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# DETERMINANTS OF SUPPLIER-BUYER RELATIONSHIP COMPETITIVENESS IN TRANSNATIONAL COMPANIES

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**ABSTRACT:** *Effective supplier-buyer relationship management should not be seen only in terms of cost and financial measures, as outlined by Transaction cost economics, but also in terms of other ("softer") relational benefits, like e.g. more comprehensive information sharing, higher levels of trust, better cooperation and increased relationship flexibility. This second view is grounded in both Relationship marketing and Resource-advantage theory. Surprisingly, only a few research papers on supplier-buyer relationships address both of these perspectives equally, as well as in terms of long-term competitiveness (vis-à-vis a traditional short-term performance). The purpose of this paper is to analyze business relationship determinants of supplier-buyer relationship competitiveness, where we study the impact of (1) relationship-based information exchange, (2) network spillover effects, (3) transaction-specific investments, (4) trust, (5) cooperation (joint actions) and (6) flexibility on perceived (7) supplier-buyer relationship competitiveness. In this regard the main research question of our study is: Which relational and transactional dimensions determine supplier-buyer relationship competitiveness, as well as how strongly? To provide the answer this research question we employ an exploratory-type Partial Least Squares (PLS) regression in conjunction with a novel perspective of network spillover effects, as a set of independent variables in our model. The data set consists of a sample of 130 international suppliers (approx. 30 % response rate) connected to a transnational company (TNC) headquartered in Slovenia, which operates in the steel construction solutions' industry. Our results clearly identify a relational and a transactional set of determinants of supplier-buyer relationship competitiveness, with the former having a significantly higher impact on competitiveness than the latter. With regards to specific dimensions associated with this relational component network spillover effects, as well as trust turn out to be key determinants of supplier-buyer competitiveness.*

**Key words:** *Buyer-supplier relationships, transnational companies, competitiveness, determinants, NIPALS algorithm, PLS regression.*

**JEL classification:** F23

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## 1. INTRODUCTION

Supplier-buyer relationships have today become the "backbones of economic activities in the modern world" (Nagurney, 2010, p. 200) and a focal point of organizational competitiveness, performance and long-term business success (Veludo, Macbeth & Purchase, 2006). According to Gadde & Håkansson (2001, p. 4) for example, "the competitiveness and profit-generating capacity of the individual firm is highly dependent on its ability to handle the supply side". Similarly, Griffith & Myers (2005, p. 254) position the management of supplier-buyer relationships "as a primary driver of both customer and shareholder value". This is particularly true due to the increased adoption of "globalization and outsourcing strategies" (Tang & Musa, 2011, p. 25) leveraged by company specialization and focus "on their core competencies" in order to withstand today's competitive market pressures (Blome & Schoenherr, 2011, p. 43). This has become particularly apparent in international contexts, dominated by transnational companies (TNCs), as key players in the organization of exchanges across markets worldwide (Hymer, 1960).

Moreover, the transitivity of company's competitive advantage (Tang & Musa, 2011) has not only transformed simple linear supply chains into complex networks of supplier-buyer relationships (Nagurney, 2010), but has also made the management of supplier-buyer relationships "a key component of corporate strategy, competitive advantage and success" (Blome & Schoenherr, 2011, p. 43). This has in turn lead managers as well as researchers to address the issue of the relational determinants of competitiveness in supplier-buyer relationships.

However, as Autry & Golicic (2010) have shown, the link between supplier-buyer relationship management and company performance/competitive advantage is by no means a simple one, let alone a linear one, so they have in turn urged for more research related to this issue. In this regard, e.g. Nagurney (2006, 2010) has emphasized a need to move beyond the traditionally dyadic relationship perspective towards an upgraded network view where networks are not simply the sum of dyadic relationships. On the other hand, Autry & Golicic (2010) have also emphasized a need to study the dynamic nature of the link between supplier-buyer relationship management and company performance/competitive advantage by addressing the mechanism of so called relationship spirals, where the link between relationship strength/quality and performance is a feed-forward/feed-back process leading to long-term competitiveness of the relationship. Lastly, Jap (1999, 2001) has in particular addressed the question of pie-sharing relational mechanisms in competitive supplier-buyer relationships, and called for a deeper understanding of such mechanisms.

The purpose of this paper is to analyze business relationship determinants of supplier-buyer relationship competitiveness, specifically the impact of relationship-based information exchange, network spillover effects, transaction-specific investments, trust, cooperation (joint actions) and flexibility on perceived supplier-buyer relationship competitiveness. In this regard the main research question of our paper is: *Which relational dimensions and transactional dimensions - as well as how strongly - determine supplier-buyer relationship competitiveness?*

To provide the answer to this research question we employ an exploratory-type Partial Least Squares (PLS) regression in conjunction with a novel perspective of network spillover effects, as an additional set of determinants of supplier-buyer relationship competitiveness. Our research design follows both Nagurney's call for incorporating a network perspective in the study of supplier-buyer relationships, as well as Jap's stream of research on specific relational mechanisms driving competitive advantage in supplier-buyer relationships, particularly in the context of building long-term competitiveness of such relationships.

## 2. THEORY AND CONCEPTUAL FRAMEWORK

Given the exploratory nature of our research this section first provides a brief theoretical background for our research, followed by a description of the conceptual framework relevant to our research with corresponding research hypotheses.

### 2.1 Theoretical background

The impact of supplier-buyer relationships on organizations can be analyzed from both operational and strategic perspectives (Carr & Pearson, 1999; Lambert & Cooper, 2000). From an operational perspective, for example, Kannan & Tan (2006) mainly emphasize the impact of good supplier-buyer relationships on quality and service delivery, and/or costs. From a strategic perspective, they emphasize sustainable continuous improvements, innovation, enhanced competitiveness, and increased market presence (Kannan & Tan, 2006).

In terms of supplier-buyer performance and/or competitiveness, Lemke, Goffin & Szwejczewski (2003, p. 12) emphasize that suppliers have an important impact on the overall performance and/or competitiveness of the industrial organizations, not only through minimizing costs, but also through joint product, service and process development, as well as continuously improving quality across all business levels (also see Yang et al. 2009). Additionally, Lambert & Cooper (2000) define the value of good supplier-buyer relationships not only in terms of cost, but also in terms of product and service information which adds value. This is especially important in terms of the so-called knowledge-based perspective of supplier-buyer relationships (see Yang et al., 2009), and is further related also to the so called relationship marketing paradigm which we described more systematically in the next section.

### 2.2 Conceptual framework and hypotheses

Autry & Golicic (2010, p. 87) point to three key perspectives which link specific relationship dimensions to performance and/or competitiveness; and are particularly relevant for our conceptual framework and research approach. The first one is the *Relationship*

*marketing theory* which emphasizes the importance of long-term and value-adding relationships. These have a superior impact on performance and/or competitiveness outcomes (Morgan & Hunt, 1994). This should be compared to "weak-lined, short-term transactions" (Autry & Golicic, 2010, p. 89; *cf.* Berry & Parasuraman, 1991; Morgan & Hunt, 1994). Within such a perspective Morgan & Hunt's (1994) *Trust-commitment theory* has become the cornerstone of the relationship marketing paradigm. While initially trust was mainly seen as a mediator to the antecedents and determinants of supplier-buyer relationship performance (Morgan & Hunt, 1994), Hutt & Speh (2004) later placed more emphasis on the long-term and value-adding nature of such relational exchanges. In such relationships "trust is central" (Morgan & Hunt, 1994, p. 24) and impacts relationship outcomes by reducing opportunistic behavior and increasing acquiescence (Morgan & Hunt, 1994), reducing negotiation and monitoring costs (Zaheer, McEvily & Perrone, 1998), as well as reducing conflict (Zaheer, McEvily & Perrone, 1998). According to Kingshott "trust signifies the transformation from an unpredictable and indeterminate relationship to one comprising relational stability as it reflects the ability to forecast the motives and behavior of others" (2006, p. 726). This aspect of trust has been described as trust based on identifying expectations and is believed to be central to cooperation (Ekar, 2007). This leads us to a link between trust and competitiveness via trust's direct impact on cooperative behavior, especially in industrial supplier-buyer relationships (Anderson & Narus, 1990; Morgan & Hunt, 1994). Drawing on the multi-level nature of trust in organizational settings – where Zaheer, McEvily & Perrone (1998) point to theoretically and empirically different operational modes of interpersonal and interorganizational trust vis-à-vis relationship outcomes – the following hypothesis was formed:

Research hypothesis 1: *Trust, both at the interorganizational and interpersonal level, has a positive impact on supplier-buyer relationship competitiveness.*

Within the relationship marketing perspective the role of communication, especially information sharing, has also been specifically emphasized (Morgan & Hunt, 1994). On the one hand, withholding information can be actually understood as a dimension of passive opportunistic behavior (Jap & Anderson, 2003). We can thus say that there is a close link between the exchange of information and the lack of opportunistic behavior in business relationships, particularly supplier-buyer relationships, since "the overall purpose of monitoring is to reduce opportunism by virtue of reducing information asymmetry" (Wathne & Heide, 2000, p. 43). On the other hand, several prominent scholars in the marketing literature have emphasized the positive link between exchange of information (communication) and trust. Thus, past exchange of information leads to higher levels of trust between actors (Anderson & Narus, 1990), while a trusting relationship atmosphere further encourages better, more pristine and open exchanges of information (Mohr & Spekman, 1994). Anderson & Narus (1990) further pointed to a dynamic circular view between information exchange and trust, which Seppänen, Blomqvist & Sundqvist (2007) described as a reciprocal relationship. In terms of relationship outcomes, Selnes (1998) believes that open and timely communication had a positive influence on

the level of satisfaction of all actors involved in the relationship, as well as other relationship outcomes.

