THE TRUST-COMMITMENT-FLEXIBILITY LINK IN TRANSNATIONAL BUYER-SUPPLIER RELATIONSHIPS: A NETWORK PERSPECTIVE

VEZA POVJERENJE-PREDANOST-PRILAGODLJIVOST U TRANSNACIONALNOM ODNOSU KUPAC-DOBAVLJAČ: MREŽNA PERSPEKTIVA

UDK 658.7 Preliminary communication Prethodno priopćenje

Matevž Rašković, Ph. D.

Assistant Professor Faculty of Economics, University of Ljubljana Kardeljeva pl. 17, 1000 Ljubljana, SLOVENIA Phone: ++386 1 5892 759 E-mail: matevz.raskovic@ef.uni-lj.si

Maja Makovec Brenčič, Ph. D.

Full Professor Faculty of Economics, University of Ljubljana Kardeljeva pl. 17, 1000 Ljubljana, SLOVENIA E-mail: maja.makovec@ef.uni-lj.si

Key words:

buyer-supplier relationships, trust, commitment, relationship flexibility, network analysis, transnational companies

ABSTRACT

The purpose of this paper is to analyze the manner in which trust and commitment impact relationship flexibility in a transnational buyer-supplier network context. There is an abundance of research on trust and commitment related to buyer-supplier relationships in the marketing literature; however, their link to relationship flexibility in particular has not attracted much attention within the marketing field to date. Whereas the marketing literature tends to focus on traditional performance outcomes in buyer-sup-

Ključne riječi:

odnos kupac-dobavljač, povjerenje, predanost, prilagodljivost odnosa, analiza poslovne mreže, transnacionalna poduzeća

SAŽETAK

Svrha je ovog rada analizirati kako povjerenje i predanost utječu na prilagodljivost odnosa u kontekstu transnacionalne povezanosti kupac-dobavljač. Marketinška literatura obiluje istraživanjima povjerenja i predanosti u odnosu kupac-dobavljač. Međutim izričita povezanost povjerenja i predanosti s prilagodljivošću odnosa do sada u marketingu nije privukla veliku pozornost. I dok je tendencija marketinške literature usredotočenost na tradicionalne ishode odnosa kupac-dobavljač (npr. financijski rezul-

plier relationships (i.e. financial performance, satisfaction, loyalty), the supply chain management literature emphasizes the importance of flexibility as fundamental characteristics of well-performing supply networks. In this paper, a novel network analysis approach is employed for the marketing literature to analyze the link between trust, commitment and relationship flexibility. The analyzed network is a two-mode, egocentric and valued network, consisting of 11 purchasing managers and 53 suppliers connected to a transnational company in the steel construction industry with headquarters in Slovenia. To analyze the impact of trust and commitment on buyer-supplier relationship flexibility, a Multiple Regression Quadratic Assignment Procedure (MRQAP) approach was used. Results show that trust and commitment are not just important determinants of buyer-supplier relationship flexibility in a network context, but also how their impact on relationship flexibility changes depending on the importance of the buyer-supplier relationship. In high importance relationships trust is the overwhelming determinant of relationship flexibility, while in low importance relationships commitment is a more important determinant of relationship flexibility.

tati, zadovoljstvo, lojalnost) literatura iz područja upravljanja lancima nabave naglašava važnost prilagodljivosti kao temeljnog obilježja uspješnih opskrbnih mreža. U radu je korišten za marketinšku literaturu novi pristup analizi mreža kako bi se analizirala veza (povezanost) između povjerenja, predanosti i prilagodljivosti odnosa. Analizirana je mreža na dva načina, tj. kao egocentrična i cijenjena mreža koja se sastoji od 11 menadžera nabave i 53 dobavljača povezanih u transnacionalnom poduzeću u industriji čeličnih konstrukcija sa sjedištem u Sloveniji. Za analizu utjecaja povjerenja i predanosti na prilagodljivost odnosa kupac-dobavljač korištena je procedura višestruke regresije - Multiple Regression Quadratic Assignment Procedure (MRQAP). Rezultati pokazuju kako povjerenje i predanost nisu samo važne odrednice prilagodljivosti odnosa kupac-dobavljač u kontekstu poslovne mreže, već kako se njihov utjecaj na prilagodljivost odnosa mijenja s obzirom na važnost odnosa kupac-dobavljač. U odnosima visoke važnosti povjerenje je iznimno velika odrednica prilagodljivosti odnosa, dok je u odnosima manje važnosti predanost važnija odrednica prilagodljivosti odnosa.

