A MODEL OF BUYER-SUPPLIER RELATIONSHIPS IN A TRANSNATIONAL COMPANY: THE ROLE OF THE BUSINESS NETWORK CONTEXT

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Abstract
The paradigmatic shift in marketing from the beginning of the 1990’s has transformed marketing in its view of business exchange to increasingly start addressing the relational aspects of market exchanges. This is particularly true in transnational supply exchanges, where specialization and outsourcing have increased the importance of effective and efficient management of buyer-supplier relationships, and their corresponding networks in which they are embedded in. In this regard particularly, TNCs are seen “as a [key] method of organizing international exchange”. The purpose of this paper is to analyze selected elements of buyer-supplier relationships within a specific TNC business-to-business (B2B) setting, vis-à-vis their impact on business performance and TNC competitiveness. This is done through the perspective of the TNC’s suppliers. The paper analyzes the impact of the functional aspect of the business network context on selected elements of buyer-supplier relationships, and their impact on business performance and the overall competitiveness. This is analyzed within a confirmatory testing of a reflective structural equation model. A unique feature of the model is its focus on the business network context - namely information obtained from the network and network spillover effects – as key network-embedded determinants of the “traditional” elements of buyer-supplier relationships (i.e. transaction-specific investments, trust, flexibility, and collaboration), where these elements have been so far mostly studied at the dyadic level in buyer-supplier relationships. The dataset includes a sample of 157 suppliers of the focal TNC world-wide (47.9 response rate on a web-based survey).

Key words: buyer-supplier relationships, industrial marketing, transnational companies, structural equation model, business network context, economic sociology

1. INTRODUCTION

Today, networks appear to be everywhere. In the face of globalization there is talk of the "network economy" (Barabasi, 2003, p. 199), where markets (Araujo, 2004) and organizations (Gulati, 2007) are increasingly understood as network forms. Fulik (2001) even talks about the “netization of economics” as a scientific field. In this new competitive landscape Best (1990) and Kandampully (2003) believe individual firms no longer compete in the global marketplace, "rather, it is networks that compete, and competitive advantage in such a scenario is largely determined by the competitive advantage of the network to which the firm belongs" (Kandampully, 2003, p. 444). According to Borgatti & Foster (2003, p. 991) this substantive perspective has been accompanied by a move "away from individualistic, essentialist and atomistic explanations [of economic behavior, particularly exchanges] toward more relational, contextual and systematic understandings". This is particularly true in transnational supply exchanges, where specialization and outsourcing have increased the importance of effective and efficient management of supply relationships and their corresponding networks in which they are embedded in (Nagurney, 2010).

As noted by the 2002 Nobel Prize laureate for economics Vernon L. Smith Homo sapiens is defined by a "universal propensity for social exchange." This propensity in turn "finds expression in two distinguishing forms: personal exchange in small-group social transactions, and impersonal trade through markets" (Smith, 2008, p. 15). However, as Cropanzano & Mitchell (2005, p. 882) note the former (social exchanges) and latter (economic exchanges) should be seen more as different types of transactional contexts, not as different types of relationships – thus fitting well within a common relationship paradigm. This paradigm has become not only dominant within the marketing (Morgan & Hunt, 1994) and management literature (Acedo & Casillas, 2005), but also within the international business literature, and the study of transnational companies (TNCs) according to Hedaa & Ritter (2005). More specifically, the paradigmatic shift in marketing from the beginning of the 1990’s (Morgan & Hunt, 1994) has transformed marketing in its view of business exchange altogether. Thus, marketing theory has increasingly started to address the relational aspects of economic exchanges, not just in end-consumer markets, but also in industrial markets. In both cases, we have also seen a move away from the dyadic to network-embedded analysis of buyer-supplier relationships, where the business network context is thought to be key (Håkansson & Snehota, 1995). A similar shift started to take place in the supply chain and operations management literature, where the issue of relationship quality has been receiving increasing research attention and becoming a very “hot topic” (Günter et al., 2011).

Linking to the perspective of trade through markets and economic (supply) transactions the work by Hymer (1979) sees TNCs not only as “the dominant organizational form of modern capitalism” (p. 1), but also “as a [key] method of organizing international exchange” (p. 5). In this regard, the study of TNCs¹ today offers an important environment

¹ For the purpose of this paper we employ the definition of a TNC by the OECD and UNCTC as "an enterprise that engages in foreign direct investments (FDIs), and owns or controls value-adding activities in more than one country" (Dunning, 1993, p. 3).
for the understanding and research of formalized economic exchanges, usually in the form of buyer-supplier relationships, and their network embeddedness (Borgatti & Li, 2009). While Ellegaard, Johansen & Drejer (2002, p. 348) point to the study of buyer-supplier relationships being “covered” within many different research areas - i.e. from industrial and relationship marketing, to supply chain management and international management – all these areas acknowledge the importance of supply relationships as the “backbones of economic activities in the modern world” (Nagurney, 2010, p. 200), and as being key to organizational competitiveness, performance and long-term success of companies (Veludo, Macbeth & Purchase, 2006).

