Frederik Guido Sebastiaan Vos

Preferred Customer Status, Supplier Satisfaction and their Contingencies

PREFERRED CUSTOMER STATUS, SUPPLIER SATISFACTION AND THEIR CONTINGENCIES

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DISSERTATION

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List of Abbreviations

AVE	average variance extracted
CR	composite reliability
CA / α	Cronbach's alpha
H	hypothesis
NPD	new product development
PLS	partial least squares
SET	social exchange theory
SEM	structural equation modeling
SPSS	statistical package for the social sciences

Chapter 1. Introduction

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1.1. Introduction into the dissertation

Over the last decades the role of purchasing has advanced from an administrative function towards a value adding activity. This advancement has been fueled by three trends: Firstly, many firms allocate more responsibilities to suppliers, to increase the firm's focus on its core abilities (Schiele, Calvi, & Gibbert, 2012a). Secondly, many supply markets become more mature and the number of suppliers decreases, reducing the availability of alternatives (Schiele et al., 2012a). Finally, companies increasingly shift from traditional in-house innovation efforts to open innovation, which increases dependencies on suppliers (Roberts, 2001, pp. 31-32; Schiele, 2012; Schiele, Veldman, & Hüttinger, 2011b; Schiele, Veldman, & Hüttinger, 2011c). As a result, more and more oligopolistic supply market structures evolve, in which customers compete for capable suppliers and access to their innovations (Ellis, Henke, & Kull, 2012; Routroy & Routroy, 2016; Schiele & Vos, 2015). Schiele et al. (2012a, p. 1178) summarized this phenomenon as "a counter-intuitive inversion of the classical marketing approach". Hence, companies increasingly focus on the question: how to gain and keep access to capable suppliers, since capabilities and resources of these suppliers are key in the development of competitive advantages (Mol, 2003; Tassabehji & Moorhouse, 2008).

As a result, gaining preferred customer status through supplier satisfaction has been discussed as crucial for buying firms (Vos, Schiele, & Hüttinger, 2016). A buyer enjoying preferred customer status attains access to supplier resources and preferential treatment, which includes additional benefits such as earlier access to innovations, better prices and delivery in times of scarcity (Baxter, 2012b; Hüttinger, Schiele, & Veldman, 2012; Schiele et al., 2011c). Preferred customer status provides strategic leverage and increases the potential to achieve sustainable competitive advantages over competitors (Dyer & Hatch, 2006; Liker & Choi, 2004). Hence, studying preferred customer status and supplier satisfaction is not only relevant for science, but also largely valuable for companies in practice. This is also indicated by the increase of publications over the last decade in both academic and professional publications. The most detailed assessments of this topic was presented recently in a PhD dissertation in 2014 by Hüttinger (2014). She studied the antecedents and consequences of supplier satisfaction and preferred customer status. My

dissertation project started at the end of 2013 and directly builds on the research of Hüttinger (2014). It extends our understanding of this phenomenon.

In particular, I extent the knowledge concerning the contingencies affecting supplier satisfaction and preferred customer status. Thereby, incorporating factors such as dependency, power, and inter-firm trust, which have not been analyzed in this combination in previous research before.

In the following sections, the detailed aims and motivations for this dissertation are outlined. This also includes an introduction to the history and state-of-the-art of both supplier satisfaction and preferred customer research. Then, based on the review, the research objectives and expected contributions of this dissertation are outlined. Finally, a description of the scientific methods used and an outline of the remainder of the dissertation is presented.

1.2. Review of supplier satisfaction and preferred customer research

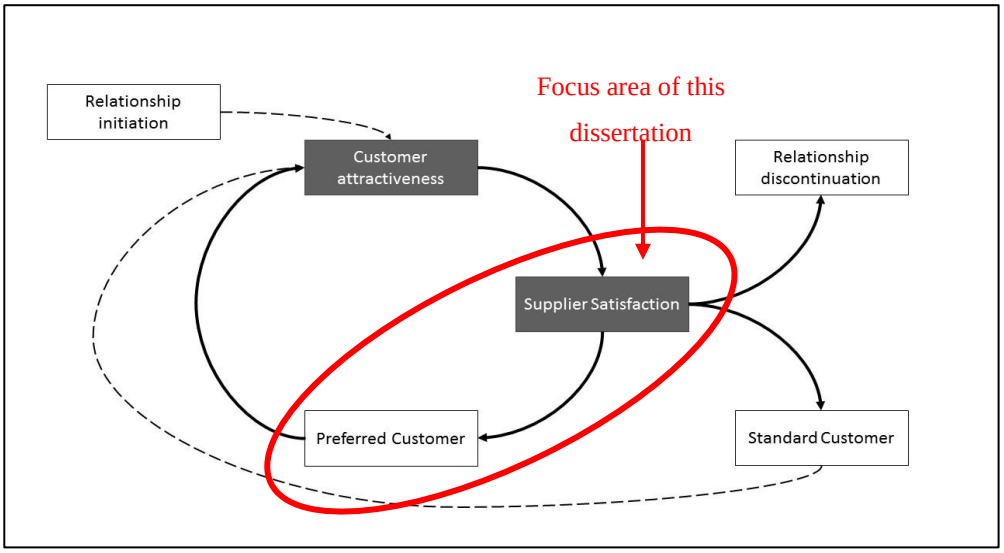
1.2.1. The circle of preferred customership

To get a clearer picture of the concepts of supplier satisfaction and preferred customer status, we need to identify how the two concepts relate to each other. A theoretical view on these concepts comes from Hüttinger et al. (2012), who presented a comprehensive review on supplier satisfaction and preferred customer status. Through their analyses of papers in the period from 1975–2011, they developed the "circle of preferred customership". In essence, they argue that the process of achieving preferred customer status follows three sequential steps (Hüttinger et al., 2012) (See Figure 1). The circle begins by assuming no previous relationship between buyer and supplier existed before. Then, to initiate a relationship, suppliers need to be attracted to the customer. In this context, customer attractiveness is defined as the expected value of a relationship (Hald, Cordon, & Vollmann, 2009; Pulles, Schiele, Veldman, & Hüttinger, 2016a). The supplier must have the perception that engaging in a relationship with the buyer will bring benefits in the future.

Then, after initial attraction, satisfaction within the relationship may grow. Supplier satisfaction is defined as meeting or exceeding expectations, which the supplier has in the relationship with the buyer (Hüttinger, Schiele, & Schröer, 2014). Only when the expectations of a supplier are met or exceeded, the supplier will be satisfied and ultimately

reward the buyer with preferred customer status. Hence, in the last step, supplier satisfaction leads to preferred customer status. In turn, preferred status makes the buyer also more attractive to other suppliers and the circle can start again. This dissertation will focus mainly on the intersection between supplier satisfaction and preferred customer status, as presented in Figure 1.

Figure 1 - The circle of preferred customership (Hüttinger et al., 2012) and the focus of this thesis



The next sections will outline how research concerning supplier satisfaction and preferred customer status has first evolved separately and then finally converged over the years. We begin with the description of research in supplier satisfaction.

1.2.2. History & State of the Art in Supplier Satisfaction Research

Research concerning supplier satisfaction stresses its implications for buying firms. Most importantly, scholars argue that supplier satisfaction strengthens the relationship between customer and supplier, which is the basis for long-term collaboration (Hüttinger et al., 2014). The following paragraphs provide a sequential review of research focused on supplier satisfaction, starting from its first appearance in the literature as a separate relational construct. This will be followed by a review of research addressing preferred customer status.

The first scientific authors to identify the importance of having suppliers which are satisfied in a relationship were **Leenders and Blenkhorn (1988)**. They used the term, "reversed marketing," to stress concepts relating to buyers advertising their company to suppliers, to gain more benefits from the relationship. Nevertheless, despite this initial indication that supplier satisfaction might imply valuable benefits for buyers, this thought was not followed-up for several years.

Then, twelve years later, in 2000, **Wong (2000)** identified the importance of supplier satisfaction as a separate construct in buyer-supplier relationships**.** He argued that overall business excellence is only achieved when both supplier and buyer satisfaction are integrated in daily operations of firms. He stated that "partnering efforts will not succeed if suppliers' needs cannot be satisfied in the process" (Wong, 2000, p. 427). Dissatisfied suppliers might not want a close collaboration and will not do their best to contribute to the customer's goals. For achieving supplier satisfaction, he mentioned three major enablers for creating supplier satisfaction: (1) The customer creates a co-operative culture, which allows both parties to strive for compatible goals; (2) The customer needs to signal its full support towards suppliers and commit actively to satisfying the suppliers' needs; and (3) The customer gives room for constructive controversy. This entails taking the other's perspective, openly discussing opposing views and the willingness to accept the suppliers' suggestions to achieve the best solution for both parties. Coinciding with the research of Wong (2000), **Forker and Stannack (2000)** published an empirical study distinguishing relationships into competitive and cooperative exchange relationships, thereby assessing the level of supplier satisfaction in these relationship modes. In line with the assumptions of Wong (2000), they found initial support for the notion that supplier satisfaction is higher in cooperative relationship in contrast to competitive relationships.

Two years later, in 2002, **Whipple, Frankel, and Daugherty (2002)** assessed the importance of information sharing for achieving both supplier and buyer satisfaction. While for buyers the accuracy of the supplier's information was most important (e.g. about quality, delivery and availability), suppliers saw the speed of information sharing (timeliness) as crucial aspect influencing their satisfaction with the relationship. Also, Whipple et al. (2002) concluded that the amount of operational information exchange has a positive effect on the satisfaction of both parties.

Then, in 2003, **Maunu (2003)** published in her dissertation the first extensive discussion of the possible antecedents of supplier satisfaction. She distinguished between business-related and communication-related factors. The 'harder' business-related factors included (1) profitability, (2) agreements, (3) early supplier involvement, (4) business continuity and (5) forecasting/planning. The 'softer' communication-related factors included (6) roles and responsibilities, (7) openness and trust, (8) feedback and (9) the buying company's values. Still, even though these factors were included in a survey tool, they were not empirically tested.

Two years later, in 2005, **Benton and Maloni (2005)** assessed empirically the influence of power driven buyer-seller relationships on supply chain satisfaction. They found not only that the relational quality of the buyer–supplier relationship strongly impacts supplier satisfaction, but also that if a power holder is attempting to promote satisfaction actively, the power holder should emphasize a relationship-driven supply chain strategy rather than a performance based strategy. In essence, these results further supported the previous findings of Forker and Stannack (2000), arguing for the importance of cooperative relationships.

A year later, in 2006**, Leenders, Johnson, Flynn, and Fearon (2006)** provided in their book the "Purchaser-Supplier Satisfaction Matrix" four marketing and supply management techniques to increase supplier satisfaction. These techniques include: (1) Long term commitments, granting substantial volumes and exclusive agreements; (2) Information sharing and extensive communication; (3) Willingness to change behavior in the buying organization; (3) Creating capabilities to respond timely to requests of suppliers. Similar to the work of Wong (2000), Leenders et al. (2006) provided a general discussion on their assumptions, without testing them empirically.

The next larger step in supplier satisfaction research appeared in 2009 by **Essig and Amann (2009)**. They constructed and validated a survey, distinguishing antecedents of supplier satisfaction into strategic, operative and accompanying levels. At the strategic level, the focus was on the intensity of the cooperation. On the operational level, the focus was on (1) the order process and (2) billing/delivery performance of the buyer. Finally, on the accompanying level, Essig and Amann (2009) focused on (1) communication, (2) conflict management and (3) a general perception of the relationship. Each of these six sub-dimensions had several sub-sub-factors, which made the model the most comprehensive one

until 2009. Despite their comprehensive questionnaire and the thoroughly validation, this questionnaire was never used in later studies.

In the following year, 2010, **Nyaga, Whipple, and Lynch (2010)** assessed how collaborative buyer-supplier activities influence satisfaction and performance. They showed that information sharing, joint relationship effort, and dedicated investments lead to increased levels of trust and commitment. Trust and commitment, in turn, had a positive impact on relationship satisfaction and performance. Additionally, they discovered that buyers focus significantly more on relationship outcomes, while suppliers tend to emphasize safeguarding transaction specific investments through increased information sharing and joint relationship efforts. In the same year, **Ghijsen, Semeijn, and Ernstson (2010)** studied how influencing strategies (i.e. Information exchange, recommendation, request, promise, threat and legal plea) and supplier development (i.e. human specific and capital-specific supplier development) have an impact on supplier satisfaction. They found that most direct influencing strategies tend to make the supplier dissatisfied (e.g. requests, threats and legalistic pleas), but have no effect on the commitment of suppliers. Yet promises increase commitment, but have no effects on satisfaction. Additionally, capital-specific supplier development increases supplier satisfaction. As a result, they recommended that indirect influencing strategies (information exchange and recommendation) and capital-specific supplier development efforts should be used by buyers to increase supplier satisfaction effectively.

In the year 2012, research in supplier satisfaction advanced again. Firstly, **Schiele et al. (2012a)** published a conceptual paper discussing the circle of preferred customership. As explained already earlier, a relationship is initialized through buyer attractiveness. During a relationship, supplier satisfaction can emerge when the buyer meets or exceeds the supplier's expectations. Then, the supplier has the choice to classify the customer as standard, preferred, or not suitable for further business. The main goal of a buyer should be to satisfy its suppliers and achieve preferred status of key suppliers. As a second study in 2012, **Meena and Sarmah (2012)** empirically tested a scale to measure supplier satisfaction. In their study, including 300 suppliers of a public sector firm, they found that the buyer's coordination, payment and purchasing policy, as well as the corporate image, had a positive impact on supplier satisfaction. Their suggestion was that firms should put more emphasis on these activities to raise the level of satisfaction among their suppliers. As a third work in 2012, **Schiele,**

Veldman, Hüttinger, and Pulles (2012b) published a book section identifying drivers of buyer attractiveness, supplier satisfaction and preferential treatment. They discussed that four factors are influencing supplier satisfaction: (1) Technical excellence, which includes facets such as supplier involvement, technical competence and response to supplier requests; (2) Supply value, consisting of substantial volumes, long-term time horizons, dedicated investments and profitability; (3) Mode of interaction, consisting of aspects like communication, trust, commitment, and quality of information; and (4) Operational excellence, comprising forecasting/ planning, support, and business competences. Yet these factors were not empirically tested.

Two years later, in 2014, related to Schiele et al.'s previous study in 2012 (i.e., the circle of preferred customership), **Hüttinger et al. (2014)** further explored the antecedents of customer attractiveness, supplier satisfaction and preferred customer status. Their assertion was that a total of seven antecedents (relational behavior, innovation potential, growth opportunity, reliability, operative excellence, involvement, support and access to contacts) have a positive impact on a supplier's satisfaction. Through a combination of the qualitative world-café method and a quantitative survey, including 171 suppliers in the automotive sector, they discovered that 'growth opportunity', 'reliability' (similar to Ellis et al. (2012) and Meena and Sarmah (2012)), as well as 'relational behavior' (similar to Ellis et al. (2012)) have a postive impact on the satisfaction of suppliers. Then, in the same year, **Hüttinger (2014)** published her dissertation with the title, "Preferential costomer treatment by suppliers - identifying benefits and antecedents". In her work she included several previously published articles (Hüttinger et al., 2014; Hüttinger et al., 2012; Schiele et al., 2011c), but also included one unpublished article testing social exchange theory. In this article, she assessed whether the expectations of the supplier and outcome/comparison levels influence the degree of supplier satisfaction. In support of the notion that supplier satisfatcion is shaped by matching or exceeding the supplier's expectation of the relationship, Hüttinger (2014) found that both expectations and outcomes explained most of the variance in supplier satisfaction. Hence, a part of the underlying mechanisms of supplier satisfaction have been identified: buyers need to exceed the expectations of suppliers to satisfy them. Yet this article has not been published in an academic journal until now (November 2017).

The most recent discoveries in supplier satisfaction research were published in 2016. Firstly, **Vos et al. (2016)** (chapter 2 of this dissertation) replicated and extended the previous

study of Hüttinger et al. (2014). This study added profitability to the seven antecendets of supplier satisfaction and tested the model for both indirect and direct materials. This study did not only replicate the results of Hüttinger et al. (2014) in the context of indirect material, but also proposed a new arrangement of antecedents in a new model, which is presented in chaper 2 of this dissertation. Secondly, **Pulles et al. (2016a)** tested the relationship between buyer attractiveness, supplier satisfaction, and preferential resource allocation. Their analysis of 91 suppliers of a German automotive company revealed that supplier satisfaction was positively influenced by buyer attractiveness and, that supplier satisfaction in turn, has a positive impact on preferential resource allocation. Supplier satisfaction significantly mediated between buyer attractiveness and supplier preferential resource allocation. This supported the notion that supplier satisfaction is a necessary condition to achieve preferred customer status and ultimately preferential treatment.

Next to the aforementioned studies, which put supplier satisfaction at the focal point of analysis, recent studies in different research areas mention the importance of supplier satisfaction for successful collaborations, or recognized its importance in creating organizational performance matrices (Brink; Jennings, Narayanan, Nepal, & Clark, 2017; Kumar & Routroy, 2017; Kumar & Routroy, 2016; Luu, 2017; Mishra & Sharma, 2016; Setu, Hossain, Hossain, & Sarkar, 2016). The notion of having satisfied suppliers for achieving competitive advantages is gaining momentum even outside dedicated supplier satisfaction research.

When synthesizing the aforementioned studies, and looking at the history of supplier satisfaction research, over the course of its research circle, the study of supplier satisfaction slowly went through a metamorphosis. (I) The initial assessments of supplier satisfaction in a broader sense of successful supply chain collaboration and improved buyer-supplier atmosphere (Forker & Stannack, 2000; Whipple et al., 2002; Wong, 2000); (II) Then, scholars increasingly put emphasis on grounded theory approaches and dedicated conceptual papers (Maunu, 2003). (III) In a next step, empirical papers emerged assessing antecedents of supplier satisfaction, including matrices, frameworks and explanatory models (Benton & Maloni, 2005; Essig & Amann, 2009; Meena & Sarmah, 2012; Nyaga et al., 2010). (IV) Then, the fourth wave, embedded supplier satisfaction in the broader context of gaining access to valuable resources (Hüttinger et al., 2014; Hüttinger et al., 2012), thereby

increasingly focusing on the consequences of supplier satisfaction. (V) Ultimately, through a focus on the broader context of supplier satisfaction, supplier satisfaction was finally linked to the study of preferred customer status (Hüttinger, 2014; Pulles et al., 2016a; Vos et al., 2016). Before that, the study of preferred customer status emerged relatively independent from the discussions surrounding supplier satisfaction.

Hence, to gather a clear view on both concepts and the interrelations between supplier satisfaction and preferred customer status research, the next section is dedicated to the history and state of the art of preferred customer research.

1.2.3. *H*istory & State of the Art in Preferred Customer Research

Already in the 1970s, as a result of a PhD dissertation, **Brokaw and Davisson (1976)** discovered that many suppliers tend to rank their customers in buyer lists on basis of certain factors (Brokaw & Davisson, 1978). They found that the supplier's ranking of buyers had a direct influence on the benefits the buyers received from a relationship. However, despite observing that there is a distinction between standard and preferred customers, including different supplier behavior towards them, the notion of preferred status did not gain momentum at that time.

More than a decade later, both **Leenders and Blenkhorn (1988)** and **Spekman (1988)** simultaneously published related research to Brokaw and Davisson (1976) and supposed that actively striving for preferred status can secure competitive advantages for a buying firm. As a result, they advocated in both of their conceptual papers that buyers should try to become more attractive towards their suppliers and engage in what they called "reverse marketing".

Three years later, in 1991, two more papers were dedicated to preferred customer status. On the one hand, **Williamson (1991)** focused on the possibility to use long-term contracting to assure a preferred customer status at suppliers. Despite the benefits of such an approach, he concluded that "such a contract would quickly become unmanageable" (Williamson, 1991, p. 80). Consequently, he advised that buying companies need to actively try to become more attractive to suppliers by, for example, concentrating the bulk of purchases with one primary supplier, creating a track record of loyalty, or paying higher prices. On the other hand, **Blenkhorn and Banting (1991)** took a closer look on the outcomes of being a preferred customer. In their case study of two organizations, they proposed new purchaser profiles,

which are distinguished between traditional purchasers and reverse marketers. They concluded that reverse marketers need to be proactive, creative, cooperative and long-term oriented, as opposed to being reactive, routine, adversarial ("them vs. us"), and short-term oriented like traditional purchasers are.

A year later, in 1992, in a first large-scale quantitative assessment of the topic, **Moody (1992)** assessed characteristics that suppliers use to describe their best customers. He found that (1) early involvement, (2) mutual trust, (3) involvement in product design, (4) quality initiative, (5) profitability, (6) schedule sharing, response to cost reduction ideas, (7) communication & feedback, (8) crisis management/response, and (9) commitment to the partnership are all characteristics which suppliers use to describe their best buyers. Hence, he found that suppliers appreciate "someone who pays bills on time, tells you what to expect for new products, and even sets a place for you at the table"(Moody, 1992, p. 53).

A decade later, **Ulaga (2003)** conducted in-depth interviews with purchasing managers in manufacturer–supplier relationships, located in the Midwest of the United States. They focused on the benefits of preferred customer status and discovered that preferred customers benefit mostly from shorter lead times, faster time to market and higher product quality**.**

Then, almost 5 years later, in 2007 and 2008, two more studies on preferred status got published. Firstly, in a conference paper, **Bew (2007)** quantified for the first time the benefits of preferred status in terms of savings. He estimated the savings potential at 2% to 4% and identified that strategic fit, cost to service a customer, predictability in decision processes, and collaboration have an influence on receiving and keeping preferred customer status. Secondly, **Steinle and Schiele (2008)** published a paper stressing the importance of cluster membership for forming preferred customer relationships. Hence, the geographical distance and cluster proximity of suppliers were identified as major driving forces in creating strong ties between buyers and suppliers.