1. INTRODUCTION

Despite a paradigmatic shift in the understanding of buyer-supplier relationships within the scope of marketing (Hedaa & Ritter, 2005) and networks receiving growing research attention in the industrial marketing literature (Ritter, 2007; Simon, Szalkai & Mandják, 2010), most marketing research on buyer-supplier relationships pursues an a priori dyadic perspective. It mainly focuses on analyzing actor attributes or types of interactions, using the concept of networks as metaphors for merely a set of connected and interdependent actors (Alajoutsijärvi, Eriksson & Tikkanen, 2001). In this regard, one is never "quite sure whether networks are a metaphor, a method, or a theory" (Smith-Doerr & Powell, 2005, p. 379).

While the relationship marketing perspective has for the most part focused on trust and commitment, and linked it to satisfaction or loyalty as traditional performance outcomes in marketing (Snoj, Gabrijan & Milfelner, 2010), the supply chain management literature has focused on the issue of flexibility, not only as a key driver of organizational performance (Carlopio, Harvey & Kiessling, 2012) and a vital organizational process for creating value (Miočević, 2011), but more specifically as a key driver of supply optimization and performance. Thus, it is guite surprising that while the supply chain management literature has started to analyze the impact of trust on supply flexibility (Johnston, Mccutcheon, Stuart & Kerwood, 2004), the link between trust, commitment and flexibility has been largely overlooked in the marketing literature empirically, despite the fact that flexibility is believed to be an important driver of supply relationship performance (Cannon, Doney & Mullen, 1999).

The purpose of this paper is to analyze the manner in which trust and commitment determine relationship flexibility (conceptualized as a response to different types of changes) in a network of transnational buyer-supplier relationships. A network of 11 purchasing managers and 53 suppliers, who are affiliated with a transna-

tional company operating in the steel construction industry with headquarters in Slovenia, is analyzed. The company has a particularly strong market position in the Western Balkans, Eastern Europe and Russia, according to the general geographic focus of Slovenia's export economy, and further complemented by its economic and commercial diplomacy (Udovič, 2011; Zupančič & Udovič, 2011). The analyzed network corresponds to a two-mode, egocentric and valued 11-by-53 actor network. To analyze the impact of trust and commitment on relationship flexibility in a network context, a Multiple Regression Quadratic Assignment Procedure (MRQAP) is used. This methodology should be seen as a network equivalent to traditional regression analysis and has not been employed extensively in the marketing literature to date. The employed research approach draws on the call for the application of an economic sociology perspective to study and manage business relationships in industrial marketing by Mandják and Szántó (2010), which provides an important substantive platform for analyzing the structural aspects of industrial networks and, in particular, "how social network structures affect behavior" (Jackson, 2008, p. 3). In this regard, network analysis is employed as a method of analysis with the network structure itself being the unit of analysis. Network analysis was used since it is one of the few methodological approaches which is not reductionist per se and because it looks at networks as a set of interconnected relationships, not actors (Wasserman & Faust, 1994).

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Flexibility is one of the central issues in supply relationships "because their [supply chains'] operations are always subject to a variety of uncertainties" (Chan & Chan, 2010, p. 331). While Mascarenhas (1981) views flexibility as a system's ability to cope with environmental variations,

Cox (1989) also stresses an agile response to market condition variation. Flexibility is thought to have a direct and positive impact on company performance (Bello & Gilliland, 1997), and has been increasingly understood as a governance mechanism to achieve higher effectiveness and efficiency, as well as sensitivity to volatility, unpredictability and change (Heide & John, 1992). Flexibility is also central to collaborative relationships (Heide & John, 1992), and leads to effective implementation of marketing strategies as well (Bello & Gilliland, 1997).

According to Morgan & Hunt (1994), trusting relationships are characterized by higher levels of flexibility and tolerance. Kumar, Scheer and Steenkamp (1995) emphasize the importance of flexibility in uncertain and turbulent exchange relationships, where high levels of trust are essential for building and maintaining such relationships. Thus, trusting relationships mitigate against ambiguity and uncertainty surrounding the relationship. Holmund and Törnroos (1997) link trust to the creation of a supportive atmosphere, which encourages adaption to changing circumstances. Furthermore, according to Sitkin and Roth (1993), less crucial supply relationships, which are characterized by lower degrees of trust, also imply strong formal and legal agreements and less adaptation to changing situations.

Hypothesis 1: Trust has a significant and positive impact on relationship flexibility in the buyer-supplier network, with this relationship being stronger in more important supply relationships.

Morgan and Hunt (1994) position trust as an important determinant of relationship commitment, and where "trust and commitment are essential elements in the development and maintenance" of exchange relationships (Kingshott, 2006, p. 724). According to Morgan and Hunt (1994, p. 31), trust and commitment should not be seen as just two "independent antecedents of important relationship outcomes", but rather as "key mediating variables" with crucial managerial implications. Kingshott (2006) also explicitly links trust and commitment to flexibility, where

he sees flexibility as a key benefit in buyer-supplier relationships, which lowers transaction and control costs, and increases efficiency and effectiveness. This view is shared by Nyaga, Whipple and Lynch (2010) in the operations management literature.

