading firm will assign goals to suppliers, and agree on potential rewards or actual rewards in exchange for attaining the assigned levels (Hult et al., 2000a; Hult et al., 2007; Birasnav et al., 2015).
	Management-by-Exception (MBE)	In an active management-by-exception practise, a leading firm tends to actively monitor deviances in members' assignment and take corrective action if necessary. In contrast, for a leading firm who uses passive management-by-exception, they tend to passively waiting for deviances to occur and then proceed with corrective action (Hult et al., 2000a; Hult et al., 2007; Birasnav et al., 2015).

Based on the measurement items adapted from the reviewed SCL and intra-organisational literature (to reflect all dimensions in transformational and transactional leadership), the example measurement items are proposed in Table 5. As the majority of the current literature

in SCL domains has adopted transformational and transactional leadership styles to explain SCL, the items proposed consists of all dimensions of transformational and transactional SCL which can act as a platform to establish more valid and reliable items. This allows future research to measure the SCL concept based on a comprehensive and holistic view of transformational-transactional leadership theory by examining all of the possible constructs or dimensions of both leadership styles. It should be noted that the items were proposed to examine the concept of SCL from suppliers' perspective (e.g., "*Leading firm goes beyond its self-interest for the good of the supply chain*"). The concept can be examined also based on the leading firms' perspective by slightly changing the context (e.g., "*We go beyond our self-interest for the good of the supply chain*").

Table 5: Example Measurement Items for SCL constructs

Constructs	Items	Sources
Transformational Leadership	Leading firm goes beyond its self-interest for the good of the supply chain. (II)	Roman (2017); Defee et al. (2010); Hult et al. (2007); Hult et al. (2000a); Avolio et al. (1999)
	Leading firm talks enthusiastically about what needs to be accomplished in the supply chain. (II)	
	Leading firm clarifies the central purpose underlying their supply chain actions. (II)	
	Leading firm displays power and confidence. (II)	
	Leading firm seeks different views when solving supply chain issues. (IS)	
	Leading firm suggests new ways in solving supply chain issues. (IS)	
	Our company is encouraged to express ideas. (IS)	
	Leading firm spends time teaching and coaching us. (IC / IM)	
	Our company gets individual consideration. (IC)	
Transactional Leadership	Leading firm encourages us to improve our strengths. (IC / IM)	Hult et al. (2007); Hult et al., (2000a); Avolio et al. (1999)
	Leading firm lets us know what is expected of us in the supply chain process. (CR)	
	Leading firm encourages the use of uniform procedures in the supply chain process. (CR)	
	Leading firm decides what shall be done and how it will be done in the supply chain process. (CR)	
	Leading firm maintains definite standards of performance in the supply chain process. (CR)	
	Leading firm asks that we follow established purchasing rules and procedures. (CR)	
	Leading firm rewards our company for achievement. (CR)	
	Our company is punished for fault and misconduct such as late delivery (CR)	
	Leading firm tracks our company mistakes (MBE Active)	
	Leading firm concentrates their full attention on dealing with our mistakes (MBE Active)	
	Leading firm concentrates on our failures (MBE Active)	
	Leading firm believes in "if not broken, don't fix it" (MBE Passive)	
Leading firm does not interfere in our company production problems (MBE Passive)		
Leading firm avoids making decisions (MBE Passive)		

5.1.2 *General SCL*

A total of 22 papers employ generic leadership attributes rather than specific leadership styles to explain the SCL concept. Papers in this category utilise a general concept of leadership, without mentioning or adopting specific leadership styles that have been introduced or discussed in the literature of leadership studies. Furthermore, articles in this category do not link leadership styles with existing leadership theories in the literature (such as the theories of transformational-transactional leadership or leader and member exchange (LMX)). A likely explanation for this approach is that there is no single leadership style that is appropriate under all circumstances (Northouse, 2004). In a supply chain context, environment and relationships can be highly dynamic. Different situations might force a firm to use different SCL styles in order to influence and control different suppliers. Gabler et al. (2017) used normative, strategic and operational factors to measure SCL and its influence on the environmental sustainability business plan. In the same vein, Yuen and Thai (2017) measured SCL using coordination and strategic capacities of leading firms towards supply chain integration and partnership. Leading firms' collaborative principles have also been used by Vivaldini and Pires (2016) to characterise SCL and examine its effects toward closed-loop supply chain performance.

