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USING THE CONCEPT OF EMBEDDEDNESS TO THEORISE THE RESOURCE-BASED COMPETITIVE ADVANTAGE OF TRIADIC SUPPLY CHAINS WITH A STRUCTURAL HOLE

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Abstract: The Resource-Based View (RBV) can be successfully employed while investigating the role of relationships in deriving the competitive advantage of supply chains. However, prior studies that invoke this research strand rarely mention the importance of social capital as a valuable asset while establishing the relationships, and thus gaining access to other companies' resources. In this paper, the concept of structural and relational embeddedness has been employed to offer a systematic conceptual analysis of the resource-based competitive advantages of supply chains. Based on this conceptual reasoning, we then build key theoretical propositions that aid in deeper understanding of how the relationships are shaped by social capital to derive the competitive advantage of supply chains. The findings of the study show that the structural hole is more likely to shape distrusted and closely tied relationships, typical for a resource-based competitive advantage.

Keywords: structural embeddedness, relational embeddedness, closure, structural hole.

1. Introduction

Relationships have become a central theme when investigating the issue of the competitive advantage of supply chains. Building upon the strategy field, relationships can be perceived as a source of competitive advantage in line with the Resource-Based View (RBV) (Dyer, and Sigh, 1998).

The RBV, pioneered by Penrose (1959), suggests that a competitive advantage is dependent upon resources, capabilities and assets that are housed within individual companies. Among the intangible resources, one may distinguish relationships (Wit, and Meyer, 2010). Relationships, as a valuable resource, enable companies to accumulate resources and capabilities that are rare, valuable, non-substitutable and difficult to imitate (Eisenhardt, and Schoonhoven, 1996; Ireland et al., 2002). As such, these relationships can be very instrumental in obtaining a company's goals (Wit and Meyer, 2010). In this sense, relationships in supply chains enable one to access

resources that a particular actor does not possess yet that can be critical for the competitive advantage of this particular actor (Das, and Teng, 2002). This has been exemplified in extant studies such as the resource-based theory of strategic alliances (Das, and Teng, 2000). In other words, establishing relationships is a way to build own key competences determining a competitive advantage (Das, and Teng, 1998; Wit, and Meyer, 2010). The obtained resources should undergo a process of internal, firm-specific adaptation to be assimilated into the other processes, which will finally lead to the competitive advantage of this firm (Duschek, 2004). Adapting the acquired resources to a firm's specificity is the major condition for obtaining a sustainable competitive advantage (Dyer, 1996). Essentially, the RBV considers the firm as the primary unit of analysis and emphasises the importance of internal resources residing within individual companies (Dyer, and Singh, 1998). Consequently, an individual company, as the beneficiary, is able to improve its competitive advantage.

Prior studies mostly focused on the quality of ties and its significant role in deriving the competitive advantage of supply chains (Kannan, and Tan, 2010; O'Leary-Kelly, and Flores, 2002; Humphries, and Wilding, 2004). However, in considering how a network of supply chain actors affects the competitive advantage, the quality of relationships is not all that matters, as the configuration of that network matters, too (Carnovale et al., 2017; Carter et al., 2015; Choi, and Krause, 2006; Choi, and Wu, 2009b; Kim, and Choi, 2015; Nair et al., 2009; Wu, and Choi, 2005). Melnyk et al. (2010) noted that the concept of supply chain management expands the reach of the company beyond its immediate grasp to other links where a competitive advantage may be derived. Similarly, other studies show that a competitive advantage is achieved through direct and indirect relationships established with other links (Harland, 1996; Hines, and Rich, 1998; Jarillo, and Ricart, 1987). Furthermore, prior research predominantly investigated the effects of configuration on performance from the standpoint of either one actor in the network (Autry, and Griffis, 2008; Lawson et al., 2008; Carey et al., 2011; Villena et al., 2011) or a dyadic arrangement (Min et al., 2008; Son et al., 2016). As a consequence, this has left a gap between traditional theories of firms and the findings concerning interconnected firms that can potentially form supply chains.