The purpose of this paper is to analyze selected elements of buyer-supplier relationships within a specific TNC business-to-business (B2B) setting, vis-à-vis their impact on business performance and competitiveness. This is done through the perspective of the TNC’s suppliers. The TNC in question is one of Europe’s leading providers of fireproof roof and facade solutions, and does not wish to be explicitly named.

The goal of the paper is to analyze the impact of the so called functional aspect of the business network context (i.e. business network information and network spillover effects) on selected elements of buyer-supplier relationships, as well to analyze how the interconnections between these relational elements impact business performance and the overall competitiveness of the relationship. This is analyzed within a confirmatory testing of a reflective structural equation model. The model in question has been adjusted and extended from Claro’s (2004) study of the Dutch potted plant supply network, and recently published by Claro & Claro (2010) in Industrial Marketing Management. A unique feature of the model is its focus on the business network context - namely information obtained from the network and network spillover effects – as key network-embedded determinants of the “traditional” elements of buyer-supplier relationships (i.e. transaction-specific investments, trust, flexibility, and collaboration), where these elements have been so far mostly studied at the dyadic level in buyer-supplier relationships. The key research question of our research is thus: How does the business network context influence the overall business performance and relationship competitiveness through various elements of the buyer-supplier relationship?

2. LITERATURE REVIEW

Most of the contemporary neoclassical economics and its analysis are based on the assumptions of rational self-efficiency and atomistic individualism (Kahneman, 1994; Thaler, 2000). Thus, "traditionally, economists have studied social and economic phenomena by using a framework in which interaction is centralized and anonymous" (Goyal, 2009, p. 4). However, rational self-efficiency and the behavior of atomized individuals which are assumed to be guiding Adam Smith’s invisible hand and theories of the general equilibrium have been proven to be “inadequate” not only for phenomena such as i.e. innovation diffusion, intra-firm alliances or functioning of labor markets (Goyal, 2009, p. 4-5), but have also disregarded the social embeddedness of economic phenomena which provides a powerful explanation of
trust, commitment, cooperation and learning in myriad economic and organizational settings (Smelser & Swedberg, 2005; Dobbin, 2004; Manski, 2000), including buyer-supplier relationships.

On the one hand social structure within the structural aspect of network research seems to be widely present in a plethora economic context. By studying it, we can see how economic phenomena are embedded in various social structures, as well as how these structures ‘constrain’ economic action and shape the very notion of rationality that is by no means either universal, nor existing in a vacuum. On the other hand the "functional aspect" of networks facilitates information exchange (Goyal, 2009), and acts as an information repository (Gulati, 2007). It "suggests that the structure of interaction may be viewed as an instance of informal institutions that supplement formal markets in the presence of imperfect or asymmetric information” which further "suggests a potentially major role for patterns of connections in shaping economic activity" (Goyal, 2009, p. 6).

Building on the exchange perspective, as well as the markets and hierarchies model of Williamson (1975) economics and organizational studies have mainly focused on networks as economic structures that lay between markets and hierarchies (Thorelli, 1986). In this sense most of the contemporary understanding of business networks has evolved in economics around the market exchange theory (Easton & Araujo, 1994) or social exchange theory (Cook & Emerson, 1978), where the management and marketing literature has also devoted attention to issues of trust, commitment and other relational elements of a more social nature.

Based on the social exchange theory (Cook & Emerson, 1978) a business network may also be seen as a type of exchange network (Blakenburg & Johanson, 1992, p. 6), and defined as a set of interconnected exchange relationships (Prenkert & Hallén, 2006, p. 384). This allows a direct comparison with supply relationships, and the importance of the supply network within the business network context. An alternative approach to the social exchange theory perspective is the market exchange theory perspective (Easton & Araujo, 1994), which builds on the concept of organized behavioral systems (Alderson & Cox, 1948), also reinterpreted by Bagozzi (1974). Here, Alajoutsijärvi, Eriksson & Tikkanen (2001, p. 95) even point out to the perspective of “networks as business systems’", and where the business network is understood as an organized behavioral system of exchange. The main focus of such a system is on the transformations and exchanges of resources, and less on the social exchange component. It is from this perspective that buyer-supplier networks (sometimes referred to as supply networks) are often analyzed. These relationships are however usually embedded in various networks of interconnected and contingent buyer-supplier relationships, where both market exchange (transformation and exchange of resources), as well social exchange perspectives (trust, collaboration, etc.) should play equal parts. In this regard, Claro (2004, p. 9) emphasizes how business networks, supply chains (networks) and buyer-supplier relationships are all types of business relationships "raging from a web of connections to a dyadic relationship" with often blurred boundaries.

