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The moderating effects of national culture on the relation between social capital and supplier satisfaction

Topic: social capital theory, supplier satisfaction, Hofstede culture

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Hereby, I would like to present my master thesis about the moderating effects of national culture on the relation between social capital and supplier satisfaction. This thesis represents the last stage of my master Business Administration with specialization Purchasing and Supply Management at the University of Twente. The thesis is executed at a Dutch company which delivers industrial services in amongst other the oil and gas market.

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Abstract

This study tries to merge two commonly used theories in the purchasing management literature: social capital theory and the Hofstede cultural dimension's theory. The increasing importance of the purchasing function in organizations allow the application of these kind of theories which stem originally from other disciplines. Both theories are becoming more and more popular in all kind of business fields, also in the field of purchasing management. Although there is not a clear consensus of what social capital theory exactly encompasses, it is key in buyer-supplier relationships. In this and previous studies, the three social capital constructs are expected to be antecedents of supplier satisfaction. To test this, the model of Bohnenkamp (2018) is replicated. Besides this, measurement items of Villena et al (2011) are also (partially) used which allow for a reasonable comparison of these two measurement models of social capital. The biggest contribution of this study is where social capital theory and the Hofstede cultural dimension's theory cross their roads: the moderating effect of culture on the relation between social capital and supplier satisfaction.

The hypotheses of the supplier satisfaction antecedents and the moderator effects are tested by means of performing a questionnaire which is send to the suppliers of the case company. The sample size gathered in this study is rather small, which affects the study results. Only one moderator hypothesis is supported, whereas only one hypothesis regarding the supplier satisfaction antecedents is supported.

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1. Introduction: the importance of supplier satisfaction

In the last years, more and more is written about supplier satisfaction and its relations with other phenomena. “Supplier satisfaction is the buyer’s ability to live up to the expectation of the supplier.”[1] The increase in academic interest in supplier satisfaction belongs to the trend of customers competing for capable suppliers, also named as reverse-marketing.[2] These capable suppliers are becoming progressively scarcer. Likewise, companies reduced their supply base in order to invest more in long-term relationships with a smaller number of suppliers.[3] As a result, customers are becoming more dependent on their suppliers, so customers should have good relationship with their suppliers to be attractive for them. To be attractive for these suppliers as a buyer, supplier satisfaction is important, because suppliers might not allocate forms of preferential treatments to their buyers when they are not satisfied.[4] For the purchasing company, there is thus much incentive to be a preferred customer.

The function of purchasing has also changed during the last decades. Where in the past the purchaser has been seen as “the guy who spends the money”, the purchaser of today has a more strategic function who can save money and can attain innovations via it suppliers and thus can create competitive advantages by doing so. To fulfill the potential of this competitive advantage, one could say that supplier satisfaction of the suppliers is important, because it would lead to a better cooperation with them. Besides that, the purchasing volume of products and services has increased largely due to primarily outsourcing of many activities. Given all these arguments, it is important to understand how supplier satisfaction can be attained and what factors does lead to supplier satisfaction.

Although the trends and details explained about supplier satisfaction general are mainly based on a manufacturing industry, they are also applicable to more project-based industries. This study tries to analyze what the roles are of social capital and culture regarding supplier satisfaction in a project-based industrial services industry. This entails applying the social capital relations towards supplier satisfaction assembled by Bohnenkamp (2018), Villena at al (2011) and Schiele (2015) in a project-based industry. This is done by hypothesizing that the three social capital constructs all have a positive and significant relationship with supplier

[1] See Schiele et al (2012), p.2; Vos et al (2016), p.1.
[2] See Leenders & Blenkhorn (1988); Vos et al (2016), p.1.
[3] See Serkar & Mohapatra (2006), p.148.
[4] See Schiele (2015), p.2.

satisfaction. For academical purposes, the measurement models of Bohnenkamp (2018) and Villena et al (2011) will be compared with each other to find out which model is more appropriate for explaining supplier satisfaction. Finally, the moderator effects of the cultural dimensions of Hofstede on the relation between the social capital dimensions on supplier satisfaction are created and tested. Here, it is hypothesized that the Hofstede dimensions individualism and masculinity have a negative moderating effect on the relation between the social capital constructs and supplier satisfaction, whereas power distance, long-term orientation and uncertainty avoidance have a positive relation.

2. Introducing the topics: social capital theory and culture

2.1 Social capital: the glue that holds the relationship between businesses together

Because a buying company will benefit from a higher supplier satisfaction as is explained shortly in the introduction, it is important to analyze the antecedents of this supplier satisfaction. Schiele et al (2015) proposed amongst others a theoretical approach to understand the supplier satisfaction antecedents by linking the social capital theory with supplier satisfaction.[5]

One could ask: why do we need social capital to explain supplier satisfaction? It is assumable that social capital in a buyer-supplier relationship leads to amongst others better communication, alignment etc., thus improving operative excellence and behavior. Operative excellence and relational behavior are found to be antecedents of supplier satisfaction[6], making the relation between social capital theory and supplier satisfaction evident. According to Schiele et al (2015), "The underlying idea of social capital theory in this context is that buyer–supplier relationships represent multi-organizational social processes, forcing the partners to interact, exchange information, and to form relationships based on interdependencies, exchanges, and mutual problem-solving."[7] To exchange these resources, it is necessary to rely on the presence of social capital within these relationships.[8]

This study will replicate and test the supplier satisfaction antecedents, in this case the social capital constructs, and will compare two measurement models of this social capital theory in

[5] See Schiele et al (2015), p.1-7.
[6] See Vos et al (2016), p.1.
[7] Schiele et al (2015), p.3.
[8] See Hughes & Perrons (2011); Schiele et al (2015), p.3.

relation with supplier satisfaction. To do so, the hypotheses of Bohnenkamp (2018) are tested with both the indicators used in that study and with the indicators used in the study of Villena et al (2011). This comprises that the three social capital constructs are hypothesized are positively related with supplier satisfaction. Besides that, it is hypothesized that structural and cognitive capital have a positive influence on relational capital.

2.2 The importance of culture in supplier satisfaction

The emergence of global sourcing in the last decades, has increased the complexity in supply chains.[9] This comprises e.g. also that the buying company must deal with more different countries and cultures. National culture has been recognized as "an important factor in shaping interorganizational relationships (Scheer et al, 2003).[10] Likewise, it has been demonstrated that national culture has its influence on negotiation behavior in supplier-buyer relationships.[11] Obviously, communication itself is also subject to the different cultures in this relationship. Since culture has such a key role in business interactions, it thus is also expected it has a big influence on supplier satisfaction. Throughout the last years, more and more is known about supplier satisfaction and its consequences and antecedents. However, all the relating antecedents and consequences might be dependent on many factors, which are per country and/or culture different. Because of that, it is fruitful to understand what the impact is of culture on the antecedents of supplier satisfaction.

The moderating effect of corporate culture between the relational aspects and supplier satisfaction is already researched.[12] In that study, the competing values framework is used as a measurement instrument of corporate culture. This framework is created by Cameron & Quinn (2011) and it explains the key dimensions and elements of corporate culture by distinguishing four different kinds of culture: adhocracy, clan, market and hierarchical cultures.[13]

The moderating effect of one of the world's most famous cultural theory between the social capital dimensions and supplier satisfaction is however not studied as of today: the cultural dimensions theory of Hofstede. Hofstede's theory is used to understand the cultural differences across countries & regions and to distinguish ways how business is done across

[9] See Golini & Kalchhschmidt (2010), p.86.
[10] e.g. Barkema & Vermeulen, (1997); Steensma, Marino, Weaver, & Dickson, (2000); Scheer et al (2003), p.304.
[11] See Metcalf et al (2006), p. 26-27.
[12] See Henn (2018), p. 1.
[13] See Cameron & Quinn (2015), p.306-307.

different cultures. This can be important since business and national culture has its influence on how people think and behave, so one could also argue that it has it influence on the relation between social capital and supplier satisfaction. That is why the Hofstede cultural dimensions theory is introduced in this paper as a hypothesis that states that culture has a moderating effect on this relation. So, it is hypothesized that the four original Hofstede dimensions (power distance, individualism, masculinity/femininity and uncertainty avoidance) have a moderating effect on the relation between the social capital constructs and supplier satisfaction. In the next chapter, we will dive deeper into Hofstede's cultural dimensions theory and its dimensions to explain the moderator effects more properly.

3. Theory / Literature review

3.1 Supplier satisfaction in a project-based organization seems to be less crucial than in non-project organizations, but remain important nevertheless

As is explained before, supplier satisfaction is important for the buying company. This section will first further elaborate why this is so. As already explained, supplier satisfaction leads to a preferred customer status. As a result of this, a supplier is more inclined to give preferential treatments to the buying companies which generates a competitive advantage for the buying company.[14] These preferential resource allocations, as they were called by Steinle & Schiele (2008)[15], are very diverse in nature. For example, one can think about privileged treatments in case of bottlenecks.[16] Preferred customers can also expected to receive benevolent pricing and more innovativeness from suppliers, since Schiele et al (2011) found that there is a positive significant relation between preferred customer status and the constructs benevolent pricing and supplier's innovativeness. The latter becomes even more beneficial since Ellis et al (2012) found that there is a positive significant relation between technological innovation access and preferred customer status.[17] Also, the sustainability and exclusivity of the buyer-supplier relationship can be ensured by having a preferred customer status.[18] Although there are more benefits which are not even mentioned yet, these already give enough incentive for the buying company to strive for a high supplier satisfaction.

[14] See Schiele, Veldman & Hüttinger (2011), p. 7; Pulles, Schiele, Veldman & Hüttinger (2016a)
[15] See Steinle & Schiele (2008), p.11.
[16] See Schiele et al (2012), p.25.
[17] See Ellis et al (2012), p.1266.
[18] See Schomann et al (2018), p.231.

The concept of supplier satisfaction and its importance is explained in the introduction already, because it is the main (dependent) variable in this study. Literature provides different conceptualizations and operationalizations of supplier satisfaction. In this research, the method of Vos et al (2016) is used to measure the supplier satisfaction. An overview of the results of the study of Vos et al (2016) is displayed here below. Keep in mind that the antecedents of Vos et al (2016) are used mainly for the case company to provide them with useful information; other supplier satisfaction antecedents, namely the social capital constructs, are used in this study to answer the hypotheses.

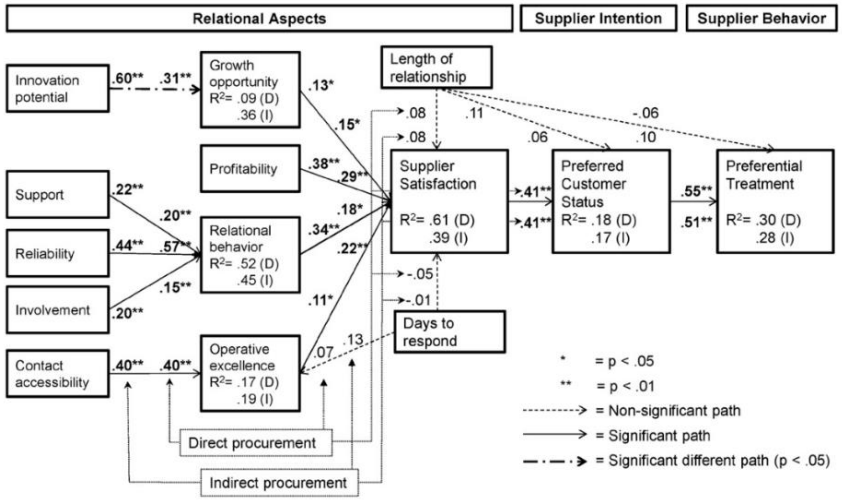

Fig. 3. Results of PLS-PM of the revised model for direct (D) and indirect (I) procurement.

Figure A: research model of Vos et al (2016). Source: Vos et al (2016)

Although the trends and details explained about supplier satisfaction general are mainly based on a manufacturing industry, they are also applicable to more project-based industries. The supplier satisfaction model of Vos et al (2016) is already once applied at a Dutch construction company, and the results indicated that most relations were significant and thus it showed that a change in the industry context did not yield substantial differences in the antecedents of supplier satisfaction or preferred customer status.[19] [20] This measurement model has also showed to be applicable in both direct and indirect procurement.[21] This is very important, since there is a significant presence of indirect procurement in project-based organizations. The main distinction between direct and indirect procurement is the relatedness of the

[19] See Smits (2018), p.3.
[20] See Smits (2018), p.1-73.
[21] See Vos et al (2016), p.4621.

products purchased with the production process.[22] Direct products include all purchases which are necessary for the production process of a company, for example raw materials or components ready for assembly into a final product.[23] Indirect products are products that "a company needs to ensure everyday business, but which are not related to the production process".[24]

Although many previous supplier satisfaction studies were conducted in typical production companies, which tend to have a functional organizational structure instead of a project-based one, only one supplier satisfaction project-based organization regarding supplier satisfaction was used in prior research. A project-based organization is "an organizational form in which the project is the primary unit for production, organization, innovation and competition."[25] The literature has showed that project-based organizations are especially required in customized industries, such as complex products and construction.[26] [27] The main differences between project-based organizations and non-project-based organizations will now be explained by means of the benefits and drawbacks of a project-based organization. According to Verona & Ravasi (1999), project-based organizations lead to better processes, control and lead time reduction.[28] Moreover, project-based organizations tend to have a higher output quality, increasing ability to respond quickly, be more flexible and offers more possibilities to innovate with its clients and suppliers. [29] [30] On the other side, project-based organizations face some drawbacks when it comes to achieving economies of scale, performing routine tasks and coordination.[31] Besides that, in these organizations it is hard to promote organization-wide and project-to-project learning, because "knowledge generated in the project itself is embedded in tacit experiences of the group members and is therefore difficult to consolidate and spread at the organizational level."[32] [33] Moreover, when a project is discontinued, knowledge is at risk because the project team is dispersed because of the project discontinuation.[34] Finally, many

[22] See Monczka et al (2009), p.416.
[23] See Vos et al (2016), p.2.
[24] See Vos et al (2016), p.2.
[25] Hobday (200); Di Vincenzo (2012), p.6.
[26] See Hobday (1998); Di Vincenzo (2012), p.6
[27] See Bresnen et al (2004); Di Vincenzo (2012), p.6.
[28] See Verona & Ravasi (1999); Di Vincenzo (2012), p.7.
[29] See Mintzberg (1983); Hobday (2000); Di Vincenzo (2012), p.6.
[30] See Pinto & Rouhiainen (2001); Di Vincenzo (2012), p.6.
[31] See Hobday (2000); Di Vincenzo (2012), p.6.
[32] See DeFillippi & Arthur (2000), p.125.
[33] Prencipe & Tell (2001); Di Vincenzo (2012), p.6.
[34] See DeFillippi & Arthur (2000), p.129.

projects are unique which means that the solutions of these problems hardly allow for a generalization.[35]

A big difference of the industrial services industry (where the case company CompanyX belongs to) and the construction industry is the presence and importance of partnerships. In general, creating contractor-subcontractor relationships is subject to many constraints and difficulties.[36] This is mainly because of the fact that many projects in the construction industry are unique and done once, for example the construction of a building or a house. It is hard to create a partnership when the number of projects is uncertain and low, because it does not really pay off. In the case of the oil & gas industry, partnerships or relational relationships with suppliers make more sense because the projects are done a more continuous basis. In this industry, it is frequent to have contracts of 1 to 5 years or even longer with the customer. When there is more certainty and continuity from the sell side, stronger relationships with local subcontractors can be built on the same duration or even longer. Hence, supplier satisfaction will also play a more important role.

3.2 Social capital is becoming more important because buyer-supplier relationships are developing more and more into relational long-term relationships.

Many different definitions of social capital theory are given in the literature; there is no main consensus of what social capital theory really is. According to Coleman (1988), social capital exists in the relations between persons, facilitating productive activity.[37] Putnam (2000) adds to that by saying that "social capital refers to features of social organization such as networks, norms and social trust that facilitate coordination and cooperation for mutual benefit."[38] Bourdieu states that the definition is as follows: "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition"[39] Nahapiet & Ghoshal defined this theory by stating that social capital consists of three main dimensions: structural, cognitive and relational,[40] while according to Adler & Kwon (2002), social capital is the goodwill available

[35] See Bresnen et al (2003); Di Vincenzo (2012), p.6.
[36] See Frodell (2009), p.9.
[37] See Coleman (1988); Greeley (1997), p.588.
[38] Putnam (2000), p.2.
[39] Bourdieu (1985), p.248.
[40] See Goshal & Nahapiet (1998), p.243.

to individuals or groups.[41] For more definitions of social capital theory, the synthesis study of Adler and Kwon (2002) provides an in-depth conceptualization of this theory in different contexts. Besides the wide acceptance of social capital theory in social sciences such as business administration, it also has been applied to economics to explain e.g. size of firms, economic growth, innovation etc.[42]

Schiele et al (2015) was the first to connect the social capital theory with supplier satisfaction by advocating that an abundance of structural, cognitive and relational capital would lead to a higher supplier satisfaction.[43] A visual representation of the propositions of Schiele et al (2015) is displayed here below in figure B.

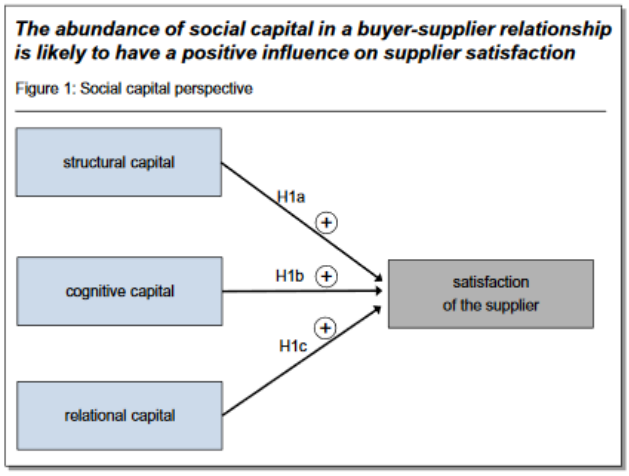

Figure B: research model of Schiele et al (2015). Source: Schiele et al (2015)

Bohnenkamp converted the propositions into hypotheses and tested them in his dissertation in 2018. Besides that, he added a relation between structural & cognitive capital towards relational capital. As of today, these propositions are tested only twice in the context of the same organization, but in two different countries: Germany and China. The results were not as expected. Why not as expected? It was fully expected that all three social capital dimensions have a positive and significant effect on supplier satisfaction. Results indicated that only the relational capital has a direct significant effect on supplier satisfaction, whereas the cognitive and structural capital did not have a significant effect on supplier satisfaction. However, the relation from cognitive and structural capital to relational capital was significant though,

[41] See Adler & Kwon (2002), p.17.
[42] See Guiso et al (2007), p.3.
[43] See Schiele et al (2015), p.4.

meaning that the former two had an indirect influence on supplier satisfaction via the mediating variable relational capital.[44] This study will analyze whether these unforeseen results are an indication of a strange phenomenon or whether the results are only case-related This study will replicate the study of Bohnenkamp (2018) and additionally will add moderator effects. But first, it will be explained shortly what social capital means in a buyer-supplier relationship.

