

# An Exploration of the Measurement of Relational Capital in Supply Chains

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## ABSTRACT

The aim of the paper is to identify and systemise dimensions and measures that can be used to evaluate buyer-supplier relational capital (RC). The authors used a literature review methodology composed of the following phases: question formulation, keyword search in databases, screening and analysis of articles. As a result, 44 articles were selected and finally analysed in detail. It was found that several theories can help to explain how buyer-supplier relationships contribute to a company's value and competitive advantage. Furthermore, RC as an element of social capital deserves more investigation in a supply chain management context. Accordingly, to date there has been no relevant in-depth studies exploring the measurement of relational capital in supply chains. On the base of the review of research articles published between 2004 and 2018, the list of items used by researchers to measure the relational capital was explored. Then, authors proposed a construct for relational capital consisting of 5 items such as: trust, close interaction, respect, reciprocity and commitment, that were shortly discussed. Taking them all into account, an authorial definition of supply chain relational capital was proposed. Although, the final results contribute to the study of RC measurement within buyer-supplier relationships in supply chains, the analysis still has some shortcomings that need to be addressed in further literature studies and empirical research.

**Keywords:** *buyer-supplier relationships, relational capital measurement, supply chain management*

## 1. INTRODUCTION

Facing the enormous challenges and managing the complexities in global business environment of the 21<sup>st</sup> century, companies more and more often recognize the need for developing strong relationships with their supply chain partners (Whipple *et al.*, 2015, p. 3). Christopher (2011) developed the definition of supply chain management that sheds light on the management of upstream and downstream relationships with suppliers and customers in order to deliver superior customer value at less cost to the supply chain as a whole (Christopher, 2011, p. 3). In today's highly competitive markets, the management of buyer-supplier relationships is crucial for achieving and maintaining competitive advantage. As a result, more and more leading firms perceive relational capital as a resource of strategic importance.

Based on the value management approach, intangible assets become key companies' resources and the evaluation of a firm's real value is based on the shift from the previous evaluation of tangible assets to the expression of intangible assets. Relational capital is a kind of intangible asset that represents "the portion of a company's market value that is attributable to its portfolios of business relationships" and its valuation is an important research topic (Léger, 2010, p. 406). It was confirmed in the literature that relational capital has a positive influence on the firms' and supply chain's performance (Ciszewska-Mlinarič *et al.*, 2012; Johnson *et al.*, 2013). On the other hand, Villena *et al.* (2011) identified the paradox that relational capital can improve as well as hurt performance. Based on this duality, the authors identified that collaboration between supply chain entities should not become too extreme, because it can inhibit business partners' capabilities to effectively adapt to changing market needs (Villena *et al.*, 2011, p. 571). Both aspects, the measurement of relational capital and its influence on performance, have been mostly derived from the qualitative evaluation based on the Likert scale (from 1 to 5 or 7) regarding items used by the authors in proposed models. Additionally, some authors developed conceptual models, in which relational capital has an important mediating and moderating role, like a bridge between supplier development and relationship benefits (Blonska *et al.*, 2013). It was also confirmed that supplier integration and supplier closeness are positively related to increased stock of relational capital in strategic buyer-supplier relationships (Lawson *et al.*, 2008).

Because of the pivotal strategic role of supply chains relationships, which lead to a competitive advantage, authors of this article believe that there is a need to carry out more research focused on managing and measuring relational capital. Furthermore, they found that there were no relevant studies exploring the measurement of relational capital in supply chains, therefore the discussion is focused on this research gap. The aim of the paper is to identify and systemise dimensions and measures that can be used to evaluate buyer-supplier relational capital (RC). Firstly, the methodology is presented. Then, theoretical foundations for the study are derived from the theories of socialization, social capital, resource-based view, resource dependence and dynamic capabilities building. Next, the study investigates definitions of relational capital in supply chain perspective.

Finally, it lists most common items used for RC measurement. This approach would be helpful for supply chain managers in evaluation of relational capital. Its development might transform supply chain relationships to become a source of profit and competitive advantage. The results contribute to the study of value creation within buyer-supplier relationships in supply chains.

## 2. METHODOLOGY

The paper is based on a desk research. The authors used a literature review methodology applied from Tranfield *et al.* (2003). The review process consisted of the following phases:

1. Question formulation;
2. Keyword search in databases;
3. Screening (removing duplicates, closer inspection, checking cited articles);
4. Analysis of articles.

The main research questions were formulated as follows: What are the main elements of relational capital in a supply chain? What are the financial and non-financial measures for supplier-buyer relational capital?

In the second phase, the two leading providers of research databases were used EBSCOhost Online Research Databases, Emerald Insight: In each database the two searches were conducted applying the following search terms and restrictions:

1. Search terms: “relational capital” and “supply chain”, a restriction: occurrence in abstract;
2. Search terms: “relational capital” and “supplier”, a restriction: occurrence in abstract.