Hypothesis 2: Commitment has a significant and positive impact on relationship flexibility in the buyer-supplier network, with this relationship being stronger in more important supply relationships.

Hypothesis 3: Trust will have a greater impact on relationship flexibility in the overall buyer-supplier network, compared to commitment. This relationship will also be significantly stronger in high importance supply relationships.

3. DATA AND METHODOLOGY

3.1. Network data

The analyzed network corresponds to a twomode, egocentric and valued network. The twomode aspect relates to the fact that the network consists of two sets of actors: (a) 11 purchasing managers of the focal transnational company from three different countries (Slovenia, Russia, Serbia) and four different production units, and (b) 53 recalled suppliers from Europe and Russia. The egocentric aspect of the network is associated to the fact that each of the 11 focal purchasing managers had to recall five suppliers, of which three suppliers had to be important suppliers and two suppliers had to be less important suppliers for their unit. Since three purchasing managers recalled a common supplier, the final supplier count is 53, not 55 (11x5). The valued aspect of the network relates to the focal purchasing managers evaluating trust, commitment and relationship flexibility with their suppliers on a 7-point ordinal scale.

3.2. Data collection

Data collection took place through a web-based survey in Slovenian, Russian and Serbian languages. The surveying was carried out in two phases in 2011. In the first phase, 11 purchasing managers, representing the complete population of purchasing managers in the focal company, were identified. Each of the 11 respondent purchasing managers were asked to take part in the research by the management of the company and were contacted through e-mail, presented with background of the research, and asked to recall exactly five suppliers (called *alters* in network analysis) through a typical name generation technique for network analysis (see Marsden, 2011). While boundary specification is usually an important issue in network specification and data collection, especially in the case of egocentric networks (Marsden, 2011; Marsden, 1990), a name generator, rather than a complete roster of suppliers was employed in order to limit the respondent burden (Zwijze-Koning & de Jong, 2005). Furthermore, the limit of five suppliers (alters) was chosen to constrain the respondent burden¹ and minimize tediousness of multiple name interpreters related to the multidimensional nature of the tested buyer-supplier relationships (Marsden, 2011). In addition, the choice of five suppliers (alters) was also based on the distribution of actual procurement costs, since a relatively small share of suppliers (top 20%) represented the bulk of procurement costs (over 80% of procurement costs). The limit of five alters was also decided on based on recommendations for egocentric network surveys, especially Burt's (1984) and Marsden's (1987) employment of five alters in the General Social Survey (GSS) name generator instrument. To test different types of buyer-supplier relationships, the respondent purchasing managers had to specifically recall three very important suppliers of their choice (in terms of purchasing value) and two less important ones. The two different types of suppliers were elicited in connection to Kraljic's (1983) notion of relationship quality (i.e. trust and commitment) being positively linearly related to supplier-buyer relationship importance.

In the second phase of the research, each of the 11 purchasing managers received their own personalized survey, which already included the

Table 1: Employed scales and their theoretical background

| Construct | Dimensions/statements | Items/ scale | Reference |
|-----------------------------|--|-------------------------------|---|
| Relationship flexibility | 3 items: Efficient response in a supply relationship to: (1) day-to-day (operational) changes; (2) occasional (e.g. quarterly tactical) changes; (3) substantive, long-term, and rare (strategic) changes. | 7-point ordinal scale** | Adapted from Golden & Powell (2000) |
| Trust | 1 item: experience-based level of trust and reliance on the arrangements and promises made by the specific supplier | 7-point ordinal scale | Adapted from Zaheer, McEvily & Perrone (1998); Morgan & Hunt (1994) |
| Commitment | 1 item: experience-based level of supplier | | Adapted from Morgan & Hunt (1994) |

Source: Authors' own review of the literature.

^{*} Note: Efficient— with minimum impact on performance.

^{**} The final flexibility dimension is based on the simple mean average of the three individual flexibility dimensions.

five suppliers recalled in the first phase of the research. They had to evaluate various relational dimensions between them and the five recalled suppliers related to trust, commitment and various aspects of relationship flexibility. Table 1 provides an overview of the employed scales, as well as their operationalization and theoretical background.

Data collection for all three constructs had to be adapted to the specifics of network data collection focusing not on actor attributes, but rather on the relations between actors, which can thus be quite tedious for respondents (Pustejovsky & Spillane, 2009). The respondent purchasing managers had to evaluate multiple alters across several different relationship dimensions, so respondent burden was minimized by using single-item operationalization of trust and commitment (Rašković, Makovec Brenčič, Ferligoj & Fransoo, 2013).

