Social capital, power and information sharing – evidence from the Dutch meat processing industry

Social capital,
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information
sharing

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Received 15 August 2019

Revised 12 February 2020

11 May 2020

Accepted 17 June 2020

Abstract

Purpose – Buying companies in the food industry increasingly recognize the need to cultivate relationships with their suppliers. Social capital and power are important to understand buyer–supplier relationships. Maintaining these relationships appears highly dependent on the degree of information sharing.

Design/methodology/approach – The study investigates how power and social capital dimensions are related to information sharing. A survey of first-tier suppliers in the Dutch meat processing industry was carried out. The data from 82 suppliers was analyzed using partial least squares.

Findings – It appears that expert power contributes to the cognitive and structural social capital. In contrast, coercive power showed no influence at all. Cognitive and structural social capital dimensions have a direct link to relational social capital, which significantly improves buyer–supplier information sharing in the food industry.

Practical implications – Buying companies can encourage supplier information sharing by building up their own expertise and cultivating social relationships. They should refrain from strong-handed practices.

Originality/value – Companies in the food and food processing industry are dependent on effective information exchange for their very survival. This study investigates the role of power and social capital in making such exchange possible and sustainable.

Keywords Information sharing, Social capital, Expert power, Coercive power, Meat processing

Paper type Research paper

1. Introduction

The food sector is one of the largest and most important industries worldwide. The food industry has evolved from a traditional agricultural industry into a modern high-tech industry (cf. Kähkönen and Tenkanen, 2010). As in many industries, changes urge companies to seek collaboration with a limited number of strategic suppliers (e.g. Kähkönen, 2012). Information sharing is a key component in these collaborative, interorganizational relationships (Carr and Kaynak, 2007).

Traditionally, meat processing is merely aimed at preserving meat (products) for use later and/or use elsewhere. Nowadays, meat processing is also aimed at customer satisfaction by producing meat products that are compatible with certain lifestyles and ideas on health issues (e.g. Casey *et al.*, 2003). Meat is prone to bacterial diseases, which emphasizes the importance of hygiene and overall process quality (Mousavi *et al.*, 2002). Companies in the

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British Food Journal
Vol. 122 No. 11, 2020
pp. 3343-3360
Emerald Publishing Limited
0007-070X
DOI 10.1108/BFJ-08-2019-0607

meat processing industry are faced with many rules and regulations for protecting the health of humans and animals (Tanner and Strøm-Andersen, 2019).

Information sharing in supply management has been studied for decades (for an overview, see Colicchia *et al.*, 2019; Marshall, 2015 and Kembro *et al.*, 2014), although to a rather limited extent in the food industry (Lusiantoro *et al.*, 2018; Kähkönen, 2012). Despite the recognized benefits, many firms seem reluctant to share information with their supply chain partners (e.g. Olorunniwo and Li, 2010). A barrier to information sharing are concerns about trust and confidentiality (e.g. Kähkönen, 2012; Li and Lin, 2006). A fear of unequal distribution of risks and returns is likely to hinder information sharing (cf. Li *et al.*, 2014; Manatsa and McLaren, 2008). Power and dependence are generally considered important for the understanding of buyer–supplier relationships (e.g. Cox, 2001). A high dependency asymmetry may be detrimental to information sharing (cf. de Oliveira *et al.*, 2019), while powerful companies could impose on supply chain partners which information is required (e.g. Vijayasarathy, 2010; Yigitbasioglu, 2010). Still, power is an often overlooked concept in information sharing studies.

Literature on information sharing recognizes the importance of social relations between buying and supplying companies (e.g. Li *et al.*, 2014; Chuang *et al.*, 2016). Social capital theory has become a useful theoretical lens for examining buyer–supplier relationships (e.g. Gelderman *et al.*, 2016). Social capital refers to the resources that are available through networks of relationships (Nahapiet and Ghoshal, 1998). Social capital is being recognized as an important concept for examining information sharing practices (e.g. Yim and Leem, 2013). However, the impact of social capital on information sharing is hardly investigated, with Li *et al.* (2014) as a notable exception.