The number of papers gathered in the second phase (keyword search in databases) was 175 (Table 1). The numbers of selected papers during the third phase consisting of four screening stages are presented in Table 2.

**Table 1.** The results of the second phase - keyword search in databases

Phase Description	Database	Output (Number of Papers)
searching the papers in databases	Search 1 in EBSCOhost	38
	Search 1 in Emerald	19
	Search 2 in EBSCOhost	84
	Search 2 in Emerald	34

Source: own elaboration.

The first three screening phases caused a reduction in the number of articles, while the fourth phase, due to the checking cited articles, caused an increase in the number of articles by one. The final output from the screening phases was 44 articles that has been subjected to the final phase, which is a detailed analysis. In the next part of this section the following statistics will be presented:

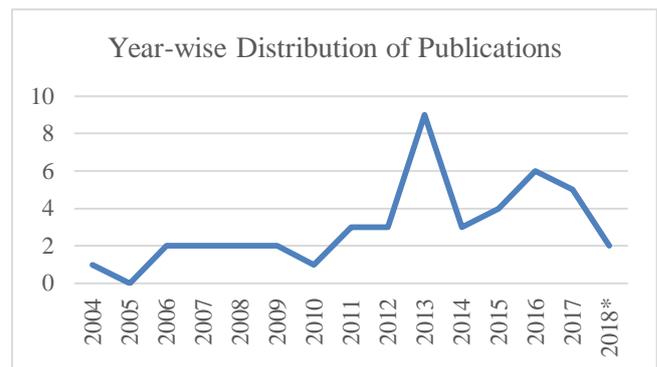
- Year-wise distribution of the publications;
- The distribution of countries represented by the authors of the publications;
- Journal-wise distribution of the publications;
- Methodologies used in the publications;
- The research perspective of surveys and case studies;
- The distribution of types of researched sectors.

**Figure 1** represents the year-wise distribution of the publications. The data indicates that the concept of relational capital emerged in supply chain literature around 2004.

**Table 2.** The results of the third phase – screening

Phase Description	Database	Output (Number of Papers)
Screening 1 recognizing papers that are related to the relational capital in supply chain management	EBSCOhost	110
	Emerald	16
Screening 2 removing duplicates between search 1 and search 2	EBSCOhost& Emerald	59
Screening 3 closer inspection (selecting articles that define the measurement of relational capital)	EBSCOhost& Emerald	43
Screening 4 checking cited articles	EBSCOhost& Emerald	44

Source: own elaboration.

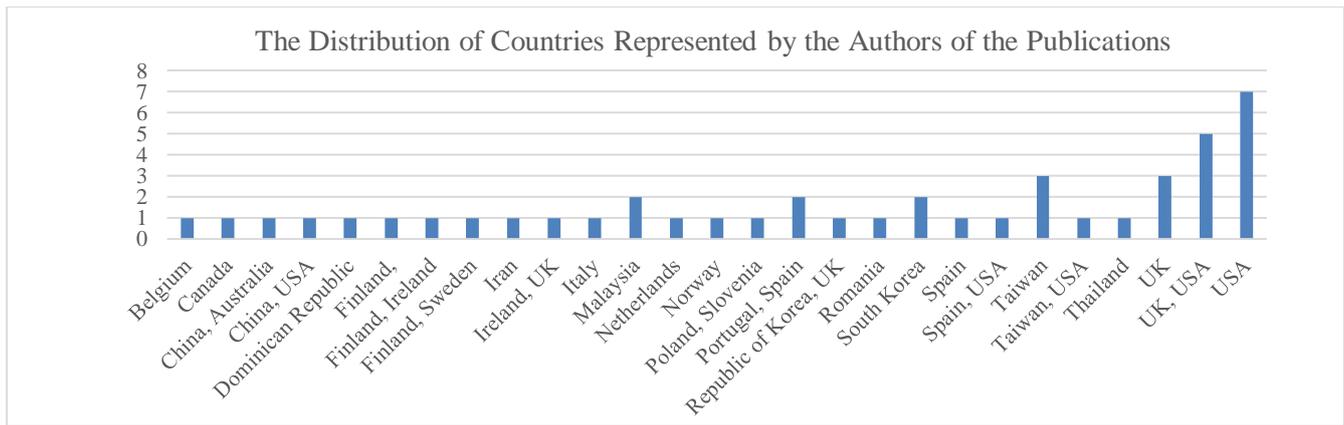


**Figure 1.** Year-wise distribution of publications (\* up to the end of June 2018)

Source: own elaboration.

In 2013 there is an increase in the number of publications on relational capital in supply chain. Since this study has been conducted in the middle of 2018, we expected that the number of the publications in the full year 2018 would be similar to the 2016 and 2017 years or even higher. Despite the fact that the number of publications on RC in supply chain is relatively low, because it did not exceed ten per year, it is assumed that interest in this area will increase in the next decade.