The three social capital dimensions in the study of Schiele (2012) and Bohnenkamp (2018) are mainly adopted from the study of Nahapiet & Ghoshal (1998) due to their wide application in business context.[45] These dimensions are then divided into sub dimensions, which are replicated from the study of Bohnenkamp (2018).

Coleman (1988) and Portes (1998) stated that social capital can be considered as the social ties between individuals or corporate actors which facilitate benefits from these ties for the actors.[46] [47] Because of this, this theory could explain why certain suppliers are more satisfied than others. "The underlying idea of social capital theory in this context is that buyer–supplier relationships represent multi-organizational social processes, forcing the partners to interact, exchange information, and to form relationships based on interdependencies, exchanges, and mutual problem-solving ."[48]

If studies confirm that the three dimensions are antecedents of supplier satisfaction, companies would be more triggered to have social capital with its suppliers. Another advantage is that the presence of two of the three components of social capital, cognitive and relational capital, explains that less opportunistic behavior occurs between buyer and supplier.[49] However, there is also another side to shed light on: Villena et al (2011) found that an extreme amount of social capital reduces the supplier's ability to make effective decisions, being objective and increases the supplier's opportunistic behavior.[50] Although opportunistic behavior is not part of this study, it is worth mentioning it since it has influence on the performance of a supplier.

[44] See Bohnenkamp (2018), p.124.
[45] See Hartmann & Herb (2014), p.250.
[46] See Coleman (1988), p.98.
[47] See Portes (1998), p.2-22.
[48] Schiele (2015), p.3.
[49] See Bohnenkamp (2018), p.67.
[50] See Villena et al (2011), p. 1.

3.3 The struggles of conceptualization and operationalization of social capital

Conceptualization of social capital in a general context is very hard. One of the reasons for this, is because social capital is so context related. Hence it is more fruitful to focus on the case of this study and conceptualize social capital theory in a business-to-business relationship setting, in this case a buyer-supplier relationship. A visual representation of social capital is displayed here below in figure C which focusses on the relation between buyer and supplier. The unit of analysis is thus not on an individual level, but on a firm level.

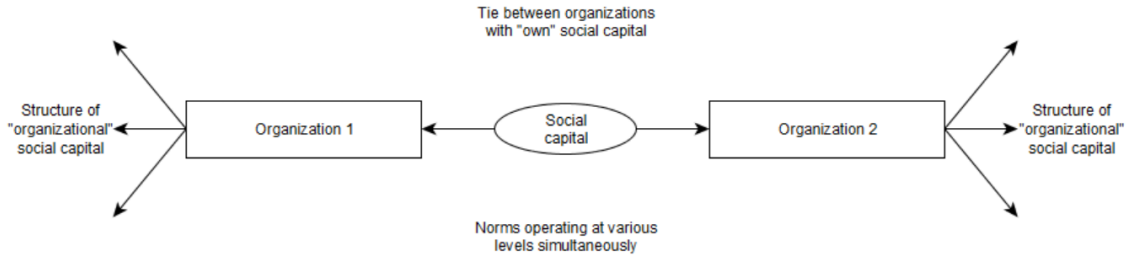

Figure C: social capital between organizations.

In the following section, the sub dimensions are shortly elaborated and operationalized. This is necessary because the dimensions should be measured to analyze the relation between social capital and supplier satisfaction. However, as Fukuyama (2001) states, "one of the greatest weaknesses of the social capital concept is the absence of consensus on how to measure it."[51][52] Hence, there is controversy and debate about the practicability of measuring social capital.[53] Also, there is no robust and widely applicable way to measure social capital in different contexts, so the measurement of social capital should be tailored to a specific case. This study confines the context into the buyer-supplier relationship with a project-based organization as the buying firm. This is not the same as the automotive industry setting where Bohnenkamp (2018) did its study, but the context of buyer-supplier relationship in a business-to-business setting suffices. Besides that, both organizations are industrial companies. Although the setting of this study does not have to be (approximately) the same as the one in the study of Bohnenkamp (2018), a similar setting (business-to-business, industrial etc.) enables us to

[51] Fukuyama (2001), p.12.
[52] See Durlauf (2002b), p.474.
[53] See Falk & Harrison (1998), p.20.

make a better comparison of the supplier satisfaction antecedents. A conceptual model Bohnenkamp's study in 2018 is displayed here below. Please recall that this is the simplified model of his study, since the hypotheses of the second-order constructs are omitted.

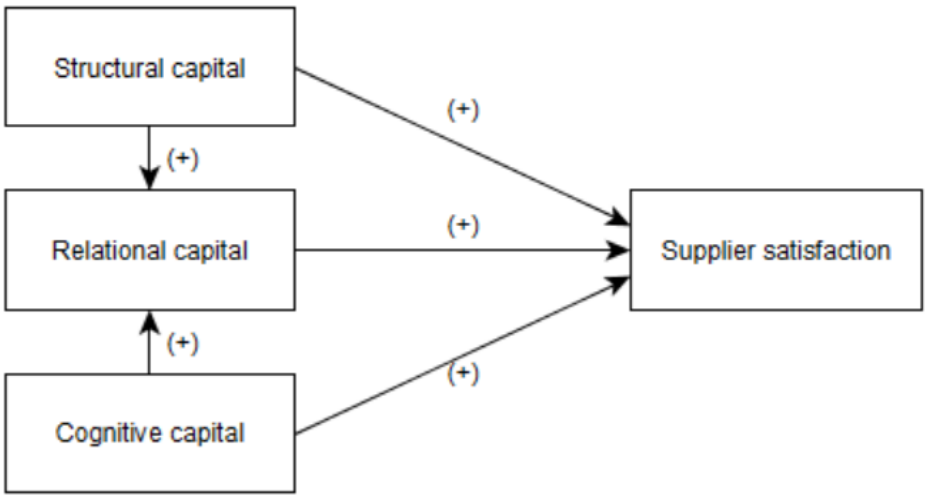

Figure D: research model social capital theory and supplier satisfaction. Source: Bohnenkamp (2018).

To make the first order constructs, which are the three social capital dimensions, more suitable for operationalization, they are divided into second order constructs which will be elaborated. This is done in exactly the same way as Bohnenkamp (2018) did this. For clarification, in Appendix B, the questionnaire with questions is displayed. One can see which questions belong to the second and first- order constructs which are explained below, which makes the explanation of the constructs more straightforward (start at bottom page 88).

Structural social capital

The structural social capital constructs consists from three second-order constructs. Burt defined structural social capital as "the overall pattern of connections between actors" (Burt 1992; Lesser 2009).[54] In the context of this study, actors are the buyer & supplier and its employees. Bohnenkamp (2018) used the measurement instrument of amongst others Villena et al (2011) to operationalize this dimension.[55]

The first second-order construct mentioned by this author, is the **infrastructure actor exchange**. Bohnenkamp (2018) used the measurements of Roden and Lawson (2014) as an inspiration, as they were loosely based upon them. The concept refers to the more qualitative

[54] Burt (1992); Lesser (2009), p.122.
[55] See Bohnenkamp (2011), p. 58.

part of the structural dimension.

Frequency of interaction, as the title already suggests, deals with the quantitative part of the structural dimension. Bohnenkamp (2018) used the measurements of Villena at al (2011) to measure the frequency. According to Villena et al (2011), "partners that enhance the frequency and interaction of multiple contacts at different levels (e.g., managerial and technical) and various functions (e.g., operations, quality, and marketing) allow the creation of a social structure that benefits both parties in terms of volume and diversity of information."[56]

The last measurement of structural capital is addressing a more qualitative part.

Nature of communication deals with e.g. whether agreements are found jointly, or problems are solved jointly.

Relational social capital

This construct consists of three second-order constructs. The first explained here, is **trust.** According to Misztal, trust is the belief that the "results of somebody's intended action will be appropriate from our point of view".[57]

The second first-order construct in the relational dimension is **commitment**, which can be considered as "a state in which an individual identifies with a particular organization and its goals and wishes to maintain membership in order to facilitate these goals."[58] This is also reflected by March & Simon (1958) which states that such commitment holds often "an exchange relationship in which individuals attach themselves to the organization in return for certain rewards or payments from the organization."[59]

"**Reciprocity** represents the feeling of indebtedness and obligation to do business in the future that the relationship parties experience" (Blonska, 2013; Hoppner & Griffith ,2011; Palmatier, 2008).[60] It can also be described as the need for both parties "to compensate an action they have experiences from others" (Bohnenkamp, 2018; Hoppner & Griffth. 2011).[61]

Cognitive social capital

The last social capital construct has two second-order constructs.

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[56] Villena et al (2011), p. 563.
[57] Misztal (1996), p. 9-10.
[58] Mowday & Steers (1979), p.225.
[59] March & Simon (1958); Mowday & Steers (1979), p.225.
[60] Palmatier (2008); Hoppner & Griffith (2011); Blonska (2013), p. 23.
[61] Hoppner & Griffth (2011); Bohnenkamp (2018), p.117.

The first construct is **shared norms.** Coleman (1990) states that a norm exists when the socially defined right to control an action is held not by the actor but by others, which means that it represents a degree of consensus in the social system.[62] Shared norms can prevent misunderstanding between actors. So, the more norms are shared between actors, the higher the cognitive capital is expected to be.

Overlap of objectives measures whether the objectives between both parties are aligned / overlapping. Bohnenkamp (2018) states that it would make sense that both parties examine whether they are aware of each other's targets and whether there is effort to reach alignment of these targets.[63] It makes more sense to add this second-order construct, since having the same norms in e.g. a regional cluster, does not automatically mean that both organizations have the same targets. [64]

3.4 The impact of culture on every international business interaction

Culture itself is a fuzzy and abstract concept which has been explained by many scientists and institutions. For example, Lederach (1996) defines culture as "the shared knowledge and schemes created by a set of people for perceiving, interpreting, expressing, and responding to the social realities around them".[65]

Hofstede uses the following one: "Culture is the collective programming of the mind that distinguishes the members of one group or category of people from others".[66] The term culture is commonly used for ethnic groups, nations and organizations, but can also be used for genders, generations and social classes.[67] In the context of this study, it will be used in a buyer-supplier relationship context. Many authors classified cultures throughout the years, however the theory of Hofstede is the most used and most famous classification of culture. The theory is widely accepted and in a study of Sondergaard (1994), it was concluded that his four dimensions are "largely confirmed".[68] Lately, it has been applied more and more in the field of purchasing and supply management, for example as antecedents of corruption, which is important for global sourcing, and project performance, for explaining negotiation behavior

[62] See Coleman (1990), p.243-244.
[63] See Bohnenkamp (2018), p.116.
[64] See Rutten et al (2010); Pulles & Schiele (2013); Bohnenkamp (2018), p.116.
[65] Lederach (1996), p.9.
[66] See Hofstede (2011), p.3.
[67] See Hofstede (2011), p.3.
[68] See Sondergaard (1994); Davis & Ruhe (2003), p.278.

etc.[69] [70] [71]. However, it should also be noted that the theory was and is subject to criticisms, which is also not a surprise, given the many different definitions of culture. For example, the hypotheses implied by Hofstede (1980) were tested and rejected by Winch et al (1997: he did not found evidence for a difference between British and French organizational structures regarding the cultural dimensions.[72] According to McSweeney (2000), "nations are not the proper units of analysis as cultures are not necessarily bounded by borders".[73]
Notwithstanding, the cultural dimensions theory of Hofstede is selected for this study. the generalizability of this theory allows us to apply it.
When the theory was developed, it contained of four dimensions: power distance, collectivism vs individualism, uncertainty avoidance, femininity vs masculinity. In respectively 1991 and 2010, two new dimensions were added: short vs long term orientation and indulgence vs restraint.[74] Hofstede uses the borders of nations as a measure of cultural units. In the following part, all six Hofstede will be elaborated. In Appendix A, an overview is displayed where one can see the characteristics of all dimensions.

Masculinity vs femininity

This dimension indicates to what extent a society stresses nurture or achievement. A high score represents masculinity while a low score represents femininity. On the masculine side, a preference for achievement, ambition and acquisition of wealth is represented. Also stands masculinity for a society where social gender roles are clearly distinct: "men are supposed to be assertive, though, and focused on material success; women are supposed to be more modest, tender, and concerned with the quality of life".[75] On the other side, "femininity stands for a in which social gender roles overlap: both men and women are supposed to be modest, tender, and concerned with the quality of life". [76] In cultures with a score on this dimension, there is often a taboo around this discussion.[77] Masculinity is high in German-speaking

[69] See See Davis & Ruhe (2003), p.278.
[70] See Chipulu et al 2014, p.1-43.
[71] See Metcalf et al (2006), p1-13.
[72] See Winch et al (1997), p.237.
[73] McSweeney (2000); Jones (2007), p.4.
[74] See Hofstede (2011), p.7.
[75] See Hofstede (2001), p. 297.
[76] See Hofstede (2001), p. 297.
[77] See Hofstede et al (1998); Hofstede ((2011), p.12.

countries, Japan and in some Latin countries. Nordic, The Netherlands and some Asian and Latin countries such as Thailand, Chile and Spain do score low to moderately low. [78]

Individualism vs collectivism

This dimension deals with how in a society are integrated into groups. The individualistic cultures are cultures in which the between individuals are loose: people are expected to care for themselves and their direct family.[79] Collectivistic cultures, the opposite of the individualistic, tend to have strong ties between individuals and are group-oriented. It is rather similar to the concept of idiocentrism – allocentrism concept explained by Triandis (1985) where people that are idiocentric are more individual oriented give e.g. priority to personal goals over the goals of collectives.[80] In collectivistic cultures, the "we" is more emphasized than the "I". Developed and Western countries are considered as individualistic countries, whereas the collectivistic countries consist mainly of less developed and Eastern countries.[81]

Power distance

The extent to which inequality and power is tolerated, is measured in this index. It represents inequality from below, thus a high score means that inequality, power differences, bureaucracy and a high respect for authority and rank are accepted. The concept of "authority ranking" is also explained by Fiske (1992) to describe different cultures. Naturally, it tells us how countries take into account the hierarchy or authority of people in society.[82] This dimension tends to be higher for Asian, African, Latin and East European countries and lower for Germanic and English-speaking Western countries.[83]

Uncertainty avoidance

This index indicates to what extent culture members feel either uncomfortable or comfortable in unstructured situations.[84] With unstructured situations is meant situations which are unknown, novel, surprising and different from usual.[85] Cultures with a high score in this dimension, try to minimize the probability unstructured situations by laws, rules, codes,

[78] See Hofstede (2010), p.13.
[79] See Hofstede (2011), p. 11.
[80] See Triandis (1989), p 397.
[81] See Hofstede (2010), p.88-89.
[82] See Fiske (1992), p.691.
[83] See Hofstede (2011), p.10.
[84] See Hofstede (2010), p.10.
[85] See Hofstede (2010), p.10.

disapproval of deviant opinions etc. This dimension shows similarities with the low-high trust dimension created by Fukuyama (1995) where he asserts that trust describes to what extent people trust and feel comfortable with the unknown.[86] East & Central European, Latin, German-speaking countries and Japan score high on this dimension while English-speaking, Nordic and Chinese culture countries score low.[87]

Long term orientation vs short term orientation

As already explained, this dimension was added later. Long-term oriented cultures (i.e. a high score) are considered pragmatic: they are more future-oriented. For example, organizations in long-term oriented cultures, are not really bothered with quarterly results, but focus more on the long term, serving the stakeholders and society for the generations to come. On the contrary, short-term oriented cultures prefer to maintain norms and traditions. East Asian, Eastern-and Central European countries are long-term oriented. USA, Australia, Latin American, African and Muslim countries are short term oriented.[88]

Indulgence vs restraint

Indulgent societies (i.e. a high score) tend to focus more on leisure time, enjoying life, having fun etc., while restrained societies control fulfillment of needs by means of strict social norms. Cultures with a low score have a tendency towards cynicism and pessimism. Indulgent countries include South-and North American, Western European and Sub-Saharan countries. Eastern European, Asian and Muslim countries are on the restraint side.

4. Hypotheses overview

The first contribution consists of the comparison of social capital measurement models of Villena et al (2011) and Bohnenkamp (2018). No hypotheses are created but the models are analyzed by means of a small statistical analysis. Explanation of this statistical analysis is covered in section 5.4 and the results can be found in section 6.1 The second contribution, testing the relation between social capital and supplier satisfaction, is explained in the next section. The third contribution, the moderator effects of culture on the aforementioned relation is described in section 4.2.

[86] See Fukuyama (1995); Ali et al (2008), p.4.
[87] See Hofstede (2010), p.11.
[88] See Hofstede (2010), p.15.

4.1 Social capital is expected to be an antecedent for supplier satisfaction

Now that the dimensions and sub dimensions are conceptualized, hypotheses can be explained. Bohnenkamp (2018) operationalized the sub dimensions by using indicators of different authors. These sub dimensions / constructs and their indicators are already explained in section 3.3. The hypotheses from section 4.1 to 4.3 are replicated from Bohnenkamp (2018).

As already explained earlier, the results of the study of Bohnenkamp (2018) were quite surprising: only the relational dimension had a direct significant relation between itself and supplier satisfaction. A possible explanation for these results is as follows:
Firstly, the structural and cognitive questions are multi interpretable. So, e.g. a high frequency interaction could be both positive but also negative interpreted: there could be a high interaction because the supplier made e.g. mistakes in the delivery but there could also be a high interaction because both actors are collaborating well with each other and these actors want to maintain this strong relationship. Given this, a high structural social capital in the supplier-buyer relationship does not automatically imply a higher supplier satisfaction.
Secondly, the study of Bohnenkamp (2018) is done in the automotive industry. Buyer-supplier relationships in the automotive industry across countries have been historically contrasted.[89] The traditional Western supply chain management relationships for example were characterized as arm's length ones.[90] Recent literature found that this strong contrast no longer exists.[91] Still, one could still argue that the OEM manufacturers in the automotive industry use e.g. a more forced and oppressed attitude and put more pressure against suppliers than in other industries.
The two previous given argumentations in combinations, might be the reason why these two dimensions are non-significant while one would expect that all three relations are significant. So, the chosen measurements might not be valid, or they are not applicable in the case of an automotive industry, which is more likely. It is also possible that the effects of social capital theory are kind of far-fetched and do not contribute to the supplier satisfaction. Finally, another possibility is that a too high social capital can lead to opportunistic behavior as is found by Villena et al (2011), having a negative effect on supplier satisfaction. Given this, it is

[89] See Wasti et al (2006), p.949.
[90] See Wasti et al (2006), p.949.
[91] See Bensaou (1999); Fujimoto (2001); Helper & Sako (1995); Liker et al (1996); Wasti et al (2006), p.949

worthwhile to test the same dimensions in another context which will be done in the next sections.