Chen & Paulraj (2004, p. 121) position the business network perspective within what they call the collaborative paradigm, where business networks emerge as patterns of interdependent business relationships "developed and fostered through strategic collaboration
with the goal of deriving mutual benefits” (Chen & Paulraj, 2004, p. 121). In this context, Parker (2008, p. 628) points to the following benefits that may be derived from various types of business networks, which may include: (1) learning and development; (2) innovation and competitive advantage; (3) value creation; and (4) growth and survival. Mouzas (2006, p. 1124) extends two key parameters of business performance – efficiency and effectiveness – to different organizational network contexts, including strategic alliances, joint ventures, sourcing and outsourcing agreements, etc. By looking at business and organizational networks as a "metaphor for exchange relationships in the marketplace" Mouzas’ empirical evidence on manufacturer-retailer German and Swiss networks shows the inherent complexity of extending, understanding and evaluating business performance in a business network context, where network externalities (spillover effects) also play an important role. Mouzas sees efficiency in a network mainly as operational excellence and productivity, achieved through cost minimization and operational margins, which lead to better performance. On the other hand "effectiveness is linked to the ability to design a unique model of embracing business opportunities" (Mouzas, 2006, p. 1125) "through a firm’s exchange relationships and the generation of sustainable growth in its surrounding networks".

3. MODEL CONCEPTUALIZATION AND HYPOTHESES DEVELOPMENT

According to Diamantopoulos & Siguaw (2008) the success of structural equation modeling (SEM) or any statistical modeling process for that matter depends first and foremost on the model conceptualization and “the extent to which the model is characterized by sound conceptualization” (p. 13). Figure 1 displays the proposed conceptual model to be tested as a reflective SEM with Mplus, and based on the adjustment of Claro’s (2004) model from the Dutch potted plant supply network. We have decided to use this model as our substantive base, since it is a rare model, which incorporates the business network context and affects the individual dyadic buyer-supplier relationship elements (i.e. transaction-specific investments, trust etc.). As can be seen from the Figure 1 the buyer-supplier relationship elements are believed to be influenced (and constrained) by the business network context, which in turn affects transaction specific investments (TSI) among individual dyadic relationships, as well as trust, joint action and flexibility (of adjustment). These in turn impact business performance, satisfaction and overall competitiveness.

With regards to the business network context a fundamental starting point of the model is the premise that “relationships within a network are based on the content of information that is disseminated through the network and affects the likelihood of engaging in collaborative relations, trust and transaction-specific investments” (Claro, 2004, p. 51).
Furthermore, the access to business network-based information is also determined by the structural position of an actor in the network, and the network spillover effects (externalities) which shape actor behavior as well as motivate network membership. The starting point of the model is actually one of sociology’s main assertions, on how social structure represents social interaction, which in turn "unavoidably transmits information" (Granovetter, 2005, p. 36). Thus, the information obtained from the business network may be a very good proxy of the network, and the actor’s structural position. Claro (2004) also outlines the importance of flexibility which business networks offer to overcome problems in declining mass-production (Powell, 1990) and production of saturated standardized products (Stern, El-Ansary & Coughlan, 1996). In such a competitive landscape the pivotal source of competitive advantage is collaboration and actor cooperation – usually in the form of joint actions and adjustments – and which are enabled by the network (Hamel, Doz & Prahalad, 1989).