**Figure 2** shows the distribution of countries represented by the authors of the publications. The dominant country is USA, whose representatives wrote 15 publications. Next country is UK with 10 publications. There is also one paper written by scientists from Poland and Slovenia. Half of analysed articles were written by authors from one country. The other half is written by authors from two countries, what indicates a high degree of internationalization of the research on relational capital in the supply chain.



**Figure 2.** The distribution of countries represented by the authors of the publications  
 Source: own elaboration.

**Figure 3** presents the journal-wise distribution of the 44 publications that have been subjected to the final analysis. Since no restrictions were placed on the source of the article, one paper was published in proceedings. The rest of publications appeared in 28 different journals. None of journals significantly dominates in the publication of articles about relational capital in supply chains. The maximum number of publications in a given distribution is four. This situation applies to the International Journal of Operations & Production Management as well as to the Journal of Operations Management. They contribute to the field of operations and supply chain management.

Considering **Table 3**, it is evident that survey has been the main focus of researchers within the area of relational capital in supply chains. In each case, authors provided several hypothesis and used structural equation modelling. Case studies were written based on data collected during in-depth interviews. Finally, literature review has not been a frequent methodology. This paper fills this gap and presents the first systematic literature review on the issue of relational capital in supply chains.

**Table 3.** Methodologies used in the publications

Methodologies			
Survey	Framework	Case Study	Literature Review
36	6	4	1

Source: own elaboration.

The following respondents dominated among the respondents: CEO, COO, supply chain director, purchasing manager. In general, they represented management, procurement, production but also R&D and marketing. Thus, both the departments responsible for the contact with suppliers and the departments cooperating with clients took part in the studies. This is confirmed by the **Table 4** that presents the perspective of analysed studies.

**Table 4.** The research perspective of surveys and case studies

Perspective	No. of Papers
Single company perspective	33
Dyadic perspective (company and suppliers)	4
Triadic perspective (company, suppliers and clients)	3

Source: own elaboration.

As a rule, single companies and their view on supplier relationships were examined (33 papers). However, it happened that two parties (supplier and buyer) participated in the same research or even the three types of supply chain links: the company, its suppliers and its clients. According to the statistics, the dyadic perspective related four publications and the triadic perspective concerned three papers. Such data show that the papers related to the dyadic or triadic perspective is still scarce.

The **Table 5** presents the distribution of types of researched sectors.

**Table 5.** The distribution of types of researched sectors

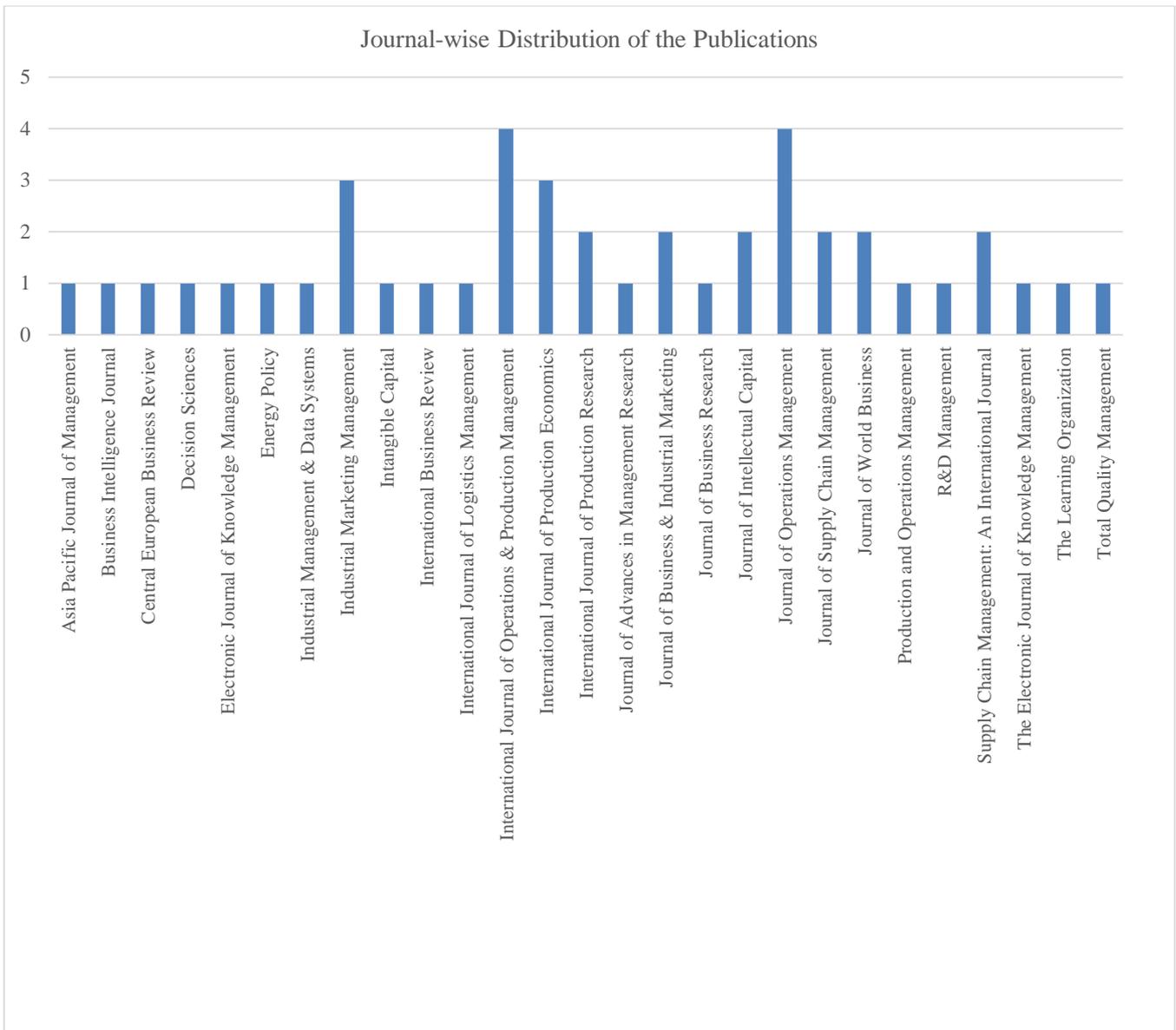
Type of Sector	No. of Papers
Manufacturing	29
Manufacturing and Services	8
Services	2
Distribution	1