4.1.1 Structural capital as an antecedent for supplier satisfaction

According to Schiele (2015) and Zaheer & Bell (2015), a dense pattern of connections facilitates the exchange of resources.[92][93] Villena et al (2011) states that a lack of structural social capital makes it costly or sometimes impossible to attain meaningful information[94]; a network of social ties could be a mean to get access to this information. Coleman (1988) advocated that information is an expensive resource,[95] so social capital can be very important in being cost-effective. When the exchange of resources is going faster and more efficient, the structural capital is higher, and so one would expect a higher supplier satisfaction. Also, information accuracy and reliability can be achieved by having social structures between parties.[96] It makes sense that this information accuracy and reliability leads to a higher supplier satisfaction.

Besides that, one could argue that a higher structural capital could lead to a higher relational capital. A high amount of structural capital enables more and better communication, which allow buyer and supplier to achieve transparency which prevents opportunistic behavior and information asymmetries.[97] Given this, structural capital is expected to have a positive impact on relational capital.

Hypothesis H1: structural capital has a positive impact on supplier satisfaction.
Hypothesis H2: structural capital has a positive impact on relational capital.

4.1.2 Relational capital as an antecedent for supplier satisfaction

According to Nahapiet & Ghoshal, relational capital resources are “the resources providing shared representations, interpretations, and systems of meaning”. It describes the kind of embeddedness and relationships people have developed with each other through a history of interactions. [98] As said in the section 4.1, Kale et al (2000) stated that relational capital has the

[92] See Schiele (2015), p.4.
[93] See Zaheer & Bell (2015), p.810.
[94] See Villena et al (2011), p. 563.
[95] See Coleman (1988), p.104.
[96] See Chen et al (2009); Villena et al (2011); Bohnenkamp (2018), p.112.
[97] See Kale et al (2000); Bohnenkamp (2018), p.112.
[98] See Granovetter (1992); Bohnenkamp (2018), p.81.

ability to reduce the risk of opportunistic behavior and outflow of important knowledge.[99] As a result of less opportunistic behavior, supplier satisfaction is likely to increase.[100]
In addition, Nyaga et al found that trust and commitment mediated the positive relation between collaborative activities and supplier satisfaction.[101] Because trust and commitment are both second-order constructs in the relational dimension, one could argue "that relational capital itself also positively influences the emergence of supplier satisfaction" (Bohnenkamp (2018).[102]

Hypothesis H3: relational capital has a positive impact on supplier satisfaction.

4.1.3 Cognitive capital as an antecedent for supplier satisfaction

According to Schiele (2015), maximum cognitive capital can be achieved, "if both parties of a buyer-supplier relation share the same business values and have the same goals."[103]
According to Adler and Kwon (2002), if buyer and supplier share the same goals and values they understand each other's processes, long-term targets and strategies better.[104] Also, Gelderman (2016) found that cognitive capital has a positive causal relation with the strategic performance of suppliers.[105] Parkhe (1993) showed that a similarity in corporate culture between buyer and supplier has a positive effect on business success. Bohnenkamp argues that "the presence of cognitive capital might go in line with a certain degree of similarity in terms of corporate culture."[106] Given all these arguments, hypothesis 4 is created.
"Literature argues that trust and commitment are only likely to develop if parties that participate in the relationship have goals and values that are in line with each other's (Barber (1983); Nahapiet & Ghoshal (1998); Carey et al (2011); Bohnenkamp (2018)).[107] So trust and commitment cannot be generated when there is a lack of alignment of targets and ambitions in a buyer-supplier relationship.[108] Given this, cognitive capital is expected to have a positive relationship on relational capital, as is stated in hypothesis 5.

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[99] See Kale et al (2000), p.218.
[100] See Schiele (2015), p.4.
[101] See Nyaga et al (2010); Bohnenkamp (2018), p.113.
[102] Bohnenkamp (2018), p.113.
[103] Schiele (2015), p.4.
[104] See Adler & Kwon (2002); Bohnenkamp (2018), p.111.
[105] See Gelderman (2016); Bohnenkamp (2018), p.111.
[106] Bohnenkamp
[107] Barber (1983); Nahapiet & Ghoshal (1998); Carey et al (2011); Bohnenkamp (2018), p.111-112.
[108] See Adler & Kwon (2000): Bohnenkamp (2018), p.112.

Hypothesis H4: cognitive capital has a positive impact on supplier satisfaction.
Hypothesis H5: cognitive capital has a positive impact on relational capital.

4.2 How the Hofstede cultural dimensions are hypothesized to have a moderating effect between social capital and supplier satisfaction

Before we will discuss all the hypotheses regarding Hofstede culture, it is important to mention that we look from the lens of the buyer, so it is about the cultural dimensions of the supplier. The buyers are either located in UK or NL (this will become clear by means of a question that will be asked in the questionnaire; besides that, the respondent knows this by themselves.). By far, most suppliers supply to the Dutch location.

4.2.1 Power Distance

Morris et al (1998) showed "that power distance is systematically related to conflict behavior": in cultures with a low power distance, subordinates (those who have to report to someone with a higher rank, for example a sales representative or a negotiator) are more inclined to resolve conflicts by themselves, making them less reliable on for example the buying company.[109] In cultures with a high power distance, suppliers would rely for conflict handling more on other parties such as the buying companies, so one could say that these suppliers gain more satisfaction in case of the presence of relational capital in relation to supplier satisfaction.

Gudykunst & Ting-Toomey (1988) showed that, "high power distance results in greater tolerance for unjust events, unfair treatment, and promotes the acceptance of higher differentials in negotiators' roles, to the extent of even tolerating insulting remarks if it comes from a high status person."[110] In this context, suppliers which are located in countries with a high power distance, would be less dissatisfied in case of e.g. unfair treatment or incidents. Given these two main arguments, it is expected that an abundance of relational capital is more appreciated in cultures where the power distance is high, thus resulting in a higher supplier satisfaction. Therefore, it is hypothesized that:

[109] Morris et al (1998); Ghauri & Usunier (2003), p.150.
[110] Gudykunst & Ting-Toomey (1988); Ghauri & Usunier (2003), p.150.

H6a: the influence of relational capital on supplier satisfaction will be positively moderated by power distance, i.e. a high-power distance will more strongly increase the positive effect of relational capital on supplier satisfaction.

As said in the first argument of the previous hypotheses, in cultures with a high-power distance, suppliers would rely for conflict handling more on other parties such as the buying companies. This means that there should be more communication activities between buyer and supplier to enable this, which is reflected by structural capital. It would make sense that this leads to a higher supplier satisfaction.
On the other hand, suppliers based in countries which are characterized by a high-power distance might be harder to communicate with because the employees might be less reachable since they stick to the hierarchy. Of course, the employee of the supplier should be high in the hierarchy and the buyer in a low hierarchy. Because we do not know this, it is hard to take this into account.
According to Bazerman (2000), "members of high-power-distance cultures (e.g. the Philippines, Venezuela, India, France, Belgium) have fewer conflicts with their superiors and are more likely to have superiors intervene in settling their conflicts than do members of low-power-distance cultures".[111] This can also be applied in a buyer-supplier relationship since the buyer can be considered as the superior to some extent. This argument is especially applicable in the "nature of communication' part of structural capital, which will lead to higher values in this part when there are less conflicts. Obviously, fewer conflicts will result in a higher supplier satisfaction.
Considering especially the first and third arguments, the following is hypothesized:

H6b: the influence of structural capital on supplier satisfaction will be positively moderated by power distance, i.e. a high-power distance will more strongly increase the positive effect of structural capital on supplier satisfaction.

Regarding the cognitive dimension, no relation is expected.

[111] Bazerman (2000), p.298.

4.2.2 Individualism

According to Ghauri & Usunier (2003), in collectivistic cultures, there is a stronger need for stable relationships so that e.g. negotiations and communication can be carried out between persons who are familiar with each other over a long time of period, that is, several years.[112] In collectivistic cultures, this is also referred as to in-group preferences.[113] When one person is being replaced, this leads to a disturbance in the relationship, which should be renewed.[114] Social capital could enable these kind of relational relationships, so one would expect that the relation between all social capital factors and supplier satisfaction is more strongly increased in case of a supplier coming from a more collectivistic society.

Moreover, Graham et al (1994) found that negotiators from individualistic cultures behave in a more competitive, confrontive and self-interested way, while negotiators from a collectivistic culture emphasize for example problem-solving, formal harmony and are more likely to avoid conflicts.[115] This is confirmed in research of Brett & Okumura (1998) and Wade-Benzoni et al (2002), where Japanese and American negotiators were compared: employees of individualistic cultures tend to show self-interesting behavior while the employees of collectivistic cultures are less result-oriented but more relational-oriented[116] [117]. Likewise, this was confirmed by Bazerman et al (2000): negotiators coming from collectivistic societies are "more concerned with preserving the relationship while negotiators from individualistic societies are more concerned with preserving the individual rights and attributes".[118] In this context, it is expected that suppliers from more collectivistic cultures appreciate relational and cognitive capital more than suppliers from individualistic cultures, because the presence of that social capital enhances the relation between supplier and buyer.[119]

According to Morris et al (1998), collectivists tend to "avoid behavior that may lead to the disintegration of the ongoing relationship".[120] This is done by preferring yielding and avoiding problems. Disintegration of an ongoing relationship would be less likely in the case of an abundance of social capital between supplier and buyer.

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[112] See Ghauri & Usunier (2003), p.146.
[113] Chung & Jin (2011), p. 238.
[114] See Ghauri & Usunier (2003), p.146.
[115] See Graham et Al (1994); Ghauri & Usunier (2003), p. 150.
[116] See Brett & Okumura (1998) ,p.502.
[117] See Wade-Benzoni (2002), p.93.
[118] Bazerman et al (2000), p.297.
[119] See Hughes & Perrons (2011), p. 164-171.
[120] Morris et al (1998); Ghauri & Usunier (2003), p.151.

Another reason why collectivists emphasize long-term relationships, is because they are not eager to create relationships with new firms: "it is normal for collectivists to favor communication with in-group members and to exclude individuals in out-groups", whereas this behavior would be considered unethical in individualistic cultures such as in the USA.[121] Moreover, it was showed that China's culture (which is highly collectivistic) "will help align buying firm and supplier interests, motivating suppliers to prioritize project targets over their own goals."[122]

Also, according to Money et al (1998), higher levels of collectivism in some countries have been shown to strengthen links between sellers and buyers.[123] The above given arguments (starting at Morris et al), all point towards a negative moderation effect of individualism on the relation between structural, relational and cognitive capital and supplier satisfaction:

H7a: the influence of structural, relational and cognitive capital on supplier satisfaction will be negatively moderated by individualism/collectivism, i.e. a lower score (that is, a collectivistic culture) on this dimension will more strongly increase supplier satisfaction.

4.2.3 Masculinity/femininity

High masculinity is characterized by ego-boosting behavior and a sympathy for being strong which means that conflicts are more often resolved by fighting rather than comprising.[124] It makes sense that a supplier is less satisfied when the buying company is oppressing the supplier by means of "fighting", which will more likely happen when the buying company is placed in a masculine company. However, since this study looks from the lens of a supplier, it should be analyzed whether the feminism/masculinity of a supplier an effect has on the relation between social capital and supplier satisfaction. Suppliers coming from a feminine society, i.e. a low score on this dimension, are expected to be more relational oriented, because relational cultures have a higher emphasis on relationships, and thus one would say that they gain more satisfaction from having social capital between buyer and supplier.[125] The former argument is also confirmed by Metcalf (2004): "business people from feminine cultures are

[121] Hofstede (2001); Chung & Jin (2011), p. 238.
[122] Song & Montoya-Weis (2001); Yan (2015), p.413.
[123] See Money et al (1998); Hewett et al (2006), p.389.
[124] See Ghauri & Usunier (2003), p 147.
[125] See Hofstede (1983); Delerue & Simon (2009), p.17.

cooperative, accustomed to seeking consensus, and intuitive rather than decisive".[126]
On the other hand, Vitell et al (1993) argued that individuals from masculine cultures are less inclined to adhere to strict standards and codes of ethics and are less likely to perceive ethical problems than individuals from feminine cultures.[127] So imagine if the buyer comes from a feminine society and the supplier from a masculine one, the cognitive capital can be low but still the supplier can be satisfied because they do not really adhere to rules and codes of ethics and thus the overlap of objectives and business values is low. So, this would weaken the relation between cognitive capital and supplier satisfaction.
Notwithstanding the last argument, it is still expected that the influence of structural, relational and cognitive capital on supplier satisfaction will be negatively moderated by masculinity/femininity. In hypothesis form, it is translated as follow:

H8a,b,c: the influence of structural, relational and cognitive capital on supplier satisfaction will be negatively moderated by masculinity/femininity, i.e. a lower score (that is feminine) on this dimension will more strongly increase supplier satisfaction.

4.2.4 Uncertainty avoidance

According to Ghauri & Usunier (2003), in countries with a low uncertainty avoidance, there is a low tolerance for ambiguity and distrust in opponents who show unusual behavior.[128] During negotiations, highly structured and ritualistic procedures are preferred in high uncertainty cultures.[129] This strong tendency for structures are also applicable to e.g. contracts: detailed contracts which are legally enforceable are preferred and mitigate the anxiety for decision makers.[130] Also, when there are e.g. videoconference meetings, there is a higher need for formal rules in high uncertainty societies.[131] Given these arguments, the presence of cognitive and structural capital in a buyer-supplier relationship would enhance the supplier satisfaction since cognitive capital deals with the shared norms & values and overlap of objectives while structural capital deals with the intensity and nature of interaction.

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[126] Metcalf (2004), p.4.
[127] See Vitell et al, p.758.
[128] See Ghauri & Usunier (2003), p.147
[129] See Ghauri & Usunier (2003), p.147
[130] See Steensma et al (2000); Pan & Tse (2000); Wuyts (2005) p. 105.
[131] See Dustbar & Hofstede (1999), p.166.

Hofstede found that cultures that score high on uncertainty avoidance "tend to demonstrate a preference for consultative decision processes and group-decision making." On the other side of the spectrum, cultures with a low uncertainty avoidance show a preference for individual decision-making and independent decision processes.[132] Given this, it makes more sense that a supplier from a country with a high uncertainty avoidance would be more satisfied in the case of more structural, cognitive and relational capital between the organizations because that will foster group-decision making and consultative decision processes.

In addition, firms coming from high uncertainty avoidance countries, show a higher resistance to the adoption and implementation of new processes and besides that, these firms are "more reluctant to enter technology alliances in the presence of technological uncertainty."[133] [134]

Cultures with a high uncertainty avoidance have a preference for dealing with only those whom they know and limiting risks which they already experienced yet.[135] Given that employees from countries with a high uncertainty avoidance would like to avoid uncertain and uncomfortable situations (e.g. by searching for a new supplier), one might expect that a supplier from such a country would be more satisfied if all three social capital factors are high, compared to suppliers from countries where the uncertainty avoidance is low. Reason for this, is that having social capital in an inter-organizational relationship between buyer and supplier, facilitates the exchange of resources which would imply that a relationship functions better.[136]

Given all these arguments, we hypothesize:

H9a,b,c: the influence of structural, relational and cognitive capital on supplier satisfaction will be positively moderated by uncertainty avoidance, i.e. a higher score on this dimension will more strongly increase supplier satisfaction.

4.2.5 Long term orientation & Indulgence

According to Yan (2015), a Chinese supplier places a higher value on the long-term potential benefits of collaboration.[137] In addition, ", China's long-term orientation will reduce supplier sensitivity to short term project outcome concerns".[138] In contrast to this long-term orientation,

[132] Hofstede (2001); Metcalf (2004), p.7.
[133] See Jayamaha et al (2017), p.439.
[134] Steensma et al (2000); Schiele (2015), p.5.
[135] Hofstede (2001); Metcalf (2004), p.7.
[136] See Hughes & Perrons (2011), p. 164-171.
[137] Nakata & Sivakumar (1996); Yan (2015), p.413.
[138] Gelfand, Spurlock, Sniezek, & Shao, (2000); Yan (2015), p.413.

"the time-conscious individualistic Americans like to arrive at decisions quickly and at the table."[139] Assuming that China represents this long-term orientation, it might makes sense that a supplier with a longer orientation, is getting more satisfied by social capital that one with a short term orientation, since the presence of social capital is assumed to be positive for supplier satisfaction. Still, the arguments to create a hypothesis for this dimension are too weak, so no hypothesis is made.

Also, regarding the sixth dimensions of Hofstede, indulgence, no significant moderator effects of the dimension on the relation between social capital and supplier satisfaction are expected, so no hypotheses is created for this dimension.