While the limitations of using a single-item operationalization for both trust and commitment clearly need to be acknowledged, there has also been some methodological support for the use of single-item "construct" operationalization by Fuchs and Diamantopoulos (2009) in case of diverse sampled populations (i.e. high vs. low importance supply relationships) and/or cases where the measured variables can be considered as concrete variables (i.e. overall assessment of trustworthiness or commitment). Selnes (1998), as well as Michell, Reast and Lynch (1998), have also employed single-item operationalization of trust in their research. Lastly, it must also be noted that this research did not specifically focus on the issue of multidimensionality of trust or commitment, but rather on the overall relationship between the perception of overall trustworthiness and commitment of a supplier with regard to their relationship flexibility from the perspective of the purchasing managers (network egos) in the focal transnational company.

3.3. MRQAP methodology

Since network analysis and MRQAP are virtually unknown to the marketing literature, this section includes a more detailed description of the MRQAP methodology employed in the analyses. The MRQAP approach was developed by Krackhardt (1993) from the bi-variate Quadratic Assignment Procedure (QAP). It addresses the widely acknowledged problems related to the statistical analysis of network data (Proctor, 1969), mostly related to the dyadic nature of network data, as well as a high level of relational interdependence (Dekker, Krackhardt & Snijders, 2007). Borgatti and Cross (2003) emphasized the network-correlated nature of such data, while Dekker et al. (2007) pointed to the sensitivity to even moderate levels of row and/or column autocorrelation. Krackhardt (1987) also pointed to the issue of spurious correlation, to which network data are often subjected especially within multiplex network contexts, where actor attributes also play an important role. All these issues hinder "reasonable interpretations of statistical tests" (Dekker, Krackhardt & Snijders, 2003, p. 3), as also statistically confirmed by e.g. Laumann and Pappi (1976).

The QAP is a non-parametric, permutation-based test (or a series of possible permutation tests) which "preserves the integrity of the observed [network] structures" (Krackhardt, 1987, p. 172; see also Barnett, 2011), and tests if "there is no similar pattern between the elements of the different variables" (Dekker et al., 2003, p. 2). Through a process of random permutations of rows and columns of one variable in the matrix, the QAP produces a reference distribution to which the original data structure is compared.

The MRQAP regression permutation version approach developed by Krackhardt (1993) is seen as an extension of the bi-variate QAP, and is employed in the assessment "of multiple regression coefficients for data organized in square matrices instead of vectors" (Dekker et al., 2007, p. 563). Ac-

cording to Dekker et al. (2003, p. 1), the MRQAP "has become popular in social network analysis" since it may be seen as a network version to its "non-network [regression] counterparts [i.e. the OLS]" (Borgatti & Cross, 2003, p. 438). Krackhardt's (1993) MRQAP has also been implemented in *UCINET VI*, a statistical software for the analysis of network data which offers a series of different types of MRQAP permutation tests (e.g. row, column, and row/column permutations), and which has been used in the analyses.

In order to run the MRQAP procedure, the valued network data measured on a 7-point ordinal scale had to be dichotomized, since MRQAP procedures have not yet been developed for the analyses of valued network data (Dekker et al., 2007). Thus, a dichotomization of the original 7-point ordinal data was performed based on the calculation of median values for each respondent purchasing manager individually (across all the five recalled suppliers), as well as for each variable separately. Thus, the following dichotomization rule was applied: 1, if > median; 0 if otherwise.

4. RESULTS

4.1. Descriptive statistics

In terms of descriptive statistics, Table 2 first provides an overview of the key descriptive sta-

tistics, connected to the three constructs of relationship flexibility, trust and commitment for the original 7-point ordinal-type network data. As can be seen from Table 2, there is on average quite a high level of trust between the 11 purchasing managers and their 53 suppliers, with relatively little difference between high importance and low importance supplier groups. This difference is, on the other hand, much more considerable (as expected) when it comes to the issue of commitment, but again less so when it comes to relationship flexibility. Overall, the average score related to relationship flexibility is also considerably lower, compared to either those of trust or commitment.

4.2. Network visualizations

Figure 1 provides illustrative visualizations of the original 7-point ordinal data valued for relationship flexibility, trust and commitment separately (presented as individual networks). In all three networks a strong star-like structure, typical of egocentric networks, may be observed. In addition, we can also see that purchasing manager 2, 3 and 10 share one common supplier.

The thickness of the ties in the networks corresponds to the strength of relationship flexibility, trust and commitment between a purchasing manager and a supplier, as measured on a 7-point ordinal scale.