Companies in the food industry have to deal with specific issues in their supply chains, such as perishability, shelf-times, traceability, food quality and safety, seasonal behaviors, transportation and storage conditions (e.g. Eksoz, 2019; Sufiyan *et al.*, 2019). Food companies are also faced with complex sustainability requirements (e.g. Dania *et al.*, 2018). Although extant research has examined collaboration (cf. Dania *et al.*, 2018) and partnerships (Eksoz *et al.*, 2019) in food chains, scant attention has been paid to the role of social capital and power in the mechanisms that produce information sharing in the food industry. This gap constitutes the central argument for our empirical exploration, which is guided by the following main research question: what is the role of social capital and buying power in information sharing in the food industry? This study addresses three main research questions:

- RQ1. What is the interplay of social capital dimensions in the food industry?
- RQ2. What is the direct effect of (relational) social capital on information sharing in the food industry?
- RQ3. What is the indirect effect of buyer power on information sharing in the food industry through (cognitive and structural) social capital?

This study extends previous research on information sharing in the food industry. The originality of the study is due to the lack of knowledge on the role of power and social capital in sharing information. Drawing upon social capital theory and theory on interfirm power, we explored the interplay of power, social capital dimensions and information sharing in the Dutch meat processing industry.

2. Literature review and hypotheses development

2.1 Information sharing in the food sector

Information sharing refers to the exchange of critical information that facilitates interfirm collaboration among supply chain members (e.g. Zhou and Benton, 2007). Information

sharing with supply chain members includes the exchange of information on operations management (e.g. material flow, order entry, shipping, billing) as well as the exchange of forecasts and plans (Marquez *et al.*, 2004). A generic definition of information sharing is “the degree to which each party discloses information that may facilitate the other party’s activities” (Heide and Miner, 1992, p. 275). Within the context of interfirm collaboration, information sharing refers to the exchange of data, information and/or knowledge between supply chain parties (Kembro and Näslund, 2014).

Companies in the food sector must share information for the purpose of developing value-creating actions and activities (Kähkönen, 2012). Numerous benefits have been linked to information sharing (cf. Sahin and Robinson, 2002), even to competitive advantage (e.g. Myšková and Kuběnka, 2019; Liu *et al.*, 2013). Shared information will lead to cost savings through inventory and batch size reductions (Marshall, 2015), improved (group) forecasts (Eksoz *et al.*, 2019), reduced inventory levels, improved inventory control (Costantino *et al.*, 2014) and the mitigation of the bullwhip effect and improved inventory variance (Costantino *et al.*, 2015). Information sharing contributes to a better performance of the logistic system in terms of time, quality and speed (e.g. Hsuan *et al.*, 2015). Collaboration and information sharing in food chains are of critical importance for companies to adequately respond to changes in a dynamic business environment (cf. Hamali *et al.*, 2020).

Perishable products, such as meat, must be protected from the dangers of contamination, which is deemed necessary to guarantee quality, safety and availability of products (Clements *et al.*, 2008). Products in food supply chains must be “fully traceable from farm to fork” (Eksoz *et al.*, 2019, p. 20). Information sharing in the food industry is considered an appropriate way to reduce uncertainties (Thakur and Gunnlaugsson, 2018) and complexities in the supply chain and additionally to improve performance and decision-making (Kaipia *et al.*, 2013; Clements *et al.*, 2008). Kumar *et al.* (2020) reported a positive, significant relationship between information sharing and organizational performance in Indian agri-food supply chains.

Despite the many identified benefits of information sharing, more skeptical views point at the downsides and the limited advantages due to complexities and costs (e.g. Tran *et al.*, 2016). Risks include a loss of power and/or competitiveness (e.g. Uzzi and Lancaster, 2003; Kähkönen, 2012; Kembro and Näslund, 2014). Kähkönen (2012) found that companies in the Finnish food industry were not always willing to openly share information, by thinking “knowledge is power” (p. 694).

Confidence in the security and quality of information systems impacts the willingness and capability of companies to share confidential information (Zhang and Li, 2006). Kataike *et al.* (2019) found a (strong) positive impact of relational governance on chain performance in the Uganda dairy sector. Other research in agribusiness acknowledged and confirmed that trust and relational governance are of critical importance for food supply chain performance (e.g. Mesic *et al.*, 2018; Odongo *et al.*, 2016). A social exchange perspective appears promising for examining information sharing practices in the supply chain (Wu *et al.*, 2014).