Research hypothesis 2: *Relationship-based information sharing has a positive impact on supplier-buyer relationship competitiveness.*

The second theoretical perspective discussed by Autry & Golicic (2010) is perhaps the most intuitively linked to competitiveness. This is the so-called *Resource-advantage theory* of competition (Hunt & Morgan, 1995, 1996, 1997; Hunt, 2000). More recently, this theoretical perspective has been directly integrated to the supply chain literature by Hunt & Davis (2008, 2012), merging the two disciplines together. Hunt and Morgan have in their rich stream of work addressed the shortcomings of a "static" understanding of market competition and provided their "dynamic" alternative. Within this perspective relationships and relationship strength were positioned as a key resource for organizational competitive advantage building (Hunt & Morgan, 1995). More recently, Hunt & Davis (2008) have explicitly called for the employment of the *Resource-advantage theory* in the supply chain management literature. In this regard, Hunt & Davis (2012, p. 16) have linked this organizational capability perspective specifically to supply chain management through Hunt & Morgan's (1995) *Resource-advantage theory.* Building on Hunt & Davis' (2008, 2012) work, relationships should not simply be viewed as a crucial organizational resource which contributes to sustainable competitive advantages by facilitating the flexibility of embeddedness and dissembeddedness. This is because, according to Heidenreich (2012), the TNC's capability to switch between different types of embeddedness/disembeddedness[3] is crucial to its competitive advantage. They should actually be managed as complex social conduits of (1) activity links/patterns, (2) resource ties/constellations and (3) actor bonds/webs. Such a complex pattern of interaction – operationalized within the marketing literature by the ARA interaction model (Håkansson & Snehota, 1995) – requires collaborative behavior which creates long-term, trusting and value-adding relationships, which can be seen as key intangible organizational resources (Makovec Brenčič, 2000; Morgan & Hunt, 1994; Hunt & Morgan, 1995).

In supplier-buyer contexts collaborative behavior leads to "pie expansion" where mutually beneficial strategic competitive advantages are created between suppliers and buyers (Jap, 1999, p. 461). This can also be related to trust and is consistent to Anderson & Narus' (1990, p. 45) description that "once trust is established, firms learn that coordinated, joint efforts will lead to outcomes that exceed what the firm would achieve if it acted solely in its own interest".

Dwyer, Schurr & Oh (1987, p. 13) saw joint actions – in the form of "joint efforts related to both performance and planning over time" – as a core relational exchange mechanism,

[3] In this context, the concept of embeddedness is employed as an economic sociology concept and relates to the structural and relational influence of "ongoing systems of social relations" on social and economic actions (Granovetter, 1985, p. 487; also see Zukin & DiMaggio, 1990, for a typology of different types of embeddedness).

linking suppliers and buyers in successful and long-term relationships. More specifically, collaborative behavior impacts relationship outcomes by increasing efficiency through better coordination and planning, and higher flexibility and adjustments which all lead to a sustainable long-term competitive advantage (Nyaga, Whipple & Lynch, 2010).

Research hypothesis 3: *Collaborative behavior in the form of joint planning and joint problem solving has a positive impact on supplier-buyer relationship competitiveness.*

Flexibility is a key performance indicator and outcome of an efficient and competitive operation system – like e.g. supplier-buyer relationships (Bertrand, 2003). In operational terms flexibility is not only crucial to deal with increasing market and demand uncertainty (Bertrand, 2003), but also to constantly adapt to transient market conditions (Swafford, Ghosh & Murthy, 2006). This can be related to both Hunt & Morgan's (1995) *Resource-advantage theory of competition* – which emphasizes this transient competition perspective – as well as Hunt & Davis' (2012) understanding of flexibility as a key organizational capability in a supply setting. Furthermore, in relational governance terms, Cannon, Achrol & Gundlach (2000) see flexibility as a particular type of social cooperative norm. Based on a sample of 396 buyer-seller relationships they were able to show that flexibility, as a particular type of social cooperative norm, positively affects relationship outcomes in cases of both high and low level of transaction uncertainty (Noordewier, John & Nevin, 1990). A similar perspective on flexibility, as a relational norm, was outlined by Heide & John (1992).

Research hypothesis 4: *Relationship flexibility has a positive impact on supplier-buyer relationship competitiveness.*

The last, third, perspective discussed by Autry & Golicic (2010) is the traditional *Transaction cost economics theory* which balanced internalization and externalization costs. In this regard, the most efficient supplier-buyer relationship was the one based on the lowest possible total cost – where internal operations costs were balanced-off with the costs of purchasing, planning, adapting and monitoring externally-transacted operations (Williamson, 1996). Addressing the question of interorganizational competitive advantage, Dyer & Singh (1998, p. 660) saw transaction-specific investments as one of "the four potential sources of interorganizational competitive advantage". They linked the role of transaction-specific investment particularly to the creation of strategic relational rents as sources of sustainable long-term competitive advantage (Dyer & Singh, 1998). Yet, the transaction cost perspective needn't necessarily be an alternative to the relationship perspective in studying supplier-buyer relationships, since the ultimate goal of efficient supplier-buyer relationships is to achieve a socially desirable and economically acceptable performance outcome, which in turn contributes to a sustainable competitive advantage, Jap (2001) drew on the earlier work of Dyer (1996) and Dyer & Singh (1998) to show how suppliers and buyers "interrelate the use of idiosyncratic investments [transaction-specific investments], knowledge-sharing processes [relation-

ship-based information], complementary capabilities and effective governance to create competitive advantages" (Jap, 2001, p. 19). This perspective has also been taken up by Autry & Golicic's relationship spirals perspective (2010, p. 90), who emphasize that "the iterative sequencing of the relationship strength and relationship-specific performance constructs as a spiral is supported via the integration of social capital and transaction cost economics theories".

Research hypothesis 5: *Transaction-specific investments, both into physical assets and people, have a positive impact on supplier-buyer relationship competitiveness.*

Lastly, our conceptual framework also importantly addresses the issue of network spillover effects, because dyadic supplier-buyer relationships are not only embedded and constrained by their wider networks (Anderson, Håkansson & Johanson, 1994; cf. Granovetter, 1985), but the actors involved also "use their network consciously to support the business done in specific relationships" (Claro & Claro, 2011, p. 514). Within their respective networks individual actors also develop different network identities. They in turn relate "to the perceived attractiveness (or repulsiveness) of a firm as an exchange partner due to its unique set of connected relations with other firms, links to their activities, and ties with their resources" (Anderson, Håkansson & Johanson, 1994, p. 4). This sort of understanding formed the conceptual basis for our analysis of the impact of network spillover effects on supplier-buyer relationship competitiveness.

This can be connected to Burt's (1995) research on network structures and actors' structural positions, and further connects to the question of motivation of a particular supplier in a supply relationship. This helps to explain signaling effects, where "transaction with firms of known reputation and capabilities" may be a motivation behind a given supplier-buyer relationships and its TSIs (Claro & Claro, 2011, p. 515). In their discussion of the determinants of attraction in supplier-buyer relationships, Hald, Cordón & Vollmann (2009) focused on the issue of perceived expected value of supplier-buyer relationships. This perceived expected value can, among other things, also be association related. In this regard, a supplier may increase its legitimacy by being associated with a particular buyer (Hald, Cordón & Vollmann, 2009, p. 963).

Providing a more systematic typology of possible indirect value functions of supplier-buyer relationships, Walter, Ritter & Gemünden (2001, p. 368) outlined three different indirect functions, which directly correspond to our network spillover effects, namely: (1) the market function (creating new relationships based on references); (2) the scout function (obtaining information from other boundary spanning actors on potential new relationships); and (3) the access function (relationships enabling direct access to other relationships, resources and/or activities).