Table 2: Selected descriptive statistics (7-point ordinal scale)

| | Relationship flexibility | Trust | Commitment |
|------------------------------------|--------------------------|-------|------------|
| Mean | 4.64 | 5.67 | 5.20 |
| Std. deviation | 1.19 | 1.00 | 1.45 |
| Mean – high importance of supplier | 4.75 | 5.79 | 5.70 |
| Mean – low importance of supplier | 4.47 | 5.50 | 4.46 |

Source: Network survey of buyer-supplier relationships, 2011 (m=11 purchasing managers; n=53 suppliers)

Figure 1: Illustrative network visualizations of original valued 7-point ordinal network data for relationship flexibility (left), trust (middle), and commitment (right)

(A) Relationship flexibility (B) Trust (C) Commitment



Source: Network survey of buyer-supplier relationships, 2011 (*m*=11 purchasing managers; *n*=53 suppliers)

4.3. QAP CORRELATIONS

Table 3 provides the results of pair-wise Pearson correlation coefficients, calculated within the dyadic QAP correlation procedure in *UCINET VI*. Based on the calculated Pearson's pair-wise correlation coefficients, we can see that the highest pair-wise correlation exists between trust and commitment (0.613), followed by that between trust and relationship flexibility (0.569), and lastly between commitment and relationship flexibility (0.551). While such pair-wise correlation coeffi-

cients would be quite high for regular parametric testing, which assumes independence between variables (particularly independent and dependent ones), the QAP correlation procedure is a non-parametric procedure and has been specifically developed to deal with the dependence between the variables typical for network contexts. In fact, Barnett (2011) specifically outlines QAP as being appropriate for correlation analysis of network data.

In terms of splitting the supplier mode into high vs. low importance of suppliers, Table 4 shows

Table 3: Pair-wise Pearson's correlation coefficients with corresponding p values in brackets

| | Trust | Commitment | Relationship flexibility | |
|--------------------------|--------------------|---------------------|--------------------------|--|
| Trust | 1.000 <i>(N/A)</i> | | | |
| Commitment | 0.613 (0.00) | 1.000 <i>(N/A)</i> | | |
| Relationship flexibility | 0.569 (0.00) | 0.551 <i>(0.00)</i> | 1.000 <i>(N/A)</i> | |

Source: Network survey of buyer-supplier relationships, 2011 (m=11 purchasing managers; n=53 suppliers)

Table 4: Pair-wise Pearson's correlation coefficients with corresponding p values in brackets for high vs. low importance supplier split

| | HIGH IMP | ORTANCE SUPP | LIERS (31) | LOW IMPORTANCE SUPPLIERS (22) | | | |
|--------------|--------------|--------------------|--------------|-------------------------------|--------------|--------------|--|
| | Trust | Commitment | Relat. flex. | Trust | Commitment | Relat. flex. | |
| Trust | 1.000 (N/A) | | | 1.000 <i>(N/A)</i> | | | |
| Commitment | 0.665 (0.00) | 1.000 <i>(N/A)</i> | | 0.406 (0.00) | 1.000 (N/A) | | |
| Relat. flex. | 0.665 (0.00) | 0.551 (0.00) | 1.000 (N/A) | 0.365 (0.00) | 0.601 (0.00) | 1.000 (N/A) | |

Source: Network survey of buyer-supplier relationships, 2011 (m=11 purchasing managers; n=53 suppliers)

the pair-wise Pearson's correlation coefficients for the split modes, where we can see relatively high and identical correlation coefficients (0.665) between trust and commitment, and trust and relationship flexibility for the high importance supplier group. The correlation between commitment and relationship flexibility is less strong (0.551).

On the other hand, the latter correlation between commitment and relationship flexibility is interestingly the strongest (0.601) of all the pair-wise correlation comparisons for the low importance supplier group; it indicates a strong correlation between commitment and relationship flexibility between purchasing managers and their less important suppliers.

4.4. MRQAP regression results

Table 5 provides the results of the MRQAP with Double-Dekker Semi-Partialling Procedure (see Dekker, Krackhardt & Snijders, 2005), where the dependent variable of relationship flexibility in buyer-supplier network relations was explained by two independent variables – trust and commitment. As we can see from the corresponding results in Table 5, both standardized coefficients are highly statistically significant, with β_{trust} at 0.37 and $\beta_{commitment}$ at 0.32, and a corresponding adjusted R-square of almost 0.39. Thus, a considerable portion of supply flexibility can be explained with the help of trust and commitment between buyers and suppliers in the studied network.

Complementing this perspective, Table 6 provides the MRQAP regression results for the two separate high and low importance supplier groups too.

Given the concerns raised by Dekker et al. (2005) regarding the sensitivity of the MRQAP regression to collinearity and autocorrelation conditions, we have employed a quick robustness check of the MRQAP regression model, using the conservative Y-permutation (pivotal statistic). The procedure produced comparably robust results.