Two years later, in 2010, **Christiansen and Maltz (2010)** focused on the benefits of a preferred status. Similar to Ulaga (2003), they performed case studies. Through semi-structured interviews with eight Danish companies from various industries, they found that a preferred status includes easier access to supplier knowledge, information exchange, improvement of production process, and higher predictability, leading to the possibility to reduce inventory for the buyer and save money.

Two years later, in 2012, preferred customer research advanced further. On the one hand, five conceptual papers were published. Firstly, **Schiele (2012)** focused on the possibility to perform a preferred customer analysis of suppliers. Similar to the popular Kraljic matrix in supply management (Kraljic, 1983), he proposed a 2x2 preferred customer matrix including the axes "competiveness of supplier" and "buyer's status with suppliers". Those suppliers which were competitive and dedicated a high status to the buyer were identified as *kings*. Those dedicating a low status, but performing very well were identified as *black knights* and those scoring on both axes low were identified as *quacksalvers*. All remaining suppliers were identified as *squires*. Depending on these classifications, buyers were advised to follow different supplier development strategies, for example bonding for kings and increased relational efforts for black knights. In the same year, **Schiele et al. (2012a)** and **Hüttinger et al. (2012)** introduced the circle of preferred customership and provided a comprehensive review of the drivers of supplier satisfaction and preferred customer status. They identified that both supplier satisfaction and preferred customer status are inherently linked to each other. Additionally, they argued for four major categories of drivers of preferred status: economic (e.g. profitability, purchasing value, business opportunities), relational (e.g. loyalty satisfaction and commitment), instrumental interactional (e.g. involvement, communication and predictability of decisions) and strategic (e.g. strategic fit, proximity and cluster membership). In another conceptual article in 2012, **Nollet, Rebolledo, and Popel (2012)** published about the nature of preferred customer status. They distinguished four steps of relationship building, which are normally passed in a relationship leading to preferred customer status. In their model, similar to the one of Schiele et al. (2012a), they also made a clear conceptual difference between attraction, relational performance/satisfaction and preferred customer status. On the other hand, next to the conceptual papers of 2012, two empirical papers were published. The studies investigated not only how a preferred status can be achieved, but also how it can be secured. Firstly, **Baxter (2012b)** assessed the role of buyer attractiveness in acquiring preferred status. He proposed that financial attractiveness of the relationship, the supplier's satisfaction and commitment influence preferred customer status. His findings indicated that financial attractiveness drives preferred customer treatment mainly through the creation of supplier commitment and supplier satisfaction. Secondly, **Ellis et al. (2012)** assessed antecedents and distributed a questionnaire among 233 sales personnel of production good suppliers in the U.S. . They found that two main factors influence the

supplier's choice of a preferred customer. (1) The buyer's attitude towards supplier involvement, which includes aligning design specifications and cooperative new product development. (2) Relational reliability, which is defined as acting predictable and consistent in the interaction with the relationship. Surprisingly, contradictory to Baxter (2012b), they did not find that preferred status can be "bought" through leveraging a high share of sales in the relationship.

Two years later, in 2014, **Hüttinger et al. (2014)** used a mixed methods approach to study the antecedents of preferred customer status. Through applying the qualitative world café method with purchasers of an automotive manufacturer and a follow-up quantitative survey among suppliers in the automotive sector, they identified that growth opportunity, operative excellence, reliability and relational behavior have a positive impact on becoming a preferred customer. This study was one of the first quantitative papers to combine the concepts of preferred customer status and supplier satisfaction in one study. In the same year, **Hüttinger (2014)** published her dissertation on the antecedents and benefits of preferred customer status. She also presented an unpublished article testing social exchange theory which looked at the effects of comparison levels that suppliers use to determine preferred customers. Surprisingly, she found that the alternatives in customer market do not influence whether a buyer is awarded preferred status, but that this decision is mainly driven by relationship-intrinsic outcomes, such as supplier satisfaction, supplier trust and commitment. Yet this article is not published yet.

Then, in 2016, **Pulles, Veldman, and Schiele (2016b)** showed that preferential resource allocation can be achieved by a buyer's selection and relational capabilities. In turn, the preferential resource allocation showed to be directly linked to competitive advantages. These results were stable among both manufacturing and service suppliers. In a second study, **Pulles et al. (2016a)** showed that a buyer's attractiveness is not directly linked to preferential treatment by suppliers, but is mediated by the creation of supplier satisfaction in a relationship. Simultaneously with **Vos et al. (2016)**, which is presented in this dissertation, Pulles et al. (2016a) showed that the assumption that supplier satisfaction is a necessary condition for achieving preferred status (Hüttinger et al., 2012; Schiele et al., 2012a) is empirically supported.

Summarized, when synthesizing the aforementioned points, we can comprehend the following findings. Firstly, most research grounds its work either in purchasing and supply management or marketing/supply chain literature (Schiele, Ellis, Eßig, Henke, & Kull, 2015). On the one hand, purchasing literature focusses mostly on general relationship management strategies, performance outcomes and the creation of a good relational atmosphere. On the other hand, the marketing and supply chain literature mostly emphasizes business- and communication-related factors, such as modes of interaction and operative excellence as drivers of a preferred status. In 2014, Hüttinger (2014) filled this gap by combining purchasing and marketing perspectives in her dissertation.

Secondly, preferred customer research evolved similar to supplier satisfaction research. It developed from purely conceptual assessments of the topic, followed by case- and qualitative studies, to large scale empirical research.

Thirdly, during recent years, a shift away from detailed operational antecedents and consequences of preferred status towards more theory driven influencing factors, such as buyer attractiveness and supplier satisfaction, are included in preferred customer research. Yet the exact interplay of supplier satisfaction in combination with other theoretical contingencies in the field of purchasing and supply management, such as material types, trust, dependency and power did not receive much attention. Accordingly, this dissertation will take a contingency perspective on supplier satisfaction and preferred customer research, including important factors such as material types, dependency, power and other relational constructs (e.g. trust).

The next section will further outline the research motivation and the specific focus of this dissertation.

1.3. Motivation, Research Problem & Research Objectives

As explained in the beginning of the introduction, changing competitive environments urge companies to become more flexible. The traditional in-house value creation strategies of firms often need to be reassessed and firms increasingly focus on cooperative buyer–supplier relationships as a source of value creation and competitive advantage (Choi, Wu, Ellram, & Koka, 2002; Krause & Ellram, 2014). With the shift towards open innovation and more collaborative supplier-buyer relationships (Chesbrough, 2006; Huizingh, 2011; West & Bogers, 2014), companies also become more dependent on each other (Terpend,

Tyler, Krause, & Handfield, 2008). Here, scholars argued that dependencies in channel relationships are directly related to risks of being exploited by opportunistic behavior of others (Pfeffer & Salancik, 2003).

A theoretical explanation for this phenomenon comes from the resource dependency theory (RDT). The RDT posits that organizations are open systems which are dependent on contingencies in the external environment (Pfeffer & Salancik, 1978). However, the importance of considering contingencies in supply management literature, these notions rarely have been addressed in supplier satisfaction and preferred customer research, apparent in the previous review section. At the bottom line, behaviors are frequently constraint by situational contingencies and these contingencies need to be taken into account when studying inter-firm relationships (Nienhüser, 2008; Pfeffer & Salancik, 2003). In other words, "to understand the behavior of an organization you must understand the context of that behavior—that is, the ecology of the organization."(Pfeffer & Salancik, 1978, p. 1). As such, when analyzing supplier satisfaction and preferred customer status it is important to theorize about contingencies in organizational environments and the resulting behavior and consequences (Kembro & Selviaridis, 2015). This leads us to the overarching research question of this dissertation:

Overarching Research Question:

How are contingency factors affecting supplier satisfaction and preferred customer status?

This dissertation contributes to literature in three ways. Firstly, this dissertation is contributing to recent discussions on the benefits of supplier satisfaction and the need for buyers to attain preferential resource allocation from suppliers. Although several mechanism have been identified that can influence these constructs (Baxter, 2012a; Ellis et al., 2012; Pulles et al., 2016a; Schiele et al., 2012a; Vos et al., 2016), little is known about the role of the aforementioned contingency factors, such product type, dependencies, and power in buyer-supplier dyads. We examine these relationships and analyze how they link to a supplier satisfaction and preferred customer status.

Secondly, this dissertation advances our understanding of the relational dynamics in buyer-supplier relationships. Early industrial marketing research compared supplier-buyer

relationships to the metaphor of causal dating versus marriage (Dwyer, Schurr, & Oh, 1987; Levitt, 1983). In line with this analogy, scholars argued that only when both partners see the necessity to manage their relationship actively and expand their responsibility for each other, resource uncertainties, exchange inefficiencies and dissatisfaction can be reduced (Dwyer et al., 1987; Spekman, Strauss, & Belk Smith, 1985). A development from casual dating to marriage without corresponding behaviors of both partners is highly unlikely (Dwyer et al., 1987; Spekman et al., 1985). This dissertation contributes to literature by assessing how in particular factors such mutual trust, just like the underlying mechanisms in a marriage, have an influence on a supplier's satisfaction and the tendency to award preferred status.

Finally, this dissertation adds novel methods and a dyadic perspective to supplier satisfaction and preferred customer research. These methods enable an assessment of predictive abilities of models and discover curvilinear and asymmetric relationships, which might not have been discovered otherwise. On the one hand, concerning the contingencies dependency and power, Emerson (1962) noted that, "power is a property of the social relation; it is not an attribute of the actor" (Emerson, 1962, p. 32). This implies that, to truly assess the impact of such factors as dependence and power on buyer-supplier relationships, it is necessary to examine them from both sides of a dyad. Yet the majority of studies in supply management research focused on either side, not both at once (Krause & Ellram, 2014). Consequently, the true impact of such contingencies like dependency and power, as originally defined by Emerson, is insufficiently examined. This dissertation contributes to current supply research by adding dyadic dependence perspectives on channel relationships. On the other hand, novel statistical methods were used, which are mostly new to purchasing and supply management research. These methods include PLS multi-group comparisons, PLS predictions, PLS segmentation methods, and polynomial regressions with surface response modelling. They give insights in the data and the underlying relationships, which have not been possible before with so much detail. In this way, this dissertation aims at surfacing the complex effects of the various contingency factors, assessing curvilinear and asymmetric effects. This helps to understand the underlying mechanisms of these factors more precisely than before and increases the practical value of the findings. At the same time, it serves as an example for other scholars, who might want to use these methods in future. The specific research objectives of this dissertation are explained in the next section.

1.3.1. Research objective 1: Assessing the contingency effects of product type (direct versus indirect materials)

Firstly, it is assessed whether the product type of materials has an influence on supplier satisfaction and preferred customer status. The most common distinction of product types in supply management is made between direct and indirect materials (Chopra & Meindl, 2007). A typical manufacturing firm spends around 60% of purchasing costs on direct materials and 40% on indirect materials (de Boer, Holmen, & Pop-Sitar, 2003; Neef, 2001). Direct materials are defined as products that directly contribute to the company's production process and the final product. This includes raw materials and components of the final product. In contrast, indirect materials are not directly linked to the production process, but enable the business to run. Examples of indirect materials include office supplies or telecommunication equipment (Chopra & Meindl, 2007).

The distinction between these product types is often deemed necessary because they need different management. Indirect materials are often less predictable, have lower volumes, but have higher transaction frequencies (Neef, 2001). Hence, the costs relative to the value of each transaction are usually higher for indirect than for direct procurement (Chopra & Meindl, 2007). It also includes more non-standardized items and a wider range of products and suppliers (de Boer et al., 2003; Nandeesh, Mylvaganan, & Siddappa, 2015). Also, from a relational point of view, buyers often have the tendency to interact less with indirect material suppliers, because their products are often viewed as less strategically relevant for the buying firm (Ingram, LaForge, Avila, Schwepker, & Williams, 2007; Mosgaard, Riisgaard, & Huulgaard, 2013).

Despite the considerable share of indirect materials in the purchasing turnover of a typical manufacturing firm and the supposed difference in management style, research addressing indirect materials is scarce. Research in this area mostly focuses on automatizing indirect procurement transactions (Batenburg, 2007; Caniato, Golini, Luzzini, & Ronchi, 2010; Lee, Pak, & Lee, 2004).

To uncover the contingency effects of indirect and direct materials on supplier satisfaction and preferred customer status, we aim at explicitly investigating whether these characteristics have an effect. This leads to the first research objective:

Research Objective 1: To assess whether and how product types (indirect and direct materials) impact supplier satisfaction and preferred customer status.

The next section continues with a discussion of dependency and power as relevant contingency factors.

1.3.2. Research objective 2: Assessing the contingency effects of dependency and power

As explained before, both dependence and power are commonly described as being crucial for understanding buyer-supplier relationships (Blois, 2010; Caniëls & Gelderman, 2007). In particular dependence literature suggests that buyer-seller relationships characterized by mutual dependence are superior to other buyer-supplier relationships (Da Villa & Panizzolo, 1996; Hausman & Johnston, 2010; Leonidou, Talias, & Leonidou, 2008). In contrast, relationships with asymmetric dependencies are generally viewed to be less effective because the dominant partner may be tempted to exploit its position (Blois, 2010; Casciaro & Piskorski, 2005; Gulati & Sytch, 2007; Ireland & Webb, 2007).

Although contemporary research and discussions stemming from the resource dependency theory suggest that dependence asymmetries lead to exploitation and inefficient buyer-supplier relationships, asymmetric dependencies might also foster collaboration. This argument relates to innovation literature, where dependence is viewed as an essential prerequisite for collaboration and new product innovation (Levine & Prietula, 2013). In this vein, scholars argue that asymmetric dependence can create a sense of solidarity between buyers and suppliers (Bowersox & Closs, 1996). Conversely, abusing a dominant position may have a negative impact on the value-generating performance of the relationship (Gulati & Sytch, 2007; Nyaga et al., 2010). Therefore, a dominant party could also use its position to benefit the relationship, leading to increased satisfaction. Additionally, asymmetric dependence also implies that the weaker counterpart receives high absolute value from the relationship. For instance, even though Wal-Mart sometimes uses its dependence advantages to squeezes its suppliers, compared to smaller retailers, Wal-Mart offers suppliers better absolute growth opportunities in terms of market shares (Bloom & Perry, 2001). Based on these contradictions between theory and literature, this dissertation elaborates on the effects of dependency dynamics influencing supplier satisfaction and preferred customer status.

Such an investigation is still missing, despite the apparent importance of dependence in general supply management literature.

Many researchers in the past used the two notions dependency and power interchangeably. Most notably the often-cited Emerson (1962) confused the two concepts, who argued that the dependence of one party is equal to the power of the other party. As discussed sporadically in literature, there is a need to conceptually distinguish the two concepts, since they follow different logics (Rehme, Nordigården, Ellström, & Chicksand, 2016). Whereas dependency is commonly defined as control over valuable resources, power is usually referred to exerting influence over others or overcoming resistance (Sturm & Antonakis, 2015). Accordingly, dependence is commonly defined as a structural attribute of a relationship, whereas power implies a conscious action of one party. Therefore, assessing the effects of both power and dependence as different constructs is often recommended by power scholars (Rehme et al., 2016; Sturm & Antonakis, 2015). Similar to the research concerning dependency, the study of power has not yet reached elaborated scrutiny in supplier satisfaction and preferred customer literature. This dissertation aims to shed light on the effects of both buyer-supplier dependence as well as the usage of power on supplier satisfaction and preferred customer status. The question arising is whether supplier satisfaction and preferred customer status are actually contingent or maybe even facilitated by dependencies and power usage in a relationship. Based on these discussions, the second research objective is:

Research objective 2: To assess whether and how dependency and power are contingency factors impacting supplier satisfaction and preferred customer status

The next section describes the third focus of this dissertation: aiming at the contingency effects of trust on perception differences of preferred customer status between buyers and suppliers.

1.3.3. Research Objective 3: Assessing the effects of relational contingencies on perception differences of preferred customer status

Whereas traditional economic theories begin 1900 postulated managers to be purely rational in their perceptions and decisions, Simon (1955) was one of the first scholars

doubting the idea of the "rational business man". However, despite this very early discussion on the accuracy of perceptions of managers, only few researchers studied these differences. A notable exception is the study of Villena, Revilla, and Choi (2011), who discussed a "dark side" of buyer-supplier relationships, as they argued that parties might lose accuracy if too much relational capital is involved (Villena et al., 2011). Subsequent research showed that supply chain partners can have different perceptions of attributes such as communication, demand and technology uncertainty, as well as dependence and performance (Oosterhuis, Molleman, & van der Vaart, 2013; Villena, Choi, & Revilla, 2016). Hence, buyers and suppliers can have different interpretations of relational attributes and outcomes (Chen, Su, & Ro, 2016b).

It is unclear which psychological mechanisms are underlying perception differences between organizations. As noted, perception differences can have consequences for the interaction between buyer and supplier. For example, a buyer overestimating its status might run the risk of paying higher prices or not receiving the best services from its suppliers. Reversely, an underestimation of preferred status might hinder the buyer to engage in more interaction with the supplier. Opportunities for collaboration include product innovations and process improvement, which could be overlooked.

Some scholars like Villena et al. (2011) already attempted initial explanations of this phenomenon, but factors influencing perception differences have not been hypothesized or tested empirically until now. With this lack of research and potential severe negative consequences for buyer-supplier relationships, this dissertation aims at assessing whether perception differences of preferred customer status exist and, if the answer is yes, how perceptions are contingent on contingency factors.

Research objective 3: To assess whether and how buyer-supplier perceptions of preferred customer status differ and on which factors they are contingent.

1.4. Methodological approach

This dissertation is based on quantitative assessments of the contingency factors affecting supplier satisfaction and preferred costumer status. Previous research already applied a plentitude of case studies and qualitative assessments, which are very suitable for initial in-

depth assessments of new topics, but are limited in their generalizability to the broader population (Yin, 2008). Because of research progress, qualitative assessments of supplier satisfaction declined and quantitative assessments increased in recent years. Yet quantitative assessments are still in an infancy stage (Hüttinger, 2014). This dissertation continues the research agenda of Hüttinger (2014), who assessed supplier satisfaction and preferred customer status in a more quantitative approach, particularly focused on meaningful theoretical and practical implications of research. In this dissertation, three novel methods are introduced to supplier satisfaction and preferred customer research.

The first novel method chosen to approach research objective 1 and compare differences between indirect and direct procurement is partial least squares (PLS) multi-group comparison. The benefit of this method lies in assessing whether the paths between constructs are significantly different for different data groupings (Sarstedt, Henseler, & Ringle, 2011). Hence, PLS multi-group analysis can not only discover whether the same factors significantly influence supplier satisfaction and preferred customer status, but also assess whether the paths are significantly different from each other, even when formative constructs are included in the model (Becker, Klein, & Wetzels, 2012; Hair, Ringle, & Sarstedt, 2011; Rigdon, 2012).

Secondly, a new PLS path modelling procedure is used for research objective 1 to create cross-validated point predictions (Shmueli, Ray, Velasquez Estrada, & Chatla, 2015, this issue). Prediction focused PLS path modelling goes beyond covariance based solutions and makes point predictions of construct items. This enables researchers to discover asymmetric relationships and assess the predictive abilities of the research model (Shmueli et al., 2015, this issue; Woodside, 2013). This dissertation is the first scientific work to use this method and even introduces a quality measure, namely Theil's U (Bliemel, 1973; Theil, 1966) as an estimation to assess the degree of satisfactory predictive abilities of the model.

Finally, the method used for answering research objectives 2 and 3 are polynomial regressions with surface analyses (Edwards & Parry, 1993). This analysis has been used in a variety of fields, such as marketing (Kim & Hsieh, 2003), innovation management (Lee, Woo, & Joshi, 2016), organizational behavior (Hecht & Allen, 2005; Kristof, 1996), information systems (Venkatesh & Goyal, 2010) and personnel psychology research (Shaw

& Gupta, 2004; Venkatesh & Goyal, 2010), but rarely in supply management. A polynomial regression can help to understand the impact of a composite constructs on a dependent variable more precisely than traditional techniques (Lee et al., 2016, p. 6). Its main contribution lies in testing for higher-order (i.e. curvilinear) effects without losing statistical information (Venkatesh & Goyal, 2010). When combined with response surface methodology, polynomial regressions have the ability to go beyond regular regression or structural equation models in assessing and visualizing results, in particular when interactions of variables are studied (Edwards, 2001; Lee et al., 2016; Venkatesh & Goyal, 2010).

After describing the research methods, the next section gives an overview of the outline of this dissertation.

1.5. Outline of the dissertation

The core of this dissertation consists of articles that have been published in academic peer-reviewed journals or presented at conferences. Each of the following chapters presents a paper, which helps to answer the research question and achieve the research objectives.