2.2 Social capital and information sharing

Social capital theory has its roots in sociology and political science where it describes and explains the preferential treatment and cooperation between individuals and groups (e.g. Putnam, 1995). Social capital is referred to as a valuable asset that stems from access to resources made available through social relationships (Nahapiet and Ghoshal, 1998). Social capital theory has proved to be suitable for examining supply chain collaboration (Wu and Chiu, 2018) and buyer–supplier relationships (e.g. Gelderman *et al.*, 2016). Beneficial effects of social capital on operational performance have been reported in terms of costs, quality, lead time, flexibility and delivery (e.g. Cousins *et al.*, 2006; Lawson *et al.*, 2008; Whipple *et al.*, 2015).

Strategic benefits include product innovation, market creation, technological development (e.g. Villena *et al.*, 2011; Sanders, 2008; Terpend *et al.*, 2008) and information sharing (Li *et al.*, 2014).

Nahapiet and Ghoshal (1998) proposed three dimensions of social capital: a cognitive dimension, which represents shared meaning and understanding between actors; a relational dimension, which refers to trust, friendship, respect and mutuality established by regular interactions between actors; and a structural dimension, which refers to the frequency of interaction, the frequency of contact between the various departments in both organizations and the number of contacts between various levels within both organizations. These different dimensions can have different effects on information sharing and other performance measures (Gelderman *et al.*, 2016; Li *et al.*, 2014). Additionally, we assume specific interrelationships between the dimensions: cognitive social capital and structural social capital are considered antecedents of relational social capital (cf. Carey *et al.*, 2011; Horn *et al.*, 2014; Roden and Lawson, 2014). Figure 3 shows the interrelationships between the three social capital dimensions.

Cognitive embeddedness between two actors was found to be positively associated with relational embeddedness, in that alignment between beliefs and expectations reinforces trust and commitment (Simsek *et al.*, 2003). Cognitive social capital, as shared understandings, values and beliefs, is likely to breed trust (Carey *et al.*, 2011). If parties have little understanding for one another, relational capital is not likely to grow. With Roden and Lawson (2014), we expect that cognitive social capital has a positive impact on relational social capital. In addition, we propose a positive relationship between structural capital and relational capital as well. Structural social capital, as social interactions, facilitates the development of trusting relationships (e.g. Carey *et al.*, 2011). Studies have shown that trust is developed through direct experiences and interactions with each other (e.g. Granovetter, 1985). Therefore, we propose:

- H1. Cognitive social capital has a positive impact on relational social capital.
- H2. Structural social capital has a positive impact on relational social capital.

Although the concept of information sharing has received increasing attention in academic literature, few empirical studies investigate the relationship between (dimensions of) social capital and information sharing. Li *et al.* (2014) show that cognitive social capital and relational social capital have a positive impact on information sharing. In another study, it was found that structural social capital, relational social capital and cognitive social capital affect knowledge sharing, which in turn influenced organizational performance (Kim *et al.*, 2013). Carlos and Pinho (2013) reported that trusted parties showed reduced feelings of vulnerability and as a result, they did not hesitate in committing and cooperating in a long-term relationship. In their study on Chinese food supply chains, Fu *et al.* (2017) found a significant effect of trust and commitment on information sharing. Obviously, with a lack of trust, parties will be unwilling to exchange sensitive information (e.g. Fawcett *et al.*, 2007). (see Figure 1) We expect:

- H3. Relational social capital has a positive impact on information sharing.

Figure 1.
Social capital
dimensions and
information sharing

2.3 The influence of coercive and expert power

Considering the importance of social capital in buyer–supplier relationships, we need a thorough understanding of its drivers and barriers. However, little work has been done to explore the antecedents of social capital (cf. [Chang and Hsu, 2016](#)). In addition, the few studies on these antecedents focus on social capital on an individual level within organizations. An example is [Van den Hooff and Huysman \(2009\)](#), who investigated the impact of organizational characteristics (e.g. organizational culture and structure) on social capital and knowledge sharing with colleagues. The actual sharing of information by a weaker party is likely to be influenced by the power of the stronger party. In many industries, buying firms are able to dominate or even exploit their suppliers ([Yigitbasioglu, 2010](#); [Schleper et al., 2017](#)). Large retail organizations initiate decisions, configure products and place orders that pull products through the supply chain ([Hsuan et al., 2015](#)). Therefore, customers and buyers are usually more powerful than the manufacturers and suppliers of goods ([Huo et al., 2016](#)). Suppliers may be reluctant to share information due to perceived risks, costs and other downsides (e.g. [Tran et al., 2016](#); [Uzzi and Lancaster, 2003](#); [Kembro and Näslund, 2014](#)).