Table 5: MRQAP regression results

| | Unstd. coeff. | Stand. coeff. | Significance | Std. error | |
|-------------------------|---------------|---------------|--------------|------------|--|
| Intercept | 0.002595 | 0.000000 | | | |
| Trust | 0.392968 | 0.369618 | 0.0005 | 0.297983 | |
| Commitment | 0.372655 | 0.324862 | 0.0005 | 0.287575 | |
| Adjusted R ² | 0.389 | | | | |

Source: Network survey of buyer-supplier relationships, 2011 (m=11 purchasing managers; n=53 suppliers)

Table 6: MRQAP regression results for high vs. low importance supplier split

| | HIGH IMPORTANCE SUPPLIERS (31) | | | | LOW IMPORTANCE SUPPLIERS (22) | | | |
|---------------------|--------------------------------|-------------|--------|----------|-------------------------------|-------------|--------|----------|
| | Unstd. | Std. coeff. | Sig. | SE | Unstd. | Std. coeff. | Sig. | SE |
| Intercept | 0.002366 | 0.000000 | | | 0.005912 | 0.000000 | | |
| Trust | 0.495977 | 0.535245 | 0.0005 | 0.265670 | 0.195271 | 0.144542 | 0.0025 | 0.467979 |
| Commitment | 0.194983 | 0.194983 | 0.0005 | 0.290100 | 0.896453 | 0.542389 | 0.0005 | 0.231449 |
| Adj. R ² | 0.463 | | | 0.378 | | | | |

Source: Network survey of buyer-supplier relationships, 2011 (m=11 purchasing managers; n=53 suppliers). Note: SE=standard error

■ Vol. 27, No. 1, 2015, pp. 7 - 19

5. IMPLICATIONS AND DISCUSSION OF THE RESULTS

The importance of trust and commitment, as determinants of relationship flexibility in a buyer-supplier network, in general confirms the key roles of these two constructs in terms of important relationship outcomes in industrial supply relationships. This supports Kingshott's (2006) results, and shows how relationship flexibility must be seen as a crucial benefit and outcome in buyer-supplier relationships. Through the observation of standardized regressor coefficients in the general MRQAP regression model (Table 5), trust comes out as having a significantly larger impact on relationship flexibility, compared to commitment. While this holds across the whole buyer-supplier network of 11 purchasing managers and their 53 suppliers, significant differences can be observed between high and low importance supplier network structures (see Table 6).

In high importance supply relationships, trust is believed to have a significantly higher impact on relationship flexibility, while commitment is believed to have a significantly higher impact on relationship flexibility for low-importance supply relationships. By further taking into account the comparison of average scores for trust, commitment and relationship flexibility between high vs. low importance supplier groups (Table 2), the relationship between trust and commitment differs significantly between the two groups. While a high level of commitment evolved into trust for high-importance supply relationships, commitment more directly drives relationship flexibility (in the absence of trust) in low-importance supply relationships. One might argue that, while a transnational company may not develop high trusting relationships with all its suppliers, it is still committed to achieving flexibility through long-term collaboration and effective performance. This perspective also fits well within Bartlett and Ghoshal's (1989) transnational managerial framework, where transnational companies try to balance both efficiency and flexibility in their relationships.

These results also question Kraljic's (1983) seminal and highly-cited work in Harvard Business Review on the linear and positive relationship between relationship quality - which he operationalized as trust and commitment - and relationship importance within a buyer-supplier relationship portfolio context. The evidence presented in this paper questions Kraljic's (1983) claim, at least in its totality, and seems to be more consistent with more recent empirical evidence by Liu, Li and Zhang (2010), who have provided a more complex relationship quality matrix in which they have addressed more specific relationship control mechanisms across different types of buyer-supplier relationships. They distinguished between four different control mechanisms namely, coercive power, non-coercive power, contracts and relational norms. In this regard, the fundamental managerial question is no longer: How much RQ should be maintained across various types of buyer-supplier relationships in a supply network? Instead, a new question related to different types of relationship quality mechanisms is posed in terms of managing a portfolio of different kinds of supply relationships within transnational companies and their buyer-supplier relationships.