In order to address the above-mentioned gap, we seek to combine the Resource-Based View of a competitive advantage with embeddedness as an important facet of social capital. Accordingly, the primary goal of the paper is to provide cumulative additions to our understanding of the role of embeddedness in shaping the competitive advantage of supply chains in line with the Resource-Based View.

In order to obtain the goals of the study, we turned to the concept of embeddedness as our theoretical framework. Generally, embeddedness is a denial of atomisation and highlights that exchange relations are embedded within the larger social system in which they occur and develop (Barber, 1995). In essence, "Embeddedness refers to the fact that economic action and outcomes ... are affected by actors' dyadic (pairwise) relations and by the structure of the overall network of relations" (Granovetter, 1992, p. 33), suggesting that no organisation is 'suspended

in a vacuum'. In the supply chain context, embeddedness can be defined as the extent a firm relies on a network of other actors (Kim, 2014). Accordingly, we consider structural and relational embeddedness as the most common conceptualisations of social capital (Granovetter, 1985; Uzzi, 1997; Ring, and Van de Ven, 1994; Zajac, and Olsen, 1993). Structural embeddedness focuses on the relevance and impact of the larger ongoing network of relationships in which economic action occurs and develops, while relational embeddedness refers to how interpersonal or interorganisational relationships and their qualities, histories and developmental processes affect economic behaviours and outcomes (Capaldo, 2014). In line with the view of Moran (2005), we use two key dimensions of relational embeddedness, namely interpersonal trust and feelings of closeness (interpersonal solidarity).

2. The Resource-Based Competitive Advantage of Supply Chains

The roots of understanding of how resource exchanges contribute to deriving the competitive advantage of supply chains can be traced to the classical Resource-Based View (RBV). In line with this approach, achieving and sustaining a competitive advantage stems from possessing and nurturing own valuable resources that enable individual companies to perform activities better or cheaper than the market rivals (Collis, and Montgomery, 1995; Barney, 1991; Quinn, and Hilmer, 2004; Prahalad, and Hamel, 1990; Amit, and Schoemaker, 1993; Scavarda, and Hamacher, 2003). Though the RBV promotes self-interest, individual profit-seeking, taking an advantage over new entrants and avoiding any dependence, it also takes into account that companies are never self-sufficient. On the contrary, they constantly seek out new opportunities for upgrading and renewing their capabilities to derive and maintain a competitive advantage (Lavie, 2006). Therefore, the Resource-Based View underlines the importance of relationships as an intangible resource to accumulate other necessary resources and capabilities that are rare, valuable, non-substitutable and difficult to imitate (Brandon-Jones et al., 2014; Carter et al., 2017). These relationships are used instrumentally by the company to enhance its competitive advantage.

Gaining access to the complementary but dissimilar capabilities of other firms requires knowledge of neighbouring resources. Accordingly, establishing relationships resides within a transitional stage on the way to building own key competences that are the source of a competitive advantage. In essence, therefore, a resource-based competitive advantage in the supply chain context is about accessing resources that a particular company does not possess, but which are critical for improving its competitive position (Das, and Teng, 1998). The major premise of a resource-based competitive advantage is to gain and aggregate valuable resources with other firms in a supply chain, as these resources, for some reason, cannot be efficiently obtained through market exchanges. It suggests creating the most value out of existing resources