In summary, the previous mentioned hypotheses regarding the Hofstede Cultural Dimensions Theory can be summarized as follows:

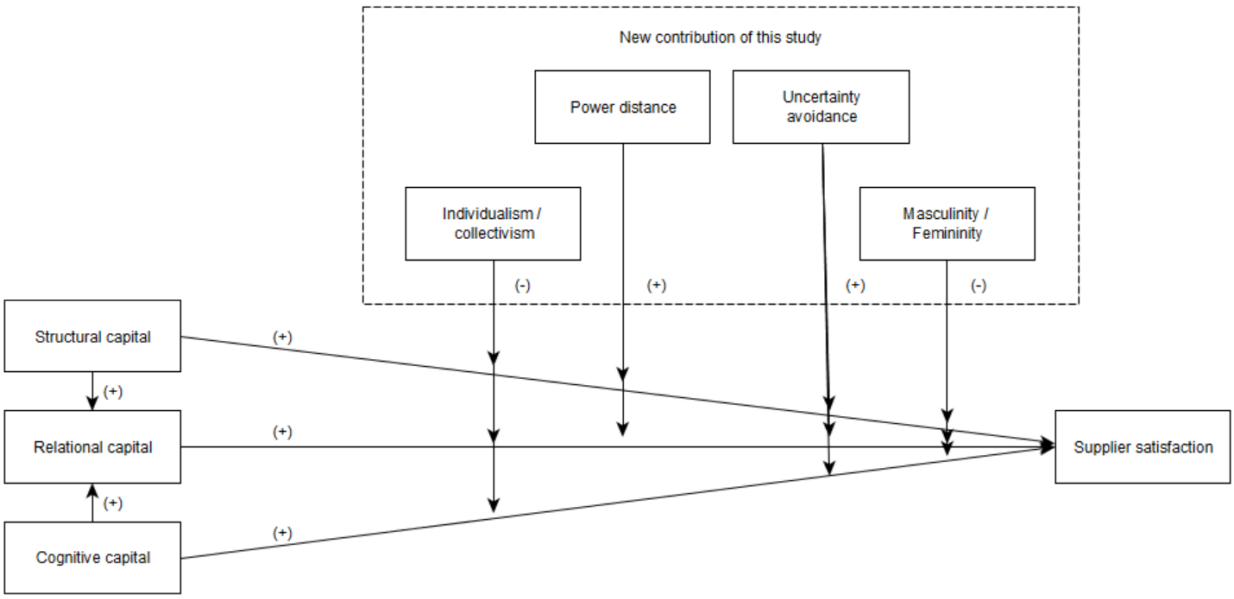

Figure E: hypotheses overview. Source: author's own contribution

5. Methodology

5.1 The case company: a project-based organization in the oil & gas industry

The case company that is chosen for this study is CompanyX, which is part of CompanyGroupX. The company was considered big enough in terms of supplier base to be suitable for this study. CompanyGroupX is an European technology company with locations

[139] Manrai & Manrai (2010), p.90.

and operations throughout the whole world. It offers industrial services in the oil & gas industry and is founded in the 80s. Annual revenue lies close to 500 million Euro. Besides the worldwide pressure on fossil fuels due to their depletion, this company managed to grow annually in every dimension, and it is expected to keep growing rapidly in the coming years. It is specialized in amongst others inspection, monitoring, analyzing and cleaning of pipelines, tankers but the company also offers other industrial services. The company produces and uses the tools by themselves. The company location where this study is done which is CompanyX (which is the Dutch location; CompanyGroupX is referred to as the whole company group), is not responsible for the production of these tools, but it is considered as the European hub (which also includes Russia and some African and West-Asian countries) where most of the services and maintenance are being done. This European hub is referred to as the Dutch company location.

The case company is not just a regular company that produces products, nor can it be considered as a construction company, so we look at the underlying dimensions that determine what kind of company it is. The main company branch of CompanyGroupX in Germany is responsible for the production of pigging tools which are not sold but are used solely for own purpose. These tools are used by the site locations, thus also the European hub where this study has been done. The pigging tools are transported to different site locations all over the globe. After such a project is done, it is brought back to the Dutch company location (most of the times) for maintenance, so that it can be used again at other site locations. CompanyX is also responsible for the sales of the whole European market including some African and Asian countries. At the Dutch company location, the procurement of the suppliers is done too. Keep in mind that because CompanyX does not produce the tools, the procurement for the production is done in the main location of CompanyGroupX in Germany. Since every site location is different and is subject to many external variables such as weather and country risks, the work done by CompanyGroupX can be considered as project management, which is typical for the construction industry. From now on, we will refer to the company as a company that delivers industrial services.

It is important to notion that the products bought by the purchasing department of CompanyX is consisting mostly of indirect materials, which classifies the procurement of this company as indirect.

It is also important to notion that CompanyGroupX is a unique company, since it insourced more and more of its products throughout the years, which is the opposite of the big trend of increasing outsourcing and a bigger emphasis on assembly. Looking from a strategic perspective, one could say that the purchasing function at that company has become less strategic, although this effect is again mitigated due to the very strong growth of CompanyGroupX and CompanyX in all dimensions. At the more service oriented CompanyX, this insourcing effect was less strong.

Most suppliers from the supplier base of CompanyX originate from three countries: The Netherlands, Germany and the United Kingdom. The scores of the six dimensions corresponding with the three countries are displayed in figure F. Because the other countries have probably a too low sample, they cannot be used individually. A possibility to still utilize the sample data, responses from different remote and culturally equal countries could be merged to create a cluster of similar countries, which can be used an input for this study. One could think of a small cluster of East-European countries or Sub-Sahara African countries. This must be done with the utmost care, because basically, every country is unique. Although this was the original plan, the individual Hofstede scores are taken, due to a too low sample size.

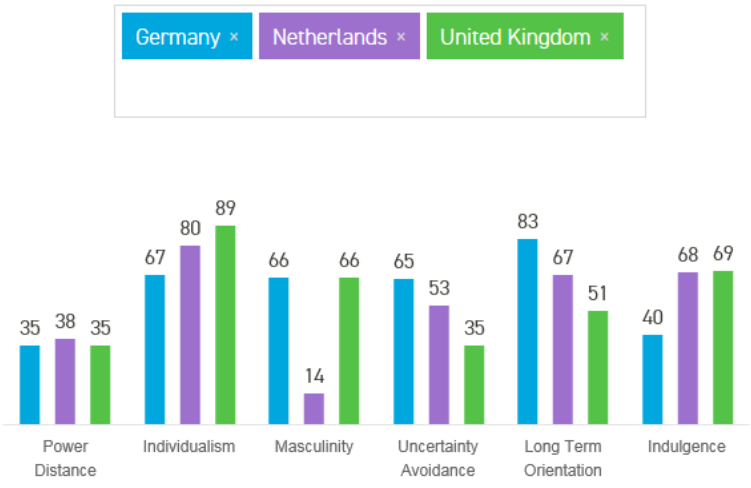

Figure F: Country comparison of Hofstede dimensions. Source: https://www.hofstede-insights.com/product/compare-countries/

5.2 Survey design and measurement

The questionnaire used in this research is a mix of the questionnaires used in the studies of Bohnenkamp (2018), Vos et al (2016) and Villena et al (2011). To gauge that the insignificant

relation between structural and cognitive capital is something typically for the automotive industry, is insignificant or is just a measurement error, the measurement instruments regarding social capital of Bohnenkamp (2018) are fully replicated. These instruments are displayed in Appendix B and C. Bohnenkamp (2018) again replicated or (slightly) adjusted measurement items from studies of Roden & Lawson (2014), Villena et al (2011), Krause et al (2007), Blonska (2013), Jap (1999) and Huettinger (2014). The measurement model of Villena et al (2011) is replicated from his study to compare his measurement model with the one of Bohnenkamp (2018).

The questionnaire consists of 152 content-wise questions which are available in three languages: English, Dutch and German. So, the total number of questions is equal to 169, including questions about language preference, comments and email input. Most questions should be answered on a Likert scale of 1 to 5. Besides these questions, there are two slider bar questions and some open questions for the purpose of getting general information. The codebook can be seen in Appendix B. It is very important to mention that although we are comparing two models here which are empirically measured in this case study, the codebook and thus the questions of Villena et al (2011) are not exactly similar in this study, as they are in the original study. That is because some questions of Bohnenkamp (2018) are based the questions on Villena et al (2011) but are not exactly the same. The exact same questions of Villena et al (2011) could have been added to the questionnaire, but this would have implied that the respondents would be faced with many questions that are significantly equal to each other, resulting in a higher questionnaire fatigue and less motivation to complete it. Instead of doing this, the questions of Bohnenkamp (2018) are taken and questions that are present in Villena et al (2011) but not in the Bohnenkamp (2018) study, are added. This resulted in two models, although some questions from Bohnenkamp (2018) are, as already mentioned, slightly differently phrased than used in the original Villena et al (2011) study. For the difference, please check Appendix E. So, because of this small difference, the interpretation of the comparison of the two measurement models should also be taken with more care.

The values of Hofstede are not taken from the site. Normally, Hofstede calculates the value per country, however in this study there will be an individual measurement per respondent. The formulas from the Hofstede VSM 2013 manual are applied to calculate these individual scores; they are displayed in Appendix G.

This study used two control variables: “Length of relationship” and “% Dependent turnover”. The two variables originate from the study of Vos et al (2016). The former indicates the number of years the supplier supplies to the buying company. The latter gives us the annual turnover of the supplier with the buying company as a % of the total revenue of the supplier. This question can be answered by means of a slider bar.

Earlier studies suggest that geographical distance between buyer and supplier is negatively related with social capital. Molina-Morales & Martinez-Fernandez (2003) found e.g. that “members of a cluster have a higher intensity of resource exchange compared to firms that do not belong to a cluster”.[140] Pulles & Schiele (2013) expected that firms strongly embedded into regional clusters can benefit more from their inter-organizational relationships.[141] Although distance is not similar to regional cluster, it is still fair to say that geographical distance has influence on social capital. Therefore, it might be possible that the bigger the distance gets, the less the social capital between the buyer and supplier will be. When comparing two countries with similar travel distance, this effect will be eliminated. So, the supplier will also be asked to what location they deliver and what their travel time is. Unfortunately, due to many missing values, these variables cannot be used in the analysis meaning that they are not considered as control variables.

Also questions were asked which are not used for the analysis of this study but are useful for the case company itself. This will only be used for internal use of the case company, to get a better grasp what e.g. the satisfaction among different supplier types such as subcontractors, forwarders etc. Hence, it cannot be considered as control variables for the hypotheses in this study.

At the end of the questionnaire, the respondent was asked whether he/she knows the buying company good enough to answer the questions properly. This question is also answered on a 1-5 Likert scale. All observations with a 1 or 2, which resemble no to low knowledge of CompanyX, are omitted. This is because these observations are subject to respondent bias which is “a potent force in diminishing the validity and reliability of results from survey research” (Summers & Hammonds, 1969).[142]

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[140] Molina-Morales & Martinez-Fernandez (2003); Pulles & Schiele (2013), p.97.
[141] See Pulles & Schiele (2013), p.100.
[142] Summers & Hammonds (1969), p.113-114.

5.3 Data collection: despite a reasonably high response rate, the sample size is small

Because this study aims to study cultural differences of the moderator, different cultures should be used in the dataset. The data is coming from the supplier base of CompanyX and for a very small part from English location of CompanyGroupX, which has suppliers in many countries throughout the world. It is important to have more countries per culture, since e.g. a single sample of a culture is not representative for that culture. Because data from the English business location of CompanyX is also used, it is important to mention that not all supplier supply to the Dutch location of CompanyGroupX but also to the English location.

The suppliers of the case company received a mail in three languages which contained an anonymous survey link. In this mail, it was emphasized that this questionnaire is important for the case company and this research, it is anonymous, and it meets the rules of GDPR. This mail is sent to a total of 451 email addresses in the BCC, where 32 did not received the mail, which equals 419 sent mails. It is however not known whether all these 419 suppliers really received and read this mail or that some ended in e.g. the junk mail.

The email addresses were taken from the database of CompanyX. If a contact email was not known, the general email address from the website of that particular supplier is used. The following exclusion criteria are used: (1) the company is not a public authority which is not relevant as a supplier (e.g. the local tax authority), (2) no agents, (3) no internal companies of CompanyGroupX and (4) the products and/or services the suppliers supplied are relevant for the case company. After these exclusion criteria and removing faulty email addresses, 451 email addresses were selected. At the 26th of June 2019, the questionnaire was published and the emails with the link were sent to the supplier. After a small week, only 9 suppliers submitted a completed questionnaire. At Wednesday 3rd of July 2019, a reminder is sent to the suppliers. Another reminder is sent at Monday 8th of July 2019. The most important suppliers received a personal mail with the name of the contact person in the email. Also, the biggest suppliers were called to increase the response rate. A couple of suppliers informed that they would like to fill in the questionnaire, but only when the questionnaire would be shortened and when the personal questions would be removed. After a disappointing 54 responses, the questionnaire was shortened, and the suppliers were informed that the questionnaire was shortened. Per language preference, 48 questions were removed which were all about the Hofstede dimensions and corporate culture. Again, suppliers were called to increase the

response rate. In total, about 50 to 70 suppliers were called. At the end of August 2019, the data collection is stopped, with a total number of respondents of 69, which equals a response rate of 16,5%. All observations with a 1 or 2 at the knowledge questions explained at the end of the previous section, are deleted. This significantly lowered the number of observations, but it is necessary because these observations suffer from many biases. In total 18 observations were deleted, leading to an end sample size of 51. The respondent characteristics of these 51 observations are described in table A.

Length of relationship		**Annual turnover with CompanyX (millions)**		**Number of employees**	
< 5 years	17	<1	13	0-50	33
5-10 years	24	1-5	13	51-150	11
11-20 years	9	6-10	7	151-500	2
> 20 years	1	>11	4	>500	4
		Not specified	14		
Percentage of turnover made with CompanyX		**Ownership of firm**		**Country of supplier**	
<5%	31	State-owned firm	1	France	1
5%-15%	16	Private firm	48	Germany	8
16%-40%	1	Public listed firm	2	India	1
>40%	3			Italy	1
				Netherlands	32
Tenure of respondent in company		**Gender of respondent**		Norway	1
< 5 years	11	Female	6	Turkey	1
5-10 years	18	Male	45	United Kingdom	5
11-20 years	13			Uzbekistan	1
> 20 years	9				

Table A: sample characteristics (N=51).

5.4 Choice of statistical analysis

The first contribution deals with the comparison of the social capital theory measurement models.

Firstly, R^2 will be used to compare the two models. The R^2 just simply represent the proportion of the variance of the dependent variable explained by the independent variable(s). A higher R^2 is preferred because a model with a higher R^2 has less residuals that are

explained by the model, simply saying that the model tells us more. Regarding the interpretation of the structural model outcome, a score of 0.75, 0.5 and 0.25 for endogenous latent variables is represented as respectively substantial, moderate and weak.[143]

The second statistic that gives some insight which model succeeds best in measuring (a set of) construct(s) or a model, is the standardized root mean residual (SRMR). The main purpose of this SRMR is to compare fit between models.[144] Because SRMR values are standardized, they allow for comparison between different models. A low SRMR value represents a good fit whereas a high value represents a low fit. According to Hair et al (2014), a rule of thumb says that SRMR rating higher than 0.1 suggests a problem with fit. To be more precise, Hair et al (2014) stated that a SRMR-rating of 0.08 or lower, demonstrates evidence of a good fit in the case of less than 250 observations and between 12 and 30 observed variables. When there are more than 30 observed variables, a SRMR-rating of or lower than 0.09 resembles a good fit.[145]

SmartPLS 3.0 gives us also another third mean to compare models: the root mean squared residual covariance matrix of the outer model residuals (further referred to as RMS_Theta).[146] This method must only be applied with reflective models and since we deal only with reflective models, this assumption is met. It "assesses the degree to which the outer model residuals correlate."[147] A good model fit should be close to 0, because that would imply that the correlations between the outer model residuals are very small.[148] An RMS_Theta value below 0.12 indicate a good model fit.[149]

It is also possible to compare the models by looking at normal fit index (NFI). However, this statistic does not penalize for models that are bigger in complexity because it will assign higher index values to the more complex models with more variables.[150] Since, we deal with two models which are not similar in complexity, this method is not appropriate to use.

D_G and d_ULS also allow for comparison of the models, however they are not applicable to second-order constructs.[151]

The second and third contribution is about testing all the hypotheses stated in his study. To

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[143] See Hair et al (2011), p.145.
[144] See Hair et al (2014), p.579.
[145] See Hair et al (2014), p.584.
[146] See Lohmller (1989), p.216.
[147] See SmartPLS site: https://www.smartpls.com/documentation/algorithms-and-techniques/model-fit
[148] See SmartPLS site: https://www.smartpls.com/documentation/algorithms-and-techniques/model-fit
[149] See Henseler et al (2014), p.203.
[150] See SmartPLS site: https://www.smartpls.com/documentation/algorithms-and-techniques/model-fit
[151] See SmartPLS site: https://www.smartpls.com/documentation/algorithms-and-techniques/model-fit

answer these hypotheses, multivariate statistical analysis is used, which enables the analysis of multiple variables simultaneously.[152] Structural equation modelling (SEM) is the most appropriate technique to use in this study, since it is an extension of several multivariate techniques, especially factor analysis and multiple regression analysis, which means that we only need this technique to answer our hypotheses, instead of performing different statistical techniques separately.[153] Partial least squares structural equation modelling (PLS-SEM), is used to calculate amongst others the path coefficients and their significance levels between the constructs. Why this method is preferred above the covariance-based structural equation modelling (CB-SEM) is explained now. Firstly, PLS-SEM is the preferred tool because it can be used with much lower sample sizes.[154] Secondly, PLS-SEM is less strict regarding the characteristics of the data distribution; so PLS-SEM will give less problems when working with e.g. non-normal data.[155] Thirdly, PLS-SEM is easy to use, as is confirmed by amongst others Henseler, Sarstedt and Ringle et al: "modern easy-to-use PLS path modeling software with graphical user-interfaces, like SmartPLS…have contributed to PLS path modeling's appeal" (Henseler & Sarstedt (2013); Ringle et al. 2005).[156] Another popular tool was also considered to test the culture hypotheses: multi-group analysis. This entails that two groups would be created, in this case a high and low group for every Hofstede dimension, and are tested whether they are significantly different from each other. Nevertheless, these groups would be too small and therefore this method is not chosen in this case.

To apply PLS-SEM, a minimum sample size should be available which is determined by the "ten-times arrow rule". This rule states that the number of observations should be greater than 10 times the maximum number of arrows pointing from an outer or inner model to any latent variable.[157] In the case of the model of Villena et al (2011), this means that there should me minimally 50 observations while for the Bohnenkamp (2018) model it holds that there should be a sample size greater than 120. The model of Bohnenkamp (2018) is below the threshold, so this actually means that PLS-SEM is not the appropriate method to apply. For lack of better alternatives, we still proceed with PLS-SEM, although this can be considered as a serious

[152] See Hair et al (2014), p.4.
[153] See Hair et al (2014), p.542.
[154] See Hair et al (2014), p. 108.
[155] See Beebe et al (1998); Cassel et al (1999); Hair et al (2014), p.108.
[156] See Ringle et al (2005); Henseler & Sarstedt (2013), p.566.
[157] See Kock and Hadaya (2018), p.2.

limitation of the study.

Several quality measures are used in this study. The average variance extracted (AVE) gives us "the mean variance extracted for the item loadings on a construct" (Hair et al 2014).[158] It should be higher than 0.5 to show an adequate convergence.[159] To assess the convergent validity better, construct reliability will also be used. Rule of thumb says that a value of 0.7 or higher presents a good reliability.[160] To assess the internal consistency of the constructs, the Cronbach's Alpha is commonly used. For Cronbach's Alpha it is acceptable to have values between 0.70 and 0.95.[161]

Most of the statistical analyses will be performed via SmartPLS 3.0. In addition, Excel is used to calculate the scores for Hofstede dimensions and to calculate the averages per question. The settings for SmartPLS 3.0 can be seen in Appendix H.

5.5 Quality assessment of the data: reliability and validity seem acceptable

Bootstrapping in SmartPLS 3.0 is used to calculate the statistics, with 5000 bootstrap samples, which is approximately equal to the 4999 bootstrap sample advise from Henseler.[162] The significance level is set to 10%, because the sample size of this study is rather small for a structural model. A two-tailed P-value is chosen. Case wise deletion is used to handle with missing values, although there are no missing values regarding social capital hypotheses. For the Hofstede related questions, there are 15 missing values. Reflective indicators are used in all statistical analysis in this study.