A dominant player can force weaker parties to share information. The use of power and influence is considered effective in mobilizing suppliers into knowledge and information sharing ([Grant and Preston, 2019](#)). Buyers can use influence strategies in achieving compliance and cooperation from suppliers (e.g. [Frazier and Rody, 1991](#)). Another mechanism might be that dominated suppliers will try to withhold confidential and important information ([Kembro et al., 2017](#)). In a more positive vein, some studies found that power can provide an effective coordination of exchange relationships, promoting supply chain integration and performance (e.g. [Maloni and Benton, 2000](#); [Caniëls and Gelderman, 2010](#)). How can we account for these paradoxical different effects?

The answer could be found in the multidimensional nature of power. Different types of power may have different effects ([Maloni and Benton, 2000](#); [Grant and Preston, 2019](#)). Dominant firms can have different power bases to influence a weaker party ([French and Raven, 1959](#)). Power types can be classified by their need for activation. Activated power types are based on intentional use, while passive power types are created by the perceptions of the other party and are hard to control directly ([Reimann and Ketchen, 2017](#)).

Coercive power is a form of activated power. *Coercive power* includes promising rewards in case of compliance and threatening punishments in case of noncompliance ([Gelderman et al., 2008](#); [Benton and Maloni, 2005](#)). This type of power use is based on the willingness to inflict negative consequences to noncompliance ([Gundlach and Cadotte, 1994](#)). Expert power is a typical example of a passive power type. *Expert power* is based on the appreciation of the other party's expertise ([Benton and Maloni, 2005](#)). Passive power types are likely to have beneficial effects on relationships, while activated power types can have detrimental effects ([Huo et al., 2017](#)). For instance, the threat or actual use of expert power in a supply chain increases cognitive social capital in terms of common interests as well as promoting collective goals and vision ([Jonsson and Zineldin, 2003](#)). The opposite is expected from the threat or actual use of coercive power [Chen et al., \(2015\)](#). We propose the following hypotheses:

H4. Coercive power has a negative impact on cognitive (a) and structural social capital (b).

H5. Expert power has a positive impact on cognitive (a) and structural social capital (b).

[Figure 2](#) shows the conceptual model and the proposed hypotheses.

3. Research method

The meat processing industry is a subsector in the (global) meat industry, which produces far over 300m tons of meat worldwide ([Lynn, 2017](#)). The Dutch meat processing industry

comprises a small number of large concerns doing business worldwide and a larger number of smaller, specialist companies with a more regional focus. The three leading meat processing companies in the Netherlands are the VION Food Group, Campofrio and Zwanenberg Food Groups. In 2017, the revenue of the VION Food Group was approximately \$6bn, Campofrio's revenue amounted to \$2.28bn, while Zwanenberg Food Group was the third in line with a revenue of \$0.46bn in 2017 (Van de Pas, 2019). More than 650 companies are engaged in the production, processing and preserving of meat products in the Netherlands in 2018 (www.statista.com/statistics/715532/).

Data collection took place through an electronic survey among a sample of managers employed at European food producing companies. An electronic survey shows similar reliability for email surveys compared to online surveys (e.g. Deutskens *et al.*, 2006). To test the hypotheses, we invited suppliers of Zwanenberg Food Group to participate in the study. The Zwanenberg Food Group is one of the leading European producers and exporters of meat products and canned meat. Suppliers were selected on two criteria. The organization should be Dutch and it has to be a first-tier supplier for Zwanenberg Food Group. A draft version of the questionnaire was pretested on a small number of respondents (pilot study). The final version of the questionnaire was administered online.