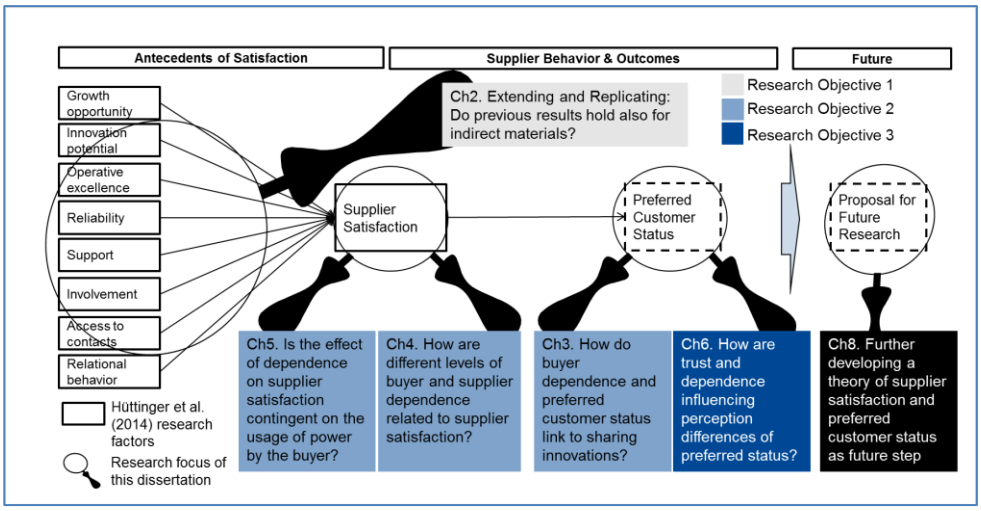
Chapter 2 focuses on the *first research objective*: To assess whether and how different product types (indirect and direct materials) are contingency factors affecting supplier satisfaction and preferred customer status. To achieve this, a combination of replicating and extending prior research was chosen. More specifically, the dissertation replicates the model of Hüttinger et al. (2014) and extents it with new factors that have not been included in the previous study. Then, it is assessed whether the effects of antecedents of supplier satisfaction and preferred customer status are different for direct and indirect materials. By applying Partial Least Squares Multi-Group Analyses (PLS-MGA), it directly compared whether path coefficients between variables are significant different when it came to direct and indirect materials. Additionally, cross validated out-of-sample point predictions were used to assess the validity of the findings among different combinations of the sample. By these asymmetric relationships among variables and predictive abilities of the model are assessed.

Chapters 3, 4 and 5 address *research objective 2*, assessing whether and how dependency and power are contingencies to supplier satisfaction and preferred customer status. **Chapter 3** assesses how preferred customer status and a buyer's dependency influence

a supplier's contribution to innovations. The assumption is that preferred customer status can mitigate the potential negative consequences of buyer dependency on a supplier's contribution to innovations. **Chapter 4** builds on the findings of chapter 3 and proposes that dependency could also have positive consequences for buyer-supplier relationships. Contrary to traditional dependence literature, it is tested whether even extreme asymmetries in buyer-supplier relationships can be beneficial to supplier satisfaction. To test this, dyadic responses from both buyers and suppliers were gathered. Combined with using polynomial regressions with surface analysis, we are interested in curvilinear effects of both buyer and supplier dependence on supplier satisfaction. Then, **chapter 5** takes a closer look at the effects of the buyer's usage of power on supplier satisfaction. It analyzes how the most common forms of power (i.e., coercive and reward power) influence conflict in buyer-supplier relationships and how this influences supplier satisfaction. Additionally, the concept of a buyer's status in an industry is a potential factor mitigating negative effects of using power against suppliers.

Chapter 6 links to *research objective 3*, assessing whether buyer-supplier perceptions differ and on which factors they are contingent. This study assesses how the buyer's perception of preferred status differs from the supplier's actual behavior of awarding it to the buyer. It is expected that trust and dependency have a major influence on perception differences. In particular, recent research argued that trust is supposed to have a "dark side", meaning that too much trust can lead to perception differences. To test these assumptions, dyadic responses were gathered and polynomial regressions with response surface analyses were used to discover potential curvilinear relationships.

Figure 2 - Outline of the dissertation, showing the included papers



Finally, **chapters 7** discusses the research findings of the dissertation in relation to the three research objectives and proposes new avenues for further research. It emphasizes that a comprehensive theory of supplier satisfaction and preferred customer status is needed as the next major step in supplier satisfaction and preferred customer status research. At the end of Chapter 7, the dissertation concludes with a discussion of the future developments in the fields of supplier satisfaction and preferred customer status regarding recent developments, such as Industry 4.0 and smart manufacturing. Figure 2 shows a visualization of the overall thesis outline, the research objective and their relation to previous research of Hüttinger (2014), which forms the starting point of this research.

The next section continues with the assessment of the contingency effects of direct and indirect procurement on supplier satisfaction.

Chapter 2. Supplier Satisfaction: Explanation and Out-of-Sample Prediction for Direct and Indirect Procurement

Chapter 2. Supplier Satisfaction: Explanation and Out-of-Sample Prediction for Direct and Indirect Procurement

Abstract

Many firms not only compete for customers, but increasingly compete for suppliers. Supplier satisfaction is a necessary condition for gaining and maintaining access to capable suppliers and their resources in this new competitive environment. This research replicates and extends the previous empirical research on supplier satisfaction. Additionally, this study tests an extended model for direct and indirect procurement, which assesses antecedents as well as consequences of supplier satisfaction. The findings indicate that next to growth opportunities and reliability, profitability of the relationship has a major impact on supplier satisfaction for both direct and indirect procurement. The results also show that supplier satisfaction has a positive impact on awarding the buyer preferred status, ultimately leading to preferential treatment. An additional exploratory analysis suggests the possibility for a hierarchical model consisting of first- and second-tier antecedents of satisfaction, which are particularly useful in direct procurement. Ultimately, the study provides a guide for purchasers to identify the dimensions of satisfaction to manage for satisfactory buyer-supplier relationships, namely perceived growth opportunity, relational behavior, operative excellence and profitability. The application of the new procedure for creating cross-validated, out-of-sample point predictions reinforces the practical relevance of these findings, which indicates a satisfactory prediction of cases outside the modeling sample.

Keywords: Supplier Satisfaction, Preferred Customer, Resource Allocation, Cross-Validation, Prediction, Replication.

2.1. Introduction

In contrast to the classical view of marketing, which assumes a competition for customers, only, research in supplier satisfaction and the preferred customer concept takes the viewpoint of customers competing for capable suppliers. This so-called "reverse marketing" (Leenders & Blenkhorn, 1988, p. 2) recently gains increased attention among supply management scholars (Baxter, 2012b). Two main reasons for this phenomenon exist (Schiele et al., 2012a). Firstly, companies, especially in mature markets, reduce their supply base to receive benefits, such as lower transaction costs and larger economies of scale. However, this behavior causes supplier reduction or even supplier scarcity, which can lead to oligopolistic supply market structures (Lavie, 2007; Wagner & Bode, 2011). Secondly, due to increased outsourcing of non-core activities and open innovation initiatives, buying firms are increasingly dependent on their suppliers (Rahmoun & Debabi, 2012; Schiele, 2012).

Therefore, scholars argue that buyers should view the supplier as a key source of competitive advantage and innovation and try to achieve preferred customer status (Schiele et al., 2011b). However, suppliers have the choice to assign buyers a regular or preferred status (Schiele et al., 2012a; Steinle & Schiele, 2008). Buying firms desire to receive preferential treatment over other buyers (Hüttinger et al., 2014). However, the question that emerges in this context is how to become a preferred customer and receive preferential treatment. A necessary condition for achieving preferred customer status is supplier satisfaction (Hüttinger et al., 2012).

Supplier satisfaction is the buyer's ability to live up to the expectations of the supplier (Schiele et al., 2012a), and the relationship between the buyer and supplier influences this satisfaction (Forker & Stannack, 2000). Satisfaction directly links to the quality of the relationship and to value creation. Christiansen and Maltz (2010) reason that being an "interesting" customer to suppliers assures their attention and loyalty. Accordingly, the buyers who can satisfy the suppliers receive the best resources and ultimately a preferred status over other buyers (Hüttinger et al., 2012).

Still, despite such benefits of supplier satisfaction, research in this field is in its infancy. Just since the last decade authors identified critical antecedents and consequences of supplier

satisfaction (Hüttinger et al., 2012). Here, researchers increasingly focus on specific relational factors that constitute supplier satisfaction (Essig & Amann, 2009; Ghijsen, Semeijn, & Ernstson, 2010). Most recently, Hüttinger et al. (2014) empirically tested a new model including eight relational antecedents of supplier satisfaction. They are the first researchers to show statistically through partial least squares (PLS) analyses that three significant key antecedents exist in supplier satisfaction: growth opportunity, reliability and relational behavior of the buyer. Despite this advancement, in their study they acknowledge that "the results can hardly be generalized to all industry settings. in other industries, other factors or weights could emerge" (Hüttinger et al., 2014, p. 713).

Therefore, building on research of Hüttinger et al. (2014), the aims of this research are: (1) To replicate their study in a new context (i.e., indirect procurement); (2) To further extend their analyses by (a) assessing the importance of supplier satisfaction for the buying firm to receive preferred customer status and ultimately preferential treatment and (b) adding an unexplored new antecedent (i.e., profitability) to increase the model's explanatory power; (3) Finally, to apply the most up-to-date PLS analyses methods (i.e., PLS-MGA & PLSpredict) to make an evaluation of both the explanatory as well as the predictive performance of the model in the different contexts. After establishing the research background and research aims, the next section will outline the hypotheses of this study.

2.2. Hypotheses

2.2.1. Replication: From Direct to Indirect Procurement

A main distinction of products in supply management occurs between direct procurement (direct materials) and indirect procurement (indirect materials) (Chopra & Meindl, 2007). On the one side, direct procurement includes all purchases that are necessary for a company's production process. These are, for example, raw materials or components of the final product. On the other side, indirect procurement includes everything that a company needs to ensure everyday business, but which is not directly related to the production process. This classification includes services and products, such as cleaning services, office supplies and telecommunication equipment (Chopra & Meindl, 2007).

In a typical firm the expenditure for direct materials accounts for about 60% of the total purchasing expenditure (indirect procurement ~40%), whereas direct materials only account for 20%-40% of all purchasing transactions (de Boer et al., 2003; Neef, 2001). Additionally, predictability and volumes are normally higher in direct procurement and, therefore, require far fewer purchasing transactions than indirect material procurement (Neef, 2001). Correspondingly, the number of transactions and the processing costs relative to the value of each transaction are higher for indirect than for direct procurement (Chopra & Meindl, 2007). Also, indirect procurement usually consists of more non-standardized items purchased in small orders, a larger number of possible suppliers and a wide range of goods and services (de Boer et al., 2003; Nandeesh et al., 2015). Additionally, buyers have a tendency to communicate less with indirect-material providers, as companies often distribute these purchases and routines and habits frequently dictate purchasing decisions (Ingram et al., 2007; Mosgaard et al., 2013).

However, despite the substantial share of indirect procurement in the total purchasing expenditures of companies and its distinctiveness to direct procurement, when looking at research efforts, the emphasis of supply management research has traditionally been on direct procurement, since direct procurement is strategically more relevant for firms (Cousins, 1999; Gebauer & Segev, 2001; Kim & Shunk, 2004; Trent & Monczka, 1998). The few studies assessing indirect procurement mainly focus on automatizing indirect procurement transactions through (e-)systems (Batenburg, 2007; Caniato et al., 2010; Lee et al., 2004) and not on assessing how to manage buyer-supplier relationships. Correspondingly, the consequences of supplier satisfaction in indirect procurement are uncertain, as is the influence of possible antecedents. This research aims to close this gap. For this purpose, this paper replicates and extends the research of Hüttinger et al. (2014), which has only been applied to direct procurement, in the context of indirect procurement to assess the stability of their findings in this new context. The following paragraphs explain the background of their research to form a hypothesis for replication.

The emphasis of Hüttinger et al.'s (2014) research is on the relational antecedents of supplier satisfaction. Their results support theoretical assumptions that the relational behavior and atmosphere in buyer-supplier relationships are important antecedents to supplier

satisfaction (Benton & Maloni, 2005; Forker & Stannack, 2000; Hüttinger et al., 2014; Nyaga et al., 2010). More specifically, they use a mixed-methods approach, including focus group interviews and a survey, to identify and test their new model. They further examine seven relational antecedents of supplier satisfaction, which are the buyer's (1) relational behavior, (2) innovation potential, (3) growth opportunity, (4) reliability, (4) operative excellence, (5) involvement, (6) support and (7) access to contacts. After thoroughly assessing the PLS-based analyses, three significant antecedents emerged: growth opportunity, reliability and relational behavior. This study expects that these findings will be the same in the new context of indirect procurement. When replicating the full model with all seven antecedents in both direct and indirect procurement, this study expects that the perceived growth opportunity, reliability and relational behavior positively influence supplier satisfaction, whereas perceived innovation potential, operative excellence, involvement, support and access to contacts are not significant. This reasoning leads to the first hypothesis.

Hypothesis 1: Growth opportunity (H1a), reliability (H1b) and relational behavior (H1c) have a positive impact on supplier satisfaction.

2.2.2. Extension: Profitability, Preferred Customer Status and Preferential Treatment

In addition to replicating, this study also elaborates on the research of Hüttinger et al. (2014). As stated previously, the main emphasis of their research is on the relational antecedents of supplier satisfaction. Still, several researchers studying channel relationships stress the difference between economic and social perspectives in satisfaction research. They argue that satisfaction constitutes both economic and non-economic aspects (Geyskens, Steenkamp, & Kumar, 1999; Kauser & Shaw, 2004; Nyaga et al., 2010). Scholars like Ruekert and Churchill Jr (1984) even define satisfaction in channel relationships mainly on the basis of a feeling of reward and profitability. Next to relational factors, such factors as profitability and sales growth influence the satisfaction of exchange partners in business-to-business relationships, according to Kauser and Shaw (2004) and Nyaga et al. (2010). Supporting these general notions from the context of channel relationships, scholars specializing in supplier research also argue that both economical and relational aspects are equally important antecedents of supplier satisfaction (Essig & Amann, 2009). Still,

Hüttinger et al. (2014) solely take the supplier's growth opportunity into consideration and exclude the profitability of the relationship in their model. Keeping in line with channel and supplier researchers, next to growth potential, the profitability of the relationship is an important factor for suppliers' perceptions of the relationship (Hald et al., 2009; Hüttinger et al., 2012; Ramsay & Wagner, 2009). Accordingly, this research includes profitability as an additional antecedent of supplier satisfaction and expects that profitability should have a positive impact on supplier satisfaction. More specifically, next to the previously identified antecedents' growth opportunity (H1a), reliability (H1b) and relational behavior (H1c), the profitability of the relationship should have a positive impact on supplier satisfaction.

Hypothesis 2: The perceived profitability of the relationship has a positive impact on supplier satisfaction.

In addition to an assessment of the antecedent of satisfaction, this study further assesses the consequences of supplier satisfaction. As stated earlier, suppliers have the choice to assign buyers a regular or preferred status (Schiele et al., 2012a; Steinle & Schiele, 2008). Hüttinger et al. (2012) argue that supplier satisfaction is a necessary condition for achieving such preferred customer status. Scholars maintain that very satisfied suppliers devote their best resources to the relationship, giving those buyers who can better satisfy them preferred status over other buyers (Hüttinger et al., 2012). Support for this assumption stems from the notion of reciprocity of the social exchange theory, which entails that the more a supplier perceives its expectations to be fulfilled (i.e., satisfaction), the more the same supplier reciprocates these feelings by making relational investments (Nyaga et al., 2010; Pulles et al., 2016a). Conversely, suppliers who are dissatisfied in their relationship tend to invest their resources more in other relationships (Ellegaard & Koch, 2012). Summarized, suppliers who are very satisfied with a buyer should have a higher tendency to give the buyer preferred status (Nollet et al., 2012; Pulles et al., 2016a). Thus, this study expects a positive impact of supplier satisfaction on the supplier's tendency to award the buyer preferred customer status.

Hypothesis 3: Supplier satisfaction has a positive impact on the tendency to award the buyer preferred customer status.

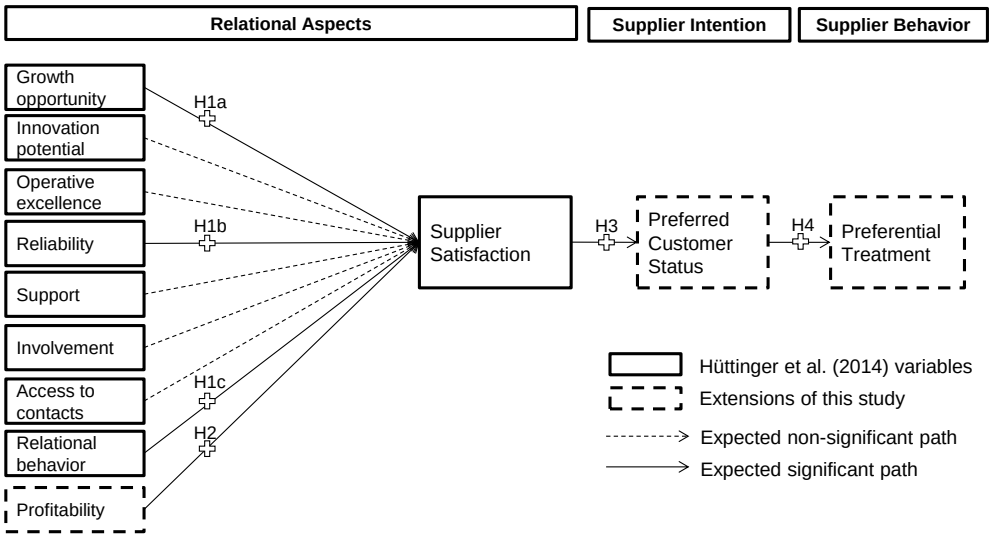
As shown in psychological literature, a distinction exists between intentions to perform a certain behavior and the actual behavior itself. More specifically, theories such as the theory

of planned behavior, theory of planned action (Ajzen, 2002) and the protection motivation theory (Rogers, Cacioppo, & Petty, 1983) assume that the intention to engage in a behavior at a specific time and place should be separated from the action itself. Even though Sheeran (2002) views intention as a main predictor of behavior, "People may not always have sufficient control over performing the behavior to actually enact their intentions" (Sheeran, 2002, p. 2). The same distinction can be made in buyer-supplier relationships. Consequently, simply giving preferred customer status (intention) does not necessarily mean that the supplier actually also treats the customer better (behavior). Still, the intention is a significant predictor of action (Sheeran, 2002). This argumentation in part supports previous research assessing the impact of preferred customer status. Several researchers have found that preferred status has a positive impact on gaining access to new technology and better pricing (Ellis et al., 2012; Schiele et al., 2011b; Schiele & Vos, 2015). Therefore, this study proposes that awarding preferred customer status to a buyer has a positive impact on giving preferential treatment to that specific buyer.

Hypothesis 4: Preferred customer status has a positive impact on giving preferential treatment.

Figure 3 presents the overall research model corresponding to the four hypotheses. The next section continues with an explanation of the outline of the procedures and statistical methods.

Figure 3 - Research Model and Hypotheses



2.3. Material and Methods

2.3.1. Measurement

This study uses multi-item scales to measure the independent and dependent latent factors. The research of Hüttinger et al. (2014) is the basis of this replication study, and the items measuring access to contacts, growth opportunity, innovative potential, reliability, involvement, operative excellence, supplier satisfaction and preferred customer status are identical to those of the Hüttinger et al. (2014) study. This study newly introduces the formative construct "preferential treatment" and the reflective construct "profitability". The measure of preferential treatment comes from the research of Pulles et al. (2016a) and includes aspects like sharing the best ideas and employees with the buyer (see Appendix A). The measure of perceived profitability originates with Hald et al. (2009) and Ramsay and Wagner (2009) and includes aspects like the margins achieved and profitability of the buyer-supplier relationship (see Appendix A). A group of twelve practitioners and five supply management scholars first discussed the validity of both preferential treatment and profitability measures. Then, the measures were pre-tested with two waves of random sampling among 1,000 key account managers ($N_{(wave\ 1)}$=70, $N_{(wave\ 2)}$=89).

Next to the dependent and independent variables of the study, the questionnaire includes an assessment of the characteristics of the suppliers and the supplier-buyer relationship, such as relationship length and supplier size, which are reported in Table 1. This study includes the length of the relationship as a control variable in the model, because previous studies show a significant influence of the length of relationship between buyer and supplier on relational outcomes (Nagati & Rebolledo, 2013). Therefore, the analyses controls for the effects of length of relationship on supplier satisfaction, preferred customer status and preferential treatment.

2.3.2. Sampling and Data Collection

This study uses quantitative data from two German companies. Samplings of both companies collect data from dissimilar contexts. The data on direct material were collected previously from suppliers of an automotive manufacturer by Hüttinger et al. (2014). The data on indirect material come from suppliers of a German chemical company by the authors of this study. For direct procurement, 173 of 2000 suppliers returned valid questionnaires, which is a response rate of 9%. For indirect procurement, the 281 contacted suppliers generated 168 valid questionnaires, which equals a response rate of 62%. Even though a response rate below 10% is not an exception in automotive supply research (Sluis & De Giovanni, 2016), the common response rate usually fluctuates between 15% and 25% (Caniëls, Gehrsitz, & Semeijn, 2013; Corsten, Gruen, & Peyinghaus, 2011; Demeter, Simpson, Power, & Samson, 2007). Therefore, this study compares late versus early respondents among the independent and dependent variables to find potential non-response bias. The comparison between the first quartile (early) and fourth quartile (late) respondents using parametric t-tests and nonparametric Mann-Whitney U tests reveal in total two differences among the variables. Direct procurement shows late respondents experiencing significant higher access to contact ($t_{90)}$ =-2.5, p= .01; $U_{(46,46)}$= 732, p=.01), whereas in indirect procurement they experience more operative excellence ($t_{(97)}$ = -2.23, p=.03; $U_{(38,61)}$= 857.5, p=.03) compared to the early respondents. All other variables show no significant differences. A control variable in the model includes calculations of the days the respondents needed to respond to the questionnaire to control for the potential effects of non-response bias for operative excellence and access to contacts (Lindner, Murphy, & Briers, 2001).

