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**Assessment of traditional food supply chain performance using triadic approach: The
Role of Relationships Quality**

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Abstract

Purpose – The objectives of this paper were twofold: to explore if there are differences in the perceptions about supply chain performance (SCP) and relationship quality (RQ) among traditional food supply chain members, and to examine the influence of individual relationship variables and aggregated relationship quality on SCP in the traditional food sector.

Design/methodology/approach – The survey was conducted in a triadic context with 189 supply chain members (62 suppliers, 65 focal companies and 62 customers) of 65 traditional food supply chains (cheese, olive oil, meat products, brandies and liqueurs, wine and honey) in Croatia. The influence of individual relationship variables and aggregated RQ on perceived SCP was tested using regression analysis.

Findings – It was found that there were no significant differences in the perception of overall SCP and RQ among supply chain members. It was identified that aggregated RQ and all individual relationship variables (trust, commitment, economic satisfaction, non-coercive and coercive power, reputation and conflict) have a significant influence on perceived SCP of the traditional food supply chains.

Practical implications – This study provides a systematic approach to investigate the SCP and supply chain RQ in the traditional food sector. Our findings suggest that managers should not neglect any aspect of supply chain relationship in order to keep high SCP and to be competitive on the market.

Originality/value – This multiple supply chain study makes an original empirical contribution to the supply chain and network management literature by using a triadic approach to investigate RQ and SCP. The influence of individual RQ constructs and aggregated RQ on traditional food SCP examined in this study has not been explored so far. This study also makes an original empirical contribution by investigating RQ and SCP in the traditional food sector, which has received little attention recently.

Key words - *Performance measurement, relationship quality, food industry, supply-chain management*

1. Introduction

Globalization, market liberalization, new consumers' lifestyle trends, stricter environmental and safety regulations in the area of food quality, and the political reforms of the EU's Common Agricultural Policy (CAP) are factors that have had a significant impact on the agri-food industry in the last 20 years (Fischer *et al.*, 2009; Tsolakis *et al.*, 2013; Mutonyi and Gyau, 2014), which has been leading to an increased concern for the competitiveness of the sector (Turi *et al.*, 2014). These changes have affected mostly small and medium-sized enterprises which dominate the agri-food industry, especially in Europe (Matopoulos *et al.*, 2007; European Commission, 2014). In order to survive in the market, these SMEs must seek for new opportunities to increase their own competitiveness. In order to gain a competitive advantage and outperform its rivals, a company must either perform its activities at a lower cost or deliver better benefits to customers than its competitors (Porter, 1985). Additionally, as recently has been argued, competitiveness also depends on a company's ability to collaborate with other enterprises (Matopoulos *et al.*, 2007), and it can be increased by improving supply chain management and efficiency (Tsolakis *et al.*, 2013; Turi *et al.*, 2014). Many studies indicate that "organizations nowadays no longer compete as independent entities, but as supply chains" (Christopher, 1998; Cox, 1999; Lambert and Cooper, 2000; Sezen, 2008).

Given the growing importance of supply chains in the food market (e.g. EU food supply chains generate an added value of € 800 billion and a turnover of € 4 trillion; European Commission, 2014), there is a growing interest among scientists and experts for evaluating food supply chain performance (SCP) and for exploring factors influencing this performance (Aramyan *et al.*, 2007; Molnar *et al.*, 2010; Mutonyi and Gyau, 2014; Odongo *et al.*, 2016). One factor which often proved as having important influence on SCP is supply chain relationship quality (RQ) (Fynes *et al.*, 2005; Lambert, 2008; Molnar *et al.*, 2010; Odongo *et al.*, 2016). RQ represents a degree to which supply chain members are involved in an active, long-term relationship (Razavi *et al.*, 2016) which, based on their past experiences of success or failure, answers to their mutual needs and expectations (Crosby *et al.*, 1990). In literature, RQ is conceptualised as a latent variable of different components mostly derived from social psychology such as trust, commitment, satisfaction etc. (Moorman *et al.*, 1993; Ganesan, 1994; Geyskenset *et al.*, 2000; Lee, 2001; Hennig-Thurau *et al.*, 2002). The majority of the existing studies have explored the impact of RQ components on SCP, while only a few studies explore the joint effect of RQ components on SCP (Fynes *et al.*, 2005; Molnar *et al.*,

2010; Odongo *et al.*, 2016). Additionally, there is a lack of evidence in the literature in which RQ, measured at an aggregate level, influences SCP.

In addition, many empirical studies on SCP have been focusing on the performance of individual firms in a supply chain (Soonhong and Mentzer, 2004; Sezen, 2008; Srinivasan *et al.*, 2011) or on the performance of dyads (Benton and Maloni, 2005; Fynes *et al.*, 2005; Krause *et al.*, 2007; Yang, 2009; Srinivasan *et al.*, 2011; Nyaga *et al.*, 2013). Dyadic level analysis collects data from two firms of a dyad, the focal company and either a firm upstream, or a firm downstream to the focal company (Benton and Maloni, 2005; Yang, 2009). However, according to previous research, an analysis of a supply chain at a dyadic level does not bring out the underlying dimensions of a supply chain (Mentzer *et al.*, 2001; Kuhne *et al.*, 2013; Dora, 2016). Consequently, researchers have an increasing interest in evaluating the performance of triads, or how three directly connected companies perform together within a supply chain (Molnar *et al.*, 2010; Holma, 2012). However, due to a rather complicated data collection based on triadic approach, there are only few papers applying this approach, especially in the agri-food sector (Molnar *et al.*, 2010; Kuhne *et al.*, 2013; Dora, 2016; Odongo *et al.*, 2016).