The review discovered that papers in this category tend to discuss SCL as a concept that similar to other constructs which have been around for a long time in supply chain research such as collaboration, integration, top management commitment, empowerment and coordination (see L'Hermitte et al., 2016; Sinha et al., 2016; Silvestre, 2015; Blome et al., 2014). For example, Silvestre (2015) conceptualised SCL based on the ability of the focal firm to be active and constructive in managing supply chain uncertainty, stimulating knowledge sharing between supply chain partners and enhancing sustainability performance. While these concepts can be seen as part of a leadership approach in the supply chain context, a holistic perspective and view of the SCL concept seems to be missing in these papers. Nonetheless, a coherent definition of SC is not apparent in these papers. As such, the theoretical contribution of the papers in this category is on the low side. First, the papers do not utilise any background leadership theories, nor they adapt classical leadership theories to the supply chain management domain. Second, as argued before, these papers seem more as a rebranding exercise of existing concepts under the SCL umbrella. Most importantly, the use of such generic SCL styles is highly inconsistent and non-homogeneous from one study to another. This leads to difficulties in generalising constructs and dimensions.

5.1.3 Behaviourist Leadership (*Autocratic, Participative, Directive SCL styles*)

The final domain in SCL studies is behaviourist leadership. This leadership domain is based on two influential theories in the leadership school which are McGregor's Theory X and Y (Bolden et al., 2003) and Blake and Mouton's Managerial Grid (Horner, 1997). **Based on the Managerial Grid, leaders are able to identify their styles of leadership or leadership behaviours such as impoverished management, authority obedience, organisation man management, and country club management or team management. The high concern for people and high concern for production, which is team management, has been identified as the most effective leadership behaviour (Bolden et al., 2003; Yukl, 1989; Blake and Mouton, 1964).** All SCL papers that characterise SCL using a behaviourist leadership paradigm are drawing upon McGregor's Theory X and Y. Theory X is for those who are likely to fall under autocratic or directive leadership, whereas theory Y for those who are likely to fall under participative leadership (Bolden et al., 2003). Theory X implies that supply chain members must be coerced and directed to get them to achieve desirable outcomes or performance required by the leading firm such as financial growth (Akhtar et al., 2017) and supply chain coordination (Da Cruz and Paulillo, 2016). In contrast, theory Y proposes that supply chain members have a tendency to exercise self-direction and control to achieve any goals they are committed to. This requires a leading firm who is participative in nature to enhance members' sense of responsibility (Venselaar et al., 2015; Harland et al., 2007).

5.2 SCL and Supply Chain Practices

Finally, this study analysed the impact of SCL on supply chain practices in the reviewed papers. The analysis revealed that SCL contributes to the improvement of operational performance, buyer-supplier relationships and sustainability (Table 6). The classification of each retrieved paper based on the type of supply chain outcome studied is shown in Appendix 1⁴.

Table 6: Supply Chain Practices from SCL Studies

Supply Chain Practises	Paper
------------------------	-------

^{4 4} Also in this case, in order to assure inter-rater reliability, a quantitative measure reporting the number of disagreements (defined as cases in which the judgement about the classification of a paper in terms of supply chain practices was not unanimous) over the total number of papers to be classified was developed. The process resulted in a number of disagreements lower than five per cent of the total cases; all the disagreement cases were discussed individually in order to reach a final consensus.

Operational performance	19
Buyer-supplier relationships	19
Sustainability	13

5.2.1 *Operational Performance*

The contribution of SCL is prominent in improving operational performance. A firm that exhibits transformational SCL will constantly train and coach their suppliers. These approaches will help suppliers to properly understand the needs and requirements of the leading firm, and hence improve their operational performance including product quality (Sinha et al., 2016; Kuei et al., 2011). Similarly, suppliers' delivery performance is affected by the leadership behaviours or styles of the leading firms. By exhibiting transactional SCL, the performance of the suppliers is closely monitored and audited by a certain set of rules and regulations (Birasnav et al., 2015). Suppliers will try to avoid potential losses and complications by adhering to the rules and regulations stipulated by direct buying firms such as delivery time and quality standards.

The ability and style of the leading firms can influence the level of operational performance of the entire supply networks including products' quality, time and delivery issues, sales growth and financial sustainability (Gosling et al., 2017). Nevertheless, a firm that promotes openness and participation among its supply chain members will create a learning culture. This will improve supply chain members' understanding of the processes and activities in the supply chains, and thus lead to better time management for the productions and operations (Birasnav et al., 2015). Moreover, a leading firm that promotes and encourages data sharing and the usage of analytics across the supply chain will help partners to have real-time performance monitoring which will help them to produce the expected product quality, and at the end it will lead to the financial sustainability of the leading firm (Akhtar et al., 2016; 2017).