Research hypothesis 6: *Network spillover effects have a positive and substantial impact on supplier-buyer relationship competitiveness.*

## 3. DATA AND METHODOLOGY

### 3.1 Data

Data was collected from a sample of 130 international suppliers to a particular TNC between June and August 2011 (approx. 30 % response rate; convenience-based-type sample) using a web-based questionnaire in Slovenian, English, Serbian and Russian language. The surveyed suppliers were all connected to a particular TNC headquartered in Slovenia, with manufacturing operations in Slovenia, Serbia, Russia and United Arab Emirates. The TNC produces metal constructions and components, and is considered a leading developer of unique and complete solutions related to steel constructions, roof systems, façades, steel containers, as well as complete sound insulation solutions in Eastern Europe. It also has a strong presence in selected Western European markets and in Russia. In 2011 the TNC employed over 1,000 people world-wide and generated revenues in excess of 178 million EUR.

### 3.2 Methodology

The data set was analyzed using Partial Least Squares (PLS) univariate regression modeling,[4] based upon the specific model of supplier-buyer relationship management developed for the Dutch potted plant industry. This model was first tested as a covariance-based structural equation model (SEM) by Claro in 2004, and subsequently by Claro & Claro (2010) as a simpler Ordinary Least Squares (OLS) regression model.

Claro's (2004) original model was chosen due to its unique incorporation of network-embedded downstream and upstream information exchange. Claro named this simply as "the business network" (ibid. p. 176), which is in accordance with Gulati's (2007) understanding of networks being important information repositories. The inclusion of this network-information-based perspective was an important contribution to the analysis of supplier-buyer relationships, which were (and still are) traditionally analyzed at a dyadic level. Such information exchange was first modeled as a key exogenous latent construct within Claro's (2004) PLS SEM testing, with the final dependent latent construct in the model being performance. In their extension of this analysis, Claro & Claro (2010) further analyzed this type of information exchange within their OLS regression testing. Here, supplier-buyer collaboration was chosen as the dependent (compounded) variable in their modeling.

Our PLS regression model includes seven constructs from the original 2004 Claro model. It further includes an adjustment of Claro's (2004) complex five-level[5] business network

[4] Using the *plsreg1* algorithm in R, ver. 2.15.2.

[5] The five levels of upstream and downstream information exchange observed the information exchanged with (1) first tier suppliers, (2) other suppliers (e.g. second tier), (3) other buyers, (4) buyers' customers, and (5) agents of the cooperative network (brokers) (Claro, 2004, pp. 176-177).

construct to the specifics of the star-like, transnational supplier-buyer network research setting.[6] Next, four variables related to network spillover effects, adapted from Anderson, Håkansson & Johanson's (1994, p. 12) concept of the anticipated constructive effects of network identity, were also added to our analysis. The inclusion of network spillover effects further extends Claro's (2004) business network context for possible sources of suppliers' motivation in the relationship with the focal TNC.

Lastly, Claro's (2004) original performance variables were replaced by variables related to supplier-buyer relationship competitiveness in order to incorporate a more long-term perspective of supplier-buyer relationships (as opposed to a more short-term perspective of performance), as well as to address a key managerial challenge faced by TNCs. Three variables related to various aspects of supplier-buyer relationship competitiveness (see Table 1) were transformed into a single compounded variable (using simple average), based on satisfactory convergent validity (AVE=0.718) and internal reliability statistics (Cronbach's alpha=0.804; composite reliability=0.884). This compounded variable was then used as the dependent variable in our PLS regression analysis.

In terms of the methodology employed, PLS regression was used as opposed to traditional OLS regression due to the exploratory nature of our analysis. Our analysis should be seen as an adjustment and considerable substantive expansion of Claro's (2004) original model testing. Furthermore, since Claro's (2004) model was originally conceptualized and tested as a SEM with latent reflective constructs, and given the relatively small sample compared to the number of analyzed variables (30 items), PLS regression was employed to tackle multicolinearity issues and correlation spuriousness (Geladi & Kowalski, 1986; Tenenhaus, 1998, Helland, 2001).

### 3.3 Operationalization (scales employed)

Table 1 provides an overview of the scales employed which are connected to 10 different constructs included in our analysis based on the adjustment and extension of Claro's (2004) covariance-based SEM. Please pay attention to the codes of individual independent variables (e.g. q2a, q6f) which refer to the item within a specific question. The original English version of the questionnaire can be found in Appendix 1 at the end of the paper.

As discussed earlier, the three variables related to supplier-buyer relationship competitiveness in Table 1 (q11a-q11c) were transformed into a single compounded variable (named *Comp*) and used subsequently as the dependent variable in our PLS regression analysis.

[6] A star-like network refers to a network with a single central actor (in our case the TNC) and several other actors which are connected only to this central actor, but not among themselves (in our case to other TNC suppliers).

**Table 1:** *Operationalization of the determinants of supplier-buyer relationship competitiveness in a TNC context*

| Construct | Abbreviation | Operationalization (variable codes) | Reference |
|---|---|---|---|
| ***Competitiveness*** | *Comp (dependent)* | 3 items related to: (1) SCM as an important source of TNC competitive advantage(**q11a**); (2) increased competitiveness of supplier due to relationship with TNC (**q11b**); (3) efficient SCM leading to dyadic supplier-buyer higher competitiveness (vis-à-vis market competition) (**q11c**) | Scales developed from work by Veludo, Macbeth & Purchase, 2006; Dyer & Singh, 1998; Harland, 1996 |
| ***Relationship-based information*** | *Info (independent)* | 5 items of shared information between TNC and supplier related to: (1) prices (**q2a**); (2) quantities (**q2b**); (3) logistic operations (**q2c**); (4) production process (**q2d**); (5) future actions (**q2e**) | Adapted from Claro, 2004; based on Anderson, Håkansson & Johanson, 1994; Blakenburg, Eriksson & Johanson, 1999 |
| ***Network spillover effects*** | *Spill (independent)* | 4 items related to: (1) transferability of know-how and expertise to other relationships (**q3a**); (2) attractiveness to other partners (**q3b**); (3) increased productivity in other relationships due to developed competencies (**q3c**); (4) increased competitiveness in other relationships due to developed competencies (**q3d**) | Adapted from Anderson, Håkansson & Johanson, 1994 |
| ***Transaction-specific investments (TSIs) in physical assets*** | *TSI_ass (independent)* | 3 items: (1) significant supply relationship investments (**q4a**); (2) specific adjustments in organizational processes (**q4b**); (3) significant commitment to specific internal process and organization (**q4c**) | Adapted from Heide & John, 1992; Bensaou & Venkatraman, 1995 |
| ***Transaction-specific investments (TSIs) in people*** | *TSI_per (independent)* | 3 items: (1) learning about partner's business practices (**q4d**); (2) additional activities, training and education (**q4e**); (3) losing knowledge about partner's operation if relationship is terminated (**q4f**) | Adapted from Heide & John, 1992; Bensaou & Venkatraman, 1995 |
| ***Interorganizational trust*** | *Trust_org (independent)* | 3 items: (1) TNC unit openness/honesty in negotiations (**q5a**); (2) TNC unit trustworthiness (**q5b**); (3) TNC unit looking out for partner interests (**q5c**) | Zaheer, McEvily & Perrone, 1998 |
| ***Interpersonal trust*** | *Trust_per (independent)* | 3 items: (1) contact person's openness/honesty in negotiations (**q5d**); (2) contact person's trustworthiness (**q5e**); (3) contact person looking out for partner interests (**q5f**) | Zaheer, McEvily & Perrone, 1998 |
| ***Joint planning*** | *Plan (independent)* | 3 items of joint planning related to: (1) volume demands (**q6a**), (2) long-term plans for new products (**q6b**), (3) sales forecasts (**q6c**) | Heide & John, 1990 & 1992; Heide & Miner, 1992; Lush & Brown, 1996 |
| ***Joint problem solving*** | *Solve (independent)* | 3 items of joint problem solving related to: (1) dealing with problems jointly (**q6d**); (2) shared responsibility (**q6e**); (3) commitment to improvements (**q6f**) | Heide & John, 1990 & 1992; Heide & Miner, 1992; Lush & Brown, 1996 |
| ***Flexibility*** | *Flex (independent)* | 3 items: Efficient response in a supply relationship to: (1) day-to-day (operational) changes (**q7a**); (2) occasional (e.g. quarterly tactical) changes (**q7b**): (3) substantive, long-term, and rare (strategic) changes (**q7c**) *(Efficient = with minimal impact /degradation on performance)* | Adapted from Golden & Powel, 2000 |

*Source:* Adapted and extended from Claro, 2004, pp. 74-77; own review of the relevant literature presented in the last column of the table. Notes: SCM=supply chain management.

All the variables in Table 1 were measured on 7-point Likert-type scales – where 1 corresponded to the lowest possible value (completely disagree) and 7 to the highest possible answer value (completely agree).

The next section presents the results. First, the Non-Linear Iterative Partial Least Squares (NIPALS) algorithm was employed in R with the goal of indentifying an optimal set of principal components out of the 30 independent variables. Identified principal components are subsequently used in the PLS regression model.