In fact, collaboration and cooperation are common core determinants of business network competitive advantages (Jap, 1999), where actors enhance network value, as well as profit from being in the partnership (Kothandaraman & Wilson, 2001). Important elements of business network competitive advantage building in this mechanism further include: trust (Barney & Hansen, 1994); resource sharing (Barney, 1991) and transaction-specific investments (Dyer & Singh, 1998) which lead to reducing risk of opportunism and shortages (Claro, 2004), and better information flow and knowledge management (Stern, El-Ansary & Coughlan, 1996). This in turn leads to higher added value and saving costs, impacting competitiveness, and business performance (Anderson & Narus, 1990; Mohr & Speckman, 1994), as well as relationship satisfaction (Bensaou & Venkatraman, 1995; Zaheer, McEvily & Perrone, 1998), according to Claro (2004). Having provided a brief substantive description of our model Table 1 summarizes the main research hypothesis on which the model is based, and provides a short account of the key literature in which these hypotheses are grounded.
<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Relationship link</th>
<th>Content</th>
<th>Selected key literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Positive link between business network context and TSI</td>
<td>Higher TSI are based on lower uncertainty and risk of opportunism, and as well act as resource ties and activity links of an actor to other actors in the network</td>
<td>Carney (1998); Uzzi (1996); Claro (2004); Claro, Claro &amp; Zylbersztajn (2005); Anderson, Håkansson &amp; Johanson (1994); Håkansson &amp; Snehota (1995); Burt (1997); Gulati, (1998); Blankenburg, Eriksson &amp; Johanson (1999)</td>
</tr>
<tr>
<td>H2</td>
<td>Positive link between business network context and trust</td>
<td>Network generated information safeguards against opportunism, and reduces risk and uncertainty, which all facilitate trust</td>
<td>Anderson &amp; Narus (1990); Mohr &amp; Nevin (1990); Morgan &amp; Hunt (1994); Uzzi (1996); Selnes (1998); Olkkonen, Tikkanen &amp; Alajoutsijärvi (2000); Burt (2001); Claro &amp; Claro (2010)</td>
</tr>
<tr>
<td>H3</td>
<td>Positive link between business network context and flexibility</td>
<td>A better business context facilitates better understanding of the other partner’s position, needs and challenges. It also facilitates greater flexibility in working towards new compromises</td>
<td>Heide &amp; John (1992); (Bello &amp; Gilliland (1997); Dahbholkar, Johnston &amp; Cathey (1994); Williams (1998); Cannon, Achrol &amp; Grundlach (2000); Olorunniwo &amp; Hartfield (2001); Johnston et al. (2004); Thakkar, Kanda &amp; Desmukh (2008); Claro &amp; Claro (2010)</td>
</tr>
<tr>
<td>H4</td>
<td>Positive link between TSI and joint actions</td>
<td>Joint actions are also as an essential management tool in coordinating activities and resources of high stake TSI</td>
<td>Treleven (1987); Leenders &amp; Blenkhorn (1988); Heide &amp; John (1990); Williamson (1996); Dyer &amp; Singh (1998); Zaheer, McEvily &amp; Perrone (1998); Mukherji, Francis &amp; Mukherji (2009)</td>
</tr>
<tr>
<td>H5</td>
<td>Positive link between trust and joint actions</td>
<td>Trust in a relationship acts as a lubricant that binds actors together and facilitates joint actions. It also has a profound impact on future intentions of actors in a relationship</td>
<td>Zand (1972); Dwyer, Schurr &amp; Oh (1987); Anderson &amp; Narus (1990); Moorman, Zaltman &amp; Deshpande (1992); Ganesan (1994); Heide (1994); Zaheer &amp; Venkatraman (1995); Holmlund &amp; Törnroos (1997); Gadde &amp; Snehota (2000); Claro, Claro &amp; Zylbersztajn (2005); Forrström (2005)</td>
</tr>
<tr>
<td>H6</td>
<td>Positive link between trust and flexibility</td>
<td>Trusting relationships are characterized by higher levels of flexibility and tolerance, as well as a supportive atmosphere which fosters compromise and adjustment</td>
<td>Anderson &amp; Narus (1990); Heide &amp; John (1992); Morgan &amp; Hunt (1994); Ganesan (1994); Kumar, Scheer &amp; Steenkamp (1995); Holmlund &amp; Törnroos (1997); Hewett &amp; Bearden (2001); Yilmaz &amp; Hunt (2001); Sezen &amp; Yilmaz (2007)</td>
</tr>
<tr>
<td>H7</td>
<td>Positive link between flexibility and joint actions</td>
<td>Interorganizational cooperation (joint action) is relationship-specific and evolves through an ongoing interaction. The interaction pattern features themselves influence the degree and type of cooperation, thus linking the degree of flexibility (type of interaction pattern) to types of cooperation</td>
<td>Macneil (1978, 1981); Heide &amp; Miner (1992); Williams (1998); Thakkar &amp; Desmukh (2008); Claro &amp; Claro (2010)</td>
</tr>
<tr>
<td>H8</td>
<td>Positive link between joint actions and business performance</td>
<td>Supply chain collaboration, particularly through joint action, builds competitive advantage in the form of “pie extension” as it enables the pooling of resources, capabilities and activities</td>
<td>Dwyer &amp; Oh (1988); Anderson &amp; Narus (1990); Mohr &amp; Speckman (1994); Lee, Padmanabhan &amp; Whang (1997); Jap (1999); Mentzer, Foggin &amp; Golicic (2000); Lumms, Duclos &amp; Vokurka (2003); Sheu, Yen &amp; Chae (2006)</td>
</tr>
<tr>
<td>H9</td>
<td>Positive link between flexibility and business performance</td>
<td>Flexibility as a governance mechanism which also has a profound impact on performance in buyer-supplier relationships in terms of better performance</td>
<td>Macneil (1981); Heide &amp; John (1992); Lush &amp; Brown (1996); Bello &amp; Gilliland (1997); Beamom (1999); Cannon, Achrol &amp; Grundlach (2000); Cassivi (2006); Kannan &amp; Tan (2006); Aramyan et al. (2007)</td>
</tr>
</tbody>
</table>

Source: Authors' own review and synthesis of the literature. *Note: Due to a large amount of the referenced literature in Table 1 this literature list is available upon request to the authors.*
4. DATA AND METHODOLOGY

4.1 Data collection and survey instrument

The data was collected through a web-based survey in the period between July 2011 and October 2011. In collaboration with the TNC and their 11 local purchasers, 328 suppliers worldwide were identified as the target population for the research. From the identified population of 328 suppliers, the final obtained sample of 157 suppliers corresponds to a 47.9 per cent response rate. Table 2 provides more detailed information on the employed survey instrument and its administration.