In addition, the contribution of SCL is observed in enhancing information sharing across supply networks. The styles exercised by the leading firms have an influence on supply chain policies, guidelines and procedures applied in the supply networks. By having a greater influence on these matters, a leading firm is able to orchestrate the entire network and articulate its vision. In a global purchasing context, a leading firm should be able to have a good level of communication among its domestic and global supply chain partners. Better communication across the supply networks allows supply chain members to disseminate information and vision so as to improve supply chain efficiency (the utilisation of organisational resources) and

effectiveness (the accomplishment of organisational goals and objectives) (Defee et al., 2010). Furthermore, a firm that is willing to inspire and motivate their supply chain partners, will be able to cultivate the information exchange between partners themselves. The ability to cultivate information exchange will lead to higher strategic and tactical planning, including sales and operations forecasting (Thomas et al., 2011).

The role of SCL is also prevalent in the logistics performance and customer service of the supply chain. SCL is not only applied to partners from the upstream channel but also to members of the downstream channel, such as LSPs. A leading firm must ensure that their monitoring, quality control and auditing should be extended to LSPs (Kuei et al., 2011). Similarly, through support and participation, leading firms will be able to foster supply chain partners' involvement in improving the agility of logistics practises including warehousing, shipping and fleet management (L'Hermitte et al., 2016). Birasnav (2013) proposed that SCL is crucial to improving product quality and customer service level, with information being shared across the supply networks so that the right products and services can be provided to the right customer at the right time. Without close coordination by the leading firm, the suppliers are unable to innovate and adapt to rapid changes in customers' demand.

5.2.2 Buyer-Supplier Relationships

The second theme that is extensively covered in the SCL literature is the direct relationship between buyers and suppliers. This theme is related to 'soft' dimensions (including trust, commitment, joint planning, communication and active participation) which can influence the relationship between a buying firm and its supplier. Specifically, the role of SCL in improving coordination and partnerships between suppliers and their direct buying firm is investigated. Within this context, SCL requires a buying firm to provide care and development to its suppliers, which in return improve members' satisfaction and supply chain relationships (Goffnett and Goswami, 2016). Once a firm is able to control and centralise supply chain activities, the partnership with their suppliers can be enhanced and consensus can be improved (Müller-Seitz and Sydow, 2012). By exhibiting certain leadership styles such as participative and transformational, a buying firm tends to provide coaching, consultation and motivation to its suppliers. These approaches lead to proper strategic planning such as joint product development, design and production between the firm and its upstream suppliers, which enhance the trust and commitment of both parties (Lockström and Lei, 2013).

The ability of a firm to integrate suppliers, processes and activities is crucial as a supply network will involve several stakeholders with different goals and objectives. Being passive and showing no close interaction with suppliers, means that a firm could experience supply chain disruptions such as communication breakdowns (Harland et al., 2007) and missing information (Thornton et al., 2016). Moreover, an inactive leadership behaviour exhibited by a buying firm, will sequentially influence buyer-supplier integration as it needs collaborative supplier involvement and continuous supplier development (Lockström and Lei, 2013) – activities that need the active participation and initiative of the buying firms. By supporting and monitoring the suppliers, a buying firm will be able to improve suppliers satisfaction and their trust of the relationship, thus helping them to sustain their business and improving their sense of belonging (Goffnett and Goswami, 2016). This situation happens as they believe the buying firm has an interest in working together with them and striving towards excellent business performance. In the same vein, partnerships and strategic alliances between the buying firm and its upstream suppliers are highly influenced by the social attributes in the relationship, such as the leadership styles of the buying firm (Venselaar et al., 2015).

5.2.3 Sustainability

Recently, the urge to manage supply chain members has increased dramatically in order to rationalise the adoption of environmental sustainability in supply chain practises. The responsibility of focal and direct buying firms has now broadened as stakeholders might hold them responsible for any environmental sustainability issues (M. Wilhelm et al., 2016). SCL behaviours are significant in promoting environmental sustainability practices amongst supply chain members and help focal or direct buying firms to evaluate, select and govern them towards environmental sustainability (Roman, 2017). A firm might use different leadership styles such as becoming reactive and transactional in enforcing environmental sustainable practises to their suppliers, or proactive and transformational to promote suppliers' full involvement and innovation towards sustainability. Leadership styles may differ based on context, culture and the suppliers' dependency level of leading firms. The different needs of the suppliers can be tailored and the adoption of environmental sustainability practises by the suppliers can be maximised (Agi and Nishant, 2017; Gosling et al., 2017).