6. CONCLUSION

The purpose of this paper was to analyze the manner in which trust and commitment determine relationship flexibility in transnational buyer-supplier relationships in a network context. A methodological approach novel to the marketing literature was employed to analyze a two-mode, egocentric and valued network between 11 purchasing managers and 53 recalled suppliers associated with a transnational company in Eastern Europe operating in the field of complete steel construction solutions. The presented results have shown that, while the overall level

of relationship flexibility may be quite comparable between the most and less important supply relationships, the mechanisms of achieving this flexibility differ between the two groups of supply relationships. In high importance supply relationships, trust is seen as the overwhelming determinant of relationship quality, while this is true for commitment among low-importance supply relationships. While it must be acknowledged that the present research may be subject

to some research limitations (single-item operationalization of trust and commitment; tentative data based on a single-case study setting), as well as some methodological limitations (dichotomization of ordinal data to perform MRQAP regression), the results presented in it seem none-theless to question the simple linear relationship between relationship quality and buyer-supplier relationship importance, as often suggested in the purchasing literature.

REFERENCES

- 1. Alajoutsijärvi, K., Eriksson, P., & Tikkanen, H. (2001). Dominant metaphors in the IMP network discourse: 'the network as a marriage' and 'the network as a business system'. *International Business Review, 10,* 91-107.
- 2. Barnett, G. A. (2011). Encyclopedia of Social Networks. London: Sage Publications.
- 3. Bartlett, C. A., & Ghoshal, S. (1989). *Managing across borders: the transnational solution*. Cambridge, MA: Harvard Business School Press.
- 4. Bello, D. C., & Gilliland, D. I. (1997). The effect of output controls, process controls, and flexibility on export channel performance. *Journal of Marketing*, *61*, 22-38.
- 5. Borgatti, P. S., & Cross, R. (2003). A Relational View of Information Seeking and Learning in Social Networks. *Management Science*, 49, 432-445.
- 6. Burt, R. S. (1984). Network Items and the General Social Survey. Social Networks, 6, 293-339.
- 7. Cannon, J. P., Doney, P. M., & Mullen, M. R. (1999). A cross-cultural examination of the effects of trust and supplier performance on long-term buyer-supplier relationships. *American Marketing Association Conference Proceedings*.
- 8. Carlopio, J., Harvey, M., & Kiessling, T. (2012). A key to prosperity in hypercompetitive markets: organizational "hyperflexibility". *Market*, *24*, 187-200.
- 9. Chan, H. K., & Chan, F. T. S. (2010). Comparative study of adaptability and flexibility in distributed manufacturing supply chains. *Decision Support Systems*, 48, 331-341.
- 10. Cox, J. T. (1989). Towards the measurement of manufacturing flexibility. *Production and Inventory Management Journal*, *30*, 68-72.
- 11. Dekker, D., Krackhardt, D., & Snijders, T. (2003). Multicolinearity Robust QAP for Multiple-Regression, Working paper. http://www.casos.cs.cmu.edu/publications/papers/dekker_2003_multicollinearity.pdf, (July 2013)
- 12. Dekker, D., Krackhardt, D., & Snijders, T. (2005). Sensitivity of MRQAP Tests to Collinearity and Auto-correlation Conditions. *Mellon University Working Paper Series*, *3*, 1-33.
- 13. Dekker, D., Krackhardt, D., & Snijders, T. (2007). Sensitivity of MRQAP tests to collinearity and auto-correlation conditions. *Psychometrika*, 72, 563-581.
- 14. Fuchs, C., & Diamantopoulos, A. (2009). Using single-item measures for construct measurement in management research. *Die Betriebswirtschaft: DBW, 69*, 195-210.
- 15. Golden, W., & Powell, P. (2000). Towards a definition of flexibility: in search of the Holy Grail?. *Ome-ga, 28,* 373-384.
- 16. Hedaa, L., & Ritter, T. (2005). Business relationships on different waves: Paradigm shift in marketing orientation revisited. *Industrial Marketing Management*, *34*, 714-721.