Table 2: Summary of survey administration details

<table>
<thead>
<tr>
<th>Pre-testing</th>
<th>Local languages</th>
<th>Number of reminders</th>
<th>Total number of questions</th>
<th>Number of SEM constructs</th>
<th>Number of SEM items</th>
<th>SEM item to sample ratio</th>
<th>Average survey duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>TNC supply management and a sub-group of suppliers</td>
<td>Slovenian, English, Serbian, Russian</td>
<td>2 reminders around week 2 and week 6</td>
<td>18 questions</td>
<td>6 constructs (from Figure 1)</td>
<td>Originally 41 items for 6 constructs; later 8 items dropped</td>
<td>Originally: 1: 3.8, Final model: 1: 4.8</td>
<td>19 minutes 16 seconds</td>
</tr>
</tbody>
</table>

Source: Authors’ own work.

Claro’s (2004) original survey instrument included 60 items within 6 constructs (as shown in Figure 1). In our case, the main adjustment of Claro’s survey instrument was linked to the first construct of the business network context. In the original survey instrument, this construct was operationalized with 25 items. Due to a different supply nature of our TNC supply network and a smaller population of their suppliers, we reduced the 5 separate types of network actors to a single network level, which we then linked to the 5 different information types. In addition to this, we have also extended the business network context by adding another dimension, related to the so-called network spillover effects or network externalities, based on the work by Anderson, Håkansson & Johanson (1994). Thus, in our research the business network context is operationalized through 2 dimensions – the dimensions of business network information (5 items) and network spillover (externality) effects (4 items). Please see Appendix for a complete overview of the 41 questionnaire items, and Table 3 for a summary of their theoretical background.

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2 Using the [www.1ka.si](http://www.1ka.si) web free access application developed at the University of Ljubljana, Faculty of Social Sciences.

3 These items were related to 5 different groups of network actors – i.e. first-tier suppliers, other suppliers, other buyers, buyers’ customers, and other agents of the cooperative network subgroup – and related to 5 types of information for defining prices, quantities, logistic operations, production processes, and foreseeing future actions in the buyer-supplier relationship.
Table 3: Scales and their theoretical background for the 41 questionnaire items

<table>
<thead>
<tr>
<th>Construct</th>
<th>Scale / items</th>
<th>Key references</th>
<th>Cronbach α</th>
<th>AVE*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business network context</strong></td>
<td>7-point Likert scale</td>
<td><em>Business network information:</em> Anderson, Håkansson &amp; Johanson (1994); Blankenburg et al. (1999) <em>Network spillover effects:</em> Anderson, Håkansson &amp; Johanson (1994)</td>
<td>0.82</td>
<td>0.68</td>
</tr>
<tr>
<td><strong>TSI</strong></td>
<td>7-point Likert scale</td>
<td><em>Interorganizational and interpersonal trust:</em> Zaheer, McEvily &amp; Perrone (1998)</td>
<td>0.76</td>
<td>0.65</td>
</tr>
<tr>
<td></td>
<td>6 items</td>
<td><em>Joint planning:</em> Heide &amp; Miner (1992) <em>Joint problem solving:</em> Lush &amp; Brown (1996); Heide &amp; Miner (1992)</td>
<td>0.73</td>
<td>0.61</td>
</tr>
<tr>
<td><strong>Trust</strong></td>
<td>7-point Likert scale</td>
<td><em>Response to temporal changes, robustness, versatility, proactiveness:</em> Golden &amp; Powell (2000)</td>
<td>0.85</td>
<td>0.73</td>
</tr>
<tr>
<td></td>
<td>6 items</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Joint actions</strong></td>
<td>7-point Likert scale</td>
<td><em>Growth and profitability:</em> Mohr &amp; Speckman (1994); Claro (2004) <em>Satisfaction:</em> Bensaou &amp; Venkatraman, 1995; Zaheer, McEvily &amp; Perrone, 1998</td>
<td>0.81</td>
<td>0.70</td>
</tr>
<tr>
<td></td>
<td>6 items</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Flexibility (of adjustment)</strong></td>
<td>7-point Likert scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6 items</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Business performance</strong></td>
<td>7-point Likert scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8 items</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Adopted from Claro (2004) and authors’ own review and synthesis of the literature. *Note: Growth and profitability measures were operationalized as Likert statements, not as financial data.