Traditional food sector as a growing segment of agri-food sector (Vanhonacker *et al.*, 2010) has recently been gaining a lot of attention in scientific literature as a food product category (Jordana, 2000; Wycherley *et al.*, 2008; Cerjak *et al.*, 2014), not only at the producer, industry, and government levels, but also at the retail and consumer levels (Vanhonacker *et al.*, 2010; Almli, 2012; Cerjak *et al.*, 2014; Mesić *et al.*, 2017). However, even if one of the major constraints for a further development of this market is low farmers' ability to act independently on the market, and distribution is also inefficient within the sector, there are only few studies dealing with traditional food SCP (Molnar *et al.*, 2010; Kuhne *et al.*, 2013), and this is especially true for developing countries.

Given the above-mentioned shortcomings in the literature, the goal of this research was to overcome these gaps through empirical examination. The data presented in the study were collected in Croatia, a transition country which has been going through a rapid change in its food market in the last 20 years. Even though the traditional food sector in Croatia faced significant growth regarding quality as well as diversity of supply, there are still many problems affecting SCP in this sector. According to Mesic (2014) the key problems in

Croatian traditional food supply chains are the use of unfair trade practices (exploitative contracts, high rebates), accounts receivable, non-compliance with the payment deadlines, low wholesale prices, high costs of logistics and poor cooperation and integration between chain members. Similar situations are present in many countries of Central and Eastern Europe (European Commission, 2014).

Specifically in the present study, we aimed to analyse SCP of the traditional food sector using, as literature suggested, triadic approach, and to explore the influence of RQ on SCP, not only on a single constructs level but also on a RQ aggregate level. Additionally, our goal was to explore if there are differences between supply chain members' perceptions about supply chain performance (SCP) and relationship quality (RQ).

This paper is organized as follows. It starts with a theoretical background and the derived research hypotheses. It is followed by the adopted methodology, the analysis of the data, the discussion of obtained results, and the theoretical and practical implications of the study are discussed in the final section.

2. Theoretical Background and Research Hypotheses

2.1. Supply chain performance and relationship quality

This paper is based on a social network theory (SNT) which suggests that firms strive for closer relationships with other supply chain members when mutual benefits can be achieved (Odongo *et al.*, 2016). Williams and Durrance (2008) noted that according to SNT, organisations should not be studied in isolation because they are ultimately influenced by the network to which they belong. SNT is relevant to this paper because our research proposition suggests that good RQ amongst supply chain members has performance benefits to individual supply chain members as well as to the performance of the whole supply chain.

According to *Mentzer et al.* (2001, p. 4), “a supply chain consists of a producer, a supplier, and a customer involved in the upstream and/or downstream flows of products, services, finances, and/or information”. “The food supply chain links a variety of activities: the procurement of agricultural raw materials, their processing up to final human consumption and their distribution” (Turi *et al.*, 2014, p. 134). The proper functioning of supply chains depends on their members whose main goal is to satisfy customer demands for which they

cooperate in value adding processes (Noemi, 2012). The common interest of chain members is the success of the entire supply chain because being part of a successful supply chain may provide competitive advantage for the individual members (Molnar *et al.*, 2010; Noemi, 2012), as suggested in SNT. Therefore, in today's competitive markets, it is important for the different chain members to be aware of how well performing the supply chain they belong to is.

The first and most important step in evaluating a SCP is having clearly defined supply chain goals because a performance can generally be defined as the extent to which goals are achieved (Kaplan, 1983). The supply chain goals are determined as a set of outcomes which can be achieved only if all supply chain members work together to remove the constraints preventing their achievement (Simatupang *et al.*, 2004). A performance can generally be measured subjectively and objectively (Dawes, 1999). An objective way of measuring a performance is based on objective data or financial indicators of enterprises (eg., profits, inventory, turnover). However, many agri-food companies do not screen their performance in a regular way (Collins *et al.*, 2001), and they are often unwilling to release information on the financial operations of the company. That is why Ward *et al.* (1994) suggested the subjective way of measuring the performance, which is based on the respondents' subjective opinion or assessment (perception) of the supply chain's business performance (Covin *et al.*, 1989). Previous research has shown that perceived assessments are consistent with objective performance (Vickery *et al.*, 1997). An appropriate measuring instrument is required for the subjective performance measurement, which will quantitatively show how successful a supply chain is, what the quality of the service delivery is, and whether there is a potential for improving performance (Cohen and Rousset, 2005).

Previous researchers have shown that RQ is one of the prerequisites of a high performing supply chain. RQ is the overall assessment of the strength of a relationship and the degree to which needs and desires of business partners are satisfied (Naude and Buttle, 2000; Srinivasan *et al.*, 2011). In literature, RQ is usually conceptualized as a composite or multidimensional construct capturing different but related facets of a relationship (Lages *et al.*, 2005; Palmatier *et al.*, 2006). In this study, we used trust, commitment, economic satisfaction, non-coercive and coercive power, reputation and conflict as RQ dimensions. These seven components have been widely referred to as important components of RQ in relationship quality studies (Crosby *et al.*, 1990; Walter *et al.*, 2003; Batt *et al.*, 2006; Vieira *et al.*, 2008; Molnar *et al.*,

2010; Zander and Beske, 2014; Odongo *et al.*, 2016 etc.). Table 1 illustrates the most common dimensions of RQ used in the literature.

[Insert Table 1 here]

2.2. Hypothesis development

To examine the points previously discussed, we have formulated the following eight hypotheses. Figure 1 presents the research framework and the research hypothesis.