Source: own elaboration.

The statistics show that 32 papers studied one sector. Most authors examined manufacturing companies. Only one paper referred to the distribution sector. The next 8 publications concerned simultaneously two sectors: manufacturing and services. The data indicate that future research should focus on a comparison of three different sectors: manufacturing, distribution and services.

### 3. THEORETICAL FOUNDATIONS FOR A RELATIONAL CAPITAL RESEARCH

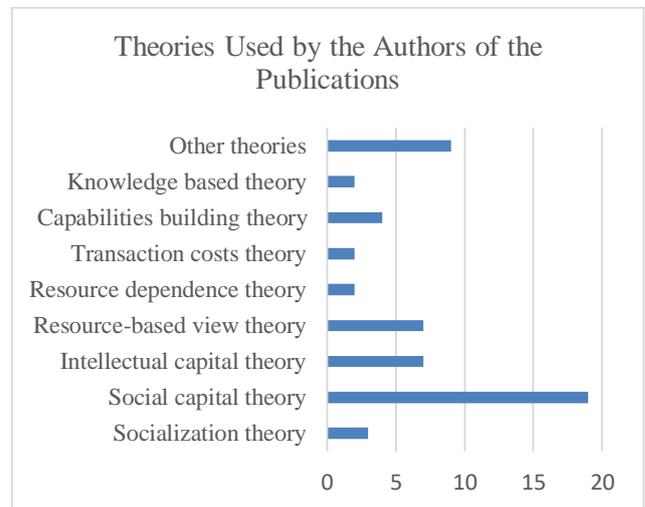
In building the foundations of the study, the authors of this article analysed a set of theories, theoretical frameworks and complementary approaches used in 44 articles that have been subjected to the final analysis, as **Figure 4** presents. In most of the publications (19), the social capital theory was used as a primary theoretical foundation of research methodology. As the complementary theoretical concepts, the authors of the analysed publications took into consideration theories of transaction costs (2), knowledge-based view (2), resource dependence (2), socialization (3), capabilities building (4), intellectual capital (7) and resource-based view (7). The significance of other theories mentioned altogether in 9 papers was marginal.



**Figure 3.** Journal-wise distribution of the publications  
 Source: own elaboration.

The roots of research on the inter-organizational processes that create relational value in supply chains are derived from the theory of socialization. Supply chain socialization is defined as “a process by which individuals in a buyer-supplier engagement acquire knowledge of the other enterprise’s social value and norms” (Cousins *et al.*, 2006, p. 853). Cousins *et al.* (2006) propose proactive socialization process between individuals as a means to buyer-supplier relationships success and find that socialization contributes to the creation of relational capital and the achievement of improved relationships outcomes. Operations and supply chain management research highlights the importance of various socialization mechanisms: development of common goals, values and trust, building of personal familiarity, the advanced interaction and communication among organizational members as well as between organizations, improved problem solving within network of organizations, that can be divided into formal and informal mechanisms (Cousins *et al.*, 2006; Jia *et al.*, 2016; Aaltonen and Turkulainen, 2018). The just mentioned authors argue that

socialization process is critical for building and managing relational capital in buyer-supplier relationships.