Finally, after consecutive steps of trimming outliers (see Section 3.4) and respondents who indicated that they do not know the focal companies sufficiently enough (this question was a control question), the final dataset included $N_{(D)}$=171 for direct (D) and $N_{(I)}$=145 for indirect (I) procurement. Table 1 shows the distribution of supplier and respondent characteristics of the two samples.

Table 1 - Sample and Respondent Characteristics

Characteristics of sample			**Characteristics of respondents**		
	D	I		D	I
1. Length of buying relationship			**1. Tenure of respondent in company**		
<1 years	1%	0%	<1 years	1%	0%
1-5 years	10%	13%	1-5 years	21%	11%
5-10 years	14%	16%	5-10 years	21%	17%
10-20 years	33%	27%	10-20 years	41%	27%
>20 years	42%	44%	>20 years	16%	45%
2. Annual turnover (in €)			**2. Tenure of respondent as sales representative**		
<10 m €	14%	28%	<1 years	4%	1%
10 m - 100 m €	50%	34%	1-5 years	22%	17%
100 m - 1 bn €	24%	23%	5-10 years	32%	26%
>1 bn	12%	15%	10-20 years	34%	33%
			>20 years	8%	23%
3. Number of employees			**3. Length of respondent involvement in focal buyer–supplier relationship**		
<100	12%	39%	<1 years	2%	1%
100 - 1,000	52%	36%	1-5 years	35%	30%
1,000 - 10,000	23%	14%	5-10 years	31%	22%
10,000 - 50,000	8%	8%	10-20 years	25,%	26%
>50000	5%	3%	>20 years	7,%	21%

2.3.3. Choice of Statistical Analyses

Concerning the *statistical analysis*, either covariance- or partial least squares (PLS)-based statistical analyses are available (Barroso, Carrión, & Roldán, 2010). However, PLS analyses are more flexible to model both reflective and formative latent factors at the same time

(Becker et al., 2012; Roldán & Sánchez-Franco, 2012). Additionally, PLS analysis is preferable when the research focus is on predictive rather than explanatory research (Hair, Hult, Ringle, & Sarstedt, 2014; Hair et al., 2011). Correspondingly, since the variable "preferential treatment" is a formative latent variable and the focus of this research is on prediction by applying cross validated point-predictions, this study uses PLS path modeling (PLS-PM).

For the application of PLS-PM and significance testing, this study uses the SmartPLS 3.0 software of Ringle, Wende, and Becker (2015). The study also applies the multiple group analysis procedure (PLS-MGA) in SMARTPLS 3.0 for group comparisons (Sarstedt et al., 2011). This PLS-MGA is the non-parametric MGA method of Henseler, Ringle, and Sinkovics (2009), which uses non-parametric bootstrapping in combination with a rank sum test. PLS-MGA compares the path coefficients of two samples and finds significant differences between them. With IBM SPSS 21 (IBM-Corporation, 2012).this study calculates the descriptive statistics and tests for data characteristics, such as common factor loadings, outliers and heteroscedasticity. All analyses handle a significance level of $p<.05$ (one tailed).

Next to statistical inference tests of the causal-explanatory model using PLS-PM, several researchers also call for assessing the predictive performance of PLS models (Armstrong, 2012; Woodside, 2013). Accordingly, the predictive nature of the PLS analyses is facilitated by following the procedures (PLSpredict) of Shmueli, Ray, Velasquez Estrada, & Chatla's (2015, this issue) to calculate out-of-sample point predictions and prediction errors separately for each item of the outcome variables. The use of 10-fold cross validation distinguishes between training and hold-out sets. For this procedure, the dataset is split into ten parts of randomly selected rows without replacement (Kuhn, 2015), which form the hold-out samples. Subsequently, the data not included in each hold-out set serves as the training sets. The training sets estimate the model and predict the values in the corresponding holdout sets using the PLSpredict function (Shmueli et al., 2015, this issue). Combining the hold-out sets and their predictions enables the prediction fit statistics to be calculated. Essentially, the assumption is that if a part of the total sample is able to predict another part of the sample, then the model has good predictive capabilities. The authors use the software package R 3.2.2 (R Core Team, 2013) for this procedure. For a more detailed explanation of the PLSpredict

procedure see Shmueli et al. (2015, this issue). The next section describes the findings concerning the data structure and measurement items.

2.3.4. Quality Assessment of Data Structure, Measurement Items and Latent Factors

In a first analysis of the data structure, principal component analysis (PCA) assesses the factor loadings and retains the unique variance of items on their hypothesized components (Petter, Straub, & Rai, 2007). This study applies the default options for Varimax and Oblige (Delta=0) rotations during the application of PCA, retaining 12 components. The minimum cut-off loading is .50, because this value is between the recommendations of .45 for sample sizes >150 (Hair, Anderson, Tatham, & W.C., 1998) and .55 for "good loadings" regardless of sample sizes (Tabachnick & Fidell, 2007). After consecutive steps of trimming, the final results show unique loadings of items on the corresponding components of >.50 for all Varimax solutions and for the majority of Oblique rotations. Additionally, all communalities per item are above .60 (on average even above .70), which is the recommended value for smaller sample sizes (MacCallum, Widaman, Preacher, & Hong, 2001).

Also this study further analyzes the data characteristics in terms of linearity, independence of residuals, heteroscedasticity and outliers. These calculations include the latent factor scores of all items calculated in SMARTPLS 3.0 and exported back to SPSS. The visual assessment using scatter dot diagrams and fitting lines show that the effects of the independent variables on the dependent variables are all closest to linear functions. When regressing the eight antecedents (see Figure 3) on satisfaction, the test reveals that the residuals are independent (Durbin Watson tests, DW_I=1.93>1 & DW_D=1.86>1) and the distributions of residuals depart from normality only for indirect procurement (Shapiro Wilk Test, $W_{I(156)}$=.952; p=0.001 & $W_{D(173)}$=.990; p=0.271) (Field, 2009). The Koenker test (Godfrey, 1996) reveals possible heteroscedasticity for indirect procurement, but not for direct procurement (I: $\chi^2_{(df=10)}$=19.71, p=.03; D: $\chi^2_{(df=10)}$=17.62, p=.06), meaning that in indirect procurement the model shows signs of asymmetric relationships (Woodside, 2013) as the model explains the variance better (i.e., has smaller residuals) for higher values of supplier satisfaction than for lower values. Concerning outliers, the Maximum Mahalanobis

Distances (max>16.91) and Centered Leverage Values (max_I>.116 & max_D>.104) diagnose extreme values in the data (Field, 2009). For identifying the specific outliers among the latent variable scores this study uses the Outlier Labeling Rule (Hoaglin, Iglewicz, & Tukey, 1986) with a g-value of 2.2 (Hoaglin et al., 1986). Eleven outliers for indirect and two outliers for direct procurement with extreme scores emerged. Further analyses were not conducted on these 13 excluded cases (listwise deletion).

Furthermore, the unmeasured latent method factor test (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) reveals that for both datasets the means of squared method factor loadings are below .01 and the means of squared construct loadings are above .76. This result signifies that the large ratio of substantive loading variance to method variance (76:1) of the unmeasured latent methods factor test indicates that common method bias is unlikely to be an issue in the data.

Table 2 - Cross-Correlations and Quality Criteria of Constructs

Constructs	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Access to Contacts	-	.21	.11	.09	.11	-.11	.40	.20	.12	.10	.32	.41	.33	.22
2 Growth Potential	.32	-	.59	.25	-.01	-.02	.32	.41	.37	.38	.49	.36	.43	.46
3 Innovation Potential	.26	.31	-	.41	-.03	-.06	.41	.35	.30	.37	.45	.23	.25	.52
4 Involvement	.38	.23	.46	-	.00	.05	.42	.39	.19	.26	.42	.27	.24	.50
5 Days to Respond	.10	.07	-.02	.04	-	.05	.18	-.02	-.09	.04	-.02	-.04	.04	.00
6 Length of Relationship	.03	.08	.21	.17	-.03	-	-.07	.14	.08	-.10	.02	-.03	.04	-.07
7 Operative Excellence	.40	.22	.22	.17	.11	-.22	-	.30	.23	.32	.56	.40	.45	.42
8 Preferential Treatment	.22	.20	.20	.23	-.08	.01	.19	-	.52	.21	.36	.28	.43	.30
9 Preferred Status	.15	.48	.20	.13	-.04	.12	.13	.54	-	.23	.35	.31	.41	.23
10 Profitability	.40	.47	.30	.21	.04	-.09	.49	.13	.31	-	.41	.32	.48	.27
11 Relational Behavior	.47	.42	.32	.32	.09	-.01	.54	.24	.24	.61	-	.57	.50	.49
12 Reliability	.46	.32	.23	.16	.06	-.13	.56	.18	.29	.57	.66	-	.57	.40
13 Supplier Satisfaction	.42	.48	.33	.26	.02	.03	.49	.14	.41	.69	.68	.64	-	.31
14 Support	.33	.34	.45	.39	.05	.01	.38	.25	.25	.37	.46	.37	.36	-
Quality Criteria														
D AVE	.83	.59	.82	.77	-	-	.68	-	.72	.83	.85	.77	.78	.79
D √AVE	.91	.77	.90	.88	-	-	.82	-	.85	.91	.92	.88	.88	.89
D CR	.94	.85	.93	.93	-	-	.89	-	.91	.94	.92	.93	.95	.92
D Cronbach's Alpha	.90	.77	.89	.90	-	-	.85	-	.87	.90	.82	.90	.93	.87
D Highest VIF	1.6	1.4	1.5	1.5	1.0	1.2	1.8	-	1.0	2.0	2.5	2.2	1.0	1.6
I AVE	.78	.67	.86	.86	-	-	.75	-	.76	.86	.85	.69	.74	.86
I √AVE	.88	.82	.93	.93	-	-	.86	-	.87	.92	.92	.83	.86	.93
I CR	.92	.89	.95	.96	-	-	.92	-	.93	.95	.92	.90	.93	.95
I Cronbach's Alpha	.86	.84	.92	.95	-	-	.89	-	.89	.92	.82	.85	.91	.92
I Highest VIF	1.4	1.8	2.0	1.6	1.1	1.1	1.9	-	1.0	1.4	2.3	1.7	1.0	1.8

Notes: Left correlation block contains correlations of direct material (D) and right correlation block contains correlations of indirect materials (I); D= direct procurement; I= indirect procurement; AVE= Average Variance Extracted; CR=Composite reliability; √AVE= Value for assessing the Fornell and Larcker (1981) statistic of discriminant validity (Criterion=√AVE>r); VIF=Variance Inflation Factor.

Concerning the quality criteria of the latent factors, firstly, the tests relating to convergent validity show Cronbach's alpha (α) and Composite Reliability (CR) scores above the threshold of .70 (Bagozzi & Yi, 1988; Field, 2009) and Average Variances Extracted (AVE) of greater than .50 (see Table 2). Support for the discriminant validity is threefold: (I) The Variance Inflation Factors (VIF) of the variables in the datasets are below 2.5, so no substantive high VIF values are existent (Diamantopoulos & Siguaw, 2006; Pan & Jackson, 2008). (II) The Fornell and Larcker (1981) procedure shows that no correlation higher than √AVE exists (see Table 2). (III) The analyses concerning the heterotrait-monotrait ratio (HTMT) show that for both direct and indirect procurement the HTMT matrix values have a maximum of .77 ($HTMT_{(D)} \leq .77$; $HTMT_{(I)} \leq .69$) and are, therefore, below the maximum

threshold of .85 (Henseler, Ringle, & Sarstedt, 2015). Also, the HTMT bootstrapping analysis of the upper confidence intervals indicates no values above 1.0 ($CI95\text{-}HTMT_{(D)} \leq .86$; $CI95\text{-}HTMT_{(I)} \leq .82$). After testing these data characteristics, the next section takes a closer look at the quality criteria of the entire PLS model.

2.3.5. Assessment of the Quality Criteria of the Models

A blindfolding procedure (omission distance of 4) (Hair et al., 2011; Henseler et al., 2009) assesses the overall predictive relevance of the model as a first step in the quality assessment. The analyses reveals Stone-Geisser Q^2 values ranging from .12 to .34 for cross-validated redundancies and from .31 to 1.00 for cross-validated communalities. This finding provides strong support for the model's overall predictive relevance, since the Q^2 values are clearly above 0 (Henseler et al., 2009).

As a second quality assessment this study assesses the standardized root mean square residual (SRMR) goodness of fit (GoF) indicators for the models. A value less than .10 or even 0.08 reflects a good fit (Henseler et al., 2014). Additionally, the SRMR value should be below the SRMR's upper confidence interval (97.5%). The next section presents the corresponding results for these analyses, together with the results of the PLS-PM and MGA analyses.

Thirdly, calculations of several scale independent fit indices measure the accuracy of the 10-fold, out-of-sample point predictions and allow a comparison of the models. This study calculates the mean absolute percentage error (MAPE) (Hora & Campos, 2015) as well as Theil's (1966) U-statistics, namely U_1 (forecast accuracy), U_2 (forecast quality) and the mean square error decompositions (U^M, U^R and U^D) (Hora & Campos, 2015; Watson & Teelucksingh, 2002). Like the SRMR, these model-specific indices are also not reported here, but in the following results section.

2.4. Results

2.4.1. Findings of the Replication and Extension of the Original Model

The results of the PLS-PM analyses (Table 3 and Figure 4) show, firstly, that concerning

Hypotheses 1a-1d and 2 the datasets show slightly differing results (Table 3, Figure 4). The analyses of direct procurement reveals that growth opportunity (H1a; t=2.29, β=.13, f^2=.03), reliability (H1b; t=3.93, β=.23, f^2=.06), relational behavior (H1c; t=3.26, β=.25, f^2=.07) and profitability (H2; t=5.24. β=.33, f^2=.15) indeed have a positive impact on supplier satisfaction. However, in the context of indirect procurement, growth opportunity (H1a; t=2.47, β=.20, f^2=.04), reliability (H1b; t=3.93, β=.32, f^2=.12), profitability (H2; t=4.38, β=.28, f^2=.11), but not relational behavior (H1c; t=.47, β=.05, f^2=.00) appear significant. Therefore, although relational behavior has a positive impact on supplier satisfaction in direct procurement, this effect vanishes in indirect procurement. Additionally, the findings show that operative excellence positively impacts supplier satisfaction in indirect procurement (t=2.51, β=.20, f^2=.04). Also, the overall explanatory power of the antecedents to explain the variance in supplier satisfaction is higher in direct procurement (R^2=.64) than in indirect procurement (R^2=.50). When comparing the relational with the economical antecedents, both explain similar variances in supplier satisfaction in direct ($f^2_{(relational)}$=.13; $f^2_{(economical)}$=.18) and indirect ($f^2_{(relational)}$=.16; $f^2_{(economical)}$=.15) procurement.

Concerning Hypotheses 3, the data supports the assumption that supplier satisfaction has a positive impact on the tendency to award the buyer preferred customer status in both direct (H3; t=5.62, β=.41, f^2=.20) and indirect procurement (H3; t=5.16, β=.41, f^2=.20). Also, Hypothesis 4, which supposes that preferred customer status, has a positive impact on preferential treatment. The findings support this hypothesis (H4; $t_{(D)}$=9.74, $\beta_{(D)}$=.55, $f^2_{(D)}$=.42; $t_{(I)}$=8.57, $\beta_{(I)}$=.51, $f^2_{(I)}$=.36). The variances explained in awarding preferred status ($R^2_{(D)}$=18; $R^2_{(I)}$=17) and in receiving preferential treatment ($R^2_{(D)}$=30; $R^2_{(I)}$=28) are almost equal for both direct and indirect procurement.

Table 3 - Bootstrap and Effect Statistics of the Models

Paths	β D	SE D	t D	f^2 D	β I	SE I	t I	f^2 I	DIFFMGA D|I
CA->SS	.00	.06	.03	.00	.06	.07	.92	.01	.06
G->SS	.13	.06	2.29*	.03	.20	.08	2.47**	.04	.07
IP->SS	.05	.06	.87	.00	-.12	.07	1.60	.01	.17
I->SS	.02	.06	.37	.00	-.02	.06	.28	.00	.04*
O->SS	.07	.06	1.11	.01	.20	.08	2.51**	.04	.13
P->SS	.33	.06	5.24**	.15	.28	.06	4.38**	.11	.05
RB->SS	.25	.08	3.26**	.07	.05	.10	.47	.00	.20
R->SS	.23	.06	3.93**	.06	.32	.08	3.93**	.12	.10
S->SS	-.06	.06	1.00	.01	-.03	.07	.42	.00	.03
DR->SS	-.05	.05	.93	.01	.00	.07	.03	.00	.05
L->PT	-.06	.08	.74	.00	.10	.07	1.35	.01	.16
L->PC	.11	.07	1.51	.01	.06	.07	.87	.00	.05
L->SS	.08	.05	1.53	.01	.09	.06	1.59	.02	.01
SS->PC	.41	.07	5.62**	.20	.41	.08	5.16**	.20	.00
PC->PT	.55	.06	9.74**	.42	.51	.06	8.57**	.36	.04

*Notes: D= Direct procurement; I= Indirect procurement; β= standardized coefficient beta; t= t-statistic; SE= Standard Error of β; f^2 = effect size of variance explained by predictor; DIFFMGA= Difference in the multi-group analyses between direct and indirect procurement; *= p<.05 (one-sided); **= p<.01 (one-sided); CA=Contact accessibility; G=Growth opportunity; I=Involvement; IP=Innovative potential; DR= Days to respond to the questionnaire (Control); O=Operational excellence; P=Profitability; RL=Reliability; Treatment RB=Relational behavior; S=Support; L= Length of relationship (Control); SS=Supplier satisfaction; PC=Preferred Customer Status; PT=Preferential Treatment.*

Figure 4 - Results of PLS-PM for Direct (D) and Indirect (I) Procurement

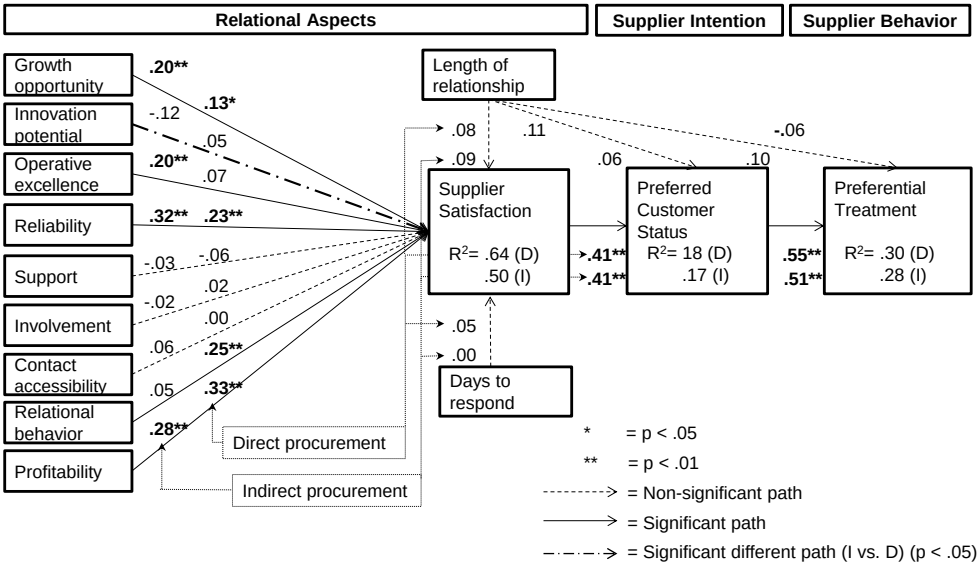


Table 4 - SRMR Results of the Composite Models

	Original Model			Revised Model		
	SRMR	CI 2.5%	CI 97.50%	SRMR	CI 2.5%	CI 97.50%
Direct procurement	.066	.071	.090	.066	.071	.091
Indirect procurement	.059	.069	.088	.059	.068	.087

Notes: SRMR = Standardized root mean square residual; CI = Confidence interval.

In relation to the goodness of fit indices (Table 4), the model shows a good model fit with SRMR values below .08 ($SRMR_{(D)}$=.066; $SRMR_{(I)}$=.059). Concerning the 10-fold cross validated out-of-sample predictions (see Table 5), the model predicts the hold-out samples better than a naive no-change forecast with U_2<1 ($U_{2(D)}$=.29; $U_{2(I)}$=.17). Additionally, the hold-out samples are better predicted in indirect procurement than in direct procurement with lower values of MAPE, U_1, U_2 ($MAPE_{(D)}$=.32 vs. $MAPE_{(I)}$=.17; $U_{1(D)}$=.15 vs. $U_{1(I)}$=.09; $U_{2(D)}$=.29 vs. $U_{2(I)}$=.17). Still, when looking at the distribution of bias, regression and disturbance proportions of the MSE, the model better predicts the systematic error (disturbance proportion) in indirect procurement ($U^D_{(D)}$=.78 vs. $U^D_{(I)}$=.83). Summarized, in both direct and indirect procurement the model shows sufficient as well as similar explanatory and predictive performances.