Now, the validity and reliability of the indicators and constructs will be assessed. Please see tables B to D for the quality measures of the three models.

Regarding the Villena et al (2011) model, Cronbach Alpha is a little bit too high for the supplier satisfaction construct. It suggests that a or some item(s) are redundant. Construct reliability is good for all constructs. All AVE scores are higher than 0.5, so here are also the criteria met.

The second model, the first order Bohnenkamp (2018) model, all show high Cronbach Alphas. The supplier satisfaction here can also be considered a bit too high. Construct reliability are all

[158] Fornell & Larcker (1981); Hair et al (2014), p.619.
[159] See Hair et al (2014), p.619.
[160] See Hair et al (2014), p.619
[161] See Bland & Altman (1997), p.572.
[162] See Henseler et al (2016), p. 11.

looking good whereas the same holds for the AVE.

The last model, the second order model of Bohnenkamp (2018), shows the same construct values for all three measurements. Reciprocity looks troublesome with a Cronbach's Alpha of 0.597, which is lower than 0.7. Besides that, the Cronbach Alpha of supplier satisfaction is also a bit too high here. For all the second order constructs, the consistent reliability and AVE look good.

Villena et al model			
Constructs	**Cronbach's Alpha**	**CR**	**AVE**
Cognitive capital	0.837	0.892	0.675
Relational capital	0.857	0.902	0.658
Structural capital	0.815	0.891	0.731
Supplier satisfaction	0.961	0.971	0.895

Table B: statistics for Villena et al (2011) model. (CR = composite reliability; AVE = average variance extracted).

Bohnenkamp first order model			
Constructs	**Cronbach's Alpha**	**CR**	**AVE**
Cognitive capital	0.936	0.947	0.691
Relational capital	0.926	0.945	0.672
Structural capital	0.919	0.929	0.527
Supplier satisfaction	0.961	0.971	0.895

Table C: statistics for Bohnenkamp (2018) first order model. (CR = composite reliability; AVE = average variance extracted).

Bohnenkamp second order model			
Constructs	**Cronbach's Alpha**	**CR**	**AVE**
Cognitive capital	0.936	0.947	0.691
Commitment	0.841	0.905	0.761
Frequency of interaction	0.815	0.891	0.731
Infrastructure exchange	0.881	0.913	0.678
Nature of communication	0.894	0.927	0.762
Overlap of objectives	0.917	0.942	0.803
Reciprocity	0.579	0.772	0.579
Relational capital	0.926	0.944	0.672
Shared norms	0.894	0.927	0.760
Structural capital	0.919	0.930	0.531
Supplier satisfaction	0.961	0.971	0.895
Trust	0.910	0.944	0.849

Table D: statistics for Bohnenkamp (2018) second order model. (CR = composite reliability; AVE = average variance extracted).

6. Results

6.1 Comparison of social capital models: going for the parsimonious or "more comprehensive" one?

The first contribution of this study is the comparison of the two models which try both to operationalize social capital theory between organizations in a buyer-supplier relationship. It is also important to not blindfold on the statistics to compare the models. A model might have better fit because "most model fit indices can be improved by reducing the sample size."[163] (Hair et al 2014), however you also want to capture enough content in the model in order to measure what you really want to measure.

The model of Villena et al (2011) contains significantly less questions than the model of Bohnenkamp (2018) leading to the corollary that it is more parsimonious. To evaluate the two models more comprehensively, the output from SmartPLS 3.0 is used for a comparison; See table E.

	SRMR	**RMS_Theta**	**R-squared (SS)**	**R-squared (RC)**
Bohnenkamp 1st order	0.102	0.208	0.348	0.734
Bohnenkamp 2nd order	0.118	0.226	0.343	1
Villena	0.090	0.231	0.403	0.722

Table E: bootstrapping output for comparing the different models. (SS = supplier satisfaction; RC = relational capital)

In the table above, a comparison of the three models is given. For a full picture, the first order model of Bohnenkamp (2018) is also given, although the second order model is preferred by Bohnenkamp (2018).[164] Regarding the SRMR, the estimated coefficients are taken instead of the saturated ones, as advised by SmartPLS.[165]

Villena et al (2011) scores best on the SRMR measurement, saying that it has the highest fit among the three models. As already mentioned in the "choice of statistical analysis" part, a SRMR value of 0.8 or lower in case of less than 250 observations and between 12 and 30 observable variables. The model, including the four independent variables, has 16 variables, hence the model falls just slightly out the threshold of 0.08. However, with only 0.01 outside the range, this is probably not a very big issue. For both Bohnenkamp (2018) models, a SRMR threshold rating lower than 0.9 applies for having a good fit. Both models do not succeed to be

[163] Hair et al (2014), p.583.
[164] Bohnenkamp (2018), p.132.
[165] See SmartPLS site.

lower than 0.9. The second order model has even a value higher than 0.1, which even suggests a problem with fit.

Regarding the RMS_Theta, all models fall short significantly, because they are all above 0.12 by a big proportion. The Bohnenkamp (2018) second order model scores slightly better here.

When looking at the R^2, it becomes clear that the model of Villena et al (2011) has the highest R^2 regarding the supplier satisfaction, but not for relational capital. The difference between the Villena et al (2011) and Bohnenkamp (2018) models is not very big, but still notable. In overall, all models do not show a high goodness of fit in terms of R^2, reflecting a weak fit based on the scale mentioned earlier by Hair et al (2014).

Regarding the multicollinearity, both Bohnenkamp (2018) models have quite much multicollinearity reflected by the many VIF indicators higher than 5. This makes sense because there are so many similar questions in this model. So, one could argue that many questions are too similar to each other. The Villena et al (2011) model suffers less from this problem, with only three variables with a high multicollinearity, where one of these three variables is also a dependent variable which reflects supplier satisfaction.

6.2 Evidence of little significance between social capital constructs and supplier satisfaction

In this part, the main relations between social capital and supplier satisfaction are highlighted which means that the results of the hypotheses H1 until H5 are given. In tables F, G and H, the results of these main effects can be seen. Table H is the most important to observe, since the Bohnenkamp (2018) 2nd order model is preferred above the 1st one and the Bohnenkamp (2018) model itself is again preferred above the Villena et al model (2011) because of the minor measurement differences explained earlier in section 5.2. Likewise, the results of the Bohnenkamp (20180 model are illustrated in figure H, which gives a clearer overview.

For the Bohnenkamp (2018) 2nd order model, only structural capital has a significant effect on supplier satisfaction. Moreover, the relation is positive, implying that hypothesis 1 is confirmed. Hypotheses 2 to 5 are rejected.

Villena et al model					
Paths	**Path value**	**Mean**	**Std. Dev**	**T-statistic**	**P-value**
Cognitive capital -> Relational capital	0.657	0.658	0.086	7.605	0.000***
Cognitive capital -> Supplier satisfaction	(0.148)	(0.112)	0.226	0.654	0.513
Relational capital -> Supplier satisfaction	0.381	0.364	0.233	1.637	0.102
Structural capital -> Relational capital	0.291	0.295	0.086	3.393	0.001***
Structural capital -> Supplier satisfaction	0.454	0.448	0.183	2.479	0.013**
% Dep. Turnover -> Supplier satisfaction	(0.152)	(0.153)	0.105	1.447	0.148
Length of relationship -> Supplier satisfaction	0.051	0.047	0.125	0.409	0.683

Table F: bootstrapping output of model of Villena et al (2011).

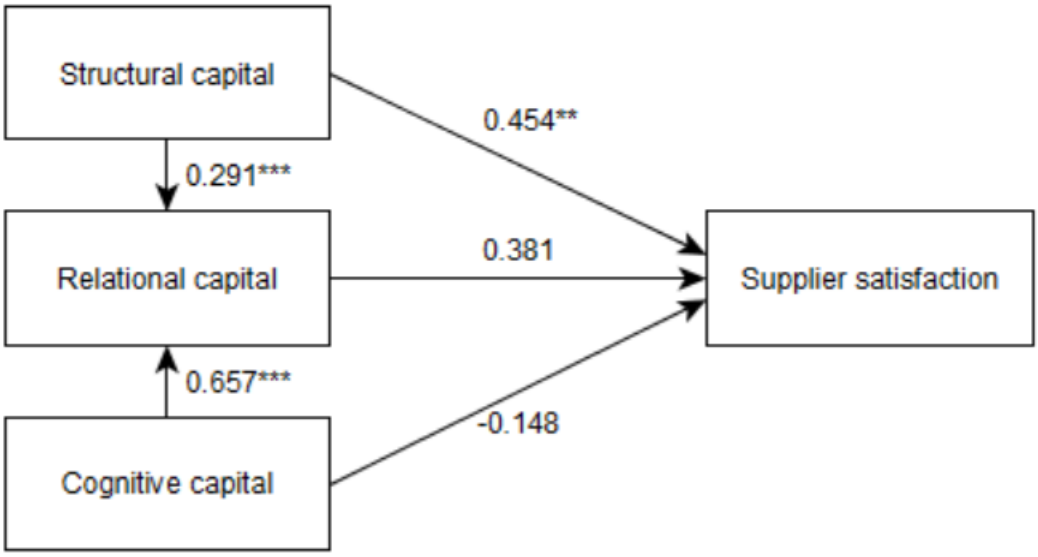

Figure G: bootstrapping output of model of Villena et al in visualized form (2011).

Bohnenkamp 1st order model					
Paths	**Path value**	**Mean**	**Std. Dev**	**T-statistic**	**P-value**
Cognitive capital -> Relational capital	0.661	0.655	0.097	6.831	0.000***
Cognitive capital -> Supplier satisfaction	(0.035)	(0.003)	0.239	0.147	0.883
Relational capital -> Supplier satisfaction	0.208	0.190	0.221	0.939	0.348
Structural capital -> Relational capital	0.259	0.273	0.099	2.616	0.009***
Structural capital -> Supplier satisfaction	0.444	0.444	0.217	2.041	0.041**
% Dep. Turnover -> Supplier satisfaction	(0.108)	(0.116)	0.117	0.925	0.355
Length of relationship -> Supplier satisfaction	(0.050)	(0.047)	0.118	0.422	0.673

Table G: bootstrapping output of first order model of Bohnenkamp (2018).

Bohnenkamp 2nd order model					
Paths	**Path value**	**Mean**	**Std. Dev**	**T-statistic**	**P-value**
Cognitive capital -> Relational capital	0.001	0.000	0.006	0.129	0.898
Cognitive capital -> Supplier satisfaction	(0.029)	(0.011)	0.228	0.127	0.899
Relational capital -> Supplier satisfaction	0.219	0.221	0.206	1.062	0.288
Structural capital -> Relational capital	0.005	0.007	0.005	1.035	0.301
Structural capital -> Supplier satisfaction	0.427	0.419	0.206	2.075	0.038**
% Dep. Turnover -> Supplier satisfaction	(0.108)	(0.114)	0.116	0.932	0.352
Length of relationship -> Supplier satisfaction	(0.054)	(0.052)	0.118	0.461	0.645

Table H: bootstrapping output of second order model of Bohnenkamp (2018).

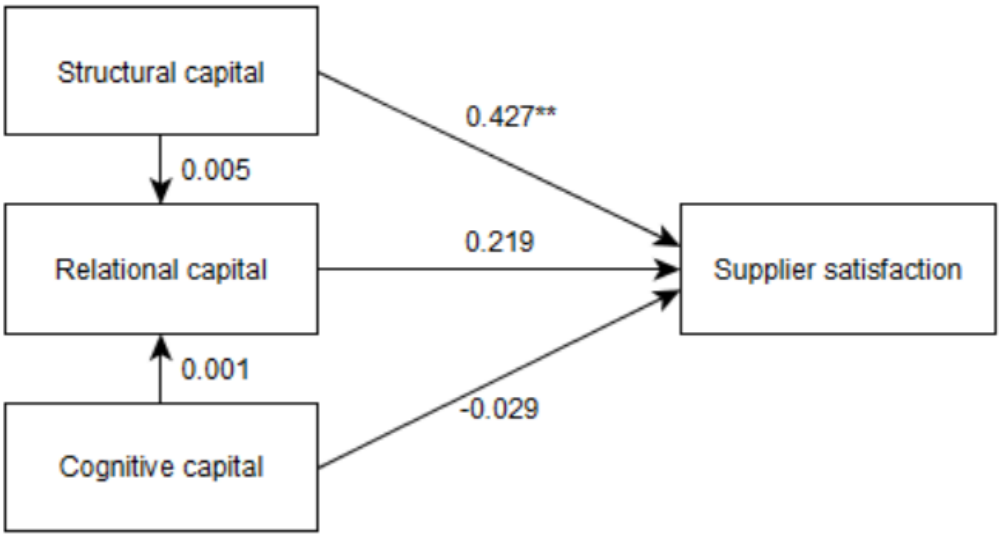

Figure H: bootstrapping output of second order model of Bohnenkamp in visualized form (2018).

6.3 Testing the Hofstede moderating hypotheses in a difficult sample: only power distance is significantly moderating the main relation

Now that a comparison is made between the social capital models of Bohnenkamp (2018) and Villena et al (2011), the results of the hypotheses of the third contribution of this study will be analyzed in this section.

To test the moderating effects of culture, the second-order model of Bohnenkamp (2018) is used, since this model is completely replicated.

Since some relations in both models were not found to be significant, this immediately creates a big problem for the hypotheses of moderating variables. If the main relation is not significant, a moderating effect makes no sense. Ergo, this study is not able to draw conclusions on these hypotheses. So, to test the moderating effects, first the main relations which are hypothesized to be moderating, will be analyzed.

Moderating effects for the Hofstede dimensions long-term orientation and indulgence are not performed, since no relation is expected.

Power Distance

	Path value	Mean	Std. Dev	T-statistic	P-value
% Dep. Turnover -> Supplier Satisfaction	-0,097	-0,130	0,204	0,475	0,635
Cognitive Capital -> Relational Capital	-0,001	-0,002	0,008	0,091	0,928
Cognitive Capital -> Supplier Satisfaction	-0,114	-0,061	0,301	0,377	0,706
Commitment -> Relational Capital	0,375	0,373	0,018	20,346	0.000***
Frequency of interaction -> Structural Capital	0,323	0,326	0,044	7,380	0.000***
Infrastructure Exchange -> Structural Capital	0,365	0,340	0,079	4,634	0.000***
Length of relationship -> Supplier Satisfaction	-0,022	-0,003	0,147	0,148	0,883
Nature of communication -> Structural Capital	0,480	0,488	0,062	7,748	0.000***
Overlap of objectives -> Cognitive Capital	0,530	0,529	0,029	18,165	0.000***
PDI -> Supplier Satisfaction	-0,190	-0,196	0,194	0,979	0,328
PDI x CC -> Supplier Satisfaction	-0,097	-0,068	0,335	0,290	0,772
PDI x RC -> Supplier Satisfaction	-0,074	-0,131	0,330	0,224	0,823
PDI x SC -> Supplier Satisfaction	0,515	0,522	0,310	1,659	0,097*
Reciprocity -> Relational Capital	0,249	0,252	0,023	10,725	0.000***
Relational Capital -> Supplier Satisfaction	0,221	0,231	0,297	0,746	0,456
Shared Norms -> Cognitive Capital	0,548	0,549	0,038	14,591	0.000***
Structural Capital -> Relational Capital	0,006	0,008	0,007	0,942	0,346
Structural Capital -> Supplier Satisfaction	0,485	0,441	0,279	1,735	0,082*
Trust -> Relational Capital	0,407	0,404	0,024	17,132	0.000***

Table I: bootstrapping output of the power distance moderator hypotheses at the second order model of Bohnenkamp (2018)

The moderating effect of power distance on the relation between relational capital and supplier satisfaction is found to be negative and insignificant.

The moderating effect of power distance on the relation between structural capital and supplier satisfaction is found to be positive and significant.

Individualism

	Path value	Mean	Std. Dev	T-statistic	P-value
% Dep. Turnover -> Supplier Satisfaction	-0,129	-0,121	0,150	0,856	0,392
Cognitive Capital -> Relational Capital	-0,001	-0,002	0,008	0,082	0,934
Cognitive Capital -> Supplier Satisfaction	-0,118	-0,019	0,325	0,364	0,716
Commitment -> Relational Capital	0,374	0,371	0,019	19,747	0.000***
Frequency of interaction -> Structural Capital	0,323	0,327	0,044	7,399	0.000***
IDV -> Supplier Satisfaction	0,056	0,088	0,223	0,248	0,804
IDV x CC -> Supplier Satisfaction	-0,004	0,163	0,549	0,007	0,995
IDV x RC -> Supplier Satisfaction	-0,018	-0,135	0,429	0,041	0,967
IDV x SC -> Supplier Satisfaction	0,214	0,143	0,367	0,582	0,560
Infrastructure Exchange -> Structural Capital	0,365	0,341	0,078	4,681	0.000***
Length of relationship -> Supplier Satisfaction	-0,027	-0,017	0,173	0,158	0,875
Nature of communication -> Structural Capital	0,480	0,487	0,062	7,770	0.000***
Overlap of objectives -> Cognitive Capital	0,530	0,528	0,028	19,096	0.000***
Reciprocity -> Relational Capital	0,249	0,253	0,023	10,721	0.000***
Relational Capital -> Supplier Satisfaction	0,273	0,222	0,358	0,761	0,447
Shared Norms -> Cognitive Capital	0,548	0,549	0,036	15,022	0.000***
Structural Capital -> Relational Capital	0,006	0,008	0,007	0,957	0,338
Structural Capital -> Supplier Satisfaction	0,555	0,473	0,329	1,685	0,092*
Trust -> Relational Capital	0,408	0,405	0,024	16,800	0.000***

Table J: bootstrapping output of the individualism moderator hypotheses at the second order model of Bohnenkamp (2018)

The moderating effect of individualism on the relation between relational capital and supplier satisfaction is found to be negative and insignificant.

The moderating effect of individualism on the relation between structural capital and supplier satisfaction is found to be negative and insignificant.

The moderating effect of individualism on the relation between cognitive capital and supplier satisfaction is found to be positive and insignificant.