Similarly, Gabler et al. (2017) deduced that SCL allows firms to develop and enforce environmentally sustainable business plans. Visible SCL will help firms to encourage their

supply chain members (both upstream and downstream) to innovate and to implement the necessary environmental sustainability practises. In other words, a supply chain leader can be an orchestrator between its upstream and downstream supply chain members towards the implementation of environmental sustainability. The ability of a firm to exhibit the necessary leadership styles to motivate and control their suppliers will improve the buyer-supplier relationship. In return, this can boost supplier adherence towards the environmental sustainability needs requested by the supply chain leader (Kurucz et al., 2017; Dubey et al., 2015).

To date, only a few empirical studies and conceptual papers have addressed the needs of SCL towards reverse and closed-loop supply chains. Vivaldini and Pires (2016) found that the role of SCL is crucial in improving the relationship between focal firms and LSPs. Based on the fast-food retail industry, the study revealed that closed-loop initiatives and implementations are only successful when the relationships between focal firms and the LSPs are based on collaborative principles. A focal firm must involve the LSP in planning and implementing recycling processes so that such processes (especially retrieving and transferring waste) will be more coordinated, while at the same time improving the sense of responsibility of the LSPs. Leadership styles are also significant in improving closed-loop innovation by coordinating both upstream and downstream stakeholders in the supply chain including suppliers and retailers or distributors (Szekely and Strebel, 2013). As closed-loop initiatives are relatively new, a leading firm should be able to engage with upstream and downstream stakeholders and address the needs of closed-loop or reverse orientation in the entire supply chain. A leading firm who adopts a closed-loop and reverse supply chain orientation should attempt to establish shared goals with supply chain members, so that mutual benefit can be attained across the supply chain (Vivaldini and Pires, 2016). A leading firm should create a vision to improve sustainability and inspire the supply chain members to work together to achieve the new supply chain orientation (Defee et al., 2009).

6 Discussion – A Research Agenda for SCL Research

Although most of the SCL literature suggests that transformational leadership leads to a higher performance of the supply chain (such as improving the purchasing process, order fulfilment and cycle time), currently, the dimensions of SCL are not properly defined and researched. Most of the authors claim that the only contributor towards SCP is transformational leadership

without considering any dimensions from transactional leadership. This phenomenon is in contrast with suggestions from classical leadership theory about adopting a combination of both transformational and transactional leadership styles for improved firm performance. For instance, Judge and Piccolo (2004) infer that transformational and transactional leadership should be tested together in order to examine the full spectrum of leadership exhibited by a leader. In addition, Bass (1985; 1990) deduced that the ideal and best leader is the one who can exhibit both transformational and transactional leadership. Hence, drawing upon these insights from classical leadership theory, similar processes of combining the dimensions of transformational and transactional leadership should be adopted in developing the SCL concept. For instance, a firm could utilise transformational or transactional leadership alternatively, or even both leadership styles simultaneously towards different suppliers. By comparing different leadership styles and different suppliers, the impact of SCL on the performance of the supply chains as a whole can be understood.

The majority of the SCL literature demonstrates the importance of an effective leadership style in enhancing performance of traditional “linear” supply chains. For example, the recent SCL literature is concerned with the improvement of supply chain cycle times (Birasnav et al., 2015), sales and operations planning (Tuomikangas and Kaipia, 2014) and environmental sustainability (Roman, 2017). As the current supply chain environment and business practices require the integration between forward and reverse supply chains, empirical studies addressing both the phases should be promoted. To date, only three papers related to this concept have been found (see Vivaldini and Pires, 2016; Szekely and Strebel, 2013; Defee et al., 2009).

Another main concern in the current SCL literature is a lack of theoretical justification prior to explaining the significant role of SCL on supply chain performance. The inter-personal leadership concept in the psychology, organisational behaviour and management fields is drawn upon several theoretical arguments such as Social Exchange Theory and Transaction Cost Economics. Theoretical justification should be provided to the readers, scholars and practitioners, to ensure that they can properly comprehend the significance of this concept in the supply chain management field. One of the most prevalent theories to explain and understand the role of SCL in supply chain management, is social exchange theory (SET) (Cropanzano and Mitchell, 2005). SET has been used extensively to understand supply chain relationships, particularly the buyer-supplier relationships. Global competition has forced organisations to focus their attention on building on-going supply chain relationships with their

suppliers (Griffith et al., 2006; Hult, 1998). Tanskanen (2015) elucidated the importance of buyer-supplier relationships in enhancing supply chain performance (SCP) by utilising an organisation's capabilities and resources. Active collaboration in various functions such as product development, operations, quality and purchasing from both buying firms and suppliers side is required in a supply chain environment. Without active collaboration, the benefits gained from supplier-buyer relationships will not be enjoyed by both parties.