Table 5 - Fit Indices of Point Predictions for the Original Model

Item	Direct Procurement						Indirect Procurement					
	MAPE	U_1	U_2	U^M	U^R	U^D	MAPE	U_1	U_2	U^M	U^R	U^D
SS1	.29	.13	.25	.00	.01	.99	.12	.07	.14	.00	.02	.98
SS2	.37	.15	.29	.00	.01	.99	.09	.05	.10	.00	.00	1.00
SS3	.28	.12	.25	.00	.00	1.00	.09	.05	.10	.00	.00	1.00
SS4	.23	.11	.21	.00	.00	1.00	.07	.04	.09	.00	.00	1.00
SS5	.24	.11	.21	.00	.01	.99	.11	.06	.12	.00	.00	1.00
PC1	.30	.14	.27	.00	.08	.92	.14	.08	.16	.00	.13	.87
PC2	.30	.14	.28	.00	.18	.82	.15	.08	.16	.00	.19	.81
PC3	.33	.15	.30	.00	.22	.78	.14	.08	.16	.00	.17	.83
PC4	.35	.15	.30	.00	.21	.79	.15	.08	.16	.00	.12	.88
PT1	.38	.18	.36	.00	.49	.51	.14	.08	.16	.00	.31	.69
PT2	.32	.17	.33	.00	.42	.58	.18	.10	.19	.00	.33	.67
PT3	.39	.19	.38	.00	.51	.49	.35	.16	.31	.00	.32	.68
PT4	.35	.17	.35	.00	.50	.50	.36	.15	.31	.00	.38	.62
PT5	.31	.16	.32	.00	.45	.55	.26	.13	.26	.00	.43	.57
Averages	.32	.15	.29	.00	.22	.78	.17	.09	.17	.00	.17	.83

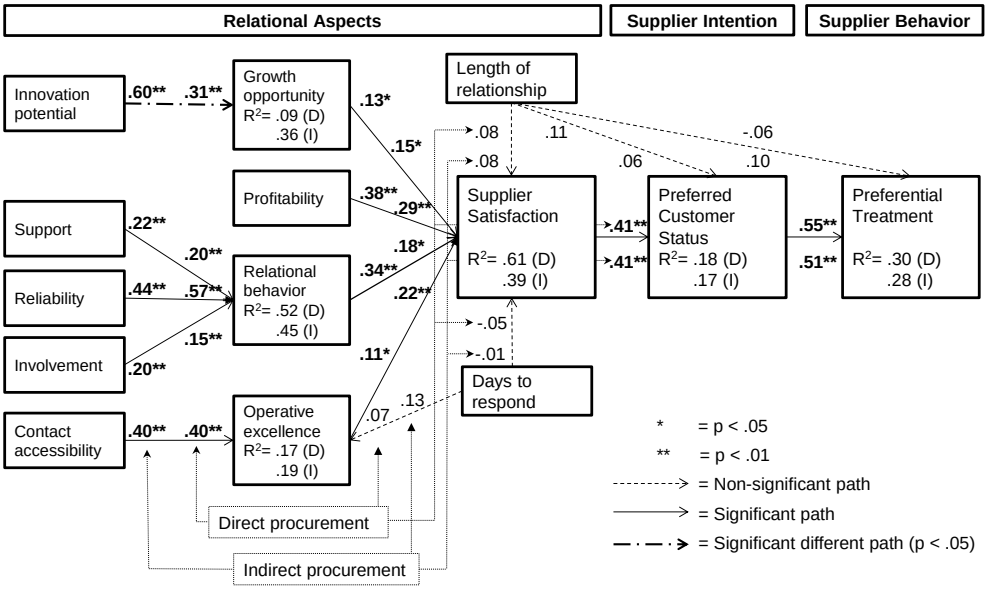
Notes: MAPE=Mean absolute percentage error; U_1=Theil's forecast accuracy; U_2=Theil's forecast quality; U^M=Bias proportion of MSE; U^R=Regression proportion of MSE; U^D=Disturbance proportion of MSE; SS=Supplier satisfaction; PC=Preferred Customer Status; PT=Preferential Treatment.

2.4.2. Improvement of the Original Model

Ozkan and Kanat (2011) state that the standard procedure when using PLS-PM is to first formulate a research model grounded in theory or previous findings, and then modify this model according to the results. For cases in which a model shows room for improvement, the researchers modify the original model by taking changes in the model's fit, R^2 values, bootstrap t-test results and path loadings into account (Blunch, 2008; Ozkan & Kanat, 2011). Also, in these circumstances, the SRMR is a valuable guide to determine model fit changes (Henseler & Sarstedt, 2013). All changes are a careful assessment of theory and logical reasoning, rather than purely statistical changes (Ozkan & Kanat, 2011). Accordingly, this study analyzed the model of Hüttinger et al. (2014) in-depth to find possible improvements.

Figure 5 shows that this study identifies the possibility to order the factors into first- and second-tier antecedents of satisfaction. The model in particular includes the interrelations of antecedents.

Figure 5 - Results of PLS-PM of the Revised Model for Direct (D) and Indirect (I) Procurement



As previously described, both economic and relational factors are critical to supplier satisfaction (Hüttinger et al., 2012). Therefore, the first-tier antecedents, which are directly linked to satisfaction, are growth opportunity, profitability, relational behavior and operative excellence. On the one hand, the first tier consists of the growth opportunity and profitability, because they reflect the economic value of the relationship (Hald et al., 2009; Hüttinger et al., 2012; Ramsay & Wagner, 2009). In relation to growth opportunity, suppliers who perceive innovative potential of a buyer (second-tier antecedent) also perceive a higher growth potential, since more innovative companies are associated with stronger market growth (Audretsch, Coad, & Segarra, 2014). Correspondingly, innovative potential is a predictor of perceived growth potential in the revised model.

On the other hand, second only to economic factors, relationship behavior and operative excellence are first-tier, because they reflect an overall cooperative and professional supply chain strategy (Nyaga et al., 2010). *Relational behavior* contains aspects, such as openness and reciprocity, which both develop over time (Forker & Stannack, 2000). Sequentially, perceived relational behavior also mirrors the buyer's *reliability* and *support* as well as active

involvement of the supplier in the buyer's processes (Essig & Amann, 2009; Ghijsen et al., 2010). Next to relational behavior, *operative excellence* is an important factor in supplier satisfaction. In particular low-levels of operative excellence (i.e., slow order processing and billing/delivery procedures) often hinder satisfactory business transactions and can be detrimental to supplier satisfaction (Essig & Amann, 2009). In turn, the perception of operative excellence can influence the degree to which the supplier can *access the buyer's contacts*. When a supplier has a specific contact person who cares for the relationship and coordinates activities (Essig & Amann, 2009), the supplier also perceives a higher degree of operational excellence of the buying firm, since questions and operational problems can be addressed directly to such a contact person. Conclusively, the revised model comprises growth potential, relational behavior, operative excellence & profitability as first tier, and involvement, reliability, support and access to contacts as second-tier antecedents. The next section explains the findings concerning this new model.

2.4.3. Findings of the Revised Model

In accordance with the recommendation of Henseler and Sarstedt (2013), this study compares the two models on the basis of path coefficients and significances. In the new model, all but the three paths from the control variable relationship length are significant among both datasets (Table 6, Figure 5), as opposed to only six significant (eight non-significant) paths in the original model. Also, the overall β and f^2 values increase in the revised model. More precisely, the average β increases from .14 to .24 and the average f^2 increases from .6 to .13 (see Table 3 and Table 5), indicating a potentially higher explanatory power of the constructs in the revised model. However, as an adverse change, the antecedents in indirect procurement explain less the variance of supplier satisfaction ($R^2_{(\text{original model})}$=.50; $R^2_{(\text{revised model})}$=.39) than in the original model. Thus, even though the average f^2 values of the model increase, the explanatory power concerning supplier satisfaction decreases. Placing reliability as a second-tier factor in the revised model comes at the price of a reduced R^2 value in supplier satisfaction for indirect procurement.

Table 6 - Bootstrap and Effect Statistics of the Revised Models

Paths	β D	SE D	t D	f^2 D	β I	SE I	t I	f^2 I	DIFFMGA D|I
IP->GP	.31	.07	4.64**	.10	.60	.06	1.81**	.56	.29*
S->RB	.20	.06	3.32**	.06	.22	.08	2.64**	.06	.02
R->RB	.57	.06	10.00**	.58	.44	.08	5.19**	.29	.13
I->RB	.15	.06	2.68**	.04	.20	.08	2.52**	.06	.05
CA->O	.40	.07	6.20**	.20	.40	.08	5.10**	.20	.00
G->SS	.13	.05	2.33*	.03	.15	.09	1.71*	.03	.03
P->SS	.38	.06	6.14**	.19	.29	.06	4.68**	.11	.08
RB->SS	.34	.07	5.00**	.15	.18	.10	1.83*	.03	.16
O->SS	.11	.06	1.79*	.02	.22	.08	2.74**	.05	.10
DR->O	.07	.07	.94	.01	.13	.08	1.63	.02	.06
DR->SS	-.05	.05	.98	.01	-.01	.07	.09	.00	.05
L->PT	-.06	.07	.79	.00	.10	.08	1.33	.01	.16
L->PC	.11	.07	1.54	.01	.06	.07	.87	.00	.05
L->SS	.08	.05	1.46	.01	.08	.06	1.38	.01	.01
SS->PC	.41	.07	5.46**	.20	.41	.08	5.22**	.20	.00
PC->PT	.55	.06	9.68**	.42	.51	.06	8.53**	.36	.04

*Notes: D= Direct procurement; I= Indirect procurement; β= standardized coefficient beta; t= t-statistic; SE= Standard Error of β; f2= effect size of variance explained by predictor; DIFFMGA= Difference in the multi-group analyses between direct and indirect procurement; *= p<.05 (one-sided); **= p<.01 (one-sided); CA=Contact accessibility; G=Growth opportunity; I=Involvement; IP=Innovative potential; DR= Days to respond to the questionnaire (Control); O=Operational excellence; P=Profitability; RL=Reliability; Treatment RB=Relational behavior; S=Support; L= Length of relationship (Control); SS=Supplier satisfaction; PC=Preferred Customer Status; PT=Preferential Treatment.*

The comparison between direct and indirect procurement in the revised model reveals that innovation potential has a significant, different effect. More specifically, the path from innovation potential to growth opportunity ($\beta_{(D)}$- $\beta_{(I)}$=-.29, p<.01.) is significantly different for the two procurement practices. The perceived innovation potential is significantly more important in indirect procurement for perceiving growth potential of the buyer than in indirect procurement.

Table 7 - Fit Indices of Point Predictions for the Revised Model

Item	Direct Procurement						Indirect Procurement					
	MAPE	U_1	U_2	U^M	U^R	U^D	MAPE	U_1	U_2	U^M	U^R	U^D
G1	.28	.14	.29	.00	.26	.74	.35	.16	.32	.00	.41	.59
G2	.24	.12	.25	.00	.33	.67	.26	.13	.27	.00	.29	.71
G3	.43	.18	.36	.00	.30	.70	.59	.24	.48	.00	.37	.63
G4	.32	.16	.31	.00	.35	.65	.49	.21	.41	.00	.36	.64
O1	.48	.21	.43	.00	.36	.64	.36	.18	.35	.00	.39	.61
O2	.46	.21	.41	.00	.31	.69	.42	.20	.39	.00	.41	.59
O3	.51	.22	.44	.00	.32	.68	.46	.20	.39	.00	.28	.72
O4	.49	.22	.43	.00	.27	.73	.39	.17	.35	.00	.28	.72
RB1	.42	.18	.35	.00	.26	.74	.20	.10	.20	.00	.06	.94
RB2	.43	.18	.34	.00	.19	.81	.21	.10	.21	.00	.08	.92
SS1	.33	.14	.28	.00	.15	.85	.13	.07	.15	.00	.05	.95
SS2	.40	.17	.32	.00	.14	.86	.10	.05	.11	.00	.01	.99
SS3	.30	.13	.26	.00	.07	.93	.10	.05	.11	.00	.02	.98
SS4	.26	.12	.23	.00	.08	.92	.08	.04	.09	.00	.01	.99
SS5	.26	.11	.22	.00	.04	.96	.12	.06	.13	.00	.03	.97
PC1	.34	.14	.28	.00	.10	.90	.13	.08	.16	.00	.05	.95
PC2	.32	.14	.27	.00	.03	.97	.14	.08	.15	.00	.08	.92
PC3	.33	.14	.28	.00	.01	.99	.14	.07	.15	.00	.06	.94
PC4	.35	.14	.28	.00	.03	.97	.15	.08	.16	.00	.09	.91
PT1	.32	.14	.27	.00	.13	.87	.13	.07	.14	.00	.07	.93
PT2	.29	.13	.27	.00	.06	.94	.16	.08	.17	.00	.05	.95
PT3	.31	.14	.29	.00	.10	.90	.31	.13	.26	.00	.04	.96
PT4	.29	.13	.26	.00	.09	.91	.31	.13	.25	.00	.06	.94
PT5	.26	.13	.25	.00	.05	.95	.21	.10	.21	.00	.09	.91
Averages	.35	.16	.31	.00	.17	.83	.25	.12	.23	.00	.15	.85

Notes: MAPE=Mean absolute percentage error; U_1=Theil's forecast accuracy; U_2=Theil's forecast quality; U^M=Bias proportion of MSE; U^R=Regression proportion of MSE; U^D=Disturbance proportion of MSE; G=Growth opportunity; O=Operational excellence; RB=Relational behavior; SS=Supplier satisfaction; PC=Preferred Customer Status; PT=Preferential Treatment.

In terms of fit and prediction outcomes, the original and the revised models have equal SRMRs (direct procurement: $SRMR_{(original\ model)}$=.066 vs. $SRMR_{(revised\ model)}$=.066; indirect procurement: $SRMR_{(original\ model)}$=.059 vs. $SRMR_{(revised\ model)}$=.059). Concerning the predictive performance, for example, in the original model, the results of the 10-fold cross-validated point predictions for the revised model (Table 7) indicate that direct and indirect procurement are both better predicted than the naive no-change forecast with U_2<1 ($U_{2(D)}$=.31; $U_{2(I)}$=.23). Also, the model better predicts the hold-out samples indirect procurement than in direct procurement ($MAPE_{(D)}$=.35, $MAPE_{(I)}$=.25). Additionally, Tables 5 and 7 show the decomposition of the mean square error into Theil's bias (U^M), regression (U^R) and

disturbance (U^D) proportions. Here, the revised model better explains the systematic disturbance in the MSE better than the original model (direct procurement: $U^D_{(original\ model)}$=.78 vs. $U^D_{(revised\ model)}$=.83; indirect procurement: $U^D_{(original\ model)}$=.83 vs. $U^D_{(revised\ model)}$=.85). Summarized, the comparison between the original and revised models shows that even though the revised model has more significant paths and a higher average f^2, the revision has a similar goodness of fit and predictive performance when compared to the original. Also, both models predict supplier satisfaction better in indirect procurement than in direct procurement. The next section further discusses the findings of this study.

2.5. Discussion

The goal of this paper is to replicate and extend the existing research and provide a more fine-grained picture of the antecedents and consequences of supplier satisfaction. The findings show that growth opportunity, reliability and profitability are relevant antecedents of supplier satisfaction regardless of the product context. Here, indirect procurement successfully replicates the model. Additionally, the results support the new hypothesis that the profitability of the relationship could be a valuable extension to the original model of Hüttinger et al. (2014). Surprisingly, the positive impact of relational behavior on supplier satisfaction is only significant in the context of direct procurement. This finding is unexpected, since positive relational behavior, such as a collaborative supply chain strategy, should have a positive influence on the satisfaction of suppliers (Essig & Amann, 2009; Nyaga et al., 2010). As a possible explanation, inter-correlated antecedents, such as the buyer's reliability and support, might suppress the statistical effects of the buyer's relational behavior on supplier satisfaction. During the search for a model that takes the interdependencies between the antecedents of satisfaction into account, this study established the revised model of supplier satisfaction. Theoretical reasoning indicates that certain antecedents might precede and influence others, thereby proposing the revised model and a clearer distinction among economic, relational and operative factors. Within the revised model, at the first tier, (1) profitability, (2) growth opportunity, (3) relational behavior and (4) operative excellence directly impact supplier satisfaction. At the second tier, (2a) innovation potential has a positive impact on growth potential; (3a) support, (3b) reliability and (3c) involvement positively affect relational behavior; and (4a) contact accessibility has a positive impact on perceived operative performance. The results after applying PLS-PM,

PLSMGA and PLSpredict show that, compared to the original model, the revised model has a higher number of significant paths and a greater overall f^2 / R^2, but a reduced explanatory power of supplier satisfaction in the context of indirect procurement. The existence of an asymmetric relationship between antecedents and supplier satisfaction in indirect procurement might lead to these results, as the model is less accurate in explaining the variance (i.e., larger residuals) for lower values of supplier satisfaction.

In addition to the assessment of the antecedent of satisfaction, this study assesses the consequences of supplier satisfaction. In detail, the findings confirm previous elaborations by Pulles et al. (2016a) and Nollet et al. (2012) that supplier satisfaction has a positive impact on the tendency to award preferred customer status, which in turn leads to preferential treatment. In other words, suppliers who are very satisfied with a buyer have a higher tendency to give the buying firm preferred status and ultimately treat the firm better than its competitors. The following section addresses the implications of the findings.

2.5.1. Implications and Future Research Directions

The practical implications of this study are twofold. Firstly, the findings show that supplier satisfaction is a means to gain a competitive advantage, because supplier satisfaction positively impacts the supplier's tendency to award preferred customer status, and ultimately give preferential treatment to buyers. Hence, as proposed by Pulles et al. (2016a), supplier satisfaction is a means to gain competitive advantages over supply-market competitors in direct and indirect procurement. Secondly, the common belief that economic factors are much more important to suppliers than relational factors is misleading. The findings of this study show that among both models (i.e., original and revised models) and procurement practices (i.e., direct and indirect procurement), relational factors, such as relational behavior, reliability and operative excellence, explain similar or even greater variance in supplier satisfaction than economic factors like profitability and growth potential. In other words, even when buyers cannot offer a large economic value to suppliers, these buyers can still influence the suppliers' satisfaction and receive preferential treatment by being reliable, operationally excellent and presenting good relational behavior. The questionnaire items underlying each dimension (see Hüttinger et al., 2014) can be a guide for practitioners to

focus activities aimed at improving satisfaction. For example, for achieving increased operative excellence, buyers should focus on timely and correct forecasts (see Hüttinger et al., 2014). In this way, practitioners can use the findings to better adjust their relational efforts.

In addition to the practical implications, the theoretical implications of the study are also twofold. Firstly, the findings show that the effects of the antecedents of satisfaction can be more differentiated. Instead of assuming that all antecedents have a direct link to supplier satisfaction (Hüttinger et al., 2014), the antecedents are ordered into a causal hierarchical model. This model distinguishes between first- and second-tier factors, taking interdependencies between factors into account. Secondly, the findings support the hypothesis of a plentitude of scholars (Essig & Amann, 2009; Hüttinger et al., 2014; Pulles et al.; Schiele et al., 2011b) that a buyer's focus on improving supplier satisfaction can yield substantial benefits. This study is the first to show statistically that for both direct and indirect procurement, the buyers with highly satisfied suppliers receive better status and ultimately better treatment than their competitors. These findings highlight the importance of research in the field of supplier satisfaction and urge scholars to further improve the explanatory as well as predictive performance of satisfaction measures.

This study also has limitations. Factors external to the dyadic exchange relationship between buyer and supplier are not yet included in the model. Corresponding factors are market structure, organizational inter-dependencies and (technological) uncertainties and should be included in future research. Secondly, future research should assess the differences between direct and indirect materials in additional industries and search for potential product-related contingency factors, such as the phase within the product-life cycle in which a certain product falls. The impact of antecedents could vary depending on a combination of factors, such as product, supplier and environmental characteristics, which have not been addressed in this research. Finally, with only 9% response rate for direct procurement, this study might not be representative for direct procurement suppliers in the automotive sector. Therefore, this research tries to mitigate the effects of potential non-response bias by controlling for the days respondents needed to respond to the questionnaire. Still, the results are vulnerable to nonresponse bias concerning the variables perceived access to contacts and operational

excellence. Accordingly, future studies should mitigate a non-response risk by having response rates that reflect at least the common rates of >20% in supply management research (Caniëls et al., 2013; Corsten et al., 2011).

In conclusion, as shown within this research, using a mixture of replication and extending previous research as well as applying advanced (prediction-oriented) methods can be very valuable for getting novel insights in a research field. Subsequently, other researchers should follow similar approaches, since in particular the combination of replication, explanatory modeling and prediction-orientated out-of-sample analyses allows a systematic comparison of different contexts and helps scholars to build more coherent research models. In particular the usage of the new prediction-oriented analyses techniques (i.e., PLSpredict and 10-fold cross validation) helps us to identify valuable models for the application in the diverse contexts of both academics and practitioners.