A total number of 157 suppliers were first contacted by email, then the questionnaire was sent out electronically. After a follow-up email, sent after two weeks, a total number of 82 questionnaires were completed, which results in an effective response rate of 52,3% (82/157). We included some background variables to get insight in sample characteristics. Table 1 shows the responses for the background variables. Company size was measured by questions about the number of employees and annual revenues in Euros. About 11% of the respondents were employed by companies with annual revenues less than €10m, while 39% worked at larger companies with more than €100m revenues. The majority of companies contracted fewer than 100 suppliers (64%) and employed fewer than 500 employees (66%). Respondents were asked to indicate their job title that reflects the position in their company. About 17% of the sample consisted of managing directors. Almost 59% held a position in sales (mostly account managers), while 24% was employed in another position. All respondents were involved in activities and decisions regarding the customer relationship management of their company, which suggests sufficient knowledge from the respondents to complete the questionnaire.

To investigate the constructs, six variables were measured on seven-point Likert scales. These variables are information sharing, cognitive social capital, relational social capital, structural social capital, coercive power and expert power. To ensure that the respondent will take the time to read the questions carefully, there are questions with both positive and negative pronunciations, which is important for the validity of questions measured by a seven-point Likert scale. The questions were translated into Dutch. Two translators executed

Figure 2.
Conceptual model

the translation, one is a native speaker of the source language and one is a native speaker of the target language.

All operationalizations were derived from measurement scales used and validated in other academic studies and adapted to fit the context of this study. *Coercive power* was measured by using the four items adapted from Brown *et al.* (1995). An example item is: “The major customer’s personnel would somehow get back at us if we do not make changes in our research and development.” *Expert power* was measured by four items adapted from Brown *et al.* (1995). An example item is: “Our major customer ensures changes in our research and development because we trust the customer’s judgment.” It should be noted that the operationalizations of the power constructs refer to the threat that emanates from the actual use of power. It is not about the actual use of power, but the imminent possibility that buyer power is exercised at the expense of a supplier. *Structural social capital* was measured by three items derived from Villena *et al.* (2011). An example item is: “Our major customer and we do not have frequent and intensive interaction with each other” (reverse coded). *Cognitive social capital* was measured by four items derived from Li *et al.* (2014) and Son *et al.* (2016). An example item is: “Our major customer and we share the same vision.” *Relational social capital* was measured by five items derived from Li *et al.* (2014) and Wu *et al.* (2014) and Villena *et al.* (2011). An example item is: “Our major customer and we are concerned about the welfare or interests of each other when making important decisions.” *Information sharing* was measured by four items derived from Li *et al.* (2014) and Wu *et al.* (2014). An example item is:

Variable	Description	Frequency	%
Type of industry	Traditional manufacturing	54	65.9
	Service	15	18.3
	High-tech manufacturing	13	15.9
Age of the organization	<5y	2	2.4
	+5–10y	3	3.7
	+10–20	8	9.8
	>20y	69	84.1
Number of employees	<500	54	65.9
	+500–1,000	12	14.6
	+1,000–5,000	11	13.4
	>5,000	5	6.1
	<10,000,000€	9	11
Annual revenue	+10,000k–50,000k	26	31.7
	+50,000k–100,000k	15	18.3
	>100,000k	32	39
	<100	53	64.6
Number of suppliers	+100–300	17	20.7
	+300–500	3	3.7
	>500	9	11
	<100	17	20.7
Number of customers	+100–300	23	28
	+300–500	8	9.8
	>500	34	41.5
	<100	17	20.7
Job title/position	Account manager	44	53.7
	Product manager	2	2.4
	Financial worker	2	2.4
	Buyer	3	3.7
	Customer service empl	1	1.2
	Managing dir	14	17.1
	Other	16	19.5

Table 1.
Sample properties

“We are willing to share our actual sales data with our major customer.” The [appendix](#) shows the items that have been used for the construction and the measurement of the variables. In order to warrant discriminant and convergent validity next to construct reliability, we examined the measurement model by evaluating loadings, average variance extracted (AVE) and composite reliability (CR). The AVE scores and the correlations between the variables are included in [Table 2](#).

Partial least squares (PLS) analyses were performed to test the structural model using the *plspm* package in *R* ([Sanchez et al., 2017](#)). The variance-based PLS-SEM approach achieves relatively high statistical power even with small sample sizes and is the recommended method when working with reflective constructs ([Hair et al., 2017](#)). In line with suggestions made by [Davies \(2001\)](#) with regard to uncertainty and bias avoidance when performing PLS, we compared the results of a more parsimonious model (i.e. less parameters) leaving nonsignificant results out.