Masculinity/femininity

	Path value	Mean	Std. Dev	T-statistic	P-value
% Dep. Turnover -> Supplier Satisfaction	-0,084	-0,071	0,148	0,567	0,570
Cognitive Capital -> Relational Capital	-0,001	-0,002	0,008	0,084	0,933
Cognitive Capital -> Supplier Satisfaction	-0,081	-0,042	0,319	0,255	0,799
Commitment -> Relational Capital	0,374	0,372	0,019	20,092	0.000***
Frequency of interaction -> Structural Capital	0,322	0,327	0,044	7,394	0.000***
Infrastructure Exchange -> Structural Capital	0,366	0,339	0,080	4,546	0.000***
Length of relationship -> Supplier Satisfaction	-0,003	0,021	0,181	0,014	0,989
MAS -> Supplier Satisfaction	0,122	0,138	0,179	0,680	0,496
MAS x CC -> Supplier Satisfaction	0,477	0,502	0,412	1,158	0,247
MAS x RC -> Supplier Satisfaction	-0,415	-0,422	0,291	1,426	0,154
MAS x SC -> Supplier Satisfaction	-0,161	-0,222	0,381	0,422	0,673
Nature of communication -> Structural Capital	0,480	0,489	0,062	7,761	0.000***
Overlap of objectives -> Cognitive Capital	0,530	0,528	0,028	18,737	0.000***
Reciprocity -> Relational Capital	0,248	0,252	0,023	10,619	0.000***
Relational Capital -> Supplier Satisfaction	0,198	0,180	0,363	0,546	0,585
Shared Norms -> Cognitive Capital	0,548	0,550	0,037	14,906	0.000***
Structural Capital -> Relational Capital	0,006	0,008	0,007	0,946	0,344
Structural Capital -> Supplier Satisfaction	0,507	0,503	0,284	1,786	0,074*
Trust -> Relational Capital	0,408	0,404	0,024	17,252	0.000***

Table K: bootstrapping output of the masculinity/femininity moderator hypotheses at the second order model of Bohnenkamp (2018)

The moderating effect of individualism on the relation between relational capital and supplier satisfaction is found to be negative and insignificant.

The moderating effect of individualism on the relation between structural capital and supplier satisfaction is found to be negative and insignificant.

The moderating effect of individualism on the relation between cognitive capital and supplier satisfaction is found to be positive and insignificant.

Uncertainty avoidance

	Path value	Mean	Std. Dev	T-statistic	P-value
% Dep. Turnover -> Supplier Satisfaction	-0,042	-0,019	0,165	0,252	0,801
Cognitive Capital -> Relational Capital	-0,001	-0,002	0,008	0,082	0,935
Cognitive Capital -> Supplier Satisfaction	0,191	0,253	0,378	0,507	0,612
Commitment -> Relational Capital	0,374	0,372	0,019	19,843	0.000***
Frequency of interaction -> Structural Capital	0,323	0,326	0,043	7,580	0.000***
Infrastructure Exchange -> Structural Capital	0,365	0,340	0,078	4,660	0.000***
Length of relationship -> Supplier Satisfaction	-0,019	-0,002	0,191	0,098	0,922
Nature of communication -> Structural Capital	0,480	0,488	0,062	7,728	0.000***
Overlap of objectives -> Cognitive Capital	0,530	0,528	0,029	18,206	0.000***
Reciprocity -> Relational Capital	0,248	0,252	0,023	10,590	0.000***
Relational Capital -> Supplier Satisfaction	-0,067	-0,019	0,417	0,162	0,872
Shared Norms -> Cognitive Capital	0,548	0,550	0,038	14,529	0.000***
Structural Capital -> Relational Capital	0,006	0,008	0,007	0,945	0,345
Structural Capital -> Supplier Satisfaction	0,445	0,388	0,344	1,294	0,196
Trust -> Relational Capital	0,408	0,405	0,023	17,345	0.000***
UAI -> Supplier Satisfaction	-0,247	-0,215	0,233	1,061	0,289
UAI x CC -> Supplier Satisfaction	0,350	0,273	0,512	0,684	0,494
UAI x RC -> Supplier Satisfaction	-0,428	-0,524	0,507	0,844	0,399
UAI x SC -> Supplier Satisfaction	0,169	0,221	0,381	0,443	0,658

Table L: bootstrapping output of the uncertainty avoidance moderator hypotheses at the second order model of Bohnenkamp (2018)

The moderating effect of uncertainty avoidance on the relation between relational capital and supplier satisfaction is found to be negative and insignificant.

The moderating effect of uncertainty avoidance on the relation between structural capital and supplier satisfaction is found to be positive and insignificant.

The moderating effect of uncertainty avoidance on the relation between cognitive capital and supplier satisfaction is found to be positive and insignificant.

To represent the results in an orderly way, they are visualized in figure I.

It is hard to say why most main relations are not significant and therefore the hypotheses are not accepted. It is not unthinkable that the small sample size is the cause of this. For example, when one sees the moderator effect of masculinity on the relation between cognitive capital and supplier satisfaction, the standard deviation (0,412) is bigger compared with its mean (0,502). The P-value tends to get smaller when sample size increases, unless the null hypothesis is true. Thus, a higher sample size might have led to more significant relations in this study.

An important side note has to be made at figure I. The moderating coefficients are coming from the individual moderator results per dimension while the coefficients of the relation between social capital and supplier satisfaction come from table G. This is done because the sample size is too low with respect to the number of variables if all four moderator variables are included.

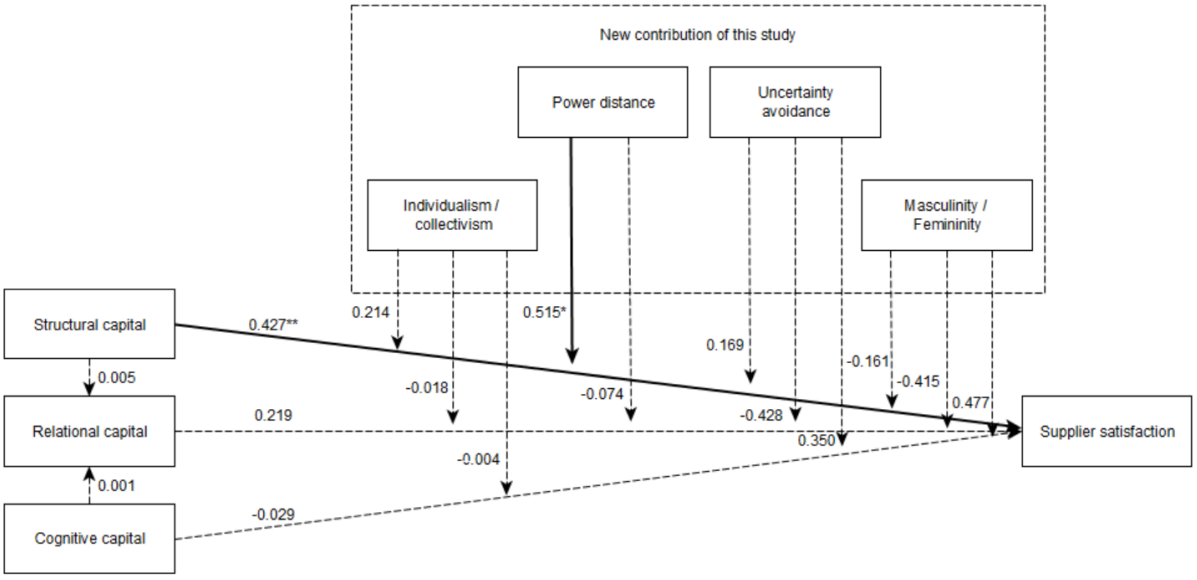

Figure I: bootstrapping output of all hypotheses at the second order model of Bohnenkamp (2018). (* = significant at the 10% level; ** = significant at the 5% level; dotted line = no significant relation; thick line = significant relation).

6.4 Additional analysis of Hofstede culture in this sample

Because the respondents were amongst others asked about their cultural preferences, the Hofstede values per dimension per country can be calculated, which is done in this small part. The formula to calculate these numbers, are displayed in Appendix G. The empirical scores

are compared to the values of the Hofstede study, found on the site of Hofstede.[166] Unfortunately, the sample size is only 53, because the Hofstede related questions were omitted on a certain moment due to lack of sufficient response. Bear in mind that no samples are discarded regarding the knowledge question about the buying CompanyX, because the Hofstede questions are not related to the knowledge of the respondent about the buying CompanyX. The sample size per country is as follows: 32 for The Netherlands, 9 for Germany and 6 for the United Kingdom. The sample size for Germany and the United Kingdom is very small; hence these empirical data are not representative to have a comparison with the values of the Hofstede study itself. The same holds for The Netherlands, but to a lesser extent. The other countries had only 1,2 or 3 samples, so it does not make sense to compare them with the Hofstede study values. The results are displayed in the figures J to L. An anomaly can be directly observed when looking at the graphs: our empirical data show negative scores for some dimensions whereas the benchmark scores do not have these negative scores. This is the result of putting the constant in the Hofstede formulas equal to 0. This constant could also be chosen to get non-negative scores, but it would also result in scores above 100, which is also not appropriate. Also, setting these scores to non-negative numbers would not affect the results of the hypotheses; they only affect the descriptive data given in figures J to L.

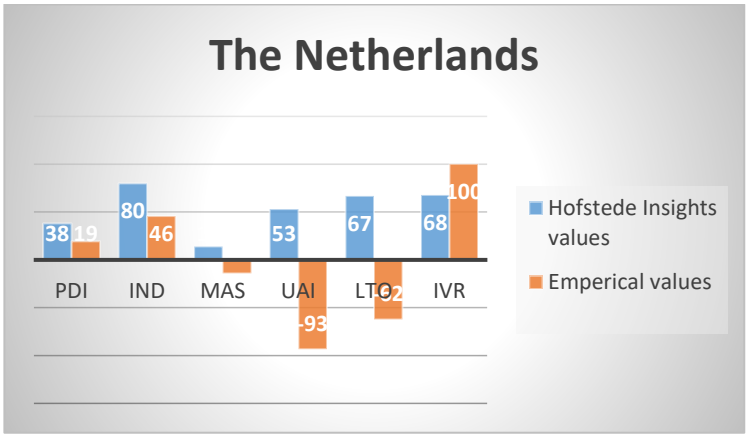

Figure J: Hofstede values per dimension of The Netherlands from this study and from Hofstede's study.

[166] See https://www.hofstede-insights.com/product/compare-countries/

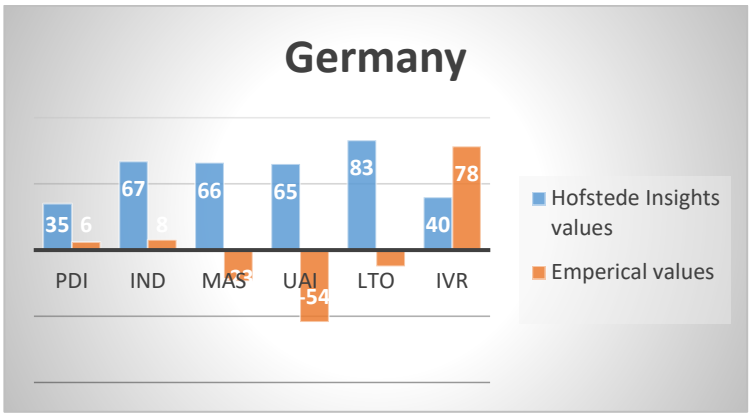

Figure K: Hofstede values per dimension of Germany from this study and from Hofstede's study.

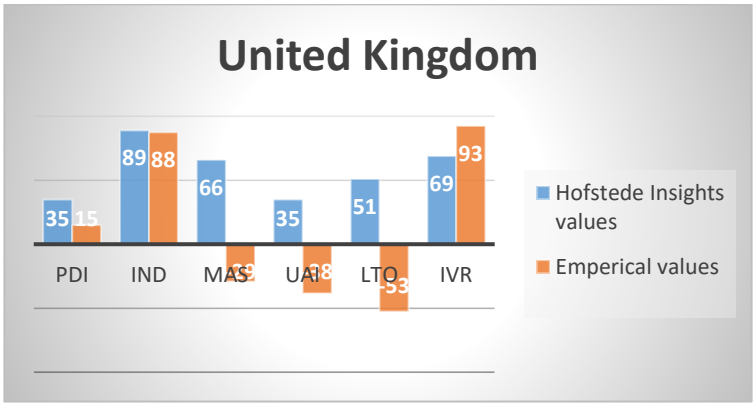

Figure L: Hofstede values per dimension of United Kingdom from this study and from Hofstede's study.

7. Discussion of the results

Consistent with the previous sections, in all three upcoming implication sections (academic, company and managerial), the tree contributions are discussed. In every section first, a comparison of the measurement models will be made. Subsequently the supplier satisfaction antecedents' results are discussed (second contribution). This will be directly followed by the biggest and third contribution of this study, the hypothesis testing of the relation between social capital theory and supplier satisfaction together with its moderator effects of culture. The results of the study applied at the model of Vos et al (2016) is displayed in Appendix I.

7.1 Academic implications

Given that the Villena et al (2011) model scores slightly better regarding the SRMR, has a higher R^2 regarding supplier satisfaction, faces less multicollinearity and is definitely more parsimonious, the model can be considered slightly more suitable to capture social capital in

organizations. However, the generalizability of this statement is certainly not without a bias, since the model of Villena et al (2011) in this study is not an exact replication of the original Villena et al (2011) model. Also, because of the low sample size and a violation of the "ten-times arrow rule" for the Bohnenkamp (2018) model, the statistics for the Bohnenkamp (2018) are not valid enough. Given these limitations, it is almost impossible to determine in this case which model is the most suitable one to measure social capital.

Regarding the social capital constructs as antecedents of supplier satisfaction, it was fully expected that all relations are positive and significant. One relation is even negative. Still, one relation is found to be significant and positive in the model of Bohnenkamp (2018). Therefore, hypothesis 1 is accepted. This signifies that the presence of structural capital, leads to a higher supplier satisfaction. So, as a buying company, it pays off to have a stable communication channel with suppliers where both actors frequently communicate and work jointly with each other. The results also indicate us that having relational and cognitive capital between the buying company and suppliers do not lead to a higher supplier satisfaction, which is an unexpected outcome of this study, yet also partially corresponding with the results of Bohnenkamp (2018). Notwithstanding, the only significant relation in the second-order model of Bohnenkamp (2018) in this study, is contradictive with the study of Bohnenkamp (2018), where the relation between structural capital and supplier satisfaction is insignificant.

Regarding the insignificant hypotheses, some anomalies arise, which will be discussed now. First, it is quite strange to see that the relation between cognitive capital and supplier satisfaction is highly significant (0.000) in the first order model of Bohnenkamp (2018) whereas it is highly insignificant in the second order model (0.899). It is also very unexpected to see that the relation between relational capital and supplier satisfaction for all models are insignificant, although this relation is very close to significance for the Villena et al (2011) model. Finally, it is surprising to see that there are differences in significance of the relations between the study of Bohnenkamp (2018) and in this study. In Appendix F, the study results of Bohnenkamp (2018) are displayed. This study is done in an automotive company in China. Later this study was replicated in Germany and it gave the same results. So, one could argue that the type of industry has effect on the relation between social capital and supplier satisfaction.

A reason for the absence of significant relations between social capital and supplier

satisfaction might be due to the characteristics of the case company. The analyzed supplier base of the company is characterized by a rather low purchasing volume (compared to the revenue) and indirect procurement. One of the main reasons for this, is that the biggest supplier to CompanyX, is the mother company of CompanyX. Moreover, CompanyX is more service-oriented. Nevertheless, the indirect procurement setting, and relative low purchasing volume did not yield very strange results when applied at the model of Vos et al (2016), except for the operative excellence antecedents (please see Appendix I). Vos et al (2016) also showed that this model is applicable to indirect procurement settings.

Regarding the third contribution, many interesting hypotheses are not testable because the main relation where the moderating effects are based upon, are insignificant. This could be due to the low ratio of sample size to number of variables. Most supplier satisfaction antecedents are insignificant after all. The moderating effect of power distance on the direct relation between structural capital and supplier satisfaction is found to be significant though. It has a positive coefficient, so it completely corresponds with hypothesis 6b. All other hypotheses regarding Hofstede culture are rejected. The moderator effect of masculinity on the relation between relational capital and supplier satisfaction comes with a p-value of 0.154 a little close to the significance level of 10% whereas the coefficient is also negative as proposed in the hypotheses. Still, nothing can be said about this because it is still insignificant while the main relation is also insignificant. It is hard to get to know what the rationale for all these insignificances is. It is plausible that the sample size is just too small to perform the PLS-SEM analysis, which is confirmed by the violation of the "ten-times-arrow rule". Besides that, it is possible that some moderator relations are too far-fetched.

The insignificant moderator effects might also have to do something with the expectations of suppliers. Performance satisfaction is for example defined by Wilson (1995) as "the level in which a transaction meets the expectations of the partners including product and non-product attributes".[167] This has also been described in the social exchange theory: firms' benefits that meet or exceed the expectations and are at least equal to their alternatives are more likely to maintain or exceed buyer-supplier relationship.[168] For example, a supplier is not satisfied when the buyer does not meet the expectations, especially when it is compared with other

[167] Wilson (1995); Lambe et al (2008), p.24.
[168] See Thibaut & Kelley (1959); Lambe et al (2008), p.25.

buying companies, because the buying company has e.g. different values and norms based on a Hofstede dimension. Another example could be the following: suppose there is a Chinese supplier that delivers to a Dutch customer. When the supplier knows that The Netherlands has a much higher individualism score than China, it expects different behavior and will lower their expectations which will be met easier, leading to a higher supplier satisfaction only because the low expectations are met quicker.

7.2 Company implications

Besides the academic implications, also some company implications can be described. To do so, the results of the application of the Vos et al (2016) model are analyzed. The results of this part are displayed in appendix I.

The supplier satisfaction level of the case company is considered very high, so it does a good job from this perspective. It is remarkable though, that although the supplier satisfaction is very high, the preferred customer status is quite low. One reason for this, might be because there are many small suppliers with low selling volume to the case company (which is typical for indirect procurement), which makes it less beneficial for them to make the case company a preferred customer.

Considering that many suppliers do not have a big sales volume to CompanyX, it also makes more sense why the relation between growth opportunity and supplier satisfaction is insignificant.: they might find the customer not too attractive and don`t see them as a key customer, desiring less growth, maybe also because they do not expect huge growth from the buying company.

7.3 Managerial implications

Regarding the second contribution, this study contradicts many propositions and hypotheses stating that social capital leads to supplier satisfaction. Given the limitations of this study and the setting, it is hard to generalize these results.

Nevertheless, it could be possible that social capital is only found to be an antecedent for supplier satisfaction in a direct procurement setting. Indirect procurement and a low purchasing volume go hand in hand and may explain the insignificance of the antecedents. When a supplier has a small selling volume from a customer, the case company in this case, it might not be that interested in social capital at all: they just want to sell their products and are

less interested in building a strong relationship with their customer. That also might explain why only structural capital is significant in the model of Bohnenkamp (2018): the supplier just wants to sell its products and is sufficient with a stable communication channel with its customer in case there are for example questions or incidents; it is less interested in e.g. shared norms, values and objectives (cognitive capital) and reciprocity, commitment and trust (relational capital).