Chapter 3. Dependency on suppliers as a peril in the acquisition of innovations? The role of buyer attractiveness in mitigating potential negative dependency effects in buyer-supplier relations

Chapter 3. Dependency on suppliers as a peril in the acquisition of innovations? The role of buyer attractiveness in mitigating potential negative dependency effects in buyer-supplier relations

Abstract

New product development occurs nowadays mostly in joint buyer-supplier projects, which require closer ties between the partners in order to mobilize their resources. One issue arising from this collaborative model is that the buyer tends to become more dependent on the supplier. Multiple cases of supplier obstructionism have been reported. To mitigate this dilemma, this paper analyzes the relevance of customer attractiveness as an enabler of collaboration. Testing this hypothesis on a sample of 218 buyer-supplier relationships, we show that dependency as such is not the issue in the presence of close ties. Buyers who are a preferred customer of their suppliers can accept the risk of becoming dependent upon them. The managerial implications of this finding is that firms should apply a reverse marketing approach and thus attempt to become the preferred customers of their important suppliers. From a conceptual perspective, our findings indicate the need to consider dependency not as an isolated variable, but in conjunction with attractiveness.

Keywords: Innovation, purchasing, buyer-supplier dependency, preferred customer

3.1. Introduction: Challenges in handling dependency in close buyer-supplier relations

Actively managing access to the resources of key suppliers has emerged as a new topic on the agenda of industrial marketing and purchasing scholars and practitioners alike (Ellram & Carr, 2006; Pulles, Veldman, Schiele, & Sierksma, 2014; Schiele, 2012). In order to achieve competitive advantage within a supply network, a buying firm needs to get better access to the industry's core suppliers than its competitors. Hence, competition for supplier resources deserves increasing managerial attention in business-to-business markets. Dependency issues become even more relevant. Supplier resources can consist, among others, of production resources, i.e. production capacity allocated to the buyer at hand, as well as innovation resources, such as personnel dedicated to new product development projects (Steinle & Schiele, 2008). In particular, the latter aspect has gained relevance in recent years due to a fundamental change in the process of innovation. Until the last decade of the twentieth century, most firms conducted virtually all new product development (NPD) activities in-house (Huizingh, 2011, p. 1255; West & Bogers, 2014). However, this no longer seems to be the standard case. For instance, a longitudinal panel study covering the top European and American firms, responsible for three-quarters of the total corporate research and development budget, showed that their percentage of in-house NPD had fallen from 78% at the beginning of the 1990s to only 15% at the end of that decade (Roberts, 2001). Similarly, the level of outsourced development spending by US firms more than doubled in this period (Carson, 2007). The literature has reflected this trend by introducing the notion of network innovations (Freeman & Soete, 1997), and exploring the open innovation paradigm (Chesbrough, 2003, 2006).

In NPD vendors, rather than offering a finished product, sell their ability to identify an innovative solution (Golfetto & Gibbert, 2006). NPD relationships differ from typical channel relationships in areas such as material supply or distribution, because they require a creative contribution on the part of the external suppliers; a very different type of resource mobilization (Carson, 2007). To deliver their innovative contribution, external suppliers have to be integrated early on in collaborative NPD processes, with the consequence of forging substantially closer ties between buyer and seller (Clark, 1989; Handfield, Ragatz, Peterson, & Monczka, 1999; Hartley, Meredith, McCutcheon, & Kamath, 1997; Lau, 2014; Primo & Amundson, 2002; Ragatz, Handfield, & Scannell, 1997; Tracey, 2004; Wasti & Liker, 1997).

Because such close ties require considerable resources, they cannot be established with a large number of suppliers, so firms tend to reduce their supply base. Often, the core supplier captures up to three-quarters of the buyer's business in a particular category (Ulaga & Eggert, 2006).

Being dependent on only one, or very few, suppliers increases risk for the buyer. Supplier obstructionism has become a frequently reported problem (Flynn, Flynn, Amundson, & Schroeder, 2000; Hartley, Zirger, & Kamath, 1997; Hibbard, Kumar, & Stern, 2001; Khoja, Adams, & Kauffman, 2011; Petroni & Panciroli, 2002; Primo & Amundson, 2002; Zsidisin & Smith, 2005). A possible cause of obstructionism has been identified in the form of dependency on a supplier, in the sense of a "negative one-sided relationship" (Cousins & Crone, 2003, p. 1467). The worst-case scenario for a firm would be to be dependent on a supplier's resources for their innovation process, but being denied access.

Due to the growing reliance on collaborative NPD, among other reasons, there is a growing need for close buyer-supplier ties. Considering the challenge arising from the buyer becoming dependent on a supplier by integrating the supplier into its own processes and relying on the supplier's ability to innovate, our research question is:

How can the apparent trade-off between closer ties in the buyer-supplier relationship on the one hand and the danger of dependency - and consequent supplier opportunism - on the other hand be addressed? Are there conditions under which the buyer does not need to be afraid of becoming dependent upon a particular supplier?

The potential solution to this dilemma, which will be elaborated subsequently, is the discussion of the concept of "customer attractiveness". The idea is simple; if the buyer is sufficiently attractive to the supplier, the latter will not abuse its power and instead provide privileged resource access. While past research on customer attractiveness has primarily been conceptual and case based (Benton & Maloni, 2005; Christiansen & Maltz, 2002; Ellegaard, Johansen, & Drejer, 2003), the present study adds new empirical insights to the recent stream of quantitative research on customer attractiveness (Baxter, 2008, 2012a, 2012b; Hüttinger et al., 2014; La Rocca, Caruana, & Snehota, 2012; Tóth, Thiesbrummel, Henneberg, & Naudé, 2015). Our analysis of a large sample of buyer-supplier relationships provides evidence that it is not dependency as such that is the problem in the presence of close ties,

but rather the coincidence of low attractiveness to the partner and a high degree of dependency on that same partner. This means that firms can accept dependency, provided that they are sufficiently attractive to the partner. This finding has substantial implications for both management and research.

With respect to management, the finding urges firms to reverse their marketing approach, not only by directing marketing towards their customers and attempting to become their preferred supplier (Ulaga & Eggert, 2006) but also to become a preferred customer of their most important suppliers (Baxter, 2012b; Schiele et al., 2011b). The importance of being a preferred customer may extend beyond the extreme case of collaborative development and also apply to other situations, such as the buyer receiving preferential treatment in event of production shortages and innovation sharing (Schiele et al., 2011c). Generally, the buying firm may have to adopt marketing approaches that are typically dedicated to the downstream part of the value chain and apply them to the upstream part of the chain (Koppelmann, 2000). Regarding our theoretical contribution, our findings suggest that the popular measure of dependency should be considered in conjunction with attractiveness, rather than alone.

In the next section of this paper we will elaborate on the relationship among dependency on a supplier, preferred customer status and the supplier's contribution to innovation, which lead to three testable hypotheses. We then present our model, the data and the results of the analysis, which are discussed in the last section.

3.2. Theory and Hypotheses: the triangle of dependency, preferred customer status and supplier's contribution to innovation

The theoretical issue of buyer-supplier dependency has appeared in many scholarly discussions. For example, transaction cost economics theory defines dependency in light of transaction-specific assets, which are assumed to influence the exchange behavior of transaction partners (Fink, James, & Hatten, 2011; Poppo & Zenger, 2002). Resource dependency theory argues that dependency creates vulnerability, which should thus be avoided (Cool & Henderson, 1998; Pfeffer & Salancik, 1978; Provan & Skinner, 1989). Additionally, principal-agent theory offers a conceptual explanation for this issue. The power relation shifts after the contract has been signed, creating a situation of post contractual lock-in. Increasing power on the part of the supplier could lead to opportunistic behavior

(Lonsdale, 2001).

This situation may become increasingly commonplace due to the reduction in the number of suppliers and closer relationships with them (Ellis et al., 2012; Horn, Schiele, & Werner, 2013). As a consequence, intensive competition for suppliers' resource allocation takes place (Pulles et al., 2014). Moreover, firms often appear to lack particular competencies for supplier integration (Lakemond, Berggren, & Weele, 2006). During innovation processes, power may shift in favor of the supplier. A supplier that has been entrusted with development tasks increases its knowledge on the subject. The seller, by contrast, having delegated the task, faces the risk of gradually losing its competence and, potentially, its absorptive capacity to fully understand the progress that the supplier has made in solving the problem at hand (Cohen & Levinthal, 1990; Corsten & Felde, 2005). Thus, over the course of the relationship, the supplier is constantly expanding the competence gap. In this way, the buyer must increasingly rely on the supplier's resources to achieve its own goals; that is, the supplier becomes more dependent (Fink et al., 2011). Arguably, there is a correspondence between the balance of power in a relationship and dependency (Buchanan, 1992; Emerson, 1962; Provan & Skinner, 1989), meaning that the supplier could be tempted to exploit its increasingly strong position, which may lead to conflicts (Heide & John, 1988; Kumar, Scheer, & Steenkamp, 1995). In the particular case of NPD, the increasingly strong position of suppliers could translate into suppliers withholding resources from the development project or not making the project a priority. Innovative projects are associated with a high degree of risk due to the uncertainty of the outcome (Keizer & Halman, 2007), which may not make them a supplier's preferred choice. Therefore, we postulate:

H1: As the buyer becomes more dependent on the supplier, the supplier will be more reluctant to collaborate in NPD processes.

Business relationships can be assessed in terms of benefits and costs. This means that the relationship continues as long as the partner is sufficiently attractive and adds value to the relationship (Buchanan, 1992; Hogan & Armstrong, 2001; Walter, Ritter, & Gemünden, 2001). The value of a business relationship has been discussed extensively, and such studies were often stimulated by Reichheld's work on customer value (Reichheld, 1992). Conceptually, the value of a relationship can be understood as the perceived trade-off between the benefits and sacrifices gained and lost through it (Walter et al., 2001). The value

of a business relationship has been operationalized as relational asset value, defined as the net worth of benefits perceived over the future of a relationship (Hogan & Armstrong, 2001); partnership advantages, which compare the advantages secured through a particular relationship to those that would be obtained through relationships with alternative partners (Sethuraman, Anderson, & Narus, 1988); or value equations, these being the differences between benefits and life-cycle costs (Blois, 2004). The essence of all of these attempts to define the value of a relationship lies in the observation that certain partners are more attractive than others because they deliver a higher value to their partners.

Initial attempts have been made to study customer attractiveness. Christiansen and Maltz, for example, conducted case studies with small Danish firms attempting to become interesting customers of their large international suppliers (Christiansen & Maltz, 2002). Through a case study on new product development, Wynstra et al. concluded that the buyer should present itself to its supplier in a way that makes it interesting to the supplier (Wynstra, Weggeman, & Van Weele, 2003). On a more conceptual level, Koppelmann urged procurement marketing (Koppelmann, 2000), while Leenders and Blenkhorn cited the need to motivate a supplier to satisfy novel demands, which they termed reverse marketing (Leenders & Blenkhorn, 1988). Ellegaard et al., again drawing on a case study, highlighted the importance of customer attractiveness in industrial buyer-supplier relationships (Ellegaard et al., 2003). From a different perspective, but concerning the same phenomenon, Zolkiewski et al. analyzed suppliers' willingness to discontinue serving unattractive customers (Zolkiewski, Turnbull, Helm, Rolfes, & Günter, 2006), while Essig and Amann developed an index to assess supplier satisfaction – with satisfaction presumably preventing the supplier from terminating the relationship (Essig & Amann, 2009).

A special form of customer attractiveness is preferred customer status. Preferred customer status is defined as a situation in which the supplier offers the customer a preferential resource allocation (Steinle & Schiele, 2008). The decision of whether to confer this status is influenced by the attractiveness of the buyer (Hüttinger et al., 2012) and stems from the reasoning that the supplier has the choice to assign its customer either regular or preferred status (Baxter, 2012b). After awarding preferred status, the perceived relationship quality often increases which, in turn, motivates the supplier to offer additional functions to the customer and further commit itself to the relationship (Baxter, 2012a; Ellegaard et al., 2003; Schiele et al., 2011c; Walter, Muller, Helfert, & Ritter, 2003). Therefore, being an

"interesting" customer is presumed to ensure the loyalty of the supplier and facilitate open innovation (Christiansen & Maltz, 2002). Several researchers have obtained initial support for this assumption. In particular, the recent empirical studies by Ellis et al. and Schiele et al. (Ellis et al., 2012; Schiele et al., 2011c) in the automotive sector, including analyses of 233 and 166 supplier-buyer relationships respectively, showed that preferred customer status has a positive influence on supplier innovativeness and the supplier's willingness to share these innovations. Correspondingly, it is expected that the attractiveness of a partner, manifested in the form of the seller awarding it preferred status, has a positive impact on supplier's contribution to collaborative NPD. Therefore, we postulate:

H2: The greater the supplier's preference for the buyer, the more pronounced the supplier's contribution to collaborative NPD will be.

Having elaborated on the potentially detrimental effects of dependency on suppliers on the one hand and the expected beneficial effects of customer attractiveness on the other hand, this raises an interesting question: are these two states mutually exclusive? Does dependency exclude attractiveness; does the buyer become less attractive when they decline in importance to the seller?

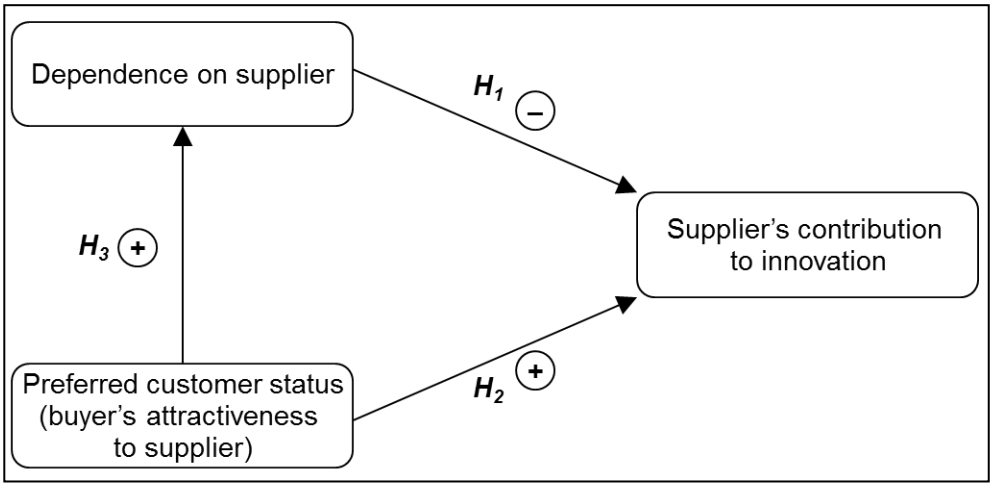
Interdependency has been found to lead to an increased level of commitment in wholesaler-distributor relationships. Additionally, the hypothesis that the more powerful party is less likely to contribute to a relationship was not supported in an initial empirical analysis (Lusch & Brown, 1996). It is possible that this finding could be transferred to a NPD situation. It could be the case that the two states are mutually reinforcing; that is, that the buyer accepts dependency once it perceives that it has achieved preferred customer status with the supplier. Dwyer et al. used the metaphor of a marriage to illustrate the possibility of combining high dependency with a high level of commitment (Dwyer et al., 1987). Based on this view, it can be assumed that dependency and preferred customer status are not mutually exclusive. Thus, we postulate:

H3: A buyer will often be dependent on a supplier that awards the buyer with preferred customer status.

Corresponding to the three hypotheses, the overall research model is presented in Figure 6, summarizes our conceptual model and the assumed relationships and expected signs

of the paths, which are subsequently operationalized to test the model. The next section continues with an explanation of the procedures and statistical methods employed in this study.

Figure 6 - The Research Model



3.3. Method: Administrating a large-scale survey with buyers in high tech industries

3.3.1. Reflective measurement items & questionnaire implementation requesting information of purchasers on two buyer-supplier relations per firm

We designed a quantitative study to address the issues raised above. To this end, a survey was administered to purchasing managers in Germany and Austria. The survey design was guided by the principle of employing proven measures whenever possible. Thus we dedicated considerable effort to identifying measures in the literature for the three factors of dependency, preferred customer and supplier collaboration.

The dependency measure was taken from studies by Corsten and Felde (Corsten & Felde, 2005; Felde, 2004). Among the multitude of dependency measures available, this measure was chosen not only because of its good statistical properties documented in previous studies but also because it was already available in both English and German. The other two instruments had only been tested in English. They were translated into German by

a translation agency and then translated back again to ensure that the original meaning has been captured. The English version of the complete set of items can be found in Appendix B, although the questionnaire was administered in German.

The measure of a buyer's attractiveness to the supplier, assessing whether the supplier had awarded preferred customer status to the buyer, was taken from another published study (Ganesan, 1994). The independent variable, satisfaction with the supplier's contribution to NPD, was adopted from a study by Krause et al. (Krause, Pagell, & Curkovic, 2001). The questionnaire uses a five-point Likert scale (1 = "strongly disagree" and 5 = "strongly agree"). All constructs were reflective in nature.

One common problem with surveys assessing relationship issues in a buyer-supplier environment is the frequent incidence of non-normally distributed data. This causes problems in statistical analysis and makes it difficult to reveal significant differences. For instance, asking firms to assess their most important customer or their largest supplier does not typically allow for clear differentiation. Firms that do not have good or very good relationships with these important partners may find it difficult to persist in the market. Accordingly, to obtain meaningful data, we adopted the idea of comparing two suppliers (Ulaga & Eggert, 2006). Therefore, respondents were asked to identify a supplier with excellent NPD performance and another of their suppliers that had disappointing performance; that is, a supplier that they had expected to deliver a valuable contribution but ultimately failed to do so. Respondents were asked to write down the names of these two firms on a separate sheet of paper and then answer the same questions twice, once for the good and once for the bad supplier.

Subsequently, the instrument was intensively pre-tested using a sample of five academics knowledgeable in the field of buyer-supplier relations and seven practitioners. Minor changes were introduced.

3.3.2. A sample reflecting Central European high tech industry

We collected data through a survey administered by the German and the Austrian associations of materials management, purchasing and logistics, BME and BMÖ, respectively. Members received an invitation to participate via e-mail and via a newsletter, which contained the link to a homepage with the questionnaire. Because we did not have

direct access to the database, it was not possible to contact non-respondents. In addition to the association members, a list of contact persons from the supply management consulting firm h&z was also included. No significant difference between these groups of respondents could be identified, and there was also no significant difference between early and late respondents.

The homepage containing the questionnaire was opened 440 times. It resulted in 121 completed questionnaires (27%), which should have contained 242 assessed suppliers. However, we applied case-wise replacement, such that only fully completed questionnaires were used for analysis. This resulted in a final sample of 218 cases for analysis.

Most respondents came from the typical industries that are highly developed in the German-speaking countries: 24% mechanical engineering / machine building, 21% electrical / electronic engineering, 11% chemical, 9% vehicles and 35% other industries, including 13% services. No difference across the branches or between industry and services were identified. Respondent firms were of notable size, averaging 2988 employees and 840 million Euros in turnover. The sample can be considered a high-tech sample, as the average research and development expenditure represented 7.9% of turnover. Of the respondents, 45% were purchasing managers, 39% were purchasers and 16% were from other functions, including senior management.

3.4. Data Analysis: Robust measures and strong paths

3.4.1. Measurement model: satisfying measurement quality criteria and no detection of common method bias issues

Concerning the measurement model, we subjected the sample to exploratory factor analysis to test the constructs. As expected, based on the conceptual framework, three factors emerged on the basis of the Kaiser criterion. The first factor is that concerning the supplier's contribution to innovation in NPD processes (27.8% of variance explained). Furthermore, the five items associated with the preferred customer construct load on a single factor (24.8% of variance explained). Dependency emerges as the third factor (16.2% of variance explained). The KMO criterion has a value of 0.929, which can be considered very high indeed. We then calculated the Bartlett-test for sphaericity, which is significant at $p < .000$ (Mayer, 2004). No cross-loadings could be identified.

Table 8 - Results of the Analysis of Latent Factor Loadings

	CL	CL^2	t_{CL}	MFL	MFL^2	t_{MFL}
CO1	0.663	0.439	5.129	0.125	0.016	0.923
CO2	0.888	0.789	12.354	0.062	0.004	0.185
CO3	0.995	0.990	14.188	-0.120	0.014	1.606
CO4	0.919	0.845	13.604	-0.061	0.004	0.380
CO5	0.822	0.676	10.460	0.081	0.007	0.911
DB3	0.888	0.788	34.468	0.033	0.001	0.512
DB4	0.869	0.755	25.432	-0.040	0.002	0.499
DB5	0.844	0.712	17.102	0.047	0.002	0.051
IS1	0.969	0.938	12.060	-0.099	0.010	1.156
IS2	0.961	0.924	12.062	-0.094	0.009	1.011
IS3	0.768	0.590	6.723	0.105	0.011	0.628
IS4	0.799	0.638	9.277	0.113	0.013	1.337
IS5	0.883	0.780	9.580	0.078	0.006	0.061
Mean	0.867	0.759	14.034	0.018	0.008	0.712

Notes: CL= Construct Loading; MFL= Method Factor Loading; t >1.96 = significant path at the $p < .05$ level (two-sided)

In our study, we used the same informants to measure the dependent and independent variables. Thus, we applied two approaches to control for common method bias: Harman's single-factor approach (Harman, 1967) and the analysis of latent factor loadings (Liang, Saraf, Hu, & Xue, 2007; Perols, Zimmermann, & Kortmann, 2013; Podsakoff et al., 2003). First, regarding Harman's single-factor test, the previously explained exploratory factor analysis already revealed that more than one factor with an eigenvalue greater than 1 can be identified in the data. Additionally, no single factor accounted for the majority of covariance in the variables, ranging from 27.8% to 17.2% variance explained, which is a prerequisite for conformity to the Harman (1967) single-factor test. Second, we applied the unmeasured latent methods factor test (Podsakoff et al., 2003) as used by Liang et al. (2007) and Perols et al. (2013). As a first step, we generated a latent "common factor" on which all survey items loaded. Then, this common factor was linked to all survey items underlying our constructs.