## 4. RESULTS

### 4.1 Descriptive statistics and principal component analysis

Table 2 presents a summary of selected descriptive statistics. Due to the large amount of analyzed variables (3 dependent and 30 independent) descriptive statistics are presented at the conceptualized construct level for each of the 10 constructs outlined in Table 1.

**Table 2:** *Descriptive statistics at conceptualized construct level (7-point Likert-type scale)*

| Construct | Items (see Table 1) | Mean (simple average) | SD | α | Skewness* | Kurtosis** |
|---|---|---|---|---|---|---|
| ***Comp*** | *q11a-q11c* | 4.40 | 1.19 | 0.80 | -0.52 | -0.14 |
| ***Info*** | *q2a-q2e* | 5.08 | 1.32 | 0.87 | -0.88 | -0.04 |
| ***Spill*** | *q3a-q3d* | 4.50 | 1.46 | 0.93 | -0.70 | 0.29 |
| ***TSI_ass*** | *q4a-q4c* | 4.81 | 1.41 | 0.77 | -0.45 | -1.04 |
| ***TSI_per*** | *q4d-q4f* | 4.17 | 1.37 | 0.75 | -0.35 | -0.76 |
| ***Trust_org*** | *q5a-q5c* | 5.32 | 1.44 | 0.90 | -1.34 | 1.48 |
| ***Trust_per*** | *q5d-q5f* | 5.42 | 1.47 | 0.93 | -1.58 | 2.16 |
| ***Plan*** | *q6a-q6c* | 3.91 | 1.60 | 0.86 | -0.41 | -0.91 |
| ***Solve*** | *q6d-q6f* | 5.28 | 1.27 | 0.83 | -1.46 | 2.42 |
| ***Flex*** | *q7a-a7c* | 4.95 | 1.32 | 0.95 | -0.79 | 0.72 |

*Source:* Suppliers' survey, 2011 (n=130). Notes: SD=standard deviation. α=Cronbach's alpha. *Skewness for normal distribution is 0. **Kurtosis for normal distribution is 3.

As we can see from the descriptive statistics presented in Table 2 interpersonal and interorganizational trust has the highest mean scores, indicating a relatively high degree of both types of trust among our supplier-buyer relationships. Similarly, joint problem solving and relationship-based information exchange also display mean scores above value five on a 7-point Likert-type scale. On the other hand, the mean value of 3.91 for joint planning indicates, at least relatively speaking, a moderate level of joint planning in the surveyed supplier-buyer relationships.

As expected, all constructs display appropriate internal reliability statistics (Cronbach's alpha over 0.7), given the employment of established and numerously cross-validated

scales. In terms of the distribution of the aggregate constructs we can see that all constructs are non-normally distributed.

Table 3 provides sample characteristics related to 130 suppliers and their corresponding TNC supplier-buyer relationships. As we can see the average length of the supplier-buyer relationships was 6.2 years. Among the surveyed suppliers almost 80 % are micro, small and medium-sized suppliers (in terms of the number of employees) with up to 50 employees. In general, these suppliers are quite independent of the TNC in terms of income generation, since they generate only up to 5 % of their income from business with the focal TNC. Almost half of them come from Slovenia; and a fifth from other EU countries and Switzerland. Two thirds of them supply to a key TNC unit in Slovenia.

**Table 3:** *Sample characteristics*

| Characteristic | Data (sample structure) |
|---|---|
| ***Supplier-buyer relationship length*** | Mean=6.22 years (SD=4.83 years)<br>Median=5 years |
| ***Average number of employees (of supplier)*** | 22.2 % micro (0-9 employees);<br>34.9 % small (10-50 employees);<br>20.6 % medium (51-250 employees);<br>22.2 % large (251+ employees) |
| ***% of supplier income generated from the TNC*** | 50.8 % (up to 1 % generated income from TNC);<br>29.2 % (between 1.1 % and 5 % generated income from TNC)<br>20.0 % (more than 5 % generated income from TNC) |
| ***Country of supplier*** | Slovenia (45.3 %);<br>Other EU countries & Switzerland (22.6 %);<br>Russia (18.9 %);<br>Serbia (13.2 %) |
| ***Key TNC location being supplied to*** | Slovenia (66.2 %);<br>Serbia (16.2 %);<br>Russia (16.2 %) |
| ***Type of supply*** | Machinery & equipment (25.8 %);<br>Components for bonding/gluing (19.5 %)<br>Prepainted steel panels (13.2 %)<br>Steel/black metallurgy (12.5 %)<br>Other (29.0 %) |

*Source:* Suppliers' survey, 2011 (n=130).

Next, Table 4 shows the results of the NIPALS algorithm-based Principal Component Analysis (PCA) on the original 30 independent variables corresponding to the nine constructs from Table 1.

**Table 4:** *Results of PCA based on the NIPALS algorithm (30 independent variables, 9 constructs)*

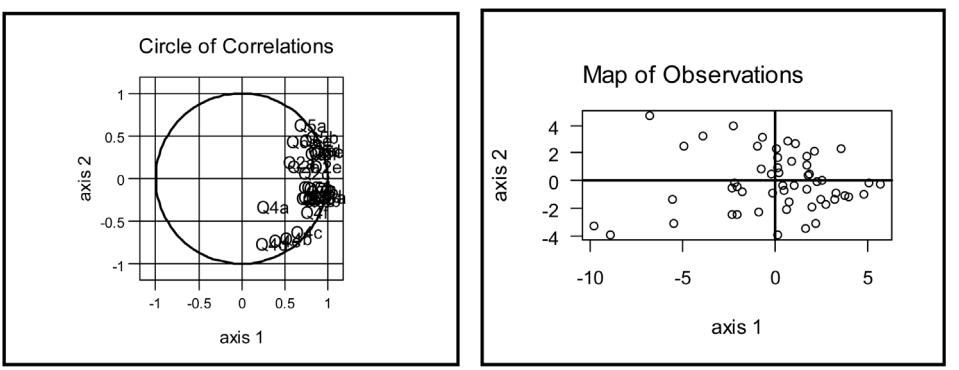
| Components | Eigen values (> 1.00) | Explained variance | Cumulative explained variance |
|---|---|---|---|
| ***#1*** | 12.2 | 40.7 % | 40.7 % |
| ***#2*** | 4.3 | 14.2 % | 54.9 % |
| ***#3*** | 2.4 | 8.1 % | 63.0 % |
| ***#4*** | 1.7 | 5.8 % | 68.8 % |
| ***#5*** | 1.5 | 5.0 % | 73.8 % |
| ***#6*** | 1.2 | 3.9 % | 77.7 % |

*Source:* Suppliers' survey, 2011 (n=130). Note: Analysis performed using the nipals algorithm in R, ver. 2.15.2.

As we can see from the results in Table 4, NIPALS PCA procedure identified six potential components with Eigen values over 1.0. However, only two components explain more than 10 % of the variance per component. Overwhelmingly, the first component explains 40.7 % of the variance of the original 30 independent variables, while the second component explains an additional 14.2 % (cumulative explained variance of 54.9 %). The remaining four components jointly explain only 23 % of additional variance.

Based on the results of PCA presented in Table 4 and additional analyses[7] a two-component solution was chosen as the optimal one, as it explained 54.9 % of the total variance of the original 30 independent variables. Figure 1 shows the plot diagrams for the selected two-component solution, both for the 30 original independent variables (left hand side) and the 130 observation (right hand side).

Figure 1: *Plot diagrams for the selected two-component solution*




*Source:* Suppliers' survey, 2011 (n=130). Note: Analysis performed using the nipals algorithm in R, ver. 2.15.2. Due to resizing of the plot diagram related to observations (right hand side) the depicted number of observations (represented by blue dots) appear smaller than the actual number of observation (n=130).

[7] Additionally, distance-to-the-origin analysis and cosinus analysis were also performed in *R*. Results can be obtained from the authors upon request.

With regards to the left hand side plot diagram in Figure 1, which shows the plotting of the 30 independent variables, it must be pointed out that variables closer to the circle perimeter are better represented by the two-component solution. Furthermore, the closeness of selected variables indicates the level of correlation. By observing the left hand side plot diagram we can thus conclude that there appears to be a relatively high degree of multicolinearity among independent variables analyzed, which again strongly supports the selection of PLS over the OLS-type regression. Having established the optimal number of principal components with the NIPALS procedure the results of PLS regression are presented in the next section.

### 4.2 PLS regression results

Based on a two-component solution identified by the NIPALS PCA procedure in the previous section Table 5 presents the results of our univariate PLS regression model, with supplier-buyer relationship competitiveness as the dependent variable. Given the large amount of the analyzed independent variables (30), only the top five most important independent variables according to their loadings on each of the two components in our regression model are shown.