possessed by other supply chain partners and combining them in such a way to derive a competitive advantage (Das, and Teng, 2000). Consequently, we define the competitive advantage of supply chains within the RBV as the ability of particular actor, usually possessing a superior position, to perform at a higher level than others by forming and sustaining unilateral (one-sided) relationships that enable this actor to gain access to the necessary resources that are possessed or controlled by other parties in the network. Deriving a competitive advantage within the RBV promotes the opportunistic posture of supply chain partners (Zacharia et al., 2009; Bowersox et al., 2003) instead of building a partnership based on mutual trust and commitment (Tsang, 2000). Therefore, as indicated by Duschek (2002), it is not surprising that the potential cooperation within the RBV is usually paraphrased in martial terms like "trojan horse", "bridgeheads", "game with hidden cards", "wait-and-watch positions" and "kiss of death". Most commonly in practice, the leader of a supply chain establishes unilateral relationships with other actors in order to derive its competitive advantage. It implies the asymmetry and dependence of one party on the others (Das, and Teng, 2003). Asymmetry is usually the result of resource flows that are established in one direction, which gives rise to power advantages generating dependence (Cook, 1977). Consequently, benefits usually go to the stronger, dependence-advantaged firm at the expense of the weaker, dependence-disadvantaged actors (Kim et al., 2004). Therefore, it may be referred to as an unbalanced dependence, suggesting that one actor with a lower level of dependence will enjoy more freedom to impose its requirements on the others. In line with this theory, the supply chain leader, as the focal firm, is capable of protecting its own resources (Jarillo, and Ricart, 1987). By the same token, Chandler (1990) posited that obtaining a competitive position is largely dependent upon a companies' leadership. From the perspective of RBV, relationships are treated instrumentally and formed to mainly provide a strong and secure competitive position for a certain link in the supply chain structure. On the other hand, firms that demonstrate a higher level of dependence on the other company have a greater interest in sustaining the existing relationship (Anderson, and Narus, 1990). The level of dependence among the links in a certain supply chain is conditioned upon the intensity of their effort to reduce safety stocks and compress the time of material and information flows (Fredriksson, and Jonsson, 2009). Wal-Mart, the leader of its supply chain from the FMCG sector, provides a very good example. The company forms one-sided relations by inducing its suppliers and service providers to operate in a particular way, thus ensuring a competitive advantage mostly for itself (Fishman, 2006). Other supply chains, predominantly from high technology and automotive sectors, are also operating under the pressure imposed by the strongest links (Sherefkin, 2006; Zhao et al., 2008; Narayanan, and Raman, 2004). Consequently, the Resource-Based View, which has provided a dominant research perspective for many years, is now being complemented by the concept of network competitive advantage, yet it is based on different premises than the RBV.

3. Structural Embeddedness in Triadic Supply Chains

Structural embeddedness is perceived as a major conceptualisation of social capital, describing impersonal configurations among the actors within a network (Nahapiet, and Ghoshal, 2000). Accordingly, among the most important facets of structural embeddedness, one may enumerate the presence or absence of ties determining the network configuration (Nahapiet, and Ghoshal, 2000). Essentially, the network configuration of supply chains requires at least three companies to be involved in one or more of the upstream and downstream flows of products, information and finances from a source to a customer (Mentzer et al., 2001). As noticed by Wynstra et al. (2015), three-tier triads involve actors that perform different roles in the overall supply chain. In other words, in its basic form, a supply chain is a triad (Cooper et al., 1997; Mentzer et al., 2001). Consequently, in our paper, we refer to this structure as triadic supply chains.

Choi and Wu (2009a) acknowledged that triads are established by either two dyads (constituted by three nodes and two links) or three dyads (composed of three nodes and three links). Generally, the first type of triad is referred to as the structural hole arrangement, in which a gap between two disconnected actors is occupied by a focal company. The structural hole arrangement is characteristic for a manufacturing setting and is analogous to supply chains depicted from the perspective of the manufacturer as a focal company (Ellram, and Cooper, 1993; Lambert et al., 1998; Cooper et al., 1997; Wuyst et al., 2004). In such a structure, the manufacturer is located in the middle between its supplier and customer, and all three actors establish linear product and information flows (Hakansson, and Persson, 2004; Mentzer et al., 2007; Wynstra et al., 2015). Consequently, there is no direct connection between the supplier and customer, which grants the focal actor a mediating role (Mena et al., 2013). Mentzer et al. (2001) referred to this structure as a basic supply chain consisting of the central company, its immediate supplier and customer, directly linked by one or more of the upstream and downstream flows of products, information and finances. Such an arrangement may be referred to as an incomplete graph or serial triadic relationship, highlighting that most exchange relationships take place between the supplier and customer with the help of the manufacturer. This situation reminds one of a series of two dyads, composed of one relationship connecting the manufacturer with its supplier and another relationship connecting the manufacturer with its customer (Havila, 1993). The other example of the structural hole, typical for a manufacturing setting, can be established by the buyer and two upstream suppliers (Choi et al., 2002).