The third contribution suggests that power distance positively influences the relation between structural capital and suppler satisfaction. For managers, this means that the purchasing department should be open to suppliers' questions, uncertain situations and other business interactions from especially high-power distance countries, because these suppliers will be satisfied earlier on average. Likewise, since members from high-power distance countries have a greater tolerance for e.g. the acceptance of higher differentials in negotiator roles, these suppliers might be on average less dissatisfied because of e.g. intense negotiations. Finally, managers should recognize that on average, suppliers from high-power distance countries, would be less dissatisfied in case of unjust events or incidents.

Other hypotheses are rejected, however this does not imply that a manager does not have to take into account these dimensions of another culture; this study only tested the moderator effects of social capital on supplier satisfaction, but there are more antecedents to supplier satisfaction.

8. Limitations & future research

The first limitation is that the sample size is too small. In the case of the model of Bohnenkamp, this means that "ten-times arrow rule" is violated. Thereby, all contributions are less reliable and valid. Further research should obviously thus try to increase the sample size, although this is not easy at all because many organizations do not have a supplier base that is big enough. Because the sample size was so small, the significance level was set to 10%, which also should be taken into account.

As already explained in section 6.1, the indicators of Villena et al (2011) are not exactly the same as they are in the original study of Villena et al (2011).

Also notable is that this study is limited to only two company locations, with the majority of the observations coming from the Dutch location. This also means that the study is applied to one specific industry, which decreases the generalizability. It is also important to mention that

the case company, compared to typical production companies, is characterized by mostly indirect procurement and a relatively low purchasing volume compared to the revenue. Another limitation is that the values of the Hofstede dimensions are not calculated on a country basis, but on an individual basis. This means that the Hofstede values in this study measure personal cultural values instead of the country values. Therefore, it alters the moderator coefficients and significance levels, which makes them more biased unfortunately. Moreover, the response rate of 16,5% is lower than 20%, implying that the threshold of 20% is not achieved. A threshold of 20% in supply management mitigates non-response bias risk.[169] Finally, the sample is homogenous regarding culture diversity: most respondents are from the Netherlands, followed by Germany and the United Kingdom.

Further research should try increase the sample size and the cultural diversity of the dataset. When doing the former, a better comparison between the measurement models of Bohnenkamp (2018) and Villena et al (2011) can be made. Nevertheless, a full comparison is still hard because a respondent will then be faced with double questions. Obviously, a bigger sample size would also make the hypotheses testing of the other two contributions more valuable.

Culture is conceptualized and operationalized in this study by the Hofstede cultural dimensions theory, which means that other notable dimensions made by other researchers are not taken into account. For example, the dimensions of Edward Hall with time orientation (polychronic vs monochronic), style of communication (high vs low context) could also deliver interesting results.

Further research could try to integrate the concepts of expectations into the research model. This could be done by e.g. the social exchange theory, explained very shortly in the previous chapter.

Further researchers are also advised to calculate the Hofstede values on a country basis, instead on an individual basis, if the sample size and the country diversity in the dataset allows to do so. It might also be possible to cluster countries to create regional clusters in case the countries have a too small sample size.

[169] See Corsten et al (2011), p.553; Caniels et al (2013), p.8; Vos et al (2016), p.4621.

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Appendix

Appendix A: interpretation of the six Hofstede dimensions in all kind of situations.

Small Power Distance	Large Power Distance
Use of power should be legitimate and is subject to criteria of good and evil	Power is a basic fact of society antedating good or evil: its legitimacy is irrelevant
Parents treat children as equals	Parents teach children obedience
Older people are neither respected nor feared	Older people are both respected and feared
Student-centered education	Teacher-centered education
Hierarchy means inequality of roles, established for convenience	Hierarchy means existential inequality
Subordinates expect to be consulted	Subordinates expect to be told what to do
Pluralist governments based on majority vote and changed peacefully	Autocratic governments based on co-optation and changed by revolution
Corruption rare; scandals end political careers	Corruption frequent; scandals are covered up
Income distribution in society rather even	Income distribution in society very uneven
Religions stressing equality of believers	Religions with a hierarchy of priests

Weak Uncertainty Avoidance	Strong Uncertainty Avoidance
The uncertainty inherent in life is accepted and each day is taken as it comes	The uncertainty inherent in life is felt as a continuous threat that must be fought
Ease, lower stress, self-control, low anxiety	Higher stress, emotionality, anxiety, neuroticism
Higher scores on subjective health and well-being	Lower scores on subjective health and well-being
Tolerance of deviant persons and ideas: what is different is curious	Intolerance of deviant persons and ideas: what is different is dangerous
Comfortable with ambiguity and chaos	Need for clarity and structure
Teachers may say 'I don't know'	Teachers supposed to have all the answers
Changing jobs no problem	Staying in jobs even if disliked
Dislike of rules - written or unwritten	Emotional need for rules – even if not obeyed
In politics, citizens feel and are seen as competent towards authorities	In politics, citizens feel and are seen as incompetent towards authorities
In religion, philosophy and science: relativism and empiricism	In religion, philosophy and science: belief in ultimate truths and grand theories

Individualism	Collectivism
Everyone is supposed to take care of him- or herself and his or her immediate family only	People are born into extended families or clans which protect them in exchange for loyalty
"I" – consciousness	"We" –consciousness
Right of privacy	Stress on belonging
Speaking one's mind is healthy	Harmony should always be maintained
Others classified as individuals	Others classified as in-group or out-group
Personal opinion expected: one person one vote	Opinions and votes predetermined by in-group
Transgression of norms leads to guilt feelings	Transgression of norms leads to shame feelings
Languages in which the word "I" is indispensable	Languages in which the word "I" is avoided
Purpose of education is learning how to learn	Purpose of education is learning how to do
Task prevails over relationship	Relationship prevails over task

Femininity	Masculinity
Minimum emotional and social role differentiation between the genders	Maximum emotional and social role differentiation between the genders
Men and women should be modest and caring	Men should be and women may be assertive and ambitious
Balance between family and work	Work prevails over family
Sympathy for the weak	Admiration for the strong
Both fathers and mothers deal with facts and feelings	Fathers deal with facts, mothers with feelings
Both boys and girls may cry but neither should fight	Girls cry, boys don't; boys should fight back, girls shouldn't fight
Mothers decide on number of children	Fathers decide on family size
Many women in elected political positions	Few women in elected political positions
Religion focuses on fellow human beings	Religion focuses on God or gods
Matter-of-fact attitudes about sexuality; sex is a way of relating	Moralistic attitudes about sexuality; sex is a way of performing

Short-Term Orientation	Long-Term Orientation
Most important events in life occurred in the past or take place now	Most important events in life will occur in the future
Personal steadiness and stability: a good person is always the same	A good person adapts to the circumstances
There are universal guidelines about what is good and evil	What is good and evil depends upon the circumstances
Traditions are sacrosanct	Traditions are adaptable to changed circumstances
Family life guided by imperatives	Family life guided by shared tasks
Supposed to be proud of one's country	Trying to learn from other countries
Service to others is an important goal	Thrift and perseverance are important goals
Social spending and consumption	Large savings quote, funds available for investment
Students attribute success and failure to luck	Students attribute success to effort and failure to lack of effort
Slow or no economic growth of poor countries	Fast economic growth of countries up till a level of prosperity

Indulgence	Restrained
Higher percentage of people declaring themselves very happy	Fewer very happy people
A perception of personal life control	A perception of helplessness: what happens to me is not my own doing
Freedom of speech seen as important	Freedom of speech is not a primary concern
Higher importance of leisure	Lower importance of leisure
More likely to remember positive emotions	Less likely to remember positive emotions
In countries with educated populations, higher birthrates	In countries with educated populations, lower birthrates
More people actively involved in sports	Fewer people actively involved in sports
In countries with enough food, higher percentages of obese people	In countries with enough food, fewer obese people
In wealthy countries, lenient sexual norms	In wealthy countries, stricter sexual norms
Maintaining order in the nation is not given a high priority	Higher number of police officers per 100,000 population

Sources: Hofstede (2010)

Appendix B: complete codebook of this study (only in English; other languages used are Dutch and German). (see next page please)

Reference	**SPSS number**		General info: Since we will present the findings of this study on an aggregated level, the buyer will not be able to trace-back your individual answers. As a result, this survey cannot be used as marketing tool by your firm to make a positive impression on the buyer, but only as a tool to suggest points for improvement. So please give honest answers!	**Scale**
			The 10 dimensions of supplier satisfaction	
Intro			Introduction: The following questions relate to the core-aspects of supplier satisfaction: your economical, operational, relational and communicative satisfaction with the customer. The answers of all suppliers will be aggregated and thus your answers will be anonymized. Please give your honest answers! Per statement you can give only one answer.	
Vos et al. 2016 + earlier (Walter, 2003)			**Contact accessibility**	For each question below mark the best answer, according to this classification:

			There is a contact person within BuyingFirmXY who…	1. I fully disagree 2. I disagree 3. Neither agree nor disagree 4. I agree 5. I fully agree
	S_Available_10_1		…coordinates the relevant relationship activities within and outside of BuyingFirmXY.	see above
	S_Available_10_2		…is, for the employees of our company, the one to contact in regard to partner-specific questions.	see above
	S_Available_10_3		…informs employees within BuyingFirmXY firm about the needs of our company.	see above
Vos et al. 2016 + earlier (Liu et al, 2009)			**Growth potential for your company**	see above
			The relationship with BuyingFirmXY …	see above
	S_Growth_20_1		... provides us with a dominant market position in our sales area.	see above
	S_Growth_20_2		... is very important for us with respect to growth rates.	see above
	S_Growth_20_3		... enables us to attract other customers.	see above
	S_Growth_20_4		... enables us to exploit new market opportunities.	see above
Vos et al. 2016 + earlier (Goodale et al 2011)			**Innovation potential**	see above

	S_InnovationPot_30_1		In collaborating with BuyingFirmXY, our firm developed a very high number of new products/services.	see above
	S_InnovationPot_30_2		In collaborating with BuyingFirmXY, our firm was able to bring to market a very high number of new products/services.	see above
	S_InnovationPot_30_3		The speed with which new products/services are developed and brought to market with BuyingFirmXY is very high.	see above
Vos et al. 2016 + earlier (Gundlach et al, 1995)			**Customer's reliability**	see above
			In working with our company, BuyingFirmXY…	see above
	S_Collaboration_50_1		... provided a completely truthful picture when negotiating.	see above
	S_Collaboration_50_2		... always negotiated from a good faith bargaining perspective.	see above
	S_Collaboration_50_3		... never breached formal or informal agreements to benefit themselves.	see above
	S_Collaboration_50_4		... never altered facts in order to meet its own goals and objectives.	see above
Vos et al. 2016 + earlier (Ghijsen et al 2010)			**Support**	see above
			BuyingFirmXY …	see above
	S_Support_60_1		... collaborates with us to improve our manufacturing processes or services.	see above

	S_Support_60_2		... gives us (technological) advice (e.g. on materials, software, way of working).	see above
	S_Support_60_3		... gives us quality related advice (e.g. on the use of inspection equipment, quality assurance procedures, service evaluation).	see above
Vos et al. 2016 + earlier **(Primo & Amundson, 2002)**			**Involvement**	see above
	S_Involvement_70_2		We are early involved in the new product/service development process of BuyingFirmXY.	see above
	S_Involvement_70_3		We are very active in the new product development process of BuyingFirmXY.	see above
	S_Involvement_70_4		Communication with our firm about quality considerations and design changes is very close.	see above
Vos et al. 2016 + earlier			**Customer's relational behavior**	see above
	S_RelBehavior_80_1		Problems that arise in the course of the relationship are treated by BuyingFirmXY as joint rather than individual responsibilities.	see above

	S_RelBehavior_80_2		BuyingFirmXY is committed to improvements that may benefit our relationship as a whole and not only themselves.	see above
	S_RelBehavior_80_3		We each benefit and earn in proportion to the efforts we put in.	see above
	S_RelBehavior_80_4		Our firm usually gets at least a fair share of the rewards and cost savings from our relationship with BuyingFirmXY.	see above
	S_RelBehavior_80_5		BuyingFirmXY would willingly make adjustments to help us out if special problems/needs arise.	see above
	S_RelBehavior_80_6		BuyingFirmXY is flexible when dealing with our firm.	see above
New Pulles (2017)			**Economic performance / Profitability**	see above
			The relationship with BuyingFirmXY …	see above
	S_Profitability_90_2		... provides us with large sales volumes.	see above
	S_Profitability_90_3		... helps us to achieve good profits.	see above
	S_Profitability_90_4		... allows us to gain high margins.	see above
	S_Profitability_90_5		... has a positive influence on the profitability of our firm.	see above
	S_Profitability_90_6		... enables us to raise our profitability together.	see above
Vos et al. 2016 + earlier (Cannon (1998) and Pulles et al. (2016))			**Supplier Satisfaction**	see above

	S_Satisfaction_100_1		Our firm is very satisfied with the overall relationship to BuyingFirmXY.	see above
	S_Satisfaction_100_3		Generally, our firm is very pleased to have BuyingFirmXY as our business partner.	see above
	S_Satisfaction_100_4		If we had to do it all over again, we would still choose to use BuyingFirmXY.	see above
	S_Satisfaction_100_5		Our firm does not regret the decision to do business with BuyingFirmXY.	see above
			Perception of customer attractiveness	
			These questions relate to the attractiveness of the customer.	see above
Vos et al. 2016 + earlier (Cannon (1998) and Pulles et al. (2016))			**Preferred Customer Status**	see above
			Compared to other customers in our firm´s customer base…	see above
	PC_PC_110_1		… BuyingFirmXY is our preferred customer.	see above
	PC_PC_110_2		... we care more for BuyingFirmXY.	see above
	PC_PC_110_3		... BuyingFirmXY receives preferential treatment.	see above
	PC_PC_110_4		… we go out on a limb for BuyingFirmXY.	see above
	PC_PC_110_5		... our firm's employees prefer collaborating with BuyingFirmXY to collaborating with other customers.	see above

			Other variables to take into account	see above
Insert REF (New Lelij / Praas 2016)			**Status**	see above
			According to us …	see above
	ADD_Status_156_1		… BuyingFirmXY has a high-status	see above
	ADD_Status_156_2		… BuyingFirmXY is admired by others	see above
	ADD_Status_156_3		… BuyingFirmXY has a high prestige	see above
	ADD_Status_156_4		… BuyingFirmXY is highly regarded by others	see above
			Operational excellence	
			Forecast and planning	see above
			BuyingFirmXY has…	see above
	S_OperativeExc_40_1		…always exact and timely forecasts about future demand	see above
	S_OperativeExc_40_2		… provides us with forecasts our firm can rely and plan on	see above
			Payment	see above
			BuyingFirmXY has…	see above
	S_OperativeExc_40_6		…reliable payment habits	see above
			Quality of processes:	see above
			BuyingFirmXY has…	see above
	S_OperativeExc_40_3		… has for our firm simple and transparent internal processes	see above
	S_OperativeExc_40_4		…supports short decision-making processes	see above
			Corporate Culture	

Cameron & Quinn			**Clan culture**	1. I strongly disagree 2. I disagree 3. Neither agree nor disagree 4. I agree 5. I strongly agree
	S_clan_301_1		Our management style is characterized by teamwork and participation.	
	S_clan_301_2		The glue that holds our company together is loyalty and mutual trust. Commitment to our organisation runs high.	
	S_clan_301_4		Our leaders are considered to exemplify monitoring, facilitating and nurturing	
	S_clan_301_5		We emphasise human development, high trust, openness and participation	
	S_clan_301_3		To us, success is defined based on people, teamwork and concern for people	
	S_clan_301_6		The organization is a very personal place. It is like an extended family. People seem to share a lot of personal information and features.	
Cameron & Quinn			**Adhocracy Culture**	**see above**

	S_adhoc_302_1		Our leaders are considered innovators, entrepreneurs and risk takers.	
	S_adhoc_302_2		Our management style is characterized by individual risk taking, innovation and flexibility.	
	S_adhoc_302_4		Our company is a dynamic entrepreneurial place. People are willing to stick their necks and take risks.	
	S_adhoc_302_3		The glue that holds our company together is orientation towards innovation and development.	
	S_adhoc_302_5		The organization emphasizes acquiring new resources and creating new challenges. Trying new things and prospecting for opportunities are valued.	
	S_adhoc_302_6		The organization defines success on the basis of having the most unique or newest products. It is a product leader and innovator.	
Cameron & Quinn			**Market Culture**	**see above**
	S_market_303_1		Our management style is characterized by hard-driving competitiveness and achievement.	

	S_market_303_2		The glue that holds our company together is the emphasis on production and goal accomplishment.	
	S_market_303_4		Our company is results oriented. A major concern is with getting the job done. People are very competitive and achievement oriented.	
	S_market_303_5		The leadership in our company is generally considered to exemplify a no-nonsense, aggressive, results-oriented focus.	
	S_market_303_3		Our organization emphasizes competitive actions and achievement. Targets and objectives are dominant.	
	S_market_303_6		The organization defines success on the basis of winning in the marketplace and outpacing the competition. Competitive market leadership is key.	
Cameron & Quinn			**Hierarchy Culture**	**see above**
	S_hierarchy_304_1		The glue that holds our company together is formal rules and policies. A smooth-running organization is important.	
	S_hierarchy_304_2		Permanence and stability are emphasized. Efficient operations are important.	