**Figure 4.** Theories used by the authors of the publications.  
 Source: own elaboration.

Social capital theory provides the primary theoretical basis for the authors' studies focused on relational capital in the context of supply chain management. Social capital is defined as "the sum of actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit" and has three dimensions: relational, cognitive and structural (Nahapiet and Ghoshal, 1998). Prior literature has examined social capital among individuals, work groups and interorganisational units (Preston *et al.*, 2017, p. 250). There are some studies indicating that the relational capital is most important from these three aforementioned dimensions of social capital (Chen *et al.*, 2006). There is a chance for the companies to achieve a relational rent that is "a supernormal profit jointly generated in an exchange relationship that cannot be generated by either firm in isolation and can only be created through the joint idiosyncratic contributions of the specific alliance partners" (Dyer and Singh, 1998, p. 662). According to Cousins *et al.* (2006), both buyers and suppliers can use relational capital to help build knowledge sharing and relationship-specific investments to generate relational rents. Many authors underline that different dimensions of social capital are useful explanatory constructs and deserve more investigation in a supply chain management context, indicating simultaneously support for the application of social capital theory to buyer-supplier relationships (Krause *et al.*, 2007; Cousins *et al.*, 2006). Besides, it was also stressed that dimensions of social capital within strategic buyer-supplier relationships have been relatively underexplored in literature (Carey *et al.*, 2011, p. 278).

Extending the application of the social capital theory to buyer-supplier relationships, the authors focus on the concept from a resource-based view (RBV) perspective. The RBV theory treats organisations as "unique bundles of accumulated tangible and intangible resource stocks, including specific internal capabilities, processes and procedures, and routines that are linked to or are controlled by the organization" (De Clercq and Sapienza, 2006). Relational capital theory extends the RBV to the interorganisational context (Jer *et al.*, 2017, p. 129). Relational capital is a kind of more and more important intangible asset, as firms are becoming increasingly dependent on a network of business partners to deliver value in supply chains (Léger, 2010, p. 406). Combining the resource-based view of the firm and the relational view, it should be outlined that resources can span an organization's boundaries and additionally, can be embedded within interorganisational collaborative processes (Dyer and Singh, 1998). Furthermore, "specific resources and capabilities that are sources of competitive advantage may result from processes of cooperation with external partners" (Ciszewska-Mlinarič *et al.*, 2012, p. 29), e.g. relationship-specific investments can enhance relationship learning capabilities and as a result, joint competitive advantage of the engaged parties (Chang and Gotcher, 2007). It should be noticed, that research has been changed from a static view to a more dynamic focus on restructuring resources bundles to accelerate strategic change and what more, its speed depends on the dynamic capabilities to restructure internal and external resources (Yi *et al.*, 2016, p. 437).

Considering the development of relationships with external parties, the resource dependence theory (RDT) should be taken into account. It highlights that a key element

of an organisation's success is "the ability to acquire and maintain resources" (Pfeffer and Salancik, 2003, p. 2), emphasising the role of suppliers providing resources that are not available within the firm (Pfeffer and Salancik, 2003; Kulangara *et al.*, 2016). RDT refers to the socialization mechanisms as effective methods to manage the interdependencies between the companies, e.g. trust can reduce uncertainty and opportunism between them (Kulangara *et al.*, 2016, p. 1606).

To conclude, the authors of this article suggest that theories of socialization, social capital, resource-based view, resource dependence and dynamic capabilities building are the most helpful in examining relational capital development in the context of supply chain management.

#### 4. THE DEFINITIONS OF RELATIONAL CAPITAL

In the nineties of the 20<sup>th</sup> century, the term "relational capital" appeared as part of the definition of "social capital". In the very often quoted framework of Nahapiet and Ghosal (1998) the social capital consists of the three following dimensions: cognitive capital, structural capital and relational capital.

**Table 6.** Examples of relational capital definition

Authors (year)	Definition
Cousins <i>et al.</i> (2006)	<b>Supply chain relational capital</b> as the configuration and social structure of the group through which resources are accessed The level of RC is assessed by the degree of mutual respect, trust, and close interaction that exists between the partner firms.
Chen, <i>et al.</i> (2006)	<b>Relational capital</b> as the stocks of connections, interactions, relationships, linkages, closeness, goodwill and loyalty between a firm and its upstream suppliers, downstream clients, strategic partners or other external stakeholders.
Krause <i>et al.</i> (2007)	<b>Relational capital</b> represented as the years of the buyer-supplier relationship and the dependency of the buyer and the supplier to the relationship.
Hammervoll (2011)	<b>Relational capital</b> is the sum of goodwill, respect and trust between buyer and seller.
Mousavi and Takhtaei (2012)	<b>Relational capital</b> is defined as all resources linked to the external relationships of the firm with customers, suppliers or partners in research and development.
Kohtamäki <i>et al.</i> (2013)	<b>Relational capital</b> as a form of social capital embedded in a single business relationship that includes dimensions such as trust, open interaction and a sense of shared destiny between the supplier and the customer.
Preston <i>et al.</i> (2017)	<b>Buyer-supplier relational social capital</b> is defined as the degree to which the supplier and distributor have mutual trust and shared norms.