Based on the aforementioned discussion, we argue that the structural hole may have a profound impact on the resource-based competitive advantage of supply chains.

4. Structural Hole and a Resource-based Competitive Advantage

The structural hole is the facet of structural embeddedness, defined as a gap occupied by a specific company and positioned between two disconnected actors in a triad. As highlighted by Podolny and Baron (1997), these two partners establish indirect ties that go through the focal actor. The central position of the actor stems from the fact that it establishes direct relationships with two other actors that do not have a direct link with each other (Choi, and Wu, 2009a). Therefore, within a triadic setting, the structural hole can be referred to as the concept of the "ego network" of a particular firm. "An ego network is comprised of an ego (i.e. a social unit such as a manufacturer), the ego's immediate ties (i.e. first-degree connections)…" (Carnovale, and Yeniyurt, 2015, p. 23). The perspective of an "ego network" has been applied in various studies, such as on the transfer of innovation (Carnovale, and Yeniyurt, 2015) and formation of a joint venture (Carnovale, and Yeniyurt, 2014). This concept adds to the understanding of how the privileged position in a triad brings competitive advantages. Drawing upon the structural hole concept, we argue that the focal actor in a triad is the one who looks for the opportunity to derive a competitive advantage by filling the gap between two other actors (Burt, 1992). However, following the study of Burt (1997), the overlying premise of the structural hole is that the privileged position in a triad is used to maximise one's own competitive advantage, even at the expense of two other actors.

In line with this concept, the company sitting on the structural hole can play two actors against each other or can form a coalition with one actor against the other one (Wolff, 2017; Choi, and Wu, 2009a; Wynstra et al., 2015). The focal actor can exploit the lack of connection by reaping a competitive advantage from bridging other disconnected actors (Podolny, and Baron, 1997; Kim, 2014). The central position results from the brokerage opportunities (Burt, 2000) that the focal company is likely to undertake. Bridging structural holes delivers a potential of increasing the competitive advantage (Kim, 2014) and enables the company to play the role of broker, or so-called "gatekeeper", with a potential to exert more power and control over peripheral firms (Scott, 1991; Bellamy, and Basole, 2013). Thus, the focal company holds the position of tertius, i.e. the third one that profits (Burt, 1992) and derives advantages. The actor with a privileged position has the right to access social capital that is normally inimitable, ubiquitous and non-substitutable (Gulati et al., 2000) and which is neither as easily alienable as physical capital nor as mobile as human capital (Moran, 2005). In other words, the focal company in the structural hole has an opportunity to access, aggregate and finally protect resources in a triad to obtain otherwise unavailable competitive advantages. Accordingly, the social capital in the structural hole is sometimes defined as individual connections and individual access to a favourable personal network (Bouzdine, and Bourakova-Lorgnier, 2004). Therefore, we argue that the structural hole is the type of interorganisational arrangement that enables the focal company to create and take the most value out of others'

resources (Das, and Teng, 2000) for its individual benefit. This finally provides the highest profits for tertius and, in the longer timeline, ensures its competitive advantage. By reference to the previous works of Burt, Kogut (2000) calls this profit the Burt rent, which is to mean that the outcome of a competitive struggle of the actor sitting on top of the structural hole is motivated by envy and self-interest. According to Duschek (2002), this type of rent is actually "firm specific quasi-rent", and as such, it represents the essential condition for achieving a competitive advantage within the RBV. On the basis of the above, we propose that:
Proposition 1: The company sitting on top of the structural hole in triadic supply chains is more likely to derive a resource-based competitive advantage.