**Table 5:** *Top five determinants of supplier-buyer relationship competitiveness based on top five loadings across the two components (univariate PLS regression)*

| Variable | Construct | Component #1 | | Component #2 | |
|---|---|---|---|---|---|
| | | *Loadings (x)* | *Correlation coefficient* | *Loadings (x)* | *Correlation coefficient* |
| *What we learn from working with this TNC unit will be use full in our other (non-TNC) future business relationships (q3a)* | *Spill* | 0.242 | *0.854* | | |
| *Competences developed in working with this TNC unit can be used to enhance the competitiveness in all our other (non-TNC) business relationships (q3d)* | *Spill* | 0.233 | *0.822* | | |
| *My contact person at this TNC unit is a trustworthy person (q5e)* | *Trust_per* | 0.224 | *0.793* | | |
| *This TNC unit is a trustworthy business partner (q5c)* | *Trust_org* | 0.224 | *0.793* | | |
| *I have faith in my contact person at this TNC unit to look out for our company interests (q5f)* | *Trust_per* | 0.220 | *0.776* | | |
| *We have made important investments to deliver products to this TNC unit (q4a)* | *TSI_ass* | | | 0.442 | *0.619* |
| *Supplying to this TNC unit required additional tasks, training and skills for at least some of our employees (q4e)* | *TSI_per* | | | 0.413 | *0.579* |
| *We have invested time and effort to learn about the business practices of this TNC unit (q4d)* | *TSI_per* | | | 0.388 | *0.554* |
| *Our production processes have been tailored to meet the requirements of supplying to this TNC unit (q4b)* | *TSI_ass* | | | 0.385 | *0.539* |
| *We have made important investments to handle internally the products and services that are ordered by the selected TNC unit (q4c)* | *TSI_ass* | | | 0.357 | *0.500* |
| **R2** | | | ***0.686*** | | ***0.093*** |

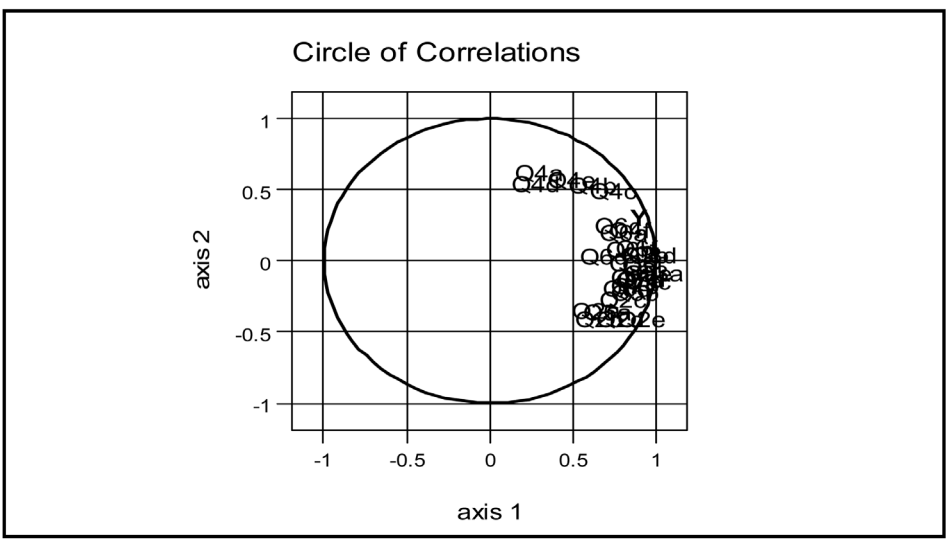
*Source:* Suppliers' survey, 2011 (n=109). Note: As the *plsreg1* algorithm does not support the analysis of the observations with missing data values the analyzed data set includes only 109 of the original 130 observations.

In addition to the loadings of independent variables across each of the two components Table 5 also provides information on the pair-wise correlation coefficients between each of the independent variables and the two obtained components. By observing both the loadings and correlation coefficients we can see that the component #1 is mostly closely connected to variables related to network spillover effects and trust, while component #2 is almost exclusively associated with both aspects of transaction-specific investments (both in physical assets and people).

Lastly, by observing the $R^2$ values related to each of the two components we can say that network spillover effects and trust (both interpersonal and interorganizational) are the strongest single determinants of supplier-buyer relationship competitiveness, as marked by a $R^2$ value of 0.686. Subsequently, a secondary determinant of supplier-buyer relationship competitiveness is connected almost exclusively with transaction-specific investments, as marked by a $R^2$ value of 0.093.

In conclusion Figure 2 shows the results of our regression analysis in the form of plotted correlation coefficients of the 30 independent variables and the dependent variable of competitiveness (indicated as y in the figure) across the two principal components in our regression model. As we can observe most of the independent variables display quite strong correlation coefficients with component #1, with the exception of the independent variables connected to transaction-specific investments (shown in Figure 2 in upper right corner as [q4a:q4f]), which have quite a strong positive correlation with component #2. Additionally, independent variables related to relationship-based information exchange display moderately positive correlation coefficients on component #1, but moderately negative correlation coefficients on component #2 (see correlation coefficient in Appendix 2 – Table 2 – for details).

Figure 2: *Variable-component correlation plot diagram (two-component PLS regression)*




Source: Suppliers' survey, 2011 (n=109).

As we can also observe from the position of the dependent compounded variable of supplier-buyer relationship competitiveness in the plot diagram it very strongly correlates ($\beta$=0.828) with component #1 (hence its high $R^2$ value of 0.686), but to a lesser, yet still significant extent with component #2 ($\beta$=0.306).

We have also cross-validated our two-component PLS regression model by applying the *plsreg1$Q2* algorithm in R. This procedure randomly splits the original data set in ten different sub-groups. Each time, one sub-group is left out of analysis as a reference set, while the remaining nine sub-groups are used to predict the observations in the excluded sub-group. This procedure is repeated ten times, each time taking one of the ten sub-groups (a reference sub-group) to be estimated by the remaining nine other sub-groups. Following this procedure an appropriate cross-validation statistic was obtained (*LimQ2*=0.0975) for both components, thus indicating that our PLS regression model is reasonably cross-validated.

## 5. RESULT IMPLICATIONS

### 5.1 Relational vs. transactional determinants of supplier-buyer relationship competitiveness

First and foremost, our results provide strong evidence in support of *Relationship marketing theory*, as well as *Social exchange theory*. This is particularly shown in the high explanatory power of component #1 ($R^2$=0.686), which displays high interorganizational and interpersonal trust variable loadings. However, by measuring the impact of relational and transactional determinants on long-term competitiveness (not short-term performance), our results go beyond Autry & Golicic's (2010, p. 96) reaffirmation of relationship-performance spirals to further support Hunt & Morgan's (1995) *Resource-advantage theory of competition* in which strong and high-quality (trusting) relationships drive competitiveness as key organizational resources. In this regard, we see that Autry & Golicic's (2010) relationship-performance spiral perspective fits well within Hunt & Morgan's (1995) *Resource advantage theory*, establishing it as a dynamic one.

This brings us to the second implication of our results, namely the difference between the impact of relational and transactional determinants on relationship competitiveness. We believe that the stronger explanatory power of the relational determinants (component #1) does not imply superiority over transactional determinants (component #2) per se. Rather, we believe our results are consistent with what Autry & Golicic (2010, p. 97) refer to as an accrual (additive) effect of relationship strength/quality on relationship outcomes. It is here that we believe *Spiral theory* is particularly valuable and has been also indirectly supported by our results, albeit based on inference from our cross-sectional data. Given that most of our surveyed suppliers have well-established and long-run relationships with the focal TNC, as is also indicated by the average length of the relationship and high levels of trust (again see descriptive statistics in Table 2), relational determinants play a more important role in driving relationship competitiveness, com-

pared to transactional determinants. This was expected and is consistent with extant *Relationship marketing theory.*

The accruing roles of relational determinants and the diminishing roles of transactional determinants are perhaps best illustrated by relatively high, yet negative factor loadings related to relationship-based information exchange within component #2 (see Appendix 2). In case of well-established supplier-buyer relationships strong transactional mechanisms related to transactional information sharing may be seen as a "redundant governance mechanism" (Rowley, Behrens & Krackhardt, 2000, p. 371), and can be interpreted as a negative signal to other existing and potential partners that the supplier is problematic and needs extra monitoring. Furthermore, this redundancy should also be linked to the punitive potential of network spillover effects, which we discuss separately in the next section.

### 5.2 Importance of network spillover effects

Ghoshal & Bartlett (1990, p. 603) have importantly described TNCs as interorganizational differentiated networks. Within these networks, however, there are often extremely powerful network "egos" (e.g. TNCs), with large bargaining power and influence over other their actors (e.g. suppliers). In this context, Dyer & Hatch (2004, p. 62) emphasize that a lot of transnational supplier networks have a star-like network structure, where the suppliers are connected to the TNC, but not among themselves. This asymmetric power/dependence perspective has important implications for the corresponding supplier-buyer relationships and their management, particularly within the so-called *Social exchange theory* perspective (Hald, Cordón & Vollmann, 2009, p. 961) in which trust and social capital are constructed and drawn upon differently within a network setting, compared to a dyadic business relationship. In such a setting, the wider network context may become more important for a given supplier than the focal dyadic supply relationship. Our results support this view, given both the explanatorily power of our component #1 ($R^2$=0.686) with regards to supplier-buyer relationship competitiveness, as well as the high loadings (and correlations) of variables related to network spillover effects on this component.