Source: own elaboration.

The first definitions of the relational capital (RC) refer

to the close personal relationships that are developed on the base of trust, obligation and reciprocity (Granovetter, 1992; Nahapiet and Ghoshal, 1998; Kale *et al.*, 2000). This approach was generally accepted and exploited in consecutively appearing articles (Youndt *et al.*, 2004; Inkpen and Tsang, 2005; Capello and Faggian, 2005; Villena *et al.*, 2011). In the meantime, new terms that include relational capital issue have emerged, as for example “relational investment” (Léger, 2010) or “relational capital skill” (Hsu *et al.*, 2011).

At the beginning of the 21st century, relational capital started to be recognised as an important element of supplier-buyer partnership and supply chain management. The analysis of the literature allowed to identify the key definitions in this regard (**Table 6**). Such elements of relationship as trust, loyalty, goodwill, or respect also appear in these definitions but this time they are mutually built through the close cooperation between supply chain links. Definitions of relational capital in supply chain refer to both upstream suppliers and downstream clients as well as to the various aspects like quality of relationship (trust, respect, shared norms and destiny), configuration and social structure, supplier-buyer interactions along with connections and dependences, further knowledge transfer and resources involved in R&D.

Considering the results of the literature review, there are authors, who in a definition of relational capital, go beyond the interactions between firms and refer to the other stakeholders. Capello (2002) includes company interactions with institutions and research centres, whereas Youndt *et al.* (2004) cover the cooperation with government and industry associations.

Eventually, some similarities between available definitions of relational capital can be noticed. First, the essence of the length of the relationship is often underlined (Krause *et al.*, 2007; Villena *et al.*, 2011; Lee, 2015). Here, a long term cooperation can be regarded as a base for building the relational capital. Further, the importance of the intensity of relationship is present (Capello, 2002) and degree/level of the arising elements of relational capital e.g. trust, respect (Kale *et al.*, 2000; Preston *et al.*, 2017). Relational capital definitions also concern the issue of resource management (Youndt *et al.*, 2004; Mousavi and Takhtaei, 2012) and the aspect of social/relational structures (Cousins *et al.*, 2006; Huikkola *et al.*, 2013). The relational capital is considered as a source of benefits too (Petersen *et al.*, 2008). For example, Lee (2015) emphasises in a definition of relational capital the importance of RC for the reduction of transaction costs, whereas Lorenzoni and Lipparani (1999) highlight the influence of RC on growth and innovativeness.

## 5. DISCUSSION ON THE MEASUREMENT OF RELATIONAL CAPITAL IN SUPPLY CHAIN

Most of analysed articles provide a research framework that involve relational capital issues. The developed theoretical models include RC in a form of a construct which is usually defined by several observable indicators. In all cases, these items are measured using a five or seven point

Likert scale. This means that these surveys are based on the respondents' opinions and its qualitative measurement. The in-depth literature review allowed to recognise the most often used components. The outcome of the analysis is presented in **Table 7**.

There were also other items proposed in the conceptual models developed by authors, such as: *friendship* (Kale *et al.*, 2000; Carey *et al.*, 2011; Villena *et al.*, 2011; Roden and Lawson, 2014; Villena and Craighead, 2017), *fairness* (Kohtamäki *et al.*, 2013), *family like atmosphere* (Lee, 2015), *length of the relationship in years* (Krause *et al.*, 2007), *long-term partnership* (Lee, 2015), *expectation the relationship to continue for a long time or relationship as a long-term alliance* (Jer *et al.*, 2017), *not misleading partner* (Kulangara *et al.*, 2016), *communication* (Sambasivan, 2013), *satisfaction* (Mubarik *et al.*, 2016), *avoiding exercising power in the relationship* (Preston *et al.*, 2017), *similar approach in fostering teamwork between one another* (Preston *et al.*, 2017), *similar pattern on how to best cooperate with each other* (Preston *et al.*, 2017), *compatibility of goals and objectives* (Jer *et al.*, 2017), *shared destiny* (Huikkola *et al.*, 2013), *obligation, identification and norms* (Nahapiet and Ghoshal, 1998; Johnson *et al.*, 2013), *goodwill and prior beliefs* (Hammervoll, 2011), *network relational embeddedness* (Preston *et al.*, 2017), *socialization* (Yim and Leem, 2013), *buyer and supplier dependency* (Krause *et al.*, 2007), *financial resources* (Léger, 2010; Hammervoll, 2011). Although, the aforementioned mentioned elements characterize meaningful aspects of relationship management within supply chain management, other essential items were chosen as a reference due to the higher frequency of their usage in reviewed models presented in research papers published in the period 2004-2017.