[Insert Figure 1 here]

Trust between supply chain members is recognized in the literature as a key factor for a development of partnerships and SCP (Johnston *et al.*, 2004). Moorman, Deshpande and Zaltman (1993) define trust as “a willingness to rely on an exchange partner in whom one has confidence”. They argue that the interpersonal factors that mostly affect trust include perceived expertise, sincerity, integrity, tactfulness, timeliness and confidentiality. Trust increases the partners’ tolerance for each others’ behaviour, and facilitates the informal resolution of conflict, which allows the partners to adapt better to the needs and capabilities of the counterpart firm (Hakansson and Sharma, 1996). According to Doney and Cannon (1997), high levels of trust enable the parties to focus on the long-term benefits of the relationship, which ultimately enhances competitiveness and reduces transaction costs. In previous research, trust has been usually hypothesised in the context of a positive influence on SCP (Fynes *et al.*, 2008; Kuhne *et al.*, 2013; Odongo *et al.*, 2016). Fynes *et al.* (2008) treated trust as an integral part of supply chain quality and, after empirical testing, they identified a positive link between supply chain quality and supply chain performance. A positive link between trust and good business results was also confirmed in the research carried out by Renko (2011) in Croatia. We therefore hypothesize that:

H1. Trust has positive influence on traditional food SCP

The co-operation, which arises from the presence of trust during the expansion phase, begins to have an impact on the commitment phase (Fynes *et al.*, 2005). Moorman *et al.* (1993) define commitment as an enduring desire to maintain a valued relationship. Many studies have shown that high performing chains are based on a strong commitment among supply chain partners (Prahinski and Benton, 2004; Krause *et al.*, 2007). Clarke (2006) noted a positive relationship between supply chain members’ commitment towards long-term

relationships and performance as commitment reduces the time and costs associated with recurrent disputes, posturing and renegotiations. Krause *et al.* (2007) reported that collaborating commitment had a direct positive impact on the performance of the organisation. Odongo *et al.* (2016) found that focal firms (maize producers) considered commitment as an important factor that influences their performance with respect to their suppliers in the maize supply chain. Prahinski and Benton (2004) tested the relationship between commitment and performance outcomes for the suppliers and concluded that commitment acts as an intermediary in building positive buyer-supplier relationships and it is a must-have factor in achieving supplier performance. As reported by Morgan and Hunt (1994) “when both commitment and trust - not just one or the other - are present, they produce outcomes that promote efficiency, productivity and effectiveness”. We therefore hypothesize that:

H2. Commitment has positive influence on traditional food SCP

Economic satisfaction is defined as a channel member’s positive affective response to economic rewards that flow from the relationship with its supply chain partner such as sales volume, margins, and discounts (Geyskens *et al.*, 1999, p. 224). According to them, “an economically satisfied channel member considers the relationship a success when it is satisfied with the effectiveness and productivity of the relationship with its partner, as well as with the resulting financial outcomes.” Ganesan (1994) describes this construct as benevolent because it is based on the degree of which the respondent firmly believes that its partner has intentions and motives which are beneficial to him/her. Previous research has given considerable attention to the effects of supply chain members’ economic satisfaction on positive outcomes like trust and commitment (see e.g., Geyskens *et al.*, 1999). As reported by Benton and Maloni (2005), without satisfaction, supply chain members are unable to generate the psychological factors such as trust and commitment, which are necessary for the partnership to be sustained. The role of economic satisfaction related to SCP in traditional food sector has received much less attention (a notable exception is the work by Molnar *et al.*, 2010). Molnar *et al.* (2010) found evidence that satisfaction with the economic contribution of partners is inversely related to the perceived chain performance in traditional food sector. They found that the higher level of economic satisfaction increases the probability of being a member of a high performing chain. We therefore hypothesize that:

H3. Economic satisfaction has positive influence on traditional food SCP

In supply chain management literature, a considerable amount of attention has been paid to the power construct (Hunt and Nevin, 1974; Brown *et al.*, 1995; Cox, 1999; Benton and Maloni, 2005; Byrne and Power, 2014; Dora, 2016). According to Maloni and Benton (2000) power in supply chain is the ability of one firm (source) to influence the actions and intents of another firm (target) it deals with. Previous studies on power have focused on its influence on power asymmetry (Ulstrup Hoejmoose *et al.*, 2013; Nyaga *et al.*, 2013), relationship commitment (Zhao *et al.*, 2008), relationship strength (Maloni and Benton, 2000; Lee, 2001) and performance (Benton and Maloni 2005; Dora, 2016). Despite the existence of numerous contributions, the literature suggests that there is a lack of empirical research examining the influence of power on SCP, especially in the agri- food sector (Dora, 2016). The influence of power in supply chain can be positive and negative, depending on the type of power in use. Hunt and Nevin (1974) classify power as coercive and non-coercive power. According to Mallen (1963) coercive power represents a power struggle driven by force. Coercive power is referred to when one supply chain member uses his power over a critical resource in the supply chain to force other partners into action, which, in most cases, leads to a decrease in the relationship quality (Jonsson and Zineldin, 2003). The work of Liu and Wang (2000) has indicated that the use of coercive power encourages conflict in the supply chain and disables cooperation, thereby decreasing the SCP. Many existing studies have found empirical evidence of the negative influence of coercive power on SCP (Zhao *et al.*, 2008; Nyaga *et al.*, 2013; Dora, 2016). We therefore hypothesize that:

H4. Coercive power has negative influence on traditional food SCP

The use of non-coercive power helps to increase financial and social benefits, through, for example, the offering of financial rewards, provision of assistance, and access to specialized information (Wilkinson, 1979). Non-coercive power increases the value of the relationship through team support and common interests as well as promoting collective goals (Jonsson and Zineldin, 2003). Previous studies have shown that the use of non-coercive power enables the development of long-term relationships and has positive effect on SCP (Zhao *et al.*, 2008; Flynn *et al.*, 2008; Nyaga *et al.*, 2013). We therefore hypothesize that:

H5. Non-coercive power has positive influence on traditional food SCP

Reputation is a belief that a company is honest and concerned about its customers (Doney and Cannon, 1997). A firm that is highly responsible, fulfils the expectations, keeps its promises, and provides value and benefits for its partner will have a good reputation in the supply chain as being reliable (Kabadayi *et al.*, 2011). A reputation for important criteria is a source of trustworthiness that clients seek in their relationships (Davies and Prince, 2005). Ganesan (1994) pointed out that reputation is built on the basis of reliable and consistent behavior in a long time, and the reputation can easily spread among companies so that they will further strengthen the credibility of the enterprises. Eltantawy *et al.* (2009) found that perceived reputation has a direct positive impact on performance. Similar findings were reported by Molnar *et al.* (2010). They found that chain members who rate their partners highly on perceived reputation score are more likely to be members of a high performing chain. We therefore hypothesize that:

H6. Reputation has positive influence on traditional food SCP

Conflict is measured as the extent of disagreements and differences in expectations in the supply chain relationship (Reve and Stern, 1979). According to Ehie (2010) conflict is pervasive and virtually inevitable in supply chain relationships, particularly when there is a functional interdependency between two business units. Until today, many authors studied the conflict problems in supply chain management literature. However, empirical evidence investigating the relationship between conflict and SCP is still underdeveloped and contradictory (Duarte and Davies, 2003; Ehie, 2010). Some studies have found that conflict is destructive and decreases performance (Kumar *et al.*, 1995; Duarte and Davies, 2003; Molnar *et al.*, 2010), while other studies found that conflict is beneficial and conducive to SCP (Brown *et al.*, 1983; Schwenk, 1990; Ehie, 2010). Pearson (1973) found no statistical significant difference in SCP between relationships characterized by conflict and those characterized by cooperation. The results of the study by Molnar *et al.* (2010) carried out in the traditional food sector, which is also in focus of our study, revealed significant negative relationship between performance and conflict in the traditional food supply chain. Their results showed that higher level of conflict between a chain's members imposes lower chain performance. In an attempt to explain the confusing and contradictory findings of relationships between channel conflict and performance, Rosenbloom (1973) theorises that the relationship between these two constructs follows an inverted-U curve, where conflict is the most productive at moderate levels and the least productive at very low or high levels.

Given the contradictory findings, more research is needed to shed light on the effect of conflict on SCP. We therefore hypothesize that:

H7. Conflict has negative influence on traditional food SCP

The influence of RQ on SCP has already been explored (Fynes *et al.*, 2005; Lambert, 2008; Molnar *et al.*, 2010; Odongo *et al.*, 2016), and previous empirical research has proved that RQ is a critical cornerstone of superior SCP (Benton and Maloni, 2005; Lambert, 2008; Odongo *et al.*, 2016). Although previous research has shown that strong relationships improve SCP, there is still a lack of empirical evidence in the agri-food sector, especially in the traditional food sector. We therefore hypothesize that:

H8. Aggregate RQ has positive influence on traditional food SCP

3. Materials and Methods

3.1. Research method and research sample

The survey was conducted with 189 supply chain members (62 suppliers, 65 producers of TFPs (focal companies) and 62 customers) from 65 supply chains of the following six TFP categories: cheese, olive oil, meat products, brandies and liqueurs, wine, and honey (Table 2). The survey questionnaires passed a linguistic validation, i.e. the clarity and comprehensibility of the statements were confirmed by five experts on supply chain research from the University of Zagreb. Before conducting a field research, the questionnaires were additionally pre-tested in a face to face survey conducted with 12 members of TFPs supply chain, ranging from raw suppliers, producers of TFPs, to customers (retail store owners). The final questionnaires were slightly modified based on the suggestion of these respondents.

[Insert Table 2 here]

In the first step of the research, we contacted 310 focal companies by telephone to invite them to participate in the survey. For selecting focal companies engaged in the production of TFPs, a “Register of Business Entities” from the Croatian Chamber of Economy was used.

In the second step, a questionnaire designed for focal companies was sent via e-mail to those producers who had agreed to participate in the survey (n=155); out of them only 65 responded

to the survey. During the telephone conversation, each focal company was requested to identify the most important supplier and customer they were working with at that time. Then the questionnaires designed for suppliers and customers were sent by e-mail to the identified suppliers and customers.

3.2. *Measurement and scaling*

To assess SCP, we used an instrument developed by Gellynck *et al.* (2008). In this instrument, SCP is measured through five constructs (traditionalism, efficiency, responsiveness, quality, and supply chain balance) presented via 11 statements. A 5-point Likert scale (1-fully disagree, 2-disagree, 3-neutral, 4-agree, 5-fully agree) was used to examine the respondents' level of agreement with the statements.

In data collection, we used a matched triad approach (Molnár *et al.*, 2010; Kühne *et al.*, 2013; Odongo *et al.*, 2016). This means that each focal company rated 11 performance statements separately for its individual supplier and customer. The supplier and the customer rated the same statements in relation to their focal company. A higher level of agreement with the statements corresponds with a higher SCP and vice versa.