Within such star-like, transnational supplier-buyer networks individual suppliers importantly craft different network identities, which are related to a "unique set of connected relations with other firms, links to their activities, and [especially] ties with their resources" (Anderson, Håkansson & Johanson, 1994, p. 4). These identities are very much association-related and lead to the attraction between a supplier and its buyer. Hald, Cordón & Vollmann (2009) saw this attraction as a function of the perceived expected relationship value, which among other things is also very much linked to the development of specific competencies and signaling effects to other potential partners (Hald, Cordón & Vollmann, 2009, p. 963).

Our results on the one hand support Dyer & Hatch's (2004, p. 62) position that competence development can be a substantial network spillover effect in TNC supplier-buyer

networks. This can consequently lead to long-term competitive advantage, which is according to Møller, Johansen & Boer (2004, p. 369; *cf.* Hamel, 1991) based on both competence development, as well as learning. With regards to signaling effects on the other hand, the association of a supplier with a particular TNC may in fact have also many different types of different signaling effects.

According to Walter, Ritter & Gemünden (2001, p. 368), it can be seen as a quality seal of approval and lead to the formation of new business relationships (the so-called market function of signaling). It can also help to reach other partners of the TNC (the so-called scout function of signaling), and can provide access to a wealth of resources and capabilities pooled across the wider network (the so-called access function of signaling). In addition, Claro & Claro (2011, p. 515) also emphasize that "the transactions with firms of known reputation and capabilities imply that social bonds guards against trouble" (*cf.* Thorelli, 1986). In this regard, the affiliation of a supplier to a particular TNC provides valuable information to prospective partners on the potential costs and management issues they may expect if they engage with that supplier. While our results do not directly support this perspective, the strong impact of trust on supplier-buyer relationship competitiveness could indirectly provide some support for Claro & Claro's (2011) position.

In terms of possible managerial implications from our results we would like to emphasize that TNC managers should understand the suppliers' business network and its structure in order to assess the potential network spillover effects that might drive suppliers' behavior. This is particularly relevant if there is a big asymmetry in size, dependence and/or power in the relationship between the supplier and the TNC. Having said this, TNCs have to be aware of all the potential non-monetary spillover effects that their relationship to a given supplier may offer, and which the suppliers can "capitalize" on within their business networks. Through understanding the suppliers' business network, TNC managers should not only understand potential network spillover effects, but also measure them and communicate them in order to manage relationships with existing suppliers and attract new potential suppliers. This will contribute to both flexibility and learning, which are according to Bartlett & Ghoshal (1989) two from three of the most important strategic objectives of TNCs.

## 6. CONCLUSION

This paper has built on the *Relationship marketing and Resource-advantage theory* in analyzing transnational supplier-buyer relationships. By focusing on the specifics of the transnational inter-organizational supplier-buyer context, long-term relationship competitiveness was chosen as our dependent variable, as opposed to traditional short-term performance. By testing the impact of specific relational and transactional determinants of supplier-buyer relationship competitiveness we have found that both types of determinants drive such competitiveness. However, in-line with the well-established nature of our supplier-buyer relationships, and according to Autry & Golicic's (2010) relationship-

performance spiral perspective, relational determinants have been found to be stronger drivers of supplier-buyer competitiveness, as opposed to transactional determinants. With regards to the former, network spillover effects have confirmed Nagurney's (2010) call for the incorporation of a wider network perspective in the study of dyadic supplier-buyer relationships. In addition to this, both interorganizational and interpersonal trust may be seen as a central relational determinant of supplier-buyer relationship competitiveness. This is consistent with *Relationship marketing theory* and Morgan & Hunt's (1994) trust-commitment perspective, but also complemented by network spillover effects.

We are fully aware that our research is also subject to some research limitations – ranging from a possible common methods bias from single respondents, to analyzing the perspective of only the suppliers' side of the supplier-buyer relationship, and to limitations related to the PLS methodology itself. However, we also believe that we have been able to test two comprehensive marketing theories (*Relationship marketing theory* and *Resource-advantage theory*) in a specific research context of transnational supplier-buyer relationships, by applying a non-traditional methodology for the marketing discipline. In this regard, the essence of a fairly complex SEM was tested with the help of PLS regression analysis to provide sound evidence and corresponding implications for both theory, as well as managerial practice.

## LITERATURE

Anderson, J. C. & Narus, J. A. (1990). A model of distributor firm and manufacturer firm working partnerships. *Journal of Marketing,* 54 (1), 42-58.

Anderson, J. C., Håkansson, H. & Johanson, J. (1994). Dyadic business relationship within a business network context. *Journal of Marketing*, 58 (4), 22-38.

Autry, C. W. & Golicic, S. L. (2010). Evaluating buyer-supplier relationship-performance spirals. *Journal of Operations Management*, 28 (2), 87-100.

Bartlett, C. A. & Ghoshal, S. (1989). *Managing across borders: the transnational solution*. Cambridge, MA: Harvard Business School Press.

Bensaou, M. & Venkatraman, N. (1995). Configurations of inter-organizational relationships: a comparison between U.S. and Japanese automakers. *Management Science*, 41 (9), 1471-1492.

Berry, L. L. & Parasuraman, A. (1991). *Marketing Services: Competing Through Quality*. New York, NY: Free Press.

Bertrand, J. W. M. (2003). Supply Chain Design: Flexibility Considerations. In Kok, A. G. de & S. C. Graves (Eds.), *Handbook in OR & MS*, Vol. 11 (pp.133-198). Amsterdam: Elsevier.

Blakenburg Holm, D., Eriksson, K. & Johanson, J. (1999). Creating value through mutual commitment to business network relationships. *Strategic Management Journal*, 20 (5), 467-486.

Blome, C. & Schoenherr, T. (2011). Supply chain risk management in financial crisis – A multiple case study approach. *International Journal of Production Economics*, 134 (1), 43-57.

Burt, R. S. (1995). *Structural Holes: The Social Structure of Competition*. Cambridge, MA: Harvard University Press.

Cannon, J. P., Achrol, R. S. & Grundlach, G. T. (2000). Contracts, norms and plural form governance. *Journal of the Academy of Marketing Science*, 28 (2), 180-194.

Carr, A. & Pearson, J. (1999). Strategically managed buyer-supplier relationships and performance outcomes. *Journal of Operations Management*, 17 (5), 497-519.

Claro, D. P. (2004). *Managing business networks in buyer-supplier relationships: how information obtained from the business network affects trust, transaction specific investments, collaboration and performance in the Dutch Potted Plant and Flower Industry*. Doctoral dissertation. Wageningen: Wageningen University and Research Centre.

Claro, D. P. & Claro, P. B. O. (2010), Collaborative buyer-supplier relationships and downstream information in marketing channels. *Industrial Marketing Management*, 39 (2), 221-228.

Claro, D. P. & Claro, P. O. B. (2011). Networking and developing collaborative relationships: evidence of the auto-part industry of Brazil. *Journal of Business & Industrial Marketing*, 26 (7), 514-523.

Dwyer, F. R., Schurr, P. H. & Oh, S. (1987). Developing Buyer-Seller Relationships. *Journal of Marketing*, 51 (2), 11-27.

Dyer, J. H. (1996). Specialized supplier networks as a source of competitive advantage: Evidence from the auto industry. *Strategic Management Journal*, 17 (4), 271-291.

Dyer, J. H. & Hatch, N. W. (2004). Using supplier networks to learn faster. *Sloan Management Review*, 45 (3), 57-63.

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

Ekar, A. (2007): *Trženje na podlagi odnosov kot dejavnik internacionalizacije slovenskih podjetjih na medorganizacijskih trgih*. Doctoral dissertation. Ljubljana: University of Ljubljana, Faculty of Economics.

Gaddé, L.-E. & Håkansson, H. (2001). *Supply Network Strategies*. Chichester: John Wiley.

Geladi, P. & Kowalski, B. (1986). Partial Least Squares Regression: A Tutorial. *Analytica Chimica Acta*, 185, 1-17.

Ghoshal, S., & Bartlett, C. A. (1990). The Multinational Corporation as an Interorganizational Network. *The Academy of Management Review*, 15 (4), 603-625.

Golden, W. & Powell, P. (2000). Towards a definition of flexibility: in search of the Holy Grail? *Omega*, 28 (4), 373-384.

Granovetter, M. (1985). Economic action and social structure: the problem of embeddedness. *American Journal of Sociology*, 91(3), 481-510.

Griffith, D. A., & Myers, M. B. (2005). The Performance Implications of Strategic Fit of Relational Norm Governance Strategies in Global Supply Chain Relationships. *Journal of International Business Studies*, 36 (3), 254-269.