According to the results, *trust* is in first place. There are authors who consider in their frameworks a mutual trust (Nahapiet and Ghoshal, 1998; Kale *et al.*, 2000; Carey *et al.*, 2011) and those who adopt one-sided trust, e.g. trustworthy supplier or customer (Kulangara *et al.*, 2016; Jer *et al.*, 2017). Trust occurs usually as a single research item. However, in some papers it is developed into several components (Mubarik *et al.*, 2016, Verwaal, 2017) with reference to the previous works, like Crosby *et al.* (1990), or Morgan and Hund (1998). In this case, trust is defined using not only qualitative indicators (e.g. reliance on a partner, helpfulness of a partner), but is also perceived through the prism of quantitative aspects like meeting agreed requirements by a partner (i.e. providing safe materials).

The second item is a *close interaction*. Close interaction between partners results in learning and exchange of information and know-how, whereas one of its enablers is an alignment of buyer's and supplier's interests (Kale *et al.*, 2000). Cousins *et al.* (2006) follow Gupta and Govindarajan (2000) in understanding the interactions as a part of socialisation that leads to “the building of personal familiarity, improved communication, and problem solving”. Kale *et al.* (2000), Lawson *et al.* (2008) consider the need of personal interactions at multiple levels. Carey *et al.* (2011) regard social interaction ties as “a conceptualisation of structural capital” that can be strengthened by personal contacts, direct experiencing and getting to know a partner during social events or building inter-organisational teams. Verwaal (2017), following

Nielson’s work (1998), connects closeness with a long cooperation time and extensiveness of relationship. The extensiveness is understood as “interactions among several functional areas and the emergence of strong personal relationships between individuals in the two companies” and may be strengthened by “mutual problem solving and informal adaptations” (Nielson, 1998).

**Table 7.** List of items for RC measurement in the research papers between 2004-2017

Item	Number of Occurrences	Research Papers in the Period 2004-2017
Trust	20	Cousins <i>et al.</i> (2006), Chang and Gotcher (2007), Lawson <i>et al.</i> (2008), <i>et al.</i> (2008), Villena <i>et al.</i> (2011), Hammervoll (2011), Carey <i>et al.</i> (2011), Sambasivan <i>et al.</i> (2013), Yim and Leem (2013), Johnson <i>et al.</i> (2013), Kohtamäki <i>et al.</i> (2013), Huikkola <i>et al.</i> (2013), Blonska <i>et al.</i> (2013), Roden and Lawson (2014), Lee (2015), Mubarik <i>et al.</i> (2016), Kulangara <i>et al.</i> (2016), Verwaal (2017), Preston <i>et al.</i> (2017), Villena and Craighead (2017), Ruy <i>et al.</i> (2017)
Close interaction	11	Carey, Lawson and Krause (2011), Cousins <i>et al.</i> (2006), Chang and Gotcher (2007), Lawson <i>et al.</i> (2008), Petersen <i>et al.</i> (2008), Villena <i>et al.</i> (2011), Huikkola <i>et al.</i> (2013), Roden and Lawson (2014), Villena and Craighead (2017), Verwaal (2017), Preston <i>et al.</i> (2017)
Respect	9	Cousins <i>et al.</i> (2006), Lawson <i>et al.</i> (2008), Petersen <i>et al.</i> (2008), Carey <i>et al.</i> (2011), Villena <i>et al.</i> (2011), Kohtamäki <i>et al.</i> (2013), Roden and Lawson (2014), Lee (2015), Villena and Craighead (2017)
Reciprocity	7	Carey <i>et al.</i> (2011), Villena <i>et al.</i> (2011), Roden and Lawson (2014), Blonska <i>et al.</i> (2013), Kohtamäki <i>et al.</i> (2013), Yim and Leem (2013), Villena and Craighead (2017)
Commitment	5	Hammervoll (2011), Blonska <i>et al.</i> (2013), Sambasivan <i>et al.</i> (2013), Yim and Leem (2013), Mubarik <i>et al.</i> (2016)

Source: own elaboration.

The third item is *mutual respect* that may characterise the relationship between the partners at multiple levels of both organisations. There is a strong mutual confidence that no party will exploit others’ vulnerabilities even if there is an opportunity to do so (Sabel, 1993; Kale *et al.*, 2000). Mutual

respect depends on the length of relationships and the strength of buyer-supplier dependence.