For each of the five performance constructs scores were computed for four perspectives: evaluation of focal companies related to suppliers (FC_S), evaluation of focal companies related to customers (FC_C), evaluation of suppliers related to focal companies (S_FC), evaluation of customers related to focal companies (C_FC) by calculating the mean of the item scores for the related construct. The aggregate SCP was calculated as a mean of the four perspective scores (Table 4).

$$\underline{\text{Aggregate SCP} = (\text{Total SCP}_{FC_S} + \text{Total SCP}_{FC_C} + \text{Total SCP}_{S_FC} + \text{Total SCP}_{C_FC})/4}$$

We also used triad approach to capture data on RQ of supply chains. RQ was measured by using seven relationship constructs (trust, commitment, economic satisfaction, non-coercive and coercive power, reputation and conflict), which were operationalized through 18 statements (details about the statements measuring RQ and sources are provided in Appendix 1). Respondents expressed their level of agreement with these statements on the same 5-point Likert scale which was used to measure SCP. Like the SCP, the aggregate supply chain score for RQ was computed as a mean of RQ scores for each perspective (Table 4).

$$\underline{\text{Aggregate RQ} = (\text{Total RQ}_{FC_S} + \text{Total RQ}_{FC_C} + \text{Total RQ}_{S_FC} + \text{Total RQ}_{C_FC})/4}$$

3.3. Data analysis

All statistical analyses were done in the program package SPSS (Statistical Package for Social Science, version 21.0). The data obtained from the surveys were initially analysed using univariate methods to examine frequencies and distributions and to detect possible errors that might have occurred during data entry.

The reliabilities of measurement scale for SCP ($\alpha=0.89$) and RQ ($\alpha=0.76$) were assessed by calculating the Chronbach's α values. The differences between suppliers', focal companies' and customers' perceptions about SCP and RQ were tested by the Kruskal-Wallis test and the Mann-Whitney U-tests. The influence of RQ and individual relationship variables on perceived SCP was tested by using linear regression analysis. The level of statistical significance was set at $p < 0.05$.

4. Results

4.1. Analysis of SCP in traditional food supply chains

The Chronbach's α values for each SCP construct and for the aggregate score of SCP are presented in Table 3. The reliabilities of each SCP construct and the aggregate SCP were acceptable with the Chronbach's α values varying from 0.67 to 0.86 (DeVellis, 1991).

[Insert Table 3 here]

Generally, respondents rated supply chain members' contribution to their companies' performance highly, and there were no statistically significant differences between these scores in the four studied perspectives (Table 4). This suggests a high subjective valuation of the contribution of supply chain members to the respondent companies' performance. In all four analysed perspectives, the highest scores were achieved for traditionalism (on aggregate level mean=4.04), responsiveness (mean=3.78) and quality (mean=3.72), while the lowest scores were achieved for efficiency (mean=3.61) and supply chain balance (mean=3.49). It was found that there were no significant differences in the perception of most individual SCP constructs and indicators. However, statistical differences were identified for only two performance indicators, profit, as an indicator of efficiency ($p < 0.05$), and attractiveness, as the indicator of quality ($p < 0.05$). Namely, the dyads analyses showed that suppliers believed more than others that food producers help them to maintain acceptable profitability. A higher

perception is identified about the extent to which food produces help customers and suppliers to sell more attractive products (Table 4).

[Insert Table 4 here]

4.2. Analysis of RQ in traditional food supply chains

Table 5 presents the Chronbach's α values for all seven RQ constructs and for the aggregate score of supply chain RQ. The reliability of each RQ construct was acceptable.

[Insert Table 5 here]

The analysis of the RQ showed that there is no significant difference in the perception of the total RQ according to individual perspectives, although significant differences were found on the following relationship measures: trust, coercive power, and reputation ($p < 0.05$). The analysed supply chains are characterized by a high level of trust (mean = 4.13), commitment (mean = 4.14), reputation (mean = 3.95), and economic satisfaction (mean = 3.93). In the relationship between focal companies and suppliers, there is a higher level of trust than in the relationship between focal companies and customers ($p < 0.05$).

We identified that customers are the ones who have more trust in the focal companies than the other way around ($p < 0.05$). Out of all four analyzed perspectives, non-coercive power has been assessed at an average score of 3.04. Coercive power (mean = 2.34) and conflict (mean = 2.17) are rated very low both at supply chain level and at dyad level. In traditional food supply chains, a higher level of reputation is recorded from the perspective of the suppliers (mean 4.10) and the customers (mean 4.20) for the focal company than vice versa ($p < 0.05$). The highest level of conflict was found in the relationship between focal companies and customers (mean 2.24), even though there were no significant differences between the different perspectives (Table 6).

[Insert Table 6 here]

4.3. The influence of RQ on SCP in traditional food supply chains

Table 7 shows the results of the linear regression analyses, confirming all the hypotheses (H1 – H8).

[Insert Table 7 here]

The results of regression analyses confirmed that RQ has positive influence on the perceived SCP ($\beta = 0.718$, t-value = 7.793, $p < 0.05$). It was also identified that trust ($\beta = 0.625$, t-value = 6.156, $p < 0.05$), commitment ($\beta = 0.680$, t-value = 7.130, $p < 0.05$), economic satisfaction ($\beta = 0.624$, t-value = 6.131, $p < 0.05$), reputation ($\beta = 0.621$, t-value = 6.028, $p < 0.05$) and non-coercive power ($\beta = 0.480$, t-value = 4.169, $p < 0.05$) have positive influence, while coercive power ($\beta = -0.336$, t-value = -2.739, $p < 0.05$) and conflict ($\beta = -0.371$, t-value = -3.032, $p < 0.05$) have negative influence on SCP ($p < 0.05$).