Gulati, R. (2007). *Managing network resources: alliances, affiliations and other relational assets*. New York: Oxford University Press.

Håkansson, H. & Snehota, I. (1995). *Developing Relationships in Business Networks.* London: International Thompson Business Press.

Hald, K., Cordón, C. & Vollmann, T. (2009). Towards an understanding of attraction in buyer-supplier relationships. *Industrial Marketing Management*, 38 (8), 960-970.

Hamel, G. (1991). Competition for competence and interpartner learning within international strategic alliances. *Strategic Management Journal*, 12 (S1), 83-103.

Harland, C. M. (1996). Supply Chain Management: Relationships, Chains and Networks. *British Journal of Management*, 7 (Spec. iss.), 63-80.

Heide, J. B. & John, G. (1990). Alliances in Industrial Purchasing: The Determinants of Joint Action in Buyer-Supplier Relationships. *Journal of Marketing Research*, 27 (1), 24-36.

Heide, J. B., & John, G. (1992). Do norms matter in relationship marketing?. *Journal of Marketing*, 56 (2), 32-44.

Heide, J. B. & Miner, A. S. (1992). The shadow of the future: effects of anticipated interaction and frequency of contact on buyer-seller cooperation. *Academy of Management Journal*, 35 (2), 265-291.

Heidenreich, M. (2012). The social embeddedness of multinational companies: a literature review. *Socio Economic Review*, 10 (3), 549-579.

Helland, I. S. (2001). Some theoretical aspects of partial least squares regression. *Chemometrics and Intelligent Laboratory Systems*, 58, 97-107.

Hunt, S. D. (2000). *A General Theory of Competition: Resources, Competences, Productivity, Economic Growth*. Thousand Oaks: Sage.

Hunt, S. D. & Davis, D. F. (2008). Grounding Supply Chain Management in Resource-Advantage Theory. *Journal of Supply Chain Management*, 44 (1), 10-21.

Hunt, S. D. & Davis, D. F. (2012). Grounding Supply Chain Management in Resource-Advantage Theory: In Defense of a Resource-Based View of the Firm. *Journal of Supply Chain Management,* 48 (2), 14-20.

Hunt, S. D. & Morgan, R. M. (1995). The Comparative Advantage Theory of Competition. *Journal of Marketing*, 59 (2), 1-15.

Hunt, S. D. & Morgan, R. M. (1996). The Resource-Advantage Theory of Competition: Dynamics, Path Dependencies and Evolutionary Dimensions. *Journal of Marketing*, 60 (3), 107-114.

Hunt, S. D. & Morgan, R. M. (1997). Resource-Advantage Theory: A Snake Swallowing Its Tail or a General Theory of Competition?. *Journal of Marketing*, 61 (4), 74-82.

Hutt, M. D. & Speh, W. T. (2004). *Business Marketing Management: A Strategic View of Industrial and Organizational Markets* (7th ed.). Orlando: Harcourt.

Hymer. S. H. (1960). *The international operations of national firms: A study of direct foreign investment*. Cambridge: MIT Press (published in 1976).

Jap, S. D. (1999). Pie-expansion efforts: collaboration processes in buyer-supplier relationships. *Journal of Marketing Research*, 36 (4), 461-476.

Jap, S. D. (2001). Pie sharing in complex collaboration contexts. *Journal of Marketing Research*, 38 (1), 86-99.

Jap, S. D. & Anderson, E. (2003). Safeguarding Interorganizational performance and continuity under ex post opportunism. *Management Science*, 49 (12), 1684-1701.

Kannan, V. R. & Tan, K. C. (2006). Buyer-supplier relationships: The impact of supplier selection and buyer-supplier engagement on relationship and firm performance. *International Journal of Physical Distribution & Logistics Management*, 36 (10), 755-775.

Kingshott, R. P. J. (2006). The impact of psychological contracts upon trust and commitment within supplier-buyer relationships: a social exchange view. *Industrial Marketing Management*, 35 (6), 724-739.

Lambert, D. M. & Cooper, M. C. (2000). Issues in Supply Chain Management. *Industrial Marketing Management*, 29 (1), 65-83.

Lemke, F., Goffin, K. & Szwejczewski, M. (2003). Investigating the meaning of supplier-manufacturer partnerships: An exploratory study. *International Journal of Physical Distribution & Logistics Management*, 33 (1), 12-35.

Lush, R. F. & Brown, J. R. (1996), Interdependency, contracting, and relational behavior in marketing channels. *Journal of Marketing*, 60 (4), 19-38.

Makovec Brenčič, M. (2000). *Soodvisnost cenovnih in necenovnih dejavnikov konkurenčnih prednosti podjetij v mednarodnem poslovanju*. Doctoral dissertation. Ljubljana: University of Ljubljana, Faculty of Economic.

Mohr, J. J. & Speckman, R. (1994). Characteristics of partnership success: partnership attributes, communication behavior, and conflict resolution techniques. *Strategic Management Journal*, 15 (2), 135-152.

Møller, M. M., Johansen, J. & Boer, H. (2004). Managing buyer-supplier relationships and inter-organizational competence development. *Integrated Manufacturing Systems*, 14 (4), 369-379.

Morgan, R. M. & Hunt, S. D. (1994). The Commitment-Trust Theory of Relationship Marketing. *Journal of Marketing*, 58 (3), 20-38.

Nagurney, A. (2006). *Supply Chain Network Economics: Dynamics of Prices, Flows and Profits*. London: Edward Elgar Publishing.

Nagurney, A. (2010). Optimal supply chain network design and redesign at minimal total cost and with demand satisfaction. *International Journal of Production Economics*, 128 (2), 200-208.

Noordewier, T. G., John, G. & Nevin, J. R. (1990). Performance Outcomes of Purchasing Arrangements in Industrial Buyer-Vendor Relationships. *Journal of Marketing*, 54 (3), 80-93.

Nyaga, G. N., Whipple, J. M. & Lynch, D. F. (2010). Examining supply chain relationships: Do buyer and supplier perspectives on collaborative relationships differ?. *Journal of Operations Management*, 28 (2), 101-114.

Rowley, T., Behrens, D. & Krackhardt, D. (2000). Redundant governance structures: an analysis of structural and relational embeddedness in the steel and semiconductor industries. *Strategic Management Journal*, 21 (3), 369-386.

Selnes, F. (1998). Antecedents and Consequences of Trust and Satisfaction in Buyer-Seller Relationships. *European Journal of Marketing*, 32 (3/4), 305-322.

Seppänen, R., Blomqvist, K. & Sundqvist, S. (2007). Measuring interorganizational trust: a critical review of the empirical research in 1990-2003. *Industrial Marketing Management*, 36 (2), 249-265.

Swafford, P. M., Ghosh, S. & Murthy, N. (2006). The antecedents of supply chain agility of a firm: Scale development and model testing. *Journal of Operations Management*, 24 (2), 170-188.

Tang, O. & Musa, S. N. (2011). Identifying risk issues and research advancements in supply chain risk management. *International Journal of Production Economics*, 133 (1), 25-34.

Tenenhaus M. (1998) *La Regression PLS: Theorie et pratique*. Paris: Editions TECHNIP.

Thorelli, H. (1986). Networks: between markets and hierarchies. *Strategic Management Journal*, 7 (1), 37-51.

Veludo, M. de L., Macbeth, D. & Purchase, S. (2006). Framework for relationships and networks, *Journal of Business & Industrial Marketing*, 21 (4), 199-207.

Walter, A., Ritter, T. & Gemünden, H. G. (2001). Value creation in buyer-seller relationships: theoretical considerations and empirical results from a supplier's perspective. *Industrial Marketing Management*, 30 (4), 365-377.

Wathne, K. & Heide, J. B. (2000). Opportunism in Interfirm Relationships: Forms, Outcomes, and Solutions. *Journal of Marketing*, 64 (3), 36-51.

Williamson, O. E. (1996). *The Mechanisms of Governance*. New York, NY: Oxford University Press.

Yang, Z. B. et al.. (2009). Supply disruptions, asymmetric information, and a backup production option. *Management Science*, 55 (2), 192-209.

Zaheer, A., McEvily, B. & Perrone, V. (1998). Does trust matter? Exploring the effects of interorganizational and interpersonal trust on performance. *Organization Science*, 9 (2), 141-159.

Zukin, S. & DiMaggio, P. (1990). *Structures of Capital: The Social Organization of the Economy*. New York, NY: Cambridge University Press.

**APPENDIX 1: Original questionnaire (English version)**

All questionnaire items were measured as 7-point Likert-type scales, with the following answer values: 1-lowest possible value (completely disagree), 4-neutral (neither disagree, nor agree) and 7-highest possible value (completely agree).