4. Results

The statistical analyses comprise two main steps: (1) in the first step, the “outer” model is tested, and (2) in the second step, the “inner” model is tested. The outer model maps the indicators on the latent factors and examines indicator loadings, which analyzes the measurement model and thus reliability and validity. The inner model maps the paths between the latent factors, which analyzes the structural or hypothesized model. Eigenvalues did not indicate multidimensionality of any latent factor and Cronbach’s alpha values are all well above the threshold values of 0.60 ([Hair et al., 2014](#)). All AVE values are well above 0.40. The loadings of the indicators on the latent factors are all well above 0.40 and there were no cross-loadings on other factors. In sum, results indicate unidimensionality of the latent factors and suggest that convergent and discriminant validity of each latent factor is acceptable and show evidence for the reliability of the constructs.

The results of the inner model are presented in [Table 3](#). Five of the seven hypothesized paths are statistically significant. The results confirm the substructure of the social capital dimensions ([H1](#) and [H2](#)). We also found support for the impact of relational structural social capital ([H3](#)). However, no statistical support was found for the hypotheses that assumed a relationship between coercive power and cognitive social capital ([H4a](#)) and structural social capital ([H4b](#)). It appears that expert power, as expected, has a positive impact on these two social capital dimensions ([H5a](#) and [H5b](#)). Results did not differ with a more parsimonious path model leaving nonsignificant paths out. [Figure 3](#) shows the structural model including the size and significance of path coefficients, as well as R^2 values.

5. Conclusions and discussion

Information sharing is of critical importance in the food industry for reasons of visibility, traceability, quality and safety of food products (cf. [Fu et al., 2017](#)). Information sharing has

Table 2.
AVE and correlations
between constructs

Constructs	AVE	1	2	3	4	5
1. Coercive Power	0.470					
2. Expert Power	0.585	−0.352				
3. Cognitive Social Capital	0.460	−0.223	0.424			
4. Structural Social Capital	0.649	−0.101	0.402	0.096		
5. Relational Social Capital	0.416	0.071	0.114	0.327	0.245	
6. Information Sharing	0.421	0.043	0.181	0.331	0.208	0.248

Note(s): Path coefficients and significance levels added on the arrows. Dotted arrows indicate non significance

n.s. = not significant; * $p \leq 0.050$; ** $p \leq 0.010$; *** $p \leq 0.001$

Figure 3.
PLS results of the
structural model

been extensively studied within the context of industrial buyer–supplier relationships, but to a limited extent within the food industry. The context of perishability of products has an unclear impact on information sharing within the food industry (cf. Lusiantoro *et al.*, 2018). Literature recognizes the importance of social capital that accrues in buyer–supplier relationships. However, no studies have investigated the role of the substructure of the three social capital dimensions on information sharing in the food industry. Despite the many attributed benefits, many firms seem reluctant to share important information with their supply chain partners (e.g. Kähkönen, 2012). A high dependence asymmetry is likely to be important in the food industry (e.g. de Oliveira *et al.*, 2019), although many studies seem to have overlooked the role of power in information sharing. This study was aimed at filling these gaps by investigating the interplay of power, different social capital dimensions and information sharing within the food sector.

This study contributes to the body of knowledge about information sharing in buyer–supplier relationships in the food industry. Only few studies on information sharing are set in the food industry (Fu *et al.*, 2017). First, our study extends previous literature by investigating the influence of the substructure of social capital dimensions on information sharing. The results of our study confirm the theoretically based substructure of the three social capital dimensions (cf. Gelderman *et al.*, 2016; Horn *et al.*, 2014; Carey *et al.*, 2011). Indeed, cognitive capital (shared meaning and understanding) and structural capital

Path	Path coefficients	<i>t</i> -Values	Sign. Levels	<i>p</i> -Values
Coercive Power → Cognitive Social Capital	−0.084	−0.774	N.S.	0.441
Coercive Power → Structural Social Capital	0.047	0.426	N.S.	0.671
Expert Power → Cognitive Social Capital	0.395	3.640	***	0.000
Expert Power → Structural Social Capital	0.419	3.810	***	0.000
Cognitive Social Capital → Relational Social Capital	0.306	2.940	**	0.004
Structural Social Capital → Relational Social Capital	0.216	2.070	*	0.042
Relational Social Capital → Information Sharing	0.248	2.290	*	0.025