The fourth item called *reciprocity* is perceived as a cornerstone of cooperative exchange relationships (Hoppner and Griffith, 2011). It generally refers to the social norm that an action performed by one party requires a compensating movement by the other (Blonska *et al.*, 2013). As an example, when buyers invest some assets and make an effort to strategic relationships with suppliers, they expect their suppliers to make similar investments. On the one hand, partners work together to achieve mutual benefits, share risk and solve problems within the collaboration development. Reciprocity means that partners consider each other’s interests when problems arise (Kohtamäki *et al.*, 2013). But on the other hand, strong reciprocity norms might develop obligations that “commit resources and constrain choices beyond what would be optimal” (Villena *et al.*, 2011, p. 565).

Different dimensions of *commitment* as an item have been considered so far. A very interesting approach referring to psychological commitment was presented by Hammervoll (2011). On the one hand, it was defined in terms of choosing other supply-chain partners than the biggest in the industry, following Fichman’s and Levinthal’s opinion (1991) and on the other hand, as a psychological resistance to change, following Crosby and Taylor (1993). Finally, the company’s willingness to change its preference for collaborating with a supply chain partner and its beliefs about a supply chain partner was measured (Hammervoll, 2011, p. 274). Within buyer-supplier relationship management, commitment might be perceived as suppliers’ predisposition to remain in the relationship due to their positive affect, feeling of unity or obligation and emotional attachment to the buyer (Blonska *et al.*, 2013; Palmatier *et al.*, 2007), especially in a long-term perspective.

With regard to the analysis carried out so far, the following definition can be proposed:

**Supply chain relational capital** is an intangible asset created together by suppliers and customers through the development of a relationship based on mutual trust, respect, close interaction, reciprocity and commitment, used as a source of competitive advantage.

The definition of supply chain relational capital presented above brings into the discussion the following issues:

1. Significance of particular items for the relational capital construct.
2. Measurement of relational capital as an intangible asset in supply chains.
3. Importance of RC as a source of competitive advantage in perspective of different strategies, e.g. sustainable, innovative and resilient supply chains.

The proposed definition is based on most common characteristics. It can be used to build theoretical models that analyse dependencies between relational capital and other items related to supply chain management. In these models, the construct of relational capital can be measured using a qualitative or quantitative approach. The latter will be discussed in the next section of this paper. According to the literature review, researchers have been following only qualitative indicators so far.

The influence of relational capital on firms’ competitive advantage is multidimensional and depends on the supply chain strategy. Lee (2015) stressed that RC plays

an important role for operational as well as environmental performance within green supply chain management. Many authors highlighted the significance of relational capital as a facilitator of knowledge transfer, joint learning and collaborative innovation development in supply chains (Chen *et al.*, 2006; Dorrego *et al.*, 2013; Huikkola *et al.*, 2013; Kohtamäki *et al.*, 2013; Preston *et al.*, 2017). Furthermore, the importance of RC was also recognised for building supply chain resilience (Johnson *et al.*, 2013).

## 6. CONCLUSIONS

It was confirmed that relational capital measurement deserves more investigation and research in a context of supply chain management. The results provide the support for the importance of supply chain relational capital and allow to identify its main elements as follows: mutual trust and respect, close interaction, reciprocity and commitment (Table 7). All of them are reflected in the proposed definition of the relational capital. The study extends knowledge and ensures a richer understanding of how organisations might exploit buyer-supplier relational capital in supply chain management. The significance of RC management increases clearly and consistently in the business environment of the 21<sup>st</sup> century, because of its growing influence on supply chain performance in many dimensions (e.g. costs, quality, flexibility, innovativeness, resilience, social and environmental responsibility).

The paper provides both theoretical and managerial implications. First, based on the in-depth literature review, the most common items used for defining and evaluating relational capital were identified. These items should be treated by managers as key dimensions of building and improving business relationships with suppliers and clients. Managers should measure the value of relational capital as an intangible asset that is co-created by supply chain links and has relevant effects on companies' value growth and finally, on their competitive advantage. Furthermore, it was recognised that there is a missing quantitative measures of relational capital. Proposals for measures may include: number of joint projects aiming at synergy effects (including knowledge transfer, information sharing, collaborative innovation development), value of assets shared in supply chain (e.g. production lines, warehouses, technologies), percentage of jointly received patents or number of joint initiatives in risk management. The RC measurement will take on especially the increased importance for firms that invest time and money to build and sustain their networks of suppliers or customers and to develop relationships with them. A quantitative approach has become crucial in the era of companies' value management based on intangible assets facing the challenge to deliver value to internal as well as external stakeholders, and particularly important for managers who are aware of the significance of relational capital for improving supply chain performance. In the face of this gap, the further investigation in this regard should be conducted.

There are some limitations of the conducted research. Mainly, the further validation of the proposed measurement approach is necessary to advance and develop a reliable reference for relational capital measurement. It is suggested to carry out additional in-depth literature analysis for each of the five items proposed in the approach. Subsequently, it is

necessary to test the validity of the construct using statistical analysis. This requires further quantitative research.

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