In terms of validity, content validity was checked through a discussion of the scales and individual items with a scientific panel from University of Ljubljana, Technical University of Eindhoven and MIT, and Harvard University. Next, convergent validity was tested through exploratory factor analysis. In this step 8 items were omitted from the final measurement model, based on the guidelines by Hair et al. (1998) related to the appropriate levels of total explained variance and factor loadings, as well as due to linear dependence of a few items. Thus, the final number of 33 employed items in SEM corresponds to a 1: 4.8 item-to-sample ratio. Discriminant validity was additionally tested by calculating the level of the average variance extracted (AVE), which was above the 0.6 for all 6 constructs. Table 3 also shows the calculated Cronbach alpha reliability statistics. Lastly, we have also tested the quality of the whole measurement model within Mplus prior to running complete SEM. The measurement model testing in Mplus produced the following goodness-of-fit statistics: Chi-square: 1801; df =480; Chi-square/df = 3.75; p = .000; CFI = .946; TLI = 0.938; RMSEA = 0.0377.

4.2 Sample characteristics

Table 4 provides a brief overview of the key descriptive characteristics of the suppliers in the sample (n=157). As can be seen from the data in Table 4 almost half of the suppliers to the focal TNC come from Slovenia (47%), followed by Russia (22%) and Serbia (12%). The suppliers from the remaining EU countries represent jointly about 17% of the sample. Two
thirds of the suppliers supply mainly to production in Slovenia, followed by Russia (20%) and Serbia (13%).

Table 4: Supplier sample descriptive statistics (n=157)*

<table>
<thead>
<tr>
<th>Country of supplier</th>
<th>Slovenia: 47%; Russia: 22%; Serbia: 12%; Rest of EU: 17%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Most important TNC unit being supplied</strong></td>
<td>Slovenia: 67%; Serbia: 13%; Russia: 20%</td>
</tr>
<tr>
<td><strong>Type of supplies</strong></td>
<td>Components for gluing: 17%; Painted steel panels: 9%; Steel and black metallurgy: 9%; Other installation services: 9%; Glass and mineral wool: 8%; Protection foils: 7% etc.</td>
</tr>
<tr>
<td><strong>Length of supplying to TNC</strong></td>
<td>Average length: 6.8 years (std. deviation: 5.1 years)</td>
</tr>
<tr>
<td><strong>Annual turnover of supplier in the last 3 years</strong></td>
<td>22.4% of suppliers with average annual turnover of up to 25,000 EUR; 44.9% of suppliers with turnover up to 20 million EUR; 18.4% of suppliers with turnover over 20 million EUR</td>
</tr>
<tr>
<td><strong>Average number of employees</strong></td>
<td>36.5% of suppliers have between 10 and 50 employees, 23.1% between 0 and 9 employees, and 21.1% between 51 and 250 employees</td>
</tr>
<tr>
<td><strong>Share of total revenues generated by the focal TNC</strong></td>
<td>For 50% of suppliers the TNC represents up to 1% of revenues, for additional 32% of suppliers it represents up to 5% of revenues</td>
</tr>
</tbody>
</table>

Source: Authors’ own analysis of the data set. *Note: more information about the sample is available upon request to the authors

In terms of supplier size, most of them are small (36.5%) or medium-sized (23.1%) in terms of the number of employees, usually with an average annual turnover of between 500,001 and 20 million EUR. For one half of the sampled suppliers the focal TNC represents up to 1% of their revenues, while for 82% of the sampled suppliers the TNC represents up to 5% of their annual revenues.

5. RESULTS

Based on the conceptualized model in Figure 1, and its specification in Table 1 the final results of the SEM testing are shown in Figure 2. Furthermore, the following goodness-of-fit statistics were produced: Chi-square: $1857; df =486; Chi-square/df = 3.82; p = .000; CFI = .964; TLI = 0.959; RMSEA = .0503.$
As can be seen from the results in Figure 2 only the relationship between *flexibility (of adjustment)* and *performance* is non-significant. Related to the *business network context* it most strongly affects *transaction-specific investments* ($\gamma = .55$), and less *trust* ($\gamma = .35$) or *flexibility (of adjustment)* ($\gamma = .24$). With regards to the former, the coefficient between *transaction-specific investments* and *joint actions* ($\beta = .63$) is the highest in the model, and shows a strong impact of *TSI* on *joint actions*. *Trust* significantly impacts *flexibility (of adjustment)* ($\beta = .49$), however it has a much weaker effect on *joint actions* ($\beta = .49$); where this relationship was actually non-significant in Claro’s results. While *flexibility (of adjustment)* quite strongly impacts *joint actions* ($\beta = .58$), it does not seem to have a direct influence on performance (whereas this relationship was quite strong in Claro’s results with $\beta = .69$; despite his sample also being mainly comprised of small suppliers). On the other hand only *joint actions* seem to directly influence *performance* in our model ($\beta = .54$).