Finally, the most important research gap that should be addressed in future is to understand the role of SCL in enhancing suppliers' performance. In recent years, there has been an increased interest in SCL and its contribution in improving buying firms' performance. Attention has been devoted to situations in which the buying firms assist in enhancing the performance of suppliers in order to gain a competitive edge by improving supply chain practises. Today's supply chain environment requires an organisation to achieve a competitive edge by improving their entire supply chain process. Reputable firms such as Honda and Toyota have invested heavily in suppliers' development initiatives in order to improve suppliers' quality, delivery and cost performance (Wu et al., 2014). Suppliers' performance and ongoing improvement are crucial as it leads to the improved performance of the buying firms. The performance of the suppliers will directly influence the performance of the whole supply chain (Chan and Kumar, 2007). Given the importance of suppliers' performance and of the coordination between buying firms and suppliers, several techniques have been introduced to enhance suppliers' development, selection and evaluation (Genovese et al., 2013; Chan and Kumar, 2007). Moreover, recent interest in sustainable supply chains requires the coordination between buying firms and the suppliers (Genovese et al., 2014). Surprisingly, very little attention has been paid to understand the role of SCL in impacting suppliers' performance.

7 Conclusion

An on-going interest in enhancing supply chain performance has been observed in the supply chain literature. Despite claims for the role of leadership in improving supply chain performance, the corresponding literature discussing SCL remains very fragmented. This paper provides a holistic review of the SCL concept by synthesising the current literature in order to understand the phenomenon including its definitions, dimensions and constructs. This paper reviews all the literature in the SCL domain and analyses its role towards the potential outcomes of supply chain performance. Furthermore, the findings discover that the examination of the SCL concept is currently focussed towards operational performance (such

as financial, cost, delivery and sales performance) and buyer-supplier relationships (such as suppliers' commitment, satisfaction and trust). However, the recent trend discloses growing interest in investigating the SCL concept towards sustainability practises in supply chain context (for example, green manufacturing and green procurement).

The major findings of this study are on the identification of the dominant leadership theories and styles used to explain the SCL concept and its influence towards supply chain practises. In summary, the findings reveal that the current concept of SCL in the literature is dominated by transformational-transactional leadership theory, with the concentration of leadership styles being more on transformational leadership. A firm which is practising transformational SCL has a tendency to provide constant training and coaching towards their suppliers. Moreover, such firms are willing to share information, give constructive feedback and communicate frequently with the suppliers. This happens as the nature of transformational SCL is focussed on stimulating suppliers' capabilities and considering suppliers' individual needs, as well as providing inspiration and motivation to suppliers. Nevertheless, supply chain practises can be improved by using transactional SCL. Using a transactional approach, a firm monitors and keeps track of the performance by comparing it to a certain set of pre-determined rules or agreements. At the same time, in order to promote compliance, rewards can be offered to supply chain members. Such firms can also use certain punishment schemes, such as downtime penalty for late delivery. By enforcing close tracking of performance (including their suppliers), immediate feedback on improvement and potential corrective actions can be shared with the suppliers. Suppliers tend to adhere to rules and regulations so that they are able to reduce the risk of potential losses or complications such as business termination.

This study offers significant contributions to both theory and practise in several ways. First, this study extends and supports the past review of SCL provided by Gosling et al. (2017). While the previous review suggested that SCL is prevalent towards sustainability learning practises, this current study posits that SCL (particularly transformational and transactional leadership) contributes significantly towards operational performance and buyer-supplier relationships. Second, based on the current gaps in the existing literature, this paper suggests four research topics of SCL that deserve further investigation and research: (i) a lack of understanding and justification of leadership theory, (ii) the absence of reverse supply chain issues and orientations, (iii) the absence of a theoretical justification and lens, and (iv) the role of SCL styles toward suppliers' performance. The research agenda provides a platform for future

research to consider the gaps in the current literature. This will help future SCL researchers to avoid stagnant and saturated research areas of SCL concept. In addition, the research agenda proposed in this study is expected to contribute in developing more efficient supply chains by improving leadership styles of a supply chain through promoting mutual benefits for both buying firms and their suppliers. Finally, this systematic literature review offers a brief overview of the existing knowledge and understanding of the SCL concept. Although this study is primarily centred towards academics, the review will be useful in enabling practitioners to understand the SCL concept discussed by the scholars. Moreover, the dimensions and constructs of the SCL concept can be used and replicated by practitioners in considering and reconfiguring their supply chain practises. For example, lessons learned from this review such as the dominant leadership styles can be considered by adoption by practitioners as their leadership approach.