Note(s): N.S. = not significant; * $p \leq 0.050$; ** $p \leq 0.010$; *** $p \leq 0.001$

Table 3.
Size and significance of
the structural model
path coefficients

(interactions and contacts) are antecedents of relational social capital (trust, friendship, mutuality). In addition, the empirical findings support the hypothesis that links relational social capital to information sharing (cf. [Li and Lin, 2006](#); [Fawcett et al., 2007](#); [Wang et al., 2014](#)).

Second, although power is generally considered a key concept in understanding buyer–power relationships, dependence asymmetry appears to be an overlooked factor in information sharing studies. This study included the role of coercive and expert power for gaining additional insights in information sharing. Third, literature shows a rather inconclusive picture of the impact of power on coordination, collaborating and information sharing in supply chains. Some studies assume a direct effect of power on information sharing (e.g. [Li et al., 2014](#); [Yigitbasioglu, 2010](#)). In this study we have argued that power will only indirectly influence information sharing, namely through social capital. We found partial evidence for this mechanism.

Fourth, we did find a (positive) path that runs from expert power through social capital to information sharing. Suppliers in the meat processing industry appreciate the expertise of the buyer, which contributes to the shared understanding (cognitive capital) and interactions (structural capital). However, the provision of information might not be completely mandatory. Suppliers could be forced to exchange information by the use of coercive buyer power. For this power type, we expected a negative impact on social capital, which works on to information sharing. Companies are known to be reluctant to share information, most likely when they feel that disclosure of information is a loss of power (cf. [Croom et al., 2000](#)). However, we did not find a statistically significant effect of coercive power on social capital. This finding is in line with the notion by some that the use of power is not always problematic and can be a positive force in supply chains, as long as the dominant party acts fairly (cf. [Yigitbasioglu, 2010](#)) and does not necessarily exploit the weaker party (cf. [Pfeffer and Salancik, 1978](#); [Caniëls and Gelderman, 2010](#)). By distinguishing coercive and expert power, as contrasting power types, we have shed light on the complex role that power can play in information sharing between buyers and suppliers.

Also, we found a (relatively strong) negative correlation between coercive power and expert power. Apparently, these power types were employed as substitutes and not in a complementary way. In other words, a buyer that uses expert power in a supplier relation is not likely to simultaneously use coercive power as well (and vice versa).

6. Limitations and recommendations

This study has a number of limitations, which could induce further research. The sample was restricted to supplying companies of one buying (food producing) company. The sample method therefore imposes restrictions on the generalizability of our findings. The study could be replicated in other settings, for instance, by selecting other subsectors in the food industry or by focusing on (innovative) start-ups. Like most studies, we examined the information sharing by suppliers. A promising line of research could be to study the effect of backward information sharing, from buying companies to supply companies (cf. [Han et al., 2019](#)). To get more insights into the effects of power and social capital, future research could use a dyadic or a network approach and include the experience and views of multiple buyers and suppliers. Complex and potentially rich research designs could include multiple layers of supply chains ([Colicchia et al., 2019](#)). Another limiting aspect is the cross-sectional nature of this study. Experimental and longitudinal studies would be more suitable for investigating cause–effect relationships, shedding light on the interplay of the various variables under study. Case study research could be aimed at more thoroughly investigating the relationship with these concepts. As in many studies, our questionnaire was completed by employees, representing

their company. A promising avenue for future research could be to investigate the interplay of the individual level and the firm level.

Studies have argued the need for advanced information technology to exchange supply chain information (e.g. [Li et al., 2014](#)). Poor data quality and a lack of shared information will result in costly repercussions and operational problems ([Tran et al., 2016](#)). Future studies could focus on the content and the quality of information shared among supply chain partners (cf. [Jie and Gengatharen, 2019](#); [Li et al., 2014](#)). To be more specific, research could differentiate between operational, tactical and strategic information (cf. [Wu et al., 2014](#)). Especially in the food industry, with perishable product chains ([Lusiantoro et al., 2018](#)), certain information types are more important than others. Another promising avenue for future research is investigating the role and the impact of information sharing on (environmental and social) sustainability in food supply chains ([Dania et al., 2018](#); [Ahmed et al., 2018](#)).