Finally, we applied a PLS analysis to assess the strength of path coefficients and their significance values. As shown in Table 8, the squared method factor loadings were all below .01 and the mean of squared construct loadings was above .76. The ratio of substantive variance to method variance was very high (95:1), and none of the common method path coefficients appeared significant, all having a t-value <1.96. Overall, both Harman's single factor approach and the unmeasured latent methods factor test indicate that it is unlikely that common method bias is a critical concern in this dataset (Perols et al., 2013; Podsakoff et al., 2003)

As a next step, we then assessed convergent and discriminant validity (Table 9). Factor loadings, Average Variance Extracted (AVE) and Composite Reliability (C.R.) are indicative of a high level of convergent validity. All values exceeded the recommended thresholds of 0.5 for AVE and 0.7 for C.R. (Bagozzi & Yi, 1988; Fornell & Larcker, 1981; Henseler et al., 2009; Nunnally, 1978). Moreover, we assessed the reliability of the variables with Cronbach's α (Cronbach, 1951). All indicators of the reflective variables had an α > 0.83, which is considered very satisfactory.

Table 9 - Overview of Constructs and Quality Criteria

Construct	Source	Type of variable	Composite reliability	Average variance extracted
Dependence on supplier	Felde (2004), Corsten and Felde (2005)	reflective	0.896	0.742
Preferred customer status (buyer's attractiveness to the supplier)	Ganesan (1994)	reflective	0.933	0.769
Supplier's contribution to innovation	Krause et al. (2001)	reflective	0.943	0.737

We assessed discriminant validity using the Fornell and Larcker criterion (Fornell & Larcker, 1981). As presented in Table 10, the smallest square root of the AVE exceeds the

correlation between each pair of factors. This indicates a satisfactory level of discriminant validity.

Table 10 - Cross-Correlations of Constructs

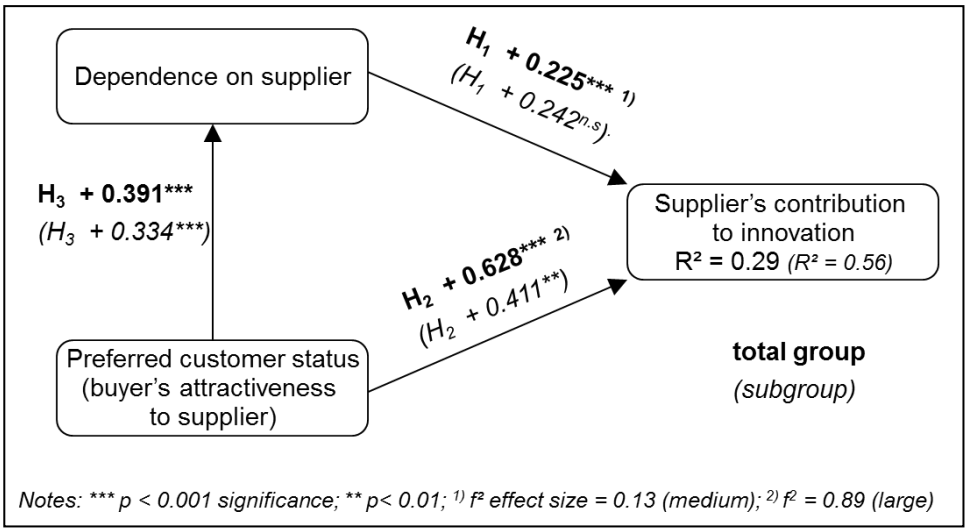
Constructs		1	2	3
1	Dependence on supplier	0.861		
2	Preferred customer status	0.396	0.877	
3	Supplier's contribution to innovation	0.504	0.732	0.858

Note: **Bold**= Fornell and Larcker (1981) criterion

3.4.2. Hypothesis testing: PLS analysis reveals strong paths

We report the results of our partial least squares (PLS) analysis in Figure 7. The data were computed using SmartPLS software (Ringle, Wende, & Will, 2005). We chose PLS because of its lack of distributional assumptions. In contrast, co-variance-based structural equation modeling approaches, such as those used by AMOS or Lisrel software, require normally distributed data (Reinartz, Haenlein, & Henseler, 2009). Despite our approach of asking respondents to assess two contrasting suppliers, the variable "preferred customer" was right skewed and slightly leptokurtic. Under a co-variance based approach, only the ADF algorithm could be used for such data. However, this algorithm produces badly misleading results except for very large sample sizes (Boomsma & Hoogland, 2001; Hoogland & Boomsma, 1998).

Figure 7 - Results of PLS Analysis and FIMIX Subgroup Testing



As depicted in Figure 7 the model has a very satisfactory R^2 of 0.56. Additionally, we used bootstrapping to test the significance of the paths. All relationships are highly significant ($p < .001$).

To assess the effect size, we used Cohen's effect size test (Cohen, 1988). The path dependency → supplier contribution has an f^2 of 0.13, which indicates a medium effect size. The path preferred customer status → supplier contribution has an f^2 of 0.89, which indicates a very high effect size. As indicated above, Hypothesis 2, which predicts a beneficial effect of customer attractiveness, and Hypothesis 3, which predicts that preferred customer status and dependence on the supplier are correlated, are fully supported by the findings. Hypothesis 1 postulating that dependence leads to a lower supplier contribution, however, is significant, but instead of the expected negative had a positive sign.

As a final analysis, we subjected our data to a FIMIX test. This algorithm tests for unobserved heterogeneity in the data (Hahn & Kaufmann, 2002; Ringle, Sarstedt, & Mooi, 2010). Could there be unexpected subgroups in the sample that exhibit significantly different patterns of relationships? A FIMIX analysis has two steps: first, the FIMIX algorithm identifies potential subgroups in the sample. Second, an ex-post interpretation must be conducted to check whether the significantly different groups display any logical grouping factors.

Applying the FIMIX algorithm to our sample, a small subgroup containing 28 cases was separated. Most of the paths remained roughly the same (see Figure 7), except for the path dependency → supplier contribution, which became non-significant. In the second step, we then used a t-test to identify differences between the main group and this statistically identified subgroup. The subgroup significantly differs from the main group in three respects: the suppliers assessed in this subgroup are more export oriented, have made joint investments with the buying company and, more often than in the main group, the buyer and seller belong to the same group of companies. However, the subgroup should not be separated from the main group because the entropy value of 0.37 is below the threshold of 0.5 recommended for group separation (Ringle et al., 2010). This means that our complete sample of 218 cases can be analyzed jointly. Nevertheless, the FIMIX analysis – despite confirming the homogeneity of the sample – also provides an initial suggestion that it may be sensible to analyze intra-group relationships and not only inter-group buyer-supplier relations.

3.5. Discussion and Implications: Mitigation of dependency problems by achieving preferred customer status

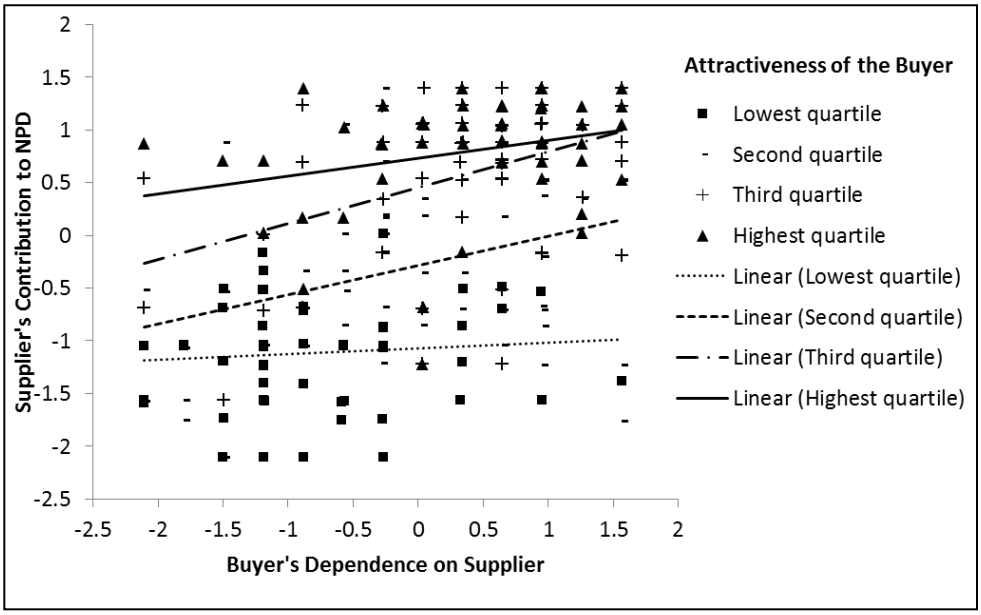
3.5.1. Discussion: Positive relationship between dependency and innovation and strong explanatory power of the preferred customer construct

Against the background of a changing pattern of NPD – which increasingly requires buyer-seller collaboration and close ties between the partners – with the consequence of the buyer becoming increasingly dependent on its supplier, this study has analyzed whether the attractiveness of the buyer can overcome a possible negative effect challenging supplier resource access and resulting from this new situation of dependency.

The first remarkable result is that the relationship between dependency and supplier contribution (Hypothesis 1) is not negative, as was hypothesized, but positive. In our sample the suppliers on which the buyer was highly dependent were exactly those suppliers exhibiting the best NPD performance. As opposed to the recommendations derived from resource dependency theory, and in the context of principal-agent considerations, our data suggest that a state of dependency is acceptable for firms, provided that their aim is to increase the supplier's contribution to innovation. This finding supports the results of Corsten and Felde, who identified a similar relationship (Corsten & Felde, 2005).

Our research further contributes to the NPD literature by integrating the concept of preferred customer status. In line with the findings of Ellis et al., we showed that the more a firm enjoys preferred customer status with a supplier, the more the vendor will be willing to engage in joint projects, in our case collaborative NPD (Ellis et al., 2012). As shown in Figure 8, the supplier's contribution to NPD is to a large extent influenced by the degree to which the buyer has a preferred status. This is also indicated by the remarkable f^2 of 0.89 (Figure 7). Both Figure 7 and Figure 8 show that the size of the effect of buyer attractiveness is very large.

Figure 8 - The Effects of the Buyer's Dependency and Attractiveness on a Supplier's NPD Collaboration



Moreover, a firm being dependent on a supplier while simultaneously enjoying preferred customer status with this supplier seems to be a common phenomenon. Hence, preferred status and buyer dependence often coincide. The path between these two factors has a positive sign and is highly significant. As a conclusion, the results can be summarized as follows: *Dependency as such is not the problem in collaborative NPD; instead only the combination of low buyer attractiveness and a high degree of dependence on a supplier is*

problematic. This finding has important implications both for management and theory development.

3.5.2. Management implications: trying to become an attractive customer in order to access key suppliers' resources by applying a reverse marketing approach

Our data suggest that collaboration is feasible and can generate benefits, such as resource access. This lends further support to the idea of supply base reduction. There is ample evidence of the value of a streamlined supply base (Chen & Paulraj, 2004; Paulraj & Chen, 2005; Talluri & Narasimhan, 2005). Our findings stress the importance of supply base reduction by adding an additional argument. Firms may not only achieve better prices by offering larger volumes to few selected suppliers. Closely collaborating with a limited set of suppliers may be a viable way to ensure their contribution to innovation in the context of NPD.

A firm that attempts to avoid becoming dependent on individual suppliers by distributing its purchasing volume across many similar vendors may find it difficult to integrate all of them in NPD. Comparable companies that continue to rely on the traditional in-house NPD process – thus bearing all costs and risks alone and having to maintain all required competencies in-house – may thus have a disadvantage in NPD relative to their competitors that have already shifted to the open innovation model. If one follows these notions, such firms may find it more difficult to become a preferred customer of any of their exchangeable suppliers and encounter difficulties in collaborating even if they wish to do so.

Not being the preferred customer of any of the leading suppliers in an industry may even have strategic consequences, as it reduces the capacity for innovation and thus the long-term sustainability of a firm. One relevant example is the American automotive industry in the years from 2004 to 2008, were the formerly "big 3" US automakers, GM, Ford and Chrysler, found it difficult to quickly adapt to new consumer and launch new models (Holweg, 2008; Train & Winston, 2007). One reason for this development is that suppliers evaluated the quality of their relations with the buyer and drew consequences from this. Specifically, the big three scored between 114 and 218 points in the annual supplier working relations index, while Honda and Toyota reached 359 and 415 points on this index, respectively (Henke, 2013). Empirical results have indicated that there is a positive and significant relationship

between the quality of the relationship as expressed by the supplier working relations index on the one hand and cost efficiency, innovation, inventory reduction and quality improvement on the other (Milas, 2006). Hence, automotive suppliers in the US attempted to reduce their exposure to the big three, due to their low satisfaction with those three OEMs. Correspondingly, studies at that time indicated that the suppliers shifted their research capacities away from the big three US OEMs and primarily developed innovations in collaboration with Japanese firms, which may explain some of the difficulties the big three experienced in responding to the market and NPD (Verespej, 2005).

Buyers may need to accept dependency on some of their key suppliers. As a consequence, they may need to change their relational approach to these firms and actively attempt to become a preferred customer of these suppliers, i.e. by applying a reverse marketing perspective (buyers trying to become attractive to suppliers, rather than only the other way round). Buyers need to increase their attractiveness to their suppliers. As Baxter summarizes it: "The findings show how important it is for managers to attend to relationship management in order to gain preferential investments of resources in the relationship from their suppliers. If they want suppliers to allocate resources to them, they need to manage suppliers' perceptions" (Baxter, 2012b, p. 1255). There is still a long way to go in order to develop a managerial toolset allowing to operationalize this request, but as a first step antecedents of customer attractiveness and supplier satisfaction have been identified (Hüttinger et al., 2014).

3.5.3. Theory implications: request to measure dependency always in conjunction with partner attractiveness

Dependency is an oft-discussed construct, particularly in channel studies and supplier portfolio analysis, for example elaborations based on the Kraljic matrix (Kraljic, 1983), and in more theory-driven assessments of buyer-supplier relationships, for example those based on resource dependency theory and the transaction cost economics perspective (Fink, Edelman, Hatten, & James, 2006; Fink et al., 2011). We have expanded this list by exploring on the resource allocation issue. As our analysis has shown, on the one hand, the buyer's dependent status is an important factor influencing the supplier's contribution to NPD. On the other hand, we found that it may be sensible to include an additional variable, which is attractiveness of the buyer. The main implication from our results is that when

analyzing dependency situations – whether buyer-supplier relations or another business situation – it may be sensible to include a variable for the attractiveness of the exchange partner. A problematic situation is presumed to occur when high dependency on a partner coincides with low attractiveness to that partner because this could lead to increased supplier opportunism. Based on our findings, we may conclude that research on dependency considering this variable alone without at the same time analyzing partner attractiveness may leave out a key context variable and may as such be considered as too narrow.

3.5.4. Limitations and suggestions: discussing mutual dependency in a dyadic setting

This research, of course, has several limitations that should be taken into account. Although the Harman factor test and the analysis of latent factor loadings did not give any indications that it was a concern, from a methodological perspective, common method bias cannot fully be excluded because we used a single informant per firm (Podsakoff & Organ, 1986). It would also be sensible to extent the study to also include the supplier's opinion. Our study solely relied on the buyer's assessment of the relationship, and a dyadic or network perspective could provide additional insights into the phenomenon at hand. Moreover, as Woodside and Baxter (2013) argue, in business-to-business relationships research, additional qualitative analyses can add valuable details and the necessary accuracy to understand, describe, and forecast business-to-business processes. Accordingly, additional insights could be gained by combining quantitative and qualitative methods in future studies.

Dependency can be conceived as a one-sided, asymmetric dependency – as our definition does – or as a status of interdependency; that is, mutual dependency (Emerson, 1962; Fink et al., 2011; Gulati & Sytch, 2007). It might be interesting to extend the attractiveness concept to include the interdependency of cases. Although interdependency and attractiveness are two different concepts, mutual dependency might precede attractiveness, at least to a certain extent.

The final limitation of this study is that it used only the supplier's contribution to NPD as a dependent variable. It would be interesting to expand the analysis to include other variables, such as the quality, responsiveness and reliability of the supplier. In so doing, we would learn more about the interwoven effects of dependency and attractiveness on various performance outcomes of the buyer-supplier relationship.

Chapter 4. The effects of balanced and asymmetric dependence on supplier satisfaction

Chapter 4. The effects of balanced and asymmetric dependence on supplier satisfaction: identifying positive effects of dependency

Abstract

Studies argue that balance in dependence is critical to supplier satisfaction in buyer-supplier relationships. We examine whether asymmetric relationships can also lead to supplier satisfaction, arguing that traditional analysis methods are unsuitable for thoroughly analyzing this issue. With polynomial regression and response surface analysis combined with dyadic data, we test the relationship between (1) balanced dependence (i.e., the buyer and supplier are equally dependent on each other) and supplier satisfaction and (2) asymmetric dependence (i.e., either the supplier or buyer is the dominant party) on supplier satisfaction. The results indicate that mutual dependence is positively related to supplier satisfaction, but surprisingly, asymmetric dependence can be related to higher levels of supplier satisfaction.

Keywords: Buyer-supplier dependence; supplier satisfaction; polynomial regression

4.1. Introduction

In recent business practice, firms experience that supplier satisfaction has strategic value for buying firms. Satisfied suppliers invest in buyer-supplier relationships, which creates benefits for buyers, such as gaining access to innovations and new technologies (Pulles et al., 2016a; Schiele & Vos, 2015). For buying firms, it is relevant to know what drives supplier satisfaction and what situations are conducive to supplier satisfaction in buyer-supplier relationships.

It is commonly accepted that buyer-supplier dependence is crucial for understanding buyer-supplier relationships (Blois, 2010; Caniëls & Gelderman, 2007). The dependence literature suggests that buyer-supplier relationships characterized by a balanced mutual dependence are superior to other buyer-supplier relationships (Da Villa & Panizzolo, 1996; Hausman & Johnston, 2010; Kumar, 1996; Leonidou et al., 2008). Asymmetric relationships, in which one partner dominates the exchange, are generally believed to be less effective because the dominant partner may be tempted to exploit its position (Blois, 2010; Casciaro & Piskorski, 2005; Ireland & Webb, 2007; Wang, Wang, Jiang, Yang, & Cui, 2016). However, in situations where a buyer dominates, suppliers may still be satisfied with the overall relationship. For instance, although large retailers may sometimes squeeze their suppliers, these suppliers can still be satisfied with the relationship due to the growth opportunities offered by a large buyer (Bloom & Perry, 2001). In addition, highly dependent partners may have a strong relational orientation, which leads to an improved relationship. This idea is supported by studies that highlight the importance of total dependence in the relationship and that show that asymmetric relationships can be as satisfactory (Caniëls & Gelderman, 2007; Caniëls & Roeleveld, 2009) and even more effective than relationships governed by ownership or formal management controls (Muthusamy & White, 2006; Steensma, Marino, Weaver, & Dickson, 2000). Hence, although contemporary research suggests that dependence asymmetry leads to inefficient relationships, dependence asymmetry may actually foster relationships and supplier satisfaction and thus improve relationship outcomes.

The present study aims to increase insights into how configurations of relative dependence relate to supplier satisfaction. We distinguish between *balanced dependence*, in which the buyer and supplier have either a high mutual dependence or a low mutual dependence, and *asymmetric dependence*, in which either the buyer or the supplier is the dominant party in the relationship. We use supplier satisfaction as a dependent variable, as

supplier satisfaction has been found to be crucial to understanding many aspects of buyer-supplier relationships that are relevant from a managerial perspective, such as collaborative innovation, supply allocation and supplier pricing behavior (Pulles et al., 2016a).

The current study is based on data gathered from 109 buyer-supplier dyads in the manufacturing industry. We use polynomial regressions with response surface analysis – a technique that is new to the purchasing and supply management field – to investigate a three-dimensional view of relative dependence and supplier satisfaction. Our analyses yield three contributions. First, whereas current literature mainly argues that asymmetric relationships are less effective, we argue that dependence asymmetry can also foster supplier satisfaction. Based on the notion of relative and absolute values, we show that relationships that are characterized by mutual dependence and those characterized by buyer/supplier dominance show higher levels of supplier satisfaction. It is not so much about the direction of dependency but about the absolute size of the dependency. Second, our findings add new insights to the supplier satisfaction literature. Specifically, we advance current knowledge about the role of relative dependence in buyer-supplier relationships and its effects on supplier satisfaction. High dependency is associated with satisfied suppliers, regardless of whether it is symmetric or asymmetric. Third, we use polynomial regression analysis to analyze our data. Current methodologies on relative dependence combine buyer's and supplier's dependence into one score of relative dependence, in which the effect of each component on the outcome is lost (Kim & Hsieh, 2003; Shanock, Baran, Gentry, Pattison, & Heggestad, 2010). Alternatively, studies use spline scores (Gulati, 2007; Kumar et al., 1995), but these scores do not capture curvilinear effects. To the best of our knowledge, polynomial regression analysis has not yet been widely applied in buyer-supplier dependence research, yet it is specifically suitable in this context.

This paper continues with a review of the literature and then the hypotheses. Then, we discuss our methodology and results. We conclude with a discussion of our findings.