	S_hierarchy_304_4		Our company is a controlled and structured place. Formal procedures govern what people do	
	S_hierarchy_304_5		The leadership of our company is considered to exemplify co-coordinating, organizing, and smooth-running efficiency.	
	S_hierarchy_304_3		Success is defined based on efficiency. Smooth scheduling and low cost production are critical.	
	S_hierarchy_304_6		The management style in the organization is characterized by security of employment, conformity, predictability, and stability in relationships.	
			National Culture	
Hofstede VSM 2013			Please think of an ideal job, disregarding your present job, if you have one. In choosing an ideal job, how important would it be to you to	

	S_hofstede_400_1		01. have sufficient time for your personal or home life	1 = of utmost importance 2 = very important 3 = of moderate importance 4 = of little importance 5 = of very little or no importance
	S_hofstede_400_2		02. have a boss (direct superior) you can respect	see above
	S_hofstede_400_3		03. get recognition for good performance	see above
	S_hofstede_400_4		04. have security of employment	see above
	S_hofstede_400_5		05. have pleasant people to work with	see above
	S_hofstede_400_6		06. do work that is interesting	see above
	S_hofstede_400_7		07. be consulted by your boss in decisions involving your work	see above
	S_hofstede_400_8		08. live in a desirable area	see above
	S_hofstede_400_9		09. have a job respected by your family and friends	see above
	S_hofstede_400_10		10. have chances for promotion	see above
			In your private life, how important is each of the following to you:	see above

	S_hofstede_400_11		11. keeping time free for fun	see above
	S_hofstede_400_12		12. moderation: having few desires	see above
	S_hofstede_400_13		13. doing a service to a friend	see above
	S_hofstede_400_14		14. thrift (not spending more than needed)	see above
	S_hofstede_400_15		15. How often do you feel nervous or tense?	1. always 2. usually 3. sometimes 4. seldom 5. never
	S_hofstede_400_16		16. Are you a happy person?	1. always 2. usually 3. sometimes 4. seldom 5. never
	S_hofstede_400_17		17. Do other people or circumstances ever prevent you from doing what you really want to?	1. yes, always 2. yes, usually 3. sometimes 4. no, seldom 5. no, never

	S_hofstede_400_18		18. All in all, how would you describe your state of health these days?	1. very good 2. good 3. fair 4. poor 5. very poor
	S_hofstede_400_19		19. How proud are you to be a citizen of your country?	1. very proud 2. fairly proud 3. somewhat proud 4. not very proud 5. not proud at all
	S_hofstede_400_20		20. How often, in your experience, are subordinates afraid to contradict their boss (or students their teacher?)	1. never 2. seldom 3. sometimes 4. usually 5. always
			To what extent do you agree or disagree with each of the following statements?	
	S_hofstede_400_21		21. One can be a good manager without having a precise answer to every question that a subordinate may raise about his or her work	1 = strongly agree 2 = agree 3 = undecided

				4 = disagree 5 = strongly disagree
	S_hofstede_400_22		22. Persistent efforts are the surest way to results	1 = strongly agree 2 = agree 3 = undecided 4 = disagree 5 = strongly disagree
	S_hofstede_400_23		23. An organization structure in which certain subordinates have two bosses should be avoided at all cost	1 = strongly agree 2 = agree 3 = undecided 4 = disagree 5 = strongly disagree
	S_hofstede_400_24		24. A company's or organization's rules should not be broken - not even when the employee thinks breaking the rule would be in the organization's best interest	1 = strongly agree 2 = agree 3 = undecided 4 = disagree 5 = strongly disagree
			General Information	

Vos et al. 2016 etc. (Standard control)			**Length of relationship (in years)**	
	LNGTH_Relationship_230_1		How long has your company been a supplier of BuyingFirmXY?	years
	LNGTH_SupplierOfB_230_2		How long have you already been working as an employee of your firm?	years
Vos et al. 2016 etc. (Standard control)			**General information**	
	ORG_Turnover_240_1		Annual Turnover (in €). (When you belong to a firm-group, please provide the details of your firm branch!)	mio
	ORG_DepTurnover_240_2		Please indicate the annual turnover with BuyingFirmXY as % of your total annual turnover (in %, 0=lowest, 100=highest, e.g. if your Company is having half of its turnover at the UT, fill-in "50")	**slider 1-100**
	ORG_Size_240_3		Number of employees	# employees
			Type Firm	
	ORG_TypeOwnership_248		Ownership	state-owned firm private firm public listed firm
	ORG_PositionPerson_253		**What is your position in the company?**	
	ORG_El@ss		Please chose the ecl@ss classification of the material you sell from the following list:	
			Additional question	

	ORG_KnowledgeB_256_1		I know BuyingFirmXY good enough to answer all the questions in this questionnaire	Likert 1- 5
Hofstede VSM 2013			**Some information about yourself (for statistical purposes):**	
	S_hofstede_400_25		25. Are you: 1. male 2. female	
	S_hofstede_400_26		26. How old are you?	1. Under 20 2. 20-24 3. 25-29 4. 30-34 5. 35-39 6. 40-49 7. 50-59 8. 60 or over
	S_hofstede_400_29		29. What is your nationality?	
	S_hofstede_400_30		30. What was your nationality at birth (if different)?	
Vos et al. 2016 etc. (Standard control)				
	ORG_EMAIL_270		If you would like to receive the results of this study, please leave your email address:	

	ORG_COMMENTS_280		Do you have any additional comments or remarks? Please leave them here	
			Questions on social capital	
			During the project you and your customer…	1. I strongly disagree 2. I disagree 3. Neither agree nor disagree 4. I agree 5. I strongly agree
Structural Social Capital	Ext.Str1	Infrastructure Actor Exchange	Always conducted common activities / workshops	
	Ext.Str2		Had common project reviews in place	
	Ext.Str3		Used internal linking systems (shared fileserver etc.)	
	Ext.Str4		Had also purely social activities (common meals, after-work get togethers)	
	Ext.Str5		Made use of being located in close proximity to each other	
	Ext.Str6	Quantity of Interaction	Frequently communicated with each other	
	Ext.Str7		Frequently communicated at different levels	
	Ext.Str8		Frequently communicated between different functions	

	Ext.Str9	Nature of Communication	Exchanged concessions throughout the project (granted more time etc.)	
	Ext.Str10		Solved / prevented problems commonly	
	Ext.Str11		Easily found agreements jointly	
	Ext.Str12		Constructively addressed topics that could entail conflicts	
Relational Social Capital	Ext.Rel1	Trust	Considered own interests as well as the others	
	Ext.Rel2		Trusted in each other to keep the best interest in mind	
	Ext.Rel3		Counted on each other to follow through with promises	
	Ext.Rel4	Commitment	Found it pleasant to work with each other, which is why the relationship continued	
	Ext.Rel5		Wanted to remain in the relationship	
	Ext.Rel6		Were attracted by what the other party represented as a firm (image, brand, reference etc.)	
	Ext.Rel7	Reciprocity	Considered the relationship as mutually beneficial	
	Ext.Rel8		Felt indebted because of what the other had done for each other	
	Ext.Rel9		Expected to also work on further projects in the future	

Cognitive Social Capital	Ext.Cog1	Shared Norms & Values	Interpreted situations in the same way / had the same approaches to business dealings	
	Ext.Cog2		Had a common understanding about what is allowed / not allowed	
	Ext.Cog3		Had the same vision of business in the relationship	
	Ext.Cog4		Share the same values und norms on how to conduct business and behave	
	Ext.Cog5	Overlap of Objectives	Were aware of each other's objectives / KPIs	
	Ext.Cog6		Were aligned on objectives / objectives matched	
	Ext.Cog7		Made the effort to align goals	
	Ext.Cog8		Had similar targets	
Cognitive	SCT_Vill_1		Had compatible goals and objectives	
Relational	SCT_Vill_2		Shared a close personal interaction	
	SCT_Vill_3		Had mutual respect between the parties	
	SCT_Vill_4		Had mutual trust between the parties	
	SCT_Vill_5		Had a personal relationship	
	SCT_Vill_6		Had a relationship which was characterized by reciprocity	
	EXT_Cont_1	Extra control variables	To which company location does your company deliver?	Dropdown menu with locations

	EXT_Cont_2	Extra control variables	How many hours do you need to visit BuyingFirmXY (by car)?	
	EXT_Cont_3	Extra control variables	How many hours do you need to visit BuyingFIrmXY (by plane)?	
	EXT_Cont_4		What kind of supplier do you consider yourself as a supplier of BuyingFIrmXY?	Drop down menu with 6 options

Appendix C: Bohnenkamp (2018) codebook for social capital theory

			During the project you and your customer…
Structural Social Capital	Ext.Str1	Infrastructure Actor Exchange	Always conducted common activities / workshops
	Ext.Str2		Had common project reviews in place
	Ext.Str3		Used internal linking systems (shared fileserver etc.)
	Ext.Str4		Had also purely social activities (common meals, after-work get togethers)
	Ext.Str5		Made use of being located in close proximity to each other
	Ext.Str6	Quantity of Interaction	Frequently communicated with each other
	Ext.Str7		Frequently communicated at different levels
	Ext.Str8		Frequently communicated between different functions
	Ext.Str9	Nature of Communication	Exchanged concessions throughout the project (granted more time etc.)
	Ext.Str10		Solved / prevented problems commonly
	Ext.Str11		Easily found agreements jointly
	Ext.Str12		Constructively addressed topics that could entail conflicts
Relational Social Capital	Ext.Rel1	Trust	Considered own interests as well as the others
	Ext.Rel2		Trusted in each other to keep the best interest in mind
	Ext.Rel3		Counted on each other to follow through with promises
	Ext.Rel4	Commitment	Found it pleasant to work with each other, which is why the relationship continued
	Ext.Rel5		Wanted to remain in the relationship
	Ext.Rel6		Were attracted by what the other party represented as a firm (image, brand, reference etc.)

	Ext.Rel7	Reciprocity	Considered the relationship as mutually beneficial
	Ext.Rel8		Felt indebted because of what the other had done for each other
	Ext.Rel9		Expected to also work on further projects in the future
Cognitive Social Capital	Ext.Cog1	Shared Norms & Values	Interpreted situations in the same way / had the same approaches to business dealings
	Ext.Cog2		Had a common understanding about what is allowed / not allowed
	Ext.Cog3		Had the same vision of business in the relationship
	Ext.Cog4		Share the same values und norms on how to conduct business and behave
	Ext.Cog5	Overlap of Objectives	Were aware of each other's objectives / KPIs
	Ext.Cog6		Were aligned on objectives / objectives matched
	Ext.Cog7		Made the effort to align goals
	Ext.Cog8		Had similar targets

Appendix D: Villena et al (2011) codebook for social capital theory

		During the project, you and your customer ...
Struct-ural SCT	Ext.Str6	Frequently communicated with each other
	Ext.Str7	Frequently communicated at different levels
	Ext.Str8	Frequently communicated between different functions
Relational SCT	SCT_Vill_2	Shared a close personal interaction
	SCT_Vill_3	Had mutual respect between the parties
	SCT_Vill_4	Had mutual trust between the parties
	SCT_Vill_5	Had a personal relationship
	SCT_Vill_6	Had a relationship which was characterized by reciprocity
Cognitive SCT	Ext.Cog1	Interpreted situations in the same way / had the same approaches to business dealings
	Ext.Cog4	Share the same values und norms on how to conduct business and behave
	SCT_Vill_1	Had compatible goals and objectives
	Ext.Cog3	Had the same vision of business in the relationship

Appendix E: Comparison between the original Villena et al (2011) codebook and the one in this study (grey are questions that should measure the same)

Villena et al (2011)

	Relational capital *please indicate the extent to which the relationship between your company and this supplier is characterized by*
SCT_Vill_2	…a close personal interaction between the parties
SCT_Vill_3	…mutual respect between the parties
SCT_Vill_4	...mutual trust between the parties
SCT_Vill_5	...personal friendship between the parties
SCT_Vill_6	...reciprocity between the parties

	Structural capital *please indicate the extent to which your company and this supplier promote*
Ext.Str6	...a frequent and intensive interaction between the personnel
Ext.Str7	...an interaction between the personnel across different levels (e.g., managers and engineers)
Ext.Str8	...an interaction between the personnel across different functions (e.g., logistics and marketing)

	Cognitive capital *please indicate the extent to which your company and this supplier share*
Ext.Cog1	...similar corporate culture/values and management style
Ext.Cog4	...similar philosophies/approaches to business dealings
SCT_Vill_1	...compatible goals and objectives
Ext.Cog3	...the same vision of business in the relationship

Bohnenkamp (2018)

	Relational capital *During the project, you and your customer ...*
Ext.Rel1	...considered own interests as well as the others
Ext.Rel2	...trusted in each other to keep the best interest in mind
Ext.Rel3	…counted on each other to follow through with promises
Ext.Rel4	…found it pleasant to work with each other, which is why the relationship continued
Ext.Rel5	…wanted to remain in the relationship
Ext.Rel6	…were attracted by what the other party represented as a firm (image, brand, reference etc.)
Ext.Rel7	…considered the relationship as mutually beneficial
Ext.Rel8	…felt indebted because of what the other had done for each other
Ext.Rel9	…expected to also work on further projects in the future

	Structural capital *During the project you and your customer…*
Ext.Str1	…always conducted common activities / workshops
Ext.Str2	…had common project reviews in place
Ext.Str3	…used internal linking systems (shared fileserver etc.)
Ext.Str4	…had also purely social activities (common meals, after-work get togethers)
Ext.Str5	…made use of being located in close proximity to each other
Ext.Str6	…frequently communicated with each other
Ext.Str7	…frequently communicated at different levels
Ext.Str8	…frequently communicated between different functions
Ext.Str9	…exchanged concessions throughout the project (granted more time etc.)
Ext.Str10	…solved / prevented problems commonly
Ext.Str11	…easily found agreements jointly
Ext.Str12	…constructively addressed topics that could entail conflicts

	Cognitive capital *During the project, you and your customer...*
Ext.Cog1	…interpreted situations in the same way / had the same approaches to business dealings
Ext.Cog2	…had a common understanding about what is allowed / not allowed
Ext.Cog3	…had the same vision of business in the relationship
Ext.Cog4	…share the same values und norms on how to conduct business and behave
Ext.Cog5	…were aware of each other's objectives / KPIs
Ext.Cog6	…were aligned on objectives / objectives matched
Ext.Cog7	…made the effort to align goals
Ext.Cog8	…had similar targets

Appendix F: results Bohnenkamp (2018) study (*** = significant at the 1% level)

Second-order construct	Paths	Path value	T-statistic	P-value
Without	Cognitive capital -> Supplier satisfaction	0.141	1.158	>0.1
	Cognitive capital -> Relational capital	0.628	9.337	<0.001***
	Structural capital -> Supplier satisfaction	0.076	0.935	>0.1
	Structural capital -> Relational capital	0.278	4.168	<0.001***
	Relational capital -> Supplier satisfaction	0.556	4.529	<0.001***
With	Cognitive capital -> Supplier satisfaction	0.081	0.746	>0.1
	Cognitive capital -> Relational capital	0.577	7.767	<0.001***
	Structural capital -> Supplier satisfaction	0.037	0.629	>0.1
	Structural capital -> Relational capital	0.290	4.145	<0.001***
	Relational capital -> Supplier satisfaction	0.633	5.580	<0.001***

G: Hofstede formulas [170]

PDI = 35(m07 – m02) + 25(m20 – m23) + C(pd)
IDV = 35(m04 – m01) + 35(m09 – m06) + C(ic)
MAS = 35(m05 – m03) + 35(m08 – m10) + C(mf)
UAI = 40(m18 - m15) + 25(m21 – m24) + C(ua)
LTO = 40(m13 – m14) + 25(m19 – m22) + C(ls)
IVR = 35(m12 – m11) + 40(m17 – m16) + C(ir)

To illuminate further the process of calculating the Hofstede scores, the calculation itself is showed here. For every observation, the individual scores of the questions are inserted in the formulas instead of the mean scores (which are described as mX here above). For example, consider the 15th observation of the dataset with the following individual scores of the Hofstede questions on a scale of 1-5 to calculate the PDI: q07=4; q02=2; q20=2; q23=2; C(pd)=0. Thus: 35*(4-2) + 25*(2-2) + 0 = 70.

H: SmartPLS 3.0 settings

Program	SmartPLS 3.0
Technique	PLS-SEM
Weighting scheme	Path
Maximum iterations	5000
Significance level	10% (two tailed)
Stop criterion	10^-7
How to handle missing data	Case wise deletion
Missing value indicator	-9999
Delimiter	Semicolon
Number format	US
Encoding	UTF-8

[170] Hofstede VSM 2013; https://geerthofstede.com/wp-content/uploads/2016/07/Manual-VSM-2013.pdf

I: Supplier satisfaction in the industrial services industry

This part of the results discusses whether the model of Vos et al (2016) is again confirmed in the context of a project-based organization within the industrial services industry that performs mainly indirect purchasing. Because this part not a contribution, it will be a small part and it is therefore included in the Appendix.

Most relations are significant, except for two anomalies: growth opportunity and operative excellence, which is quite surprising and does not support findings of Vos et al (2016). Besides that, all significant path coefficients are positive, which makes perfect sense. The reason growth opportunity has no effect on supplier satisfaction, might be because many suppliers do not have a big sales volume to CompanyX. Therefore, they might find the customer not very attractive and don`t see them as a key customer, desiring less growth, maybe also because they do not expect huge growth from the buying company. Operative excellence is considered more insignificant, with a p-value of only 0.875. This antecedent is less obvious, so a closer look at item level might give more insight.

Two out of five questions regarding operative excellence do measure whether the buying company provides forecasts to its suppliers. Since there is a reasonable high presence of ad hoc buying at CompanyX, future demand is very hard to measure. This would normally negatively affect supplier satisfaction, but if CompanyX and a supplier has agreed in their supply relationship that there would be a high amount of ad hoc buying from the beginning on, this would normally diminish the negative effect of a lack of demand forecast on supplier satisfaction, especially when the purchasing volumes are rather low. Moreover, two other questions regarding operative excellence are about the internal processes of the buying company, but if the buying company has a low purchasing volume to the supplier, a supplier would be less bothered if these processes are not that good.

Given these two arguments, operative excellence might not be linked to supplier satisfaction for CompanyX.

Paths	Path value	T-statistic	P-value
Contact accessibility -> Operative excellence	0.426	2.307	0.021**
Growth opportunity -> Supplier satisfaction	0.110	0.856	0.392
Innovation potential -> Growth opportunity	0.684	7.693	0.000***
Involvement -> Relational behavior	0.287	2.908	0.004***
% Dep. Turnover -> Supplier satisfaction	(0.267)	2.233	0.026**
Length of relationship -> Supplier satisfaction	(0.073)	0.826	0.409
Operative excellence -> Supplier satisfaction	0.023	0.157	0.875
Profitability -> Supplier satisfaction	0.317	2.304	0.021*
Relational behavior -> Supplier satisfaction	0.507	3.632	0.000***
Reliability -> Relational behavior	0.571	7.214	0.000***
Supplier satisfaction -> Preferred customer status	0.396	4.263	0.000***
Support -> Relational behavior	0.242	2.438	0.015**

Extra: risk assessment tool for suppliers

The company wanted to improve its supplier evaluation and risks process. To do so, the supplier evaluation assessment tool is altered. Also, a risk assessment tool is created. A reliable and valid tool is very important for CompanyX since the company's operations involve high risks. Also, these operations are done globally which means that the company is even more exposed to risks such as political country risks. The company outsources many of its operations, however CompanyX is responsible for the result of the service provided to its customers. So, a comprehensive overview of the quality and risks of the supplier should be available to avoid getting accused or sued.

The form must be filled in by the purchasing department of the company. They will be supported by site executors who will also fill in forms to evaluate the supplier performances and risks. It is thus very important that someone who is not familiar with purchasing should be able to fill in this form and that it does not take too long to fill in the form, otherwise the form will generate invalid and unreliable results. The risk assessment tool has different risk factors per type of supplier, because all types of suppliers bear different risks.