5. Relational Embeddedness and the Resource-based Competitive Advantage of Supply Chains

Social relations possess two attributes – closeness and trust, which are used to characterise relational embeddedness (Nahapiet, and Ghoshal, 1998). As stated by Moran (2005, p. 1135), closeness and trust "represent progressively deeper degrees of relational quality: from proclivity to provide resources vis-a-vis personal familiarity (relational closeness) to a deep sense of the contact's reliability and faithfulness in resource exchange (interpersonal trust)".

5.1. Relational Closeness

Relational closeness reflects the strength of ties and, thus, the amount of interfirm transactions in a network (Moran, 2005). The strength of a tie can be described as either a strong or weak tie (Granovetter, 1973; Tiwana, 2008). A strong tie describes the extent to which a firm frequently interacts with another and circulates knowledge and resources efficiently, whereas a weak tie is depicted as a loosely coupled relationship or the relative infrequency of interaction (McEvily, and Zaheer, 1999; Choi, and Kim, 2008). Consequently, the stronger the relationships in a network, the more frequent the interaction among the actors (Granovetter, 1973). If the ties are strong and the actors are more tightly connected, essential information can be exchanged, and the selected number of suppliers/customers can be engaged in long-term contracts to ensure the "threshold" level of interaction (Wilding, and Humphries, 2006). The concept of "tie-strength" is originally derived from the structural hole theory (Granovetter, 1985; Burt, 1992). The actors sitting on the structural holes possess the capability of selecting new ideas from the diverse information available. In other words, the central position provides creativity and learning, which is the source of a competitive advantage. There is a number of extant research which illustrate the information and knowledge benefits of brokerage on historical examples (Bouzdine, and Bourakova-Lorgnier, 2004). Consequently, the actor sitting on the structural hole is particularly capable of gaining two major advantages: information and

control (Xiao, and Tsui; 2007). Establishing a non-redundant tie provides an opportunity for the company sitting on the structural hole to exploit, manipulate and arbitrage the information flow between disconnected parties, as well as control the projects that bring together the actors positioned on the opposite sides of the hole (Brass, 1995; Burt, 2000; Baum, and Ingram, 2002; Shipilov, and Li, 2008; Yang et al., 2011). Accordingly, we conclude that relational closeness can contribute to resource-based competitive advantages in supply chains with the structural hole. Therefore, we propose the following:

Proposition 2: Relational closeness (closely-tied relationships), as a major facet of relational embeddedness, promotes deriving the resource-based competitive advantages of supply chains.

5.2. Relational trust

Trust and distrust are viewed as mutually exclusive (Parris et al., 2016). While trust can be expressed as the belief that an exchange actor will not be selfish and will not act in self-interest at another's expense (Uzzi, 1997), distrust, usually conceived as the absence of trust, demonstrates the belief that an exchange actor is selfish and self-interested and thus may act harmfully (Svensson, 2001; Schoorman et al., 2007). Though prior studies on perceived trust as a bipolar concept opposite to distrust, a large body of literature defends the existence of different levels of trust and distrust (Gago-Rodríguez, and Naranjo-Gil, 2016).

The level of trust/distrust has profound implications for the competitive advantage of supply chains. Interestingly, as highlighted by Podolny and Baron (1997), the structural hole does not seem to recognise the importance of trust and support from others to access crucial resources necessary for a competitive advantage. Bullen and Onyx (1998) stressed that in the case of structural holes, it is very difficult to generate trust, as the actors act on their own. This is confirmed by Burt (1992), who maintained that there is no long-term contract that keeps the structural hole structure strong enough to secure the trust necessary to establish a productive relationship. Consequently, the structural hole is a pulsing swirl of mixed, conflicting demands. Following Moran (2005), we argue that while the existence of relationships provides the potential opportunity for actors to share their resources, the lack of trust discourages the actors to willingly provide those resources. Accordingly, Burt (1992) corroborated that formation of relationships in the structural hole is one sided, personal specific and determined by the focal actor. In other words, a sufficient requirement for trust in the structural hole is that any actor is less likely to betray the other actors. This specifically refers to the actor sitting on top of the structural hole, who is lured and prone to act opportunistically. Accordingly, Moran (2005) concluded that trust is not considered as a central theme of the structural hole concept. The lack of trust among the actors in the structural hole can have a significant impact on the competitive advantage of supply chains, as distrusting relationships in structural holes usually results in a disproportionate share of benefits stemming from the competitive advantage (Gulati et al., 1994). For instance, the research by Oxborrow and Brindley (2014) showed that small and medium companies in fast fashion supply chains were not able to develop trustful and long-