5. Discussion

SCP in traditional food supply chains

The results of this study present several important findings. First, by analysing differences in supply chain members' perceptions about traditional food SCP, we revealed that the total SCP showed satisfying results in all four examined perspectives. The differences between the four perspectives were not statistically significant, implying that all supply chain members have similar perception of the SCP, and the contribution of other supply chain members to the SCP, i.e. the chains are performing in a balanced way.

The highest scores were obtained for traditionalism in all four perspectives, followed by quality and responsiveness. This emphasises the awareness of all SC members on the importance of the authenticity of raw materials, the traditional way of production and the traditional character of products that should be followed throughout the whole supply chain. As focal companies' production of traditional products depends heavily on quality as well as on the traditional character of raw materials, they are often loyal to reliable suppliers. This, on the other hand, encourages suppliers to preserve the authenticity of their products and to stay active in their business. Furthermore, focal companies consider their customers important advertisers of traditional production practices and of the specific quality of traditional food products to the end consumers. By doing that, customers play an important role in preserving authenticity and promoting traditional food products as a part of the gastronomic heritage.

The quality and safety of products of known origin are among the main drivers of the increased demand for traditional food products (Ilbery and Kneafsey, 1998; Belletti *et al.*, 2007; Almli, 2012). Therefore, it is important for traditional food supply chains to take care of

the safety and quality of these products along the whole supply chain. In this study, quality and especially safety obtained high scores implying that all supply chain members recognise the importance of other supply chain members in attaining the high quality of the end products. Customers particularly perceive the attractiveness of products as an important matter coming from focal companies. Supply chain members perceive the cooperation with other supply chain members as not contributing to a greater extent to the environmentally friendly management in their companies. That is probably related to the fact that most of them does not even have a mission dedicated exclusively to environmental protection, and consequently, it puts low-level requirements on their business partners in relation to this performance construct. Highly rated safety and lower rated attractiveness and environmental protection in all perspectives correspond to the findings of existing research (Molnar and Gellynck, 2008; Molnar *et al.*, 2010).

The relatively high score of responsiveness confirms its importance as a SCP indicator in a food supply chain as already evidenced in the literature (Aramyan *et al.*, 2007; Molnar and Gellynck, 2008). Focal companies showed the importance of having requested raw materials delivered in the shortest possible period of time, which is in line with a study carried out by Brown and Vastag (1993), showing that food producers exert pressure on suppliers in relation to shortening the supply chain response time. These findings could be related to the specificity of agricultural production such as spoilage and the short shelf life of raw materials (Boudahri *et al.*, 2011). However, the high scores of supply chain responsiveness given by suppliers indicate that focal companies, although they exert pressure to speed up lead time, also provide suppliers with relatively precise plans for raw material repurchase in order to shorten lead time. In relation to other perspectives, customers have highly rated the contribution of focal companies to fast responsiveness, which indicates that focal companies help them to quickly process orders and to avoid complaints from consumers.

Supply chain members' perceived efficiency is a relatively important element of SCP while considering other supply chain members' influence on their profitability as more important than their influence on reduction of logistic costs. This could be explained by the fact that many focal companies are responsible for the distribution costs in raw material procurement (e.g. the purchase of milk for traditional cheese production). Additionally, focal companies often use direct distribution for transporting their products to the customers, thus circumventing retailer and wholesaler logistics. Similar findings were evidenced in the Greek

dairy supply chain in which dairy manufactures manage the products in most stages of that chain from collecting milk from breeders to delivering the final product to wholesale, retail and catering outlets (Bourlakis *et al.*, 2014).

The lowest rate has been assigned to the contribution of supply chain members to the supply chain balance maintenance, which indicates that, in reality, small risk and benefit distribution have been observed between the supply chain members.

RQ in traditional food supply chains

Our analysis has shown that there are no significant differences in the perception of overall RQ among supply chain members. According to Choi and Wu (2009), it signifies a state of equilibrium where all members of the triad consider the overall relationship arrangement equitable. Furthermore, the results have shown that traditional food supply chains in Croatia are characterized by a high level of trust, commitment, reputation and economic satisfaction. This finding is in line with the results of previous studies (Molnar *et al.*, 2010; Fischer, 2013). Fischer (2013) identified high level of trust in meat and cereals supply chains in supplier-buyer relationships in six EU countries. A study carried out by Molnar *et al.* (2010) also showed high levels of trust and reputation in traditional food supply chains in Hungary, Belgium and Italy. As Molnar *et al.* (2010) discussed in their paper, high levels of trust and reputation are related to the fact that relationships in traditional food supply chains usually exist for a long period and moreover, personal contact between a focal company and the suppliers/customers is the dominant business relationship in many supply chains. However, it should be noted from this study that both suppliers and customers perceived higher level of reputation of the focal company compared to other two perspectives (FC_S and FC_C), and FCs expressed the lowest level of trust to customers. All members of the traditional food supply chains showed similar and rather high levels of commitment and economic satisfaction towards other supply chain members, which makes good basis for successful cooperation.

However, non-coercive power in all four analyzed perspectives was assessed with an average score, which indicates that supply chain members do not receive sufficient technical support, free advice, financial support, etc. from other supply chain members. This should be a point of improvement in the future.

The highest level of coercive power is evaluated by focal companies in relation to customers (mostly supermarkets) which have a stronger bargaining power in supply chains. These

findings are in line with the situation in many EU countries. According to the report of the European Economic and Social Committee, using unfair trade practices (exploitative contracts, high rebates, short delivery deadlines, return of unsold goods) is the most common in the relationship between supermarkets and small food producers, especially in Central and Eastern Europe. According to Kähkönen and Anni-Kaisa (2014), the relationships between food producers and customers are mostly uneven. They state that retailers usually have more power, and relationships of balanced power are rather rare. This also explains our result that traditional food producers expressed the lowest level of trust towards customers compared to all other supply chain perspectives.