We investigated power and social capital on information sharing in the food industry. We drew upon social capital theory and theory on interfirm power for our hypotheses and conceptual model. Obviously, other theoretical lenses could be used for information sharing studies. Game theory and stakeholder theory are examples of alternative theoretical foundations for investigating buyer–supplier relationships, but also for examining the roles of other stakeholders such as competitors, consumers and governments.

The findings of our study have also practical relevance. Applications may be in the field of business advice, consultancy and therefore training. Companies in the food industry need reliable information from their suppliers, although many firms seem reluctant to share information. The results of our study show that investing in relational social capital contributes to the willingness of suppliers to share information. An atmosphere of trust, respect and caring about each other promotes information sharing. Buying companies should acknowledge that relational social capital (trust, respect, friendship) can be promoted by investing in cognitive social capital (shared understanding and meaning) and structural social capital (frequency of contacts and interactions).

Other practical recommendations concern the use of buying power. The use of coercive power showed no influence at all (nor positive, nor negative) in our study. Eager purchasing professional in the food industry might be tempted to put the pressure on their suppliers. However, whenever information sharing is an important performance measure, the idea of punishing and rewarding suppliers is likely to be ineffective. Purchasing professionals should refrain from coercive power, from the perspective of collaboration and information sharing.

The results of our study suggest that purchasing professionals could benefit from the finding that expert power impacts information sharing, be it in an indirect way through high levels of social capital. Social networks and social relation factors do play an important intermediate role in the food sector. Trust is essential for suppliers to exchange information with a more powerful customer. Sharing operational information on production and deliveries forms a very different context compared to sharing strategic information for gaining competitive value, promoting collaborative behaviors between various supply chain members. Companies in the food industry can encourage supplier information sharing by building up their own expertise and cultivating social relationships.

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Further reading

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Appendix Measurement of variables

Social capital,
power and
information
sharing

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Variable	Label	Items
Coercive power ^a	CP1	The major customer's personnel would somehow get back at us if we do not make changes in our research and development
	CP2R	The major customer does not withdrawn certain needed services from us if we do not make changes in our sales. (R)
	CP3R	The major customer does not hint that they would take certain actions if we do not make changes in our production process. (R)
	CP4	The major customer could have made things difficult for us if we do not agree with their suggestions about distribution
Expert power ^a	EP1	Our major customer ensures changes in our research and development, because we trust the customer's judgment
	EP2	Our major customer ensures changes in our sales, because they have great business expertise about sales
	EP3R	Our major customer does not ensure changes in our production, because we usually do not have good advice from the customer. (R)
	EP4	Our major customer ensures changes in our distribution, because they have specially trained people who know what had to be done
Information sharing ^b	IS1	We are willing to share information about the available stock with our major customer
	IS2	We are willing to share our production planning with our major customer
	IS3R	We are not willing to share our production capacity with our major customer. (R)
	IS4R	We are not willing to share our actual sales data with our major customer. (R)
Relational social capital ^b	RSC1	Our major customer and we are concerned about the welfare or interests of each other when making important decisions
	RSC2	Our major customer and we are willing to offer assistance and support to each other, even if the circumstance changes
	RSC3	Our major customer and we share confidential information with each other
	RSC4R	Our major customer and we do not have a close personal interaction. (R)
	RSC5	Our major customer and we are willing to invest in specific resources for each other, because we maintain a close relationship
Structural social capital ^c	SSC1	Our major customer and we maintain close social relationships with each other
	SSC2R	Our major customer and we do not have frequent and intensive interaction with each other. (R)
	SSC3R	Our major customer and we did not obtain new interactions by the cooperation. (R)
Cognitive social capital ^d	CSC1	Our major customer and we share the same vision
	CSC2R	Our major customer and we do not share the same ambitions. (R)
	CSC3	Our major customer and we share the same goals
	CSC4R	Our major customer is similar to us in that we both are willing to change for the benefit of the relationship

Note(s): (R) = recoded

^a Brown *et al.* (1995), ^b Wu *et al.*, (2014), Li *et al.* (2014), ^c Villena *et al.* (2011), ^d Li *et al.* (2014), Son *et al.* (2016)

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