lasting relationships with the big retailers, who mostly benefited from one-sided ties. Similarly, Cousins and Crone (2003) concluded that relationships among actors in automotive supply chains were highly adversarial and were characterised by the absence of trust. The suppliers did not believe that their contractors took sufficient care in managing the supply chain for all actors involved. Another exemplary study derived from the automotive supply chain showed there is very a low level of trust and one-sided relationships established between Opel Portugal and its seven Portuguese- based direct suppliers (de Lurdes Veludo et al., 2004). As a consequence, each actor in the supply chain only considers its own goals and does not share the same expectations. In fact, the suppliers need to adjust to the requirements imposed by Opel. Therefore, following the study of Lavie (2006), we argue that the higher proportion of benefits stemming from a resource-based competitive advantage is appropriated by the focal company filling the structural hole. Ultimately, this can lead to dishonesty, cheating and the pursuit self-interested objectives to maximise short-term particular benefits at the expense of other actors' common benefits. As a resource-based competitive advantage is driven by the actor sitting on top of the structural hole, we propose that:

Proposition 3: Distrust (distrusting relationships) is more likely to shape the resource-based competitive advantage of supply chains.

6. Findings and Conclusions

In this paper, we have formulated key propositions that aided in deeper understanding of how the competitive advantage of supply chains is shaped by structural and relational embeddedness. The common premise of the Resource-Based View is using relationships in deriving the competitive advantage of supply chains. We argue that an important aspect of deriving the competitive advantage of supply chains is establishing relationships that are shaped by two dimensions of social capital, namely structural and relational embeddedness. We distinguish the structural hole as a basic facet of structural embeddedness that is relevant for deliberating on the resource-based competitive advantage of supply chains. Specifically, as the findings of the study show, the structural hole is more likely to shape distrusted and closely tied relationships, typical for a resource-based competitive advantage. The concept of the structural hole explains the competitive advantage of supply chains via brokerage in the whole business network. Consequently, due to the privileged position of a focal company, the structural hole shapes the resource-based competitive advantage. In other words, the actor sitting on top of the structural hole has an opportunity to enhance its competitive advantage. The focal company, as a more powerful actor, tends to increase efficiency to take advantage at the expense of others, while the weaker actors are often forced to undertake certain costly actions and exhausting efforts to satisfy the focal company. We argue that a resource-based

competitive advantage perceives these relationships as adversarial, but relatively close. This is parallel to the findings of the study conducted by Kim and Choi (2015), who proposed to refer to the relationships as 'sticky', denoting closely tied but distrusted ties. In this sense, 'sticky relationships' are stable and durable, and their interaction frequency, as a key indicator of relational closeness, is relatively high. Yet, 'sticky relationships' discourage actors from building trust, as they create animosity and opportunistic behaviour, usually induced by the focal company. Actually, in the case of a resource-based competitive advantage, the relationships among actors can be characterised by distrust, and the actors consider each other as a necessary evil.

Although, the study elaborated on the conceptualisation of trusted-distrusted relationships, the dimension of relational closeness has been only partially touched upon. Therefore, the findings of our research concerning closely tied relationships could be complemented by providing a discussion on arm's length relationships, placed on the opposite side of relational closeness. Juxtaposing the dimension of arm's length relationships with the described conceptualisation of trust-distrust relationships yields two binary sets of relationship characteristics, namely arm's length and trust-based along with arm's length and distrusted.

To sum up, the study has provided a set of testable propositions, derived from conceptual papers and previous studies. To the best of our knowledge, the propositions offered in this study have not yet been empirically tested within a supply chain setting, which may potentially indicate a future research avenue.

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