The low level of perceived conflict implies that supply chain members do not perceive conflict as an important factor in their relationships with other supply chain members. Obviously, the low level of conflict between supply chain members implies high level of trust as approved by Kwon and Suh (2004).

The influence of RQ on SCP in traditional food supply chains

The results of this study confirmed the significant positive influence of **trust** on SCP (**H₁**). This result is expected as previous researches in the agribusiness sector have shown that trust is a critical determinant of a good relationship, and consequently, a well performing chain (Batt *et al.*, 2006; Molnar *et al.*, 2010). According to Sezen and Yılmaz (2007), firms must build the relationship based on mutual trust because relationships with high level of trust provide each firm more benefits and profits than it can be obtained in a non-trust relationship. Our findings add credence to the positive influence of trust on SCP in the traditional food sector and identify trust as an antecedent of higher performance in a supply chain (Morgan and Hunt, 1994; Fynes *et al.*, 2008; Molnar *et al.*, 2010).

A statistically significant positive relationship between **commitment** and SCP is identified, providing support for **H₂**. Although we identified a high level of total commitment among chain members, especially in the relationship between focal companies and suppliers, our findings suggest that firms must maintain this important aspect of RQ in order to achieve their common supply chain goals. According to Cechin *et al.* (2013), committed partners are less likely to exit the relationship than the less committed ones and consequently, commitment reduces the transaction costs in supply chain and improves SCP.

Our results also support the existence of a significant and positive relationship between **economic satisfaction** and SCP, providing support for **H₃**. Similarly, Molnar *et al.* (2010) found evidence that satisfaction with the economic contribution of partners in a traditional food supply chain is directly related to SCP. An improvement in SCP was also positively associated with economic satisfaction in the work of Odongo *et al.* (2016). This suggests that chain members who are satisfied with the economic rewards coming from their relationship perceive their partner as contributing to the advancement of their goals as opposed to impeding or preventing them.

The use of **coercive power** has generally been hypothesized to have a negative effect on SCP (Zhao *et al.*, 2008; Nyaga *et al.*, 2013), and it is also confirmed by our study (**H₄**). Previous studies have found that coercive power leads to an undesirable cooperative relationship (Brown *et al.*, 1995; Benton and Maloni, 2005), and it might have a negative impact in the sense that weaker parties may lose interest in the relationship. As reported by Batt *et al.* (2006), producers prefer doing business with buyers who refrain from the use of coercive power in order to achieve their goals. This implies that managers of traditional food supply chains need to properly control their use of coercive power in supply chain relationships, as it may be counterproductive for SCP.

Our results give support to the arguments of Brown *et al.* (1995), Maloni and Benton (2000), Flynn *et al.* (2008) and Nyaga *et al.* (2013) about the positive influence of **non – coercive power** on SCP (**H₅**). On the other hand, a study carried out by Kuhne *et al.* (2013) has revealed that the use of non-coercive power was associated with decreased SCP in European traditional food chains. The study by Odongo *et al.* (2016) also revealed that the use of non-coercive power tends to have negative influence on SCP in the maize sector in Uganda. Considering that the above-mentioned researches studied supply chains from diverse sectors, it becomes very apparent that the use of non-coercive power depends on the nature and the type of the supply chain.

The results of this study confirm the positive and significant influence of **reputation** on SCP, which supports **H₆**. This suggests that reputation provides a sustainable competitive advantage, not only to individual firms, as it was noted by Kabadayi *et al.* (2011), but also to the whole supply chain. Therefore, firms must strive to create a good reputation of being a fair and honest business partner, to take care of their partners, and to avoid activities that could

negatively affect their partners' interests, even though such actions may be beneficial to themselves.

It has been found that **conflict** is negatively related to SCP, providing support for **H₇**. This has also been confirmed in studies conducted by Kumar *et al.* (1995), Duarte and Davies (2003), and Molnar *et al.* (2010). On the other hand, our findings are opposite to the results of the studies of Brown *et al.* (1983) and Schwenk (1990) who found that conflict has a positive effect on SCP. However, we agree that a better knowledge of the sources of conflict in the supply chain helps firms to manage conflict effectively and to keep it at a level which is productive for all chain members, as previously mentioned in the study by Brown and Day (1981).

Finally, our findings provide empirical support for the general hypothesis that aggregate RQ has a positive impact on SCP (**H₈**). Our findings are in line with the results of Yang *et al.* (2009), Molnar *et al.* (2010) and Odongo *et al.* (2016). This suggests that by developing and engaging in good relationships, supply chain members can improve SCP. This is especially important for traditional food chains where small scale producers are dominant. The majority of them depend on collaboration with producers of TFPs, who, in most cases, are the only buyers of their products.

Research contributions

This section presents the contributions achieved in the light of the results of this study.

The **theoretical contribution** of this study to supply chain management literature relates to developing and testing hypotheses regarding the influence of individual RQ constructs as well as aggregate RQ on traditional food SCP. The study confirms that SCP is influenced by RQ measured on an aggregate level, which has not been previously showed in literature. Moreover, in this study, we applied network concept and thus we contributed to studies confirming the appropriateness of social network theory, and we enriched the existing literature by studying the influence of RQ on SCP in the traditional food sector.