- 17. Heide, J. B., & John, G. (1992). Do norms matter in relationship marketing?. *Journal of Marketing*, *56*, 32-44.
- 18. Holmund, M., & Törnroos, J-Å. (1997). What are relationships in business networks?. *Management Decision*, *35*, 304-309.
- 19. Jackson, M. O. (2008). *Social and Economic Networks*. Princeton and Oxford: Princeton University Press.
- 20. Johnston, D. A., Mccutcheon, D. M., Stuart, F. I., & Kerwood, H. (2004). Effects of supplier trust on performance of cooperative supplier relationships. *Journal of Operations Management*, *22*, 23-38.
- 21. 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*, 724-739.
- 22. Krackhardt, D. (1987). QAP partialling as a test of spuriousness. Social Networks, 9, 171-186.
- 23. Krackhardt, D. (1993). MRQAP: analytic versus permutation solutions. Carnegie Mellon University Working paper series.
- 24. Kraljic, P. (1983). Purchasing Must Become Supply Management. *Harvard Business Review, 61*, 109-117.
- 25. Kumar, N., Scheer, L. K., & Steenkamp, J.-B. E. M. (1995). The effects of supplier fairness on vulnerable resellers. *Journal of Marketing Research*, *32*, 54-65.
- 26. Laumann, E. O., & Pappi, F. U. (1976). *Networks of Collective Action: A Perspective on Community Influence Systems*. New York, NY: Academic Press.
- 27. Liu, Y., Li, Y., & Zhang, L. (2010). Control mechanisms across a buyer-supplier quality matrix. *Journal of Business Research*, *63*, 3-12.
- 28. Mandják, T., & Szántó, Z. (2010). How economic sociology can help business relationship management?. *Journal of Business & Industrial Marketing*, 25, 202-208.
- 29. Marsden, P. V. (1987). Core discussion networks of Americans. *American Sociological Review, 52*, 122-131.
- 30. Marsden, P. V. (1990). Network data and measurement. Annual Review of Sociology, 16, 435-463.
- 31. Marsden, P. V. (2011). Survey Methods for Network Data. In: J. Scott & P. J. Carrington (Eds.). *The SAGE Handbook of Social Network Analysis*. 2^{ed} (370-388). London: Sage Publications.
- 32. Mascarenhas, B. (1981). Planning for flexibility. Long Range Planning, 14, 78-82.
- 33. Michell, P., Reast, J., & Lynch, J. (1998). Exploring the foundations of trust. *Journal of Marketing Management*, *14*, 159-172.
- 34. Miočević, D. (2011). Key Supplier Relationship Management: The Case of Croatian Medium-sized and Large Manufacturing Companies. *Market*, *23*, 27-44.
- 35. Morgan, R. M., & Hunt, S. D. (1994). The Commitment-Trust Theory of Relationship Marketing. *Journal of Marketing*, *58*, 20-38.
- 36. 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,* 101-114.
- 37. Proctor, C. H. (1969). Analyzing pair data and point data on social relationships, attitudes and background characteristics of Costa Rican Census Bureau Employees. *Proceedings of the American Statistical Association* (457-465). Washington, D. C.: US Census Bureau.
- 38. Pustejovsky, J. E., & Spillane, J. P. (2009). Question-order effects in social network name generators. *Social Networks, 31,* 221-229.
- 39. Rašković, M., Makovec Brenčič, M., Ferligoj, A., & Fransoo, J. C. (2013). Relationship learning as a dimension of relationship quality: tentative evidence from transnational buyer-supplier relationships. *Market*, *25*, 37-50.

- 40. Ritter, T. (2007). A framework for analyzing relationship governance. *Journal of Business & Industrial Marketing*, 22, 196-201.
- 41. Selnes, F. (1998). Antecedents and consequences of trust and satisfaction in buyer-seller relationships. *European Journal of Marketing*, *32*, 305-322.
- 42. Simon, J., Szalkai, S., & Mandják, T. (2010). Business Networks: Global, Regional and Local The Best from the IMP 2010 Budapest (special issue). *Industrial Marketing Management, 40*, 817-1056.
- 43. Sitkin, S. B., & Roth, N. L. (1993). Explaining the limited effectiveness of legalist 'remedies' for trust/distrust. *Organization Science*, *4*, 367-392.
- 44. Smith-Doerr, L., & Powell, W. W. (2005). Networks and Economic Life. In: N. J. Smelser & R. Swedberg (Eds.). *The Handbook of Economic Sociology*. (379-402). New York, NY: Russell Sage Foundation.
- 45. Snoj, B., Gabrijan, V., & Milfelner, B. (2010). Internal and External Market Orientation as Organizational Resources Consequences for Market and Financial Performance. *Market*, 22, 223-241.
- 46. Udovič, B. (2011). Slovene commercial diplomacy in the Western Balkan countries. *Communist and Post-Communist Studies*, 44, 357-368.
- 47. Wasserman, S., & Faust, K. (1994). *Social Network Analysis: Methods and Applications*. New York, NY: Cambridge University Press.
- 48. Zaheer, A., McEvily, B., & Perrone, V. (1998). Does trust matter? Exploring the effects of interorganizational and interpersonal trust on performance. *Organization Science*, *9*, 141-159.
- 49. Zupančič, R., & Udovič, B. (2011). Lilliputian in a Goliath world: the preventive diplomacy of Slovenia in solving the question of Kosovo's independence. *Revista românæa de ştiinţe politice, 11*, 39-80.
- 50. Zwijze-Koning, K. H., & de Jong, M. D. T. (2005). Auditing information structures in organizations: A review of data collection techniques for network analysis. *Organizational Research Methods, 8*, 429-453.

Endnotes

The ratio between a purchasing manager and the number of suppliers was, on average, higher than 1:30 at the TNC level, where for a complete network each purchasing manager would have to evaluate on average over 30 alters across the myriad relationship dimensions (name interpreters).