6. IMPLICATIONS OF THE RESULTS

The results of our SEM confirm the importance of the *business network context* as an important determinant of supply relationship characteristics, business performance, competitiveness and even satisfaction. Based on Best’s (1990) perspective on the *new competition*, and sociology’s concept of *embeddedness* (Granovetter, 1985), dyadic buyer-supplier relationships seem to be heavily influenced by the network of both the buyer and the supplier. This holds also important implications for the management of such relationships (Wathne & Heide, 2004).

From the suppliers’ perspective the *information* obtained from the network of their suppliers, buyers, competitors and other network actors is important in determining the decisions on *pricing, quantities, production and logistic operations* to a particular buyer (in our case the focal TNC), as well as even providing them queues for estimating *future actions* of the specific buyer (also influenced by its network). In this respect the perspective of
networks as being information repositories (Gulati, 2007) seems to be particularly important. On the other hand the importance of network externalities in motivating the network-based behavior of a particular supplier highlights the importance of interaction, not atomized individualism in supply relationships (Claro & Claro, 2010). Furthermore, the supplier’s membership and position in the network offers important network externalities (spillovers) which influence the behavior of the supplier at the dyadic buyer-supplier relationship level, as well as signal its current structural network position and motivate its future network behavior. This is directly related to Burt’s (1995) research on network structures and actors’ structural positions, and at the same time outlining the question of motivation of the actor in a supply relationship which needn’t be only related to direct economic benefits.

Another important implication of our SEM results is also linked to the issue of collaborative behavior in the supply relationship (Kim, 1999), which calls for both joint actions and flexibility (of adjustments) (Claro & Claro, 2010). In this regard transaction-specific investments are decided upon, based on the business network context, and importantly determine the nature of joint actions. As our results show the whole business network context, not just past experience and buyer-related information, influence the level of trust in a specific buyer-supplier relationship. This holds important implications for the study of the antecedents and determinants of trust in buyer-supplier relationships, where most of the research thus far was conducted only by incorporating the dyadic relationship level. While the study on trust in exchange relationships has mainly focused on the multiple levels of analysis – i.e. interpersonal and interorganizational trust – the complex and sometimes blurred relationship between trust and performance Zaheer, McEvily & Perrone (1998) may be more easily understood by incorporating multiple units of analysis – i.e. dyad and network – and more specifically incorporating a business network perspective.

Lastly, performance in terms of profitability and growth of sales, as well as in terms of satisfaction and overall competitiveness of the supplier seems to be directly affected by the degree of joint actions, and only indirectly by flexibility (of adjustments) through joint actions. While this may in part be linked to including also satisfaction in the construct of performance, we have used the same scales as Claro (2004), where satisfaction was also included in the performance measurement. However, while Claro’s results, as well as an extensive body of literature (see Table 1) suggest a direct impact of both joint actions and flexibility (of adjustments) on performance, the current economic crisis may have changed these relationships. In addition, while Claro’s research also mainly rested on small suppliers within the Dutch potted plant supply network, in our case the buyer represents a large TNC. Thus, there is also a difference in supplier (small) and buyer (large TNC) sizes in our studied relationships. Assuming a changed context due to the crisis, one might argue that joint planning and joint problem solving have a more direct impact on overall performance, while flexibility (of adjustments) should be seen more as their determinant. In any case, the

Due to the small sub-sample of large suppliers in our data set, we could directly check the differences in our SEM between large and smaller suppliers.
difference of our results only emphasizes Rahaman’s (2011) view on how existing theories should be cross-validated in new crisis contexts.

7. LIMITATIONS OF THE RESEARCH

The first limitation of our research is linked to incorporating only the supplier perspective in our analysis, whereas Claro (2004) surveyed both the suppliers and the buyers, thus analyzing both sides of the dyad. In our case, the results from the supplier side were only discussed with the focal TNC purchasers (buyers) due to their count being only 11. As already alluded to in the discussion of the results, the second limitation of our research may be linked to the timing of our research, which took place during a severe economic crisis in Europe in 2011. While undoubtedly the crisis context has influenced our results the timing of our research on the other hand also provides a new context for the research.

As also outlined by Claro & Claro (2010) in their research limitations, further research should pay more attention also to the issue of the quality of the obtained network information – where at present all the business network information is assumed to be correct and of high quality – and causality between i.e. collaboration and obtaining information.

Lastly, due to the very nature of TNC operations cross-cultural differences should also be more directly incorporated into the model, not just as control variables, but also as a construct which i.e. directly impacts trust through differences in psychic distance (Dow & Karunaratna, 2006).5

8. CONCLUSION

The purpose of this paper was to analyze selected elements of buyer-supplier relationships within a specific TNC business-to-business (B2B) setting, vis-à-vis their impact on business performance and competitiveness. We have focused on the importance of the business network context and shown how it impacts transaction-specific investments, trust and (less strongly) flexibility in buyers-supplier relationships. This confirms that dyadic buyer-supplier relationships are embedded and influenced by their wider business network context, and should not be analyzed only at the dyadic level. In such a network embedded relational context, trust is shown to be more strongly linked to flexibility (a key element of the buyer-supplier relationship), and less strongly to joint actions. Furthermore, flexibility seems to impact performance only indirectly through joint actions, while the latter has a direct impact on performance, as well. These results highlight the importance of a deeper understanding and analysis of the current crisis context, which puts existing buyer-supplier (dyadic) relationship theories to a new test, and undoubtedly calls for more current research.