1. **COMPETITIVENESS** (Adapted from Veludo, Macbeth & Purchase, 2006; Dyer & Singh, 1998; Harland, 1996):
   a. *The supply chain management system at this TNC unit is an important source of the TNC's competitive advantage (**code q11a**).*
   b. *Since becoming a supplier t this TNC, we have become a more competitive firm (**q11b**).*
   c. *Because our supply relationship with this TNC unit is managed efficiently, both our organization and this TNC unit are more competitive on the market (**q11c**).*

2. **RELATIONSHIP-BASED INFORMATION (SHARING)** (Adapted from Claro, 2004; based on Anderson, Håkansson & Johanson, 1994; Blakenburg, Eriksson & Johanson, 1999):
   a. *We get all the relevant information from this TNC unit and this supports us in defining product and service prices of supplies to this TNC unit (**q2a**).*
   b. *We get all the relevant information from this TNC unit and this supports us in defining product and service quantities of supplies to this TNC unit (**q2b**).*
   c. *We get all the relevant information from this TNC unit and this supports us in logistic operations of supplies to this TNC unit (**q2c**).*
   d. *We get all the relevant information from this TNC unit and this supports us in production processes related to supplies to this TNC unit (**q2d**).*
   e. *We get all the relevant information from this TNC unit and this supports us in foreseeing future actions of this TNC unit (**q2e**).*

3. **NETWORK SPILLOVER EFFECTS** (Adapted from Anderson, Håkansson & Johanson, 1994):
   a. *What we learn from working with this TNC unit will be use full in our other future business relationships (**q3a**).*
   b. *By working closely with this TNC unit our company can become more attractive to other business partners (**q3b**).*
   c. *Competences developed in working with this TNC unit can be used to enhance the productivity in all our other business relationships (**q3c**).*
   d. *Competences developed in working with this TNC unit can be used to enhance the competitiveness in all our other business relationships (**q3d**).*

4. **TRANSACTION-SPECIFIC INVESTMENTS (TSI) IN PHYSICAL ASSETS** (Adapted from Heide & John, 1992; Bensaou & Venkatraman, 1995):
   a. *We have made important investments to deliver products to this TNC unit (**q4a**).*
   b. *Our production processes have been tailored to meet the requirements of supplying to this TNC unit* (q4b).

*c. We have made important investments to handle internally the products and services that are ordered by the selected TNC unit (**q4c**).*

5. **TRANSACTION-SPECIFIC INVESTMENTS (TSI) IN PEOPLE** (Adapted from Heide & John, 1992; Bensaou & Venkatraman, 1995):
   *a. We have invested time and effort to learn about the business practices of this TNC unit (**q4d**).*
   *b. Supplying to this TNC unit required additional tasks, training and skills for at least some of our employees (**q4e**).*
   *d. If we stop working with this TNC unit, we would be wasting a lot of knowledge regarding the TNC's method of operation (**q4f**).*

6. **INTERORGANIZATIONAL TRUST (**Adapted from Zaheer, McEvily & Perrone, 1998):
   a. *This TNC unit has always been evenhanded and straightforward in their negotiations with us (**q5a**).*
   *b. Based on past experience, we can with complete confidence rely on this TNC unit to keep promises made to us (**q5b**).*
   *c. This TNC unit is a trustworthy business partner (**q5c**).*

**7. INTERPERSONAL TRUST** (Adapted from Zaheer, McEvily & Perrone, 1998):
   *a. My contact person at this TNC unit has always been evenhanded and straightforward in negotiating with me (**q5d**).*
   *b. My contact person at this TNC unit is a trustworthy person (**q5e**).*
   *c. I have faith in my contact person at this TNC unit to look out for our company interests (**q5f**).*

8. **JOINT PLANNING** (Adapted from Heide & John, 1990 & 1992; Heide & Miner, 1992; Lush & Brown, 1996):
   a. *We plan volume demands for the next season together with this TNC unit (**q6a**)*
   *b. We share our long-term product and service plans with this TNC unit (**q6b**).*
   *c. This TNC unit provides us with sales forecasts for the products we supply to this unit (**q6c**).*

9. **JOINT PROBLEM SOLVING** (Adapted from Heide & John, 1990 & 1992; Heide & Miner, 1992; Lush & Brown, 1996):
   *a. We and this TNC unit deal with problems that arise in the course of the relationship together (**q6d**).*
   *b. In most aspects of the relationship with this TNC unit, the responsibility for getting things done is shared (**q6e**).*
   *c, We and this TNC unit are committed to improvements that may benefit the relationship as a whole (**q6f**).*

10. **RELATIONSHIP FLEXIBILITY** (Adapted from Golden & Powel, 2000):
    a. *How well does your supply relationship with this TNC unit respond to day-to-day operational changes (with minimal impact on performance) (**q7a**)?*
    *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) (**q7b**)?*
    *c. How well does your supply relationship to this TNC unit respond to one-way, long-term strategic changes (with minimal impact on performance) (**q7c**)?*

## APPENDIX 2: NIPALS and PLS regression results

**Table 1:** *Loadings for each of the 30 independent variables on each of the two components from NIPALS procedure*

| | p1 | p2 |
|---|---|---|
| Q2a | 0.13313638 | -0.24911385 |
| Q2b | 0.14022950 | -0.28820247 |
| Q2c | 0.18026661 | -0.19148167 |
| Q2d | 0.17636931 | -0.29249055 |
| Q2e | 0.21250434 | -0.29174562 |
| Q3a | 0.24158717 | -0.06122968 |
| Q3b | 0.21755603 | 0.03323476 |
| Q3c | 0.19820457 | -0.01015446 |
| Q3d | 0.23270811 | 0.03292288 |
| Q4a | 0.03868468 | 0.44175622 |
| Q4b | 0.12818638 | 0.38470062 |
| Q4c | 0.16353677 | 0.35674650 |
| Q4d | 0.03081465 | 0.38846497 |
| Q4e | 0.09220849 | 0.41315566 |
| Q4f | 0.19780826 | 0.15882927 |
| Q5a | 0.15402946 | -0.25766995 |
| Q5b | 0.20151680 | -0.15685522 |
| Q5c | 0.22435051 | -0.10273954 |
| Q5d | 0.21121918 | -0.08657149 |
| Q5e | 0.22435688 | -0.06116308 |
| Q5f | 0.21955304 | -0.02008074 |
| Q6a | 0.18222459 | 0.14623608 |
| Q6b | 0.19192812 | 0.06108095 |
| Q6c | 0.17431126 | 0.17651407 |
| Q6d | 0.14903157 | 0.02454310 |
| Q6e | 0.18579001 | -0.13855952 |
| Q6f | 0.20802829 | 0.07056687 |
| Q7a | 0.20908115 | -0.09139806 |
| Q7b | 0.20115381 | -0.12228321 |
| Q7c | 0.20108310 | -0.08046043 |

Source: Suppliers' survey, 2011 (n=109). Note: Based on the plsreg1 algorithm in R, ver. 2.15.2.

**Table 2:** *Correlation coefficients for each of the 30 independent variables and the dependent compounded variable across each of the two components from PLS regression*

| | t1 | t2 |
|---|---|---|
| Q2a | 0.4705345 | -0.34889399 |
| Q2b | 0.4956032 | -0.40363917 |
| Q2c | 0.6371035 | -0.26817780 |
| Q2d | 0.6233296 | -0.40964480 |
| Q2e | 0.7510391 | -0.40860150 |
| Q3a | 0.8538245 | -0.08575463 |
| Q3b | 0.7688929 | 0.04654662 |
| Q3c | 0.7005004 | -0.01422173 |
| Q3d | 0.8224438 | 0.04610982 |
| Q4a | 0.1367205 | 0.61869739 |
| Q4b | 0.4530401 | 0.53878873 |
| Q4c | 0.5779765 | 0.49963785 |
| Q4d | 0.1089061 | 0.54406084 |
| Q4e | 0.3258859 | 0.57864116 |
| Q4f | 0.6990997 | 0.22244679 |
| Q5a | 0.5443754 | -0.36087716 |
| Q5b | 0.7122066 | -0.21968206 |
| Q5c | 0.7929061 | -0.14389086 |
| Q5d | 0.7464970 | -0.12124687 |
| Q5e | 0.7929286 | -0.08566136 |
| Q5f | 0.7759508 | -0.02812389 |
| Q6a | 0.6440235 | 0.20480953 |
| Q6b | 0.6783180 | 0.08554633 |
| Q6c | 0.6160559 | 0.24721507 |
| Q6d | 0.5267117 | 0.03437360 |
| Q6e | 0.6566245 | -0.19405819 |
| Q6f | 0.7352197 | 0.09883175 |
| Q7a | 0.7389407 | -0.12800667 |
| Q7b | 0.7109237 | -0.17126257 |
| Q7c | 0.7106738 | -0.11268807 |
| Y | 0.8282748 | 0.30575147 |

Source: Suppliers' survey, 2011 (n=109). Note: Based on the plsreg1 algorithm in R, ver. 2.15.2.