Although the paper highlights some of the interesting insights in the SCL literature, there are a few limitations of the paper. Firstly, despite providing the first holistic systematic review in this domain, the manual search method used for retrieving the articles might suffer the risk of excluding or overlooking other relevant articles. As the articles were retrieved from SCOPUS and WOS, any related papers that have not been listed in one of these databases are excluded. Secondly, this paper acknowledges the difficulty in generalising the conclusion of SCL concept considering the low number (51) of papers focusing on the SCL concept. However, the systematic review is useful in paving the way to understand and comprehend the SCL concept for improving SC performance. The concept of SCL is relatively new and immature. Further empirical analysis and theoretical justifications are needed to strengthen the concept and explore its impact on supply chain performance.

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**Appendix 1:
Reviewed Articles for Supply Chain Leadership**

No	Author	Country / Context	Methodology	Instruments / Analysis	Sample Size	Supply Chain Relationship	Leadership Styles	Measures / Dimensions of Leadership	Supply Chain Outcome
1	Roman (2017)	USA	Quantitative	Survey / CB-SEM	206	Dyadic	Transformational leadership	Idealised influence, inspirational motivation, intellectual stimulation, individualised consideration	Sustainability
2	Dubey et al. (2017)	India	Quantitative	Survey / Multiple regression	277	Dyadic	General	Legal, penalties, ethical, environment and social responsibility	Sustainability
3	Agi & Nishant (2017)	Gulf Countries	Qualitative	Interview / Interpretive Structural Modelling (ISM)	13	Dyadic	Transformational and transactional leadership	Commitment of top management, reward and appraisal systems, performance monitoring, integration with SC partners (trust, dependence, long-term relationship)	Sustainability
4	Akhtar et al. (2017)	New Zealand	Quantitative	Survey / CB-SEM (AMOS)	225	Dyadic	Autocratic / Directive / Participative	Influence on policy, idea dissemination, promotional allowances, uniform, guidelines and instructions	Operational performance
5	Blome et al. (2017)	Germany	Quantitative	Survey / PLS-SEM	118	Dyadic	Transformational and transactional leadership	Ethical, obedience to authority	Sustainability
6	Gabler et al. (2017)	USA	Qualitative	Interview / Case study	15	General	General	Normative, strategic, operational	Sustainability
7	Gosling et al. (2017)	N/A	Conceptual Paper	Content-based literature review	N/A	General	Transformational and transactional leadership	Proactive and reactive	Sustainability
8	Kurucz et al. (2017)	N/A	Conceptual Paper	N/A	N/A	General	General	Collective capacity, reflective practise	Sustainability

No	Author	Country / Context	Methodology	Instruments / Analysis	Sample Size	Supply Chain Relationship	Leadership Styles	Measures / Dimensions of Leadership	Supply Chain Practices
9	Yuen & Thai (2017)	Singapore	Quantitative	Survey / Exploratory Factor Analysis	172	Dyadic	General	Coordination, strategic	Buyer-supplier relationships
10	Akhtar et al. (2016)	China, India and New Zealand	Quantitative	Survey / CB-SEM (MPlus)	220	Dyadic	General	Influence on policy, idea dissemination, promotional allowances, encouragement / promotion on data driven	Operational performance
11	Da Cruz & Paulillo (2016)	Brazil	Qualitative	Interview / Case Study	Not stated	Myriad	Autocratic / Directive / Participative	Imposition, centralisation, coercion, control, coordination, complexity, prescription	Buyer-supplier relationships
12	Goffnett & Goswami (2016)	USA	Quantitative	Survey / CB-SEM	184	Triadic	Transformational leadership	Idealised influence, inspirational motivation, intellectual stimulation, individualised consideration	Buyer-supplier relationships
13	L'Hermitte et al. (2016)	Italy	Qualitative	Interview / Case Study	29	Dyadic	General	Purposeful, action-focused, collaborative, learning-oriented	Operational performance
14	Mzembe et al. (2016)	Malawi	Qualitative	Interview / Case Study	37	Myriad	Transformational leadership	Organisational contingency, ethical values, advisory	Sustainability
15	Sinha et al. (2016)	India	Quantitative	Survey / Multiple regression	120	Dyadic	General	Quality, empowerment, motivation, change management	Operational performance
16	Thornton et al. (2016)	USA	Quantitative	Survey / CB-SEM	145	Dyadic	General	Building relationship, connection, understanding people,	Buyer-supplier relationships
17	Vivaldini & Pires (2016)	Brazil	Qualitative	Interview / Case Study (longitudinal)	Not stated	Dyadic	General	Collaborative principles	Sustainability