5 At present we were unable to pursue this research stream, since a large part of our n=157 sample were local (mainly Slovenian) suppliers supplying to local TNC units (mainly Slovenian).
9. LITERATURE


APPENDIX

1. Construct of business network context (2 dimensions)

   Business network information:
   a) The information from our business network enables us to make better decisions regarding prices of products and services, which we supply to the selected TNC.
   b) The information from our business network enables us to make better decisions regarding quantities of products and services, which we supply to the selected TNC.
   c) The information from our business network enables us to make better decisions regarding logistic operations of products and services, which we supply to the selected TNC.
d) The information from our business network enables us to make better decisions regarding production processes, related to products and services, which we supply to the selected TNC.
e) The information from our business network enables us to better foresee future actions of the selected TNC.

Network spillover effects (externalities):

a) What we learn from working with this TNC is and will be useful in our other business relationships (which are not connected to this TNC).
b) By working closely with this TNC, our firm becomes more attractive to our other partners (which are not connected to this TNC).
c) Competences developed in working with this TNC are and can be used to enhance the productivity in all our firm’s relations (which are not connected to this TNC).
d) Competences developed in working with this TNC are and can be used to enhance the competitiveness in all our firm’s relations (which are not connected to this TNC).

2. Construct of transaction-specific investments (2 dimensions)

TSI in physical assets:

a) We have made significant investments to supply products and services to this TNC.
b) Our production processes have been tailored to supplying to this TNC.
c) We have made significant investments related to internal processes and the organization of products and services in order to supply to this TNC.

TSI in people:

a) We have invested a lot of time and energy in order to get to know the business practices and processes of this TNC.
b) Supplying to this TNC has called for additional activities, training and/or education for at least some of our employees.
c) If we would stop supplying to this TNC, we would be wasting a lot valuable knowledge about their method of operation.

3. Construct of trust (2 dimensions)

Interorganizational trust:

a) This TNC unit has always been evenhanded and straightforward in their dealings with us.
b) Based on past experience we can rely on promises and agreements made with this TNC unit.
c) This TNC unit is a trustworthy partner.

Interpersonal trust:

a) My contact person at this TNC unit has always been evenhanded and straightforward in their dealings with me.
b) My contact person at this TNC unit is a trustworthy person.

c) I have faith my contact person at this TNC unit also looks out for the interests of our organization.

4. Construct of joint actions (2 dimensions)
   
   Joint planning:
   a) Our organization plans volume demands for the next season together with this TNC unit.
   b) Our organization exchanges long-term strategic plans related to new products and services with this TNC unit.
   c) This TNC unit provides us with their plans and estimates of sales for the products and services which we supply to them.

   Joint problem solving:
   a) We deal with problems with this TNC unit jointly, as they arise in the business relationship.
   b) In most aspects of our supply relationship the responsibility for getting things done is shared.
   c) We and this TNC unit are committed to (continuous) improvements that may benefit our relationship as a whole.

5. Construct of flexibility

   a) How well does your supply relationship with this TNC unit respond to day-to-day operational changes (with minimal impact on performance)?
   b) How well does your supply relationship with this TNC unit respond to occasional (i.e. monthly, quarterly) tactical changes (with minimal impact on performance)?
   c) How well does your supply relationship to this TNC unit respond to one-way, long-term strategic changes (with minimal impact on performance)?
   d) How strong and robust is your supply relationship with this TNC unit in terms of sudden and substantial changes?
   e) How versatile (range of possible responses) is your supply relationship with this TNC unit in terms of foreseen changes?
   f) How proactive (self-initiated) is your supply relationship with this TNC unit in improving the flexibility of your supply relationship?

6. Construct of performance (3 dimensions)

   Perceived satisfaction:
   a) How satisfied are you with supply chain management and/or purchasing functions at this TNC unit?
   b) How satisfied are you with the communication quality and openness with people from this TNC unit?
   c) How satisfied are you with the way in which problems are solved with this TNC unit?
d) How satisfied are you with the business terms (i.e. prices, quantities, lead times etc.) in this supply relationship?

Profitability and competitiveness:
   a) Expected profitability of the supply relationship with this TNC unit in the last 3 years.
   b) Increasing the competitiveness of your supply relationship with this TNC unit.
   c) Increasing the overall competitiveness of your organization.

Growth rate:
   a) Development of sales volume with this Trimo unit in the last 3 years.