The **methodological contribution** of this study concerns a replication of existing methods. The methodology used in this study is in line with generally-accepted practices. We used conclusive (quantitative) research methods to conclude on the research problem and to

provide input into managerial decision making (Malhotra, 1999). Furthermore, we tested the instrument developed specifically for the measurement of SCP in the traditional food sector (Gellynck *et al.*, 2008) in different socio-cultural and economic context compared to a previous study (Molnar *et al.*, 2010) and approved its high reliability.

This study makes an **empirical contribution** by investigating RQ and SCP in the traditional food sector. We focus on supply chain level analysis (instead of firm or dyadic level analysis) and collect data from minimum three firms from supply chains (instead of collecting data from one firm of the supply chain (the focal company)). This study can be considered as a multiple supply chain study (instead of a single supply chain study) because we investigated 65 supply chains. We benchmarked performance within supply chains and compared 189 supply chain members' perspectives with each other. We collected data from one country and 6 TFP categories. More specifically, the study was conducted in Croatia, thereby filling the gap of sparse research in transition countries in Central and Eastern Europe. The empirical contribution of this study also lies in the choice of the sector. The traditional food sector has received little attention in scientific literature recently; however, its particularities make it an interesting sector to study. We confirmed the need to extent the focus of traditional food producers from their own firm performances to downstream and upstream supply chain network members in order to increase their own competitiveness and the competitiveness of the whole supply chain (Noemi, 2002). Furthermore, with regard to **managerial contribution**, the following notion was our starting point: although there is an increasing interest in the performance of entire supply chains (Lambert and Cooper, 2000; Benton and Maloni, 2005; Simatupang *et al.*, 2004; Fynes *et al.*, 2005; Krause *et al.*, 2007; Yang, 2009; Nyaga *et al.*, 2013), Fisher (2009) claims that SCP in many instances has "never been worse". One of the reasons why Fisher (2009) states the above is supply chain relationships. In this context, this study has a managerial contribution to the field of supply chain management in general, and regarding SCP and RQ in particular. This is primarily situated in providing supply chain members with a systematic approach to investigate the supply chains they belong to (regarding both SCP and RQ). We showed supply chain members how to measure SCP and how to identify which relationships are responsible for the level of SCP. We provided a systematic approach to measure the contribution of each supply chain member to SCP and to identify significant gaps regarding the contribution of supply chain members to SCP.

The results of this study can be used by all chain members whose companies have participated in the survey to encourage them to take certain measures to improve the performance of the supply chains they belong to. In order to strengthen and maintain long-term relationships which are crucial for SCP, it is necessary to build up trust and commitment within the relationship. It is important to keep promises, to achieve high confidence in and by the chain partners, to provide correct information and to consider how decisions might affect the chain partner's situation (Kuhne *et al.*, 2013). The establishment of a good reputation and economic satisfaction can be achieved by greater concern for the business partners, offering excellent expertise and being correct in all activities. Furthermore, conflicts and coercive power should be avoided as it has a negative influence on the RQ (Jonsson and Zineldin, 2003) and hence on overall SCP (Kumar *et al.*, 1995; Molnar *et al.*, 2010). Conflicts in the supply chain can be avoided in a way that common goals and the expectations of all chain members are clearly defined at the beginning of a collaboration (Batterink *et al.*, 2008).

Limitations and suggestions for future research

Notwithstanding its contributions, there are certain limitations of this study which are worth mentioning. These limitations can give directions for future research. Firstly, although it is mentioned that the evaluation of SCP should be based on supply chain goals because the performance can generally be defined as the extent to which goals are achieved (Kaplan, 1983), we have not identified supply chain goals but instead, we used an instrument based on our literature review for the evaluation of SCP in the traditional food sector. Consequently, future research should consider identifying supply chain goals, confronting them with the goals used as a basis for the instrument applied in this research and translating these supply chain goals into SCP indicators. Secondly, this study is limited in its scope with regard to the research setting (country, size of the sample and number of TFP categories) and the unit of analysis (supply chain). With regard to the former, and given the differences in the production practice of diverse traditional food products as well as specific contexts of traditional food sector in various countries, future research could focus on the impact of RQ on SCP in a single traditional food products supply chain. In doing so, results would be more generalisable. Regarding the latter, this study defines supply chains in a narrow sense (three members); therefore, it represents the perspectives of a limited number of supply chain members (suppliers, producers of TFPs (focal companies), customers). Consequently, future research should consider extending the research setting and the unit of analysis. For instance, when the unit of analysis is widened, input from additional supply chain members would be necessary

(such as suppliers of suppliers, customers of customers, third parties, or competitors). Thirdly, SCP (and RQ) were measured based on the supply chain members' perceptions, which could be subject to social desirability biases. Future research should consider measuring SCP in an objective way as well, based on indicators like profits, inventory, and turnover. In the future, research should also extend the list of performance indicators with parameters other than economical ones such as ecological and social ones. The influence strength of different parameters (economical, ecological, social) on general SCP could be studied as well.

6. Conclusion

The purpose of this research was to add evidence to the existing literature on SCP in the traditional food sector by exploring the influence of RQ on SCP by using triadic approach (suppliers, focal company, customers). We provided empirical evidence that the individual relationship variables (trust, commitment, economic satisfaction, non-coercive and coercive power, reputation and conflict) as well as aggregate RQ have a significant influence on the perceived performance of traditional food supply chains.

It was found that there are no significant differences in the perception of overall SCP and RQ among supply chain members. The total SCP had satisfying scores in all four examined perspectives (FC_S, FC_C, S_FC, C_FC). The highest scores were obtained for the performance construct traditionalism followed by quality and responsiveness, thereby confirming the awareness of supply chain members on the importance of the traditional component in the food sector in the market.

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[Insert Appendix]