No	Author	Country / Context	Methodology	Instruments / Analysis	Sample Size	Supply Chain Relationship	Leadership Styles	Measures / Dimensions of Leadership	Supply Chain Practices
18	Birasnav et al. (2015)	N/A	Conceptual Paper	N/A	N/A	Dyadic	Transformational and transactional leadership	Idealised influence, inspirational motivation, intellectual stimulation, individualised consideration, contingent reward behaviour, active management by exception, passive management by exception	Operational performance
19	Venselaar et al. (2015)	Netherlands	Qualitative	Interview / Case-Study	9	Dyadic	Autocratic / Directive / Participative	consultation, shared understanding, strategic needs, group dynamics	Buyer-supplier relationships
20	Dubey et al. (2015a)	India	Quantitative	Survey / EFA, CFA, Regression	306	Dyadic	Transformational and transactional leadership	Vision statement, high performance expectation, intellectual stimulation, provide appropriate model	Operational performance
21	Dubey et al. (2015b)	India	Quantitative	Survey / EFA, CFA, Regression	187 /174	Dyadic	Transformational leadership	Establishing policies, providing resources, stimulating improvement, long-term vision	Sustainability
22	Silvestre (2015)	Brazil	Qualitative	Interview / Case Study	52	Dyadic	General	Constructive, active leadership, pressure supplier to obtain quality and environmental certifications, promote appropriate policies and sustainable practices	Sustainability
23	Tuomikangas & Kaipia (2014)	N/A	Conceptual Paper	N/A	N/A	Triadic	General	Advanced formal planning, common aligned business objectives, rewarding and incentives, corporate norms, commitment, trust, top management setting example, collaborative manner, empowerment, constructive engagement, conflict management.	Operational performance

No	Author	Country / Context	Methodology	Instruments / Analysis	Sample Size	Supply Chain Relationship	Leadership Styles	Measures / Dimensions of Leadership	Supply Chain Practices
24	Blome, Hollos, & Paulraj (2014)	Western Europe	Quantitative	Survey / PLS-SEM (SmartPLS)	114	Dyadic	General	Top management initiatives and motivation	Operational performance
25	Birasnav (2013)	N/A	Conceptual Paper	N/A	N/A	Triadic	Transformational leadership	Idealised influence, inspirational motivation, intellectual stimulation, individualised consideration,	Buyer-supplier relationships
26	Szekely & Strebek (2013)	N/A	Conceptual Paper	N/A	N/A	Triadic	Transformational leadership	Commitment, innovation, visionary, clear direction	Sustainability
27	Lockström & Lei (2013)	China	Quantitative	Survey / PLS-SEM	88	Dyadic	Transformational leadership	Communication with strategic suppliers, treat suppliers as partners, encourage and involve our key supplier in teamwork, authority, supplier autonomy, supplier continuous improvement	Buyer-supplier relationships
28	Tamburro & Wood (2014)	N/A	Conceptual Paper	N/A	N/A	Dyadic	General	Intellectual challenge	Buyer-supplier relationships
29	Müller-Seitz & Sydow (2012)	Germany	Qualitative	Interview / Case Study	83	Myriad	General	Distribution of power, decision making, initiation of leadership related activities, nature of leadership, degree of formal centralisation, scope of centralisation, scope of activities, duration	Buyer-supplier relationships

No	Author	Country / Context	Methodology	Instruments / Analysis	Sample Size	Supply Chain Relationship	Leadership Styles	Measures / Dimensions of Leadership	Supply Chain Practices
30	Youn et al. (2012)	South Korea	Quantitative	Survey / PLS-SEM	142	Dyadic	Autocratic / Directive / Participative	Interest, support, power, authority long-term partnership, long-term plan	Operational performance
31	Sharif & Irani (2012)	UK	Quantitative	Survey / Correlation	50	Myriad	General	Affiliation, power, achievement	Operational performance
32	Loke et al. (2012)	Malaysia	Quantitative	Survey / CB-SEM (Lisrel)	202	Dyadic	General	Encouragement, knowledge management	Operational performance
33	Kuei et al. (2011)	Taiwan	Quantitative	Survey / AHP	Not stated	Triadic	General	Ability to manage change, culture diversity, support, policy deployment, communication	Operational performance
34	Thomas et al. (2011)	USA	Qualitative	Interview / Case Study	149	Dyadic	General	Inspiration, motivation, roles defined, communication	Operational performance
35	Lee et al. (2011)	China	Quantitative	Survey / CB-SEM (AMOS)	192	Dyadic	Transformational leadership	Idealised influence, inspirational motivation, intellectual stimulation, individualised consideration	Buyer-supplier relationships
36	Lockström et al. (2010)	China	Qualitative	Interview / Case Study	30	Dyadic	Transformational leadership	Coaching / cooperative leadership style, situation changing leadership, assertive leadership style, delegating leadership style	Buyer-supplier relationships
37	Lambrechts et al. (2010)	Belgium	Qualitative	Interview / Case-Study	Not stated	Dyadic	Transformational leadership	Pro-activity, indirectness, inducing and stimulating	Buyer-supplier relationships
38	Defee et al. (2010)	USA	Quantitative	1. Simulation 2. Survey / CB-SEM AMOS	253	Dyadic	Transformational leadership	Idealised influence, inspirational motivation, intellectual stimulation, individualised consideration	Operational performance

No	Author	Country / Context	Methodology	Instruments / Analysis	Sample Size	Supply Chain Relationship	Leadership Styles	Measures / Dimensions of Leadership	Supply Chain Practices
39	Defee et al. (2009)	N/A	Conceptual Paper	N/A	N/A	Dyadic	Transformational leadership	Idealised influence, inspirational motivation, intellectual stimulation, individualised consideration	Sustainability
40	Wamba & Chatfield (2009)	Australia	Qualitative	Interview - Observation - Focus Group / Case Study	Not stated	Triadic	Transformational leadership	Organisational transformation, change management, communication	Buyer-supplier relationships
41	Melnyk et al. (2009)	USA	Mixed	Literature Review & Delphi study	29	General	General	Talent management, supply chain competencies, cross-functional experience	Operational performance
42	Hult (2007)	USA	Quantitative	Survey / CB-SEM (LISREL)	314	Triadic	Transformational and transactional leadership	Idealised influence, inspirational motivation, intellectual stimulation, individualised consideration, contingent reward behaviour, management by exception	Operational performance
43	Harland et al. (2007)	UK	Qualitative	Interview / Case Study		Dyadic	Autocratic / Directive / Participative	Contingent, aggregation, information integration, long-term relationship	Buyer-supplier relationships
44	Russell & Hoag (2004)	N/A	Conceptual Paper	N/A	N/A	General	General	Management level support, breadth of support, opinion leaders / champions in-house	Operational performance
45	Williams (2002)	N/A	Conceptual Paper	N/A	N/A	Triadic	Transformational leadership	Flexibility, decision making, consideration and appreciation, dynamic, long-term collaboration, encouragement, visionary	Buyer-supplier relationships
46	Kaynak (2002)	USA	Quantitative	Survey / CB-SEM (Lisrel)	214	Dyadic	General	Communication, resources, involvement, training	Operational performance

No	Author	Country / Context	Methodology	Instruments / Analysis	Sample Size	Supply Chain Relationship	Leadership Styles	Measures / Dimensions of Leadership	Supply Chain Practices
47	Segars (2001)	USA	Qualitative	Interview / Case Study	Not stated	Dyadic	Transformational leadership	Investigator, innovator, coach, change agent, visionary	Buyer-supplier relationships
48	McAdam & Brown (2001)	UK	Mixed	Survey & Interview	Not stated	Dyadic	Transformational leadership	Company baron, traditionalist, visionary, coach	Buyer-supplier relationships
49	Wong (2001)	China	Quantitative	Survey / CB-SEM (EQS)	139	Dyadic	General	Commitment to cooperative culture, long-term orientation, goal interdependence, open-mindedness, quality contributions	Buyer-supplier relationships
50	Hult et al. (2000a)	USA	Quantitative	Survey / CB-SEM (Lisrel)	555	Dyadic	Transformational and transactional leadership	Idealised influence, inspirational motivation, intellectual stimulation, individualised consideration	Buyer-supplier relationships
51	Hult et al. (2000b)	USA	Quantitative	Survey / CB-SEM (Lisrel)	746	Dyadic	Transformational leadership	Idealised influence, inspirational motivation, intellectual stimulation, individualised consideration, contingent reward behaviour, active management by exception, passive management by exception	Operational performance