4.2. Literature background: Supplier satisfaction and dependence in buyer-supplier relations

Supplier satisfaction is related to the supplier's perceived value of a relationship in terms of meeting or exceeding expectations (Pulles et al., 2016a). If a supplier perceives a relationship to be satisfactory, the supplier will feel socially indebted to make relational

investments (Blau, 1964; Emerson, 1962; Nyaga, Lynch, Marshall, & Ambrose, 2013). Satisfied suppliers make a greater effort to gratify their customers and provide resources that go beyond what has been contracted (Bemelmans, Voordijk, Vos, & Dewulf, 2015; Vos et al., 2016). It has been argued that supplier satisfaction is an important factor in obtaining preferred customer status, which notably includes benefits for buyers, such as better access to innovations and technologies, higher flexibility and access to resources in times of scarcity (Pulles et al., 2016b; Schiele & Vos, 2015; Sieweke, Birkner, & Mohe, 2012; Vos et al., 2016). In this way, supplier satisfaction is positively related to the relational performance of buyers and suppliers alike (Baxter, 2012b; Essig & Amann, 2009; Ghijsen et al., 2010; Vos et al., 2016). Conversely, suppliers that become dissatisfied with their relationship with the buyer may eventually search for alternative buyers and commit to other relationships (Ellegaard & Koch, 2012). Having dissatisfied suppliers could therefore result in both decreased performance within a certain buyer-supplier relationship and decreased performance of a buying firm relative to its competitors that source from similar suppliers, thereby negatively impacting long-term competitive advantages of the buying firm. Hence, supplier satisfaction is an important construct that has strategic value for buying firms.

The present study focusses on buyer-supplier dependence as a determinant of supplier satisfaction. The theoretical foundations of dependence research lie in the power-dependence view of Emerson (1962) and the resource-dependence view of Pfeffer and Salancik (1978). The basic idea behind these theories is that organizations are interconnected systems that need resources for survival. The need for these resources generates dependence and power-dynamics in inter-organizational relationships. Even though definitions vary considerably, a general definition of dependence is "an actor's need to continue its relationship with an exchange partner in order to achieve its desired goals" (Scheer, Miao, & Palmatier, 2015, p. 700).

To study interorganizational dependence, researchers advocate adopting a two-sided view, taking both buyer and supplier dependence into account. For instance, Terpend and Krause (2015) studied mutual dependence and found that the effectiveness of cooperative relational incentives in supplier performance depends on the degree of buyer and supplier dependence. They showed that mutual dependence – with a slight emphasis on the supplier's dependence – is the key driver in the effectiveness of cooperative incentives with regard to increasing supplier performance. They acknowledged that without taking a two-sided view

on dependence, they would have rejected the idea that cooperative incentives have an impact on supplier performance. Hence, a dyadic view on buyer-supplier dependence is crucial for understanding buyer-supplier relationship dynamics. Moreover, the literature has shown that different degrees of mutual and asymmetric dependence can exist. Casciaro and Piskorski (2005) distinguished between dependence asymmetry and joint dependence in analyzing the effects on the power restructuring activities of firms. They found that mutual dependence allowed weaker firms to address resistance from stronger partner firms. However, a shortcoming of their study was that they did not include the underlying causes of mutual and asymmetric dependence in their hypothesizing. Recent studies have begun to address this issue by including asymmetric and mutual dependence as interaction effects in their hypothesis building. For example, Griffith, Hoppner, Lee, and Schoenherr (2017) analyzed the resource sharing of suppliers and found that positive and negative inequity differentially influence perceived relationship performance depending on the degree of mutual dependence. To summarize, the above studies demonstrate the importance of taking a dyadic view on buyer-supplier dependence, while explicitly considering the different effects of mutual and asymmetric buyer-supplier dependence.

Despite the growing body of research on supplier satisfaction, there is still a lack of a thorough understanding of how different (asymmetric) dependence constellations of buyer versus supplier dependence have different effects on supplier satisfaction. Below, we take a dyadic view of buyer-supplier dependence, and we hypothesize on the effects of mutual and asymmetric dependence.

4.3. Hypotheses

4.3.1. Mutual dependence and supplier satisfaction

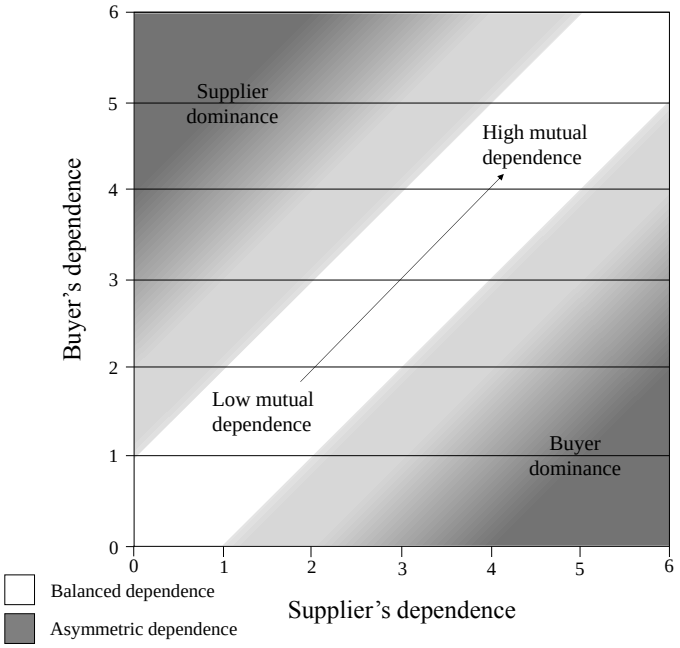
As noted, firms always depend, to varying extents, on their trading partners (Caniëls & Gelderman, 2007; Schiele & Vos, 2015). Studies about buyer-supplier dependence usually conceptualize dyadic relationships, taking into account the dependence from the buyer's as well as the supplier's perspective (Buchanan, 1992; Geyskens, Steenkamp, Scheer, & Kumar, 1996; Kumar et al., 1995). The possession and control of critical assets by one party creates dependence in the other party: A has a dominant position over B if B depends on A more than A depends on B (Caniëls & Gelderman, 2007; Emerson, 1962).

Scholars have emphasized that balanced levels of dependence between partners enhance relationship stability (Muthusamy & White, 2006). Social exchange theory suggests that exchanges between partners occur when they are rewarding for both parties (Emerson, 1962). In this way, buyer-supplier relationships characterized by mutual dependence facilitate interactions between firms that both seek value. The dependence literature describes notions such as 'total interdependence', 'total mutual dependence' and 'joint dependence' (Bacharach & Lawler, 1981; Casciaro & Piskorski, 2005; Gulati, 2007) to delineate the sum of the parties' dependence on one another. Higher levels of mutual dependence increase the depth of economic interaction between exchange partners and in this way are related to a stronger relational orientation (Gulati, 2007). These relationships are therefore expected to be stable and beneficial for both parties. Hence, symmetry in the dependence of two trading partners is expected to facilitate the relationship (Andaleeb, 1996).

Figure 9 shows the relation between buyer dependence and supplier dependence. The white surface refers to a situation in which both partners have a similar level of dependence on each other. In cases of such balanced dependence, relationships may still differ with respect to total mutual dependence. That is, the buyer-supplier relationship can be characterized by a low or a high mutual dependence, each of which has behavioral implications for the relationship. Mutual dependence has been shown to reduce the uncertainty of transaction outcomes, increase knowledge sharing activities and improve conflict resolution (Gao, Sirgy, & Bird, 2005; Kaiser, Widjaja, & Buxmann, 2013; Kumar et al., 1995). Low levels of mutual dependence may reflect buyer-supplier relationships with respect to non-critical routine products. High levels of mutual dependence may indicate strongly co-operative relationships (Gulati, 2007). Furthermore, when both parties are aware of each other's (high) dependence, it is unlikely that either side will abuse its position. The risk of retaliation in such situations is easily perceived as too high (Casciaro & Piskorski, 2005; Gulati & Sytch, 2007). Hence, the extent to which a buyer-supplier relationship is characterized by mutual dependence can be expected to positively influence the relational behavior due to relational risk avoidance and the value that both partners perceive in the relation. Relationships in which the buyer and supplier are mutually dependent at a high level are therefore more likely to yield high levels of supplier satisfaction.

Hypothesis 1: High levels of mutual dependence are positively related to supplier satisfaction

Figure 9 - Buyer-supplier dependence (inspired by Caniëls and Gelderman, 2007; Caniëls and Roeleveld, 2009)



4.3.2. Asymmetric relationships and supplier satisfaction

Dependence asymmetry is usually associated with a negative influence on performance by reducing the willingness to compromise (Gundlach & Cadotte, 1994) or to undertake adaptations (Hibbard et al., 2001). In asymmetric relationships, one partner dominates the exchange (Blois, 2010; Casciaro & Piskorski, 2005; Gulati, 2007). Current views dictate that such relationships are less effective because the dominant partner may be tempted to exploit its position (Ireland & Webb, 2007). Usually, the mere presence of asymmetric positions in relationships is associated with instability and conflict (Anderson & Weitz, 1992; Geyskens et al., 1996; Kumar et al., 1995; Rokkan & Haugland, 2002). For instance, if a dominant party forces its views onto its trading partner, knowledge sharing practices will become difficult or even impossible (Kwon & Suh, 2004). Accordingly, Ford and Thomas (1995) show that in asymmetric relationships, communication will predominantly flow from the dominating

party to the dependent party, which hampers the dependent party's responses to the dominant party's initiatives.

If relationship continuity is not a priority, the dominant partner can appropriate the largest share of the relational value created (Brito & Miguel, 2017). Naturally, if the supplier is the dominant party in the relationship, it is likely to gain high value from the relationship, leading to high satisfaction. For instance, Dyer, Singh, and Kale (2008) provide the example of Toyota. Although Toyota overall made higher relational profits than its suppliers due to asymmetric dependence, some partner suppliers made similar profits to those of Toyota. A main reason for this was that those suppliers offered more valuable and unique components than other suppliers. Consequently, the dependence of Toyota on these suppliers allowed the suppliers to gain high benefits from the relationship. The value that suppliers perceive in a relationship creates a feeling of fulfillment regarding their relationship investments and is thus linked to supplier satisfaction (Essig & Amann, 2009; Pulles et al., 2016a). Hence, relationships in which the supplier has a dominant position are more likely to lead to higher levels of supplier satisfaction.

Similarly, buying firms are more likely to extract high value from supplier relationships if they hold a dominant position. However, contrary to studies that argue that buyer dominance negatively affects supplier satisfaction, we argue that buyer dominance does not necessarily result in supplier dissatisfaction.

Still, an often accepted assumption in the literature is that dependence on a dominant party has negative consequences for the dependent party. For instance, Mentzer, Min, and Zacharia (2000, p. 553) state that "[r]egardless of whether the firm is in a position of relative power or relative dependence, increasing asymmetry in relative dependence and decreasing total interdependence generates greater conflict, lower trust, and lower commitment." Griffith et al. (2017, p. 126) argue that "a firm that is relatively less dependent on its partner is less motivated to cooperate" and that "as a supplier's relative dependence increases, the supplier is motivated to reduce its asymmetric dependence on its buyer to reduce its vulnerability to potential exploitation" (p. 127). However, in business practice, many suppliers are highly dependent on large buyers, but not all of these relationships generate conflicts, and the suppliers do not always seek to reduce vulnerability in these relationships. Additionally, buying firms do not necessarily exploit the dependence of suppliers, which would limit the negative consequences of dependence asymmetry. Gaski (1984) distinguishes exercised and

unexercised power and argues that although a dominant party may have the ability to control another party's behavior, the dominant party does not necessarily need to exercise this control. Gaski (1984) argues that exercised dominance (e.g., coercive power tactics) negatively influences supplier satisfaction. Indeed, research shows that a buyer's abuse of a dominant position may have a negative impact on the value-generating performance of the relationship (Gulati, 2007; Nyaga et al., 2010). On the other hand, unexercised dominance is argued to positively influence satisfaction (Gaski, 1984). For example, Toyota and Ikea are large firms with many smaller and dependent suppliers, but these firms are not known to exploit their suppliers. Instead, they are known for their successful supply management and satisfied supplier base.

However, even if a dominant buyer extracts a higher relative value of a relationship than a supplier, the supplier may still be satisfied due to the absolute value it perceives. That is, even though a relationship is not symmetrically interdependent, high levels of absolute value for the supplier could still result in supplier satisfaction. For instance, Wal-Mart sometimes uses its dominance to squeeze its suppliers. Still, compared to smaller retailers, Wal-Mart offer suppliers better absolute growth opportunities in terms of market shares (Bloom & Perry, 2001), which can result in supplier satisfaction, since growth is a key factor determining supplier satisfaction (Vos et al., 2016). Hence, when comparing a symmetric relationship with a small partner with low turnover potential to an asymmetric relationship with a large partner with high turnover potential, a supplier may actually prefer to cooperate with the larger partner, opting to take the higher turnover potential while accepting the relative dependence. In these situations, suppliers are inclined to satisfy the need for large-volume orders for their survival despite the relative dominance of the buyer (Brito & Miguel, 2017). Especially at moderate levels of total mutual dependence, asymmetric dependence situations may lead to higher supplier satisfaction than symmetric ones. Hence, we argue that due to (i) the relative value the supplier retrieves from a supplier-dominant relationship and (ii) the absolute value the supplier retrieves from a buyer-dominant relationship, if the buyer does not exploit this dominance, dependence asymmetry has a positive effect on supplier satisfaction.

Hypothesis 2: At intermediate levels of total mutual dependence, both supplier and buyer dominance are positively related to supplier satisfaction

4.4. Method

4.4.1. Sample and procedure

This study's data were collected in collaboration with a large German chemical company and its suppliers. To prevent response bias, suppliers were informed that responses were collected independently of the focal company. Additionally, suppliers were guaranteed complete anonymity as long as they did not voluntarily indicate their names. Informants were invited by an email including a link to an online survey tool. Two weeks after distributing the questionnaire, all suppliers were called as a reminder. Final reminders were sent out via mail in the third week, after which the survey closed. Purchasing employees, the main contacts of the supplier, were asked by their supervisors to fill in the questionnaire. Their questionnaires were matched to the supplier responses using the same survey tool.

Of the 281 contacted dyads, suppliers and buyers returned 177 and 263 questionnaires, respectively, indicating response rates of 63% and 93%. Matching the buyer and supplier views resulted in 132 dyads. After removing 23 respondents due to missing values and self-reported insufficient knowledge of their partner, the final dataset included 109 dyads. The sample characteristics are shown in Table 11.

Table 11 - Sample Characteristics

1. Length of firm relationship	
<1 years	0%
1-5 years	13%
5-10 years	17%
10-20 years	26%
>20 years	44%

2. Annual turnover of suppliers (in €)	
<10 m €	34%
10 m - 100 m €	34%
100 m - 1 bn €	19%
>1 bn	13%

1. Tenure of respondent	**S**	**B**
<1 years	0%	0%
1-5 years	10%	37%
5-10 years	23%	10%
10-20 years	36%	17%
>20 years	31%	37%

2. Tenure of respondent as sales/purchase representative		
<1 years	1%	0%
1-5 years	18%	41%
5-10 years	28%	20%
10-20 years	34%	30%
>20 years	19%	8%

Notes: S=Supplier; B= Buyer.

4.4.2. Measures

The measures in this research are derived from previous research (see Appendix C). The dependence construct included five items, which comprised statements such as “In this contractual relationship, our company is very dependent on this client/supplier” (Frazier, 1983; Hibbard et al., 2001; Kaiser et al., 2013; Kumar, Scheer, & Steenkamp, 1998). The supplier satisfaction construct entailed five items, such as “On the whole, our firm is completely happy with this customer” and “If we had to do it all over again, we would still choose to use this customer” (Cannon & Perreault, 1999; Hüttinger et al., 2014; Vos et al., 2016). All items were measured on 6-point Likert scales. The anchors for these scales were 1 = strongly agree to 6 = strongly disagree.

We controlled for the length of the relationship in the analyses because contemporary research has shown its influence on the satisfaction in a buyer-supplier relationship (Nagati & Rebolledo, 2013).

4.4.3. Data quality criteria

To test the reliability, discriminant and convergent validity or our data, we first conducted a principal component analysis to examine whether the items load on the hypothesized components (Petter et al., 2007). We applied varimax (orthogonal) and oblique (non-orthogonal, delta = 0) rotations. Factors were identified based on eigenvalues > 1. Four components were extracted from the principal component analysis, covering variances of 23.1%, 22.7%, 21.5% and 7.0%, respectively. Apart from one item measuring dependence, all factor loadings were above the suggested minimum cut-off of .55 (Tabachnick & Fidell, 2007), and no relevant cross-loadings on non-hypothesized components were found. The varimax and oblique rotations yielded similar results. We excluded the weak dependence item from further analysis (see Appendix C).

Then, we tested the data on linearity, independence of residuals, heteroscedasticity and outliers. When regressing the independent variables on supplier satisfaction (using OLS regression), the residuals appeared independent (Durbin Watson tests, DW = 1.67 >1), but the distribution of residuals departed from normality (Shapiro Wilk Test, $W(109)= .965$; $p < .01$) (Field, 2009). The Koenker (Koenker, 1981) heteroscedasticity analyses revealed possible heteroscedasticity ($\chi 2(df=1)=10.85$, $p<.001$), meaning that the model shows signs of asymmetric relationships (Woodside, 2013). To mitigate bias stemming from

heteroscedasticity and non-normality, we bootstrapped our data in the regression analyses with 5,000 bootstrap samples, which is a common procedure under these circumstances (Efron & Tibshirani, 1993; Field, 2009; Vos et al., 2016). Concerning outliers, the Cook's distances appeared to range between .09 and .01, which indicates that no separate cases have a strong influence on the regression results (Bollen & Jackman, 1990). Finally, the Cronbach's alphas are all above the threshold of .70 and the variance inflation factor values are below 4, indicating good reliability and low multicollinearity (Diamantopoulos & Siguaw, 2006; Field, 2009).

Table 12 presents the construct means, standard deviations, correlations and quality criteria.

Table 12 - Construct Correlations and Quality Measures of Constructs

Construct	Mean	SD	CA	VIF	1	2	3
1. Buyer Dependence	2.74	1.11	0.90	1.85	-		
2. Supplier Dependence	3.44	1.20	0.87	1.45	0.04	-	
3. Supplier Satisfaction	5.44	0.59	0.90	-	0.16	0.43**	-
4. Relationship Length	21.51	14.92	-	1.12	0.10	0.19*	0.04

Notes: SD=Standard deviation; CA= Cronbach's alpha; VIF= Variance inflation factor.

Analytical strategy

4.4.4. Analytical strategy

We used polynomial regression with response surface analysis (Edwards, 1994; Shanock et al., 2010) to test the effects of dependence on supplier satisfaction. Although relatively unknown in the purchasing and supply management literature, this analysis technique is growing in popularity in a variety of fields, such as marketing (Kim and Hsieh, 2003), innovation (Lee et al., 2016), organizational behavior (Caniëls & Veld, 2016; Hecht & Allen, 2005), information systems (Venkatesh & Goyal, 2010) and personnel psychology research (Shaw & Gupta, 2004).

Traditional approaches to measuring the dependence between parties calculate the algebraic difference between dependencies (Joshi, 1998; Yilmaz & Kabadayi, 2006), the average or the sum of these measures (Gundlach & Cadotte, 1994) or use spline scores (Gulati & Sytch, 2007; Kumar et al., 1995). For instance, for spline scores, the difference between

the supplier's dependence (SD) and the buyer's dependence (BD) are calculated. Then, the supplier dominance equals SD – BD if (BD > SD) and zero otherwise. Conversely, the buyer dominance is BD-SD if (SD > BD) and zero otherwise. However, Edwards (1994) and Shanock et al. (2010) highlight severe methodological drawbacks of the above approaches. These approaches compute two predictor variables (i.e., buyer dependence and supplier dependence) into a single score (i.e., relative dependence), which reduces the available information. However, completely different situations may lead to similar averages. Using polynomial regressions with response surface analysis instead allows one to investigate a three-dimensional view of the relationship between combinations of buyer and supplier dependence on the one hand and supplier satisfaction on the other hand (Edwards & Parry, 1993). Additionally, polynomial regression analysis differs from interaction analysis, since it too includes two non-linear effects (X2 and Y2) rather than only an interaction term (cross product XY) in the regression equation. These non-linear terms allow for one to examine whether an apparent interaction effect is actually a curvilinear effect.

In line with the suggestions by Shanock et al. (2010), we first examined how many dyads demonstrated discrepancies between buyer dependence and supplier dependence, which would enable us to perform polynomial regressions with sufficient variance. To do so, we computed the standardized scores of buyer and supplier dependence. The standardized buyer dependence scores with half a standard deviation above and below the standardized supplier dependence scores were coded as supplier dominance and buyer dominance, respectively. The scores in between were coded as balanced dependence (see Table 13). As shown in Table 13, the cases are evenly distributed among the three dependence groups, and thus, we can conclude that indeed it makes practical sense to analyze the discrepancies between dependencies (Shanock et al., 2010).

Next, we centered buyer and supplier dependence around the midpoint of their respective scales to reduce the potential risk of multicollinearity (Cohen, Cohen, West, & Aiken, 2013; Edwards, 1994). Finally, we conducted the polynomial regression with 5,000 bootstrap samples (resampling with replacement from the original dataset) and used the Excel spreadsheet from Shanock et al. (2010) to generate a three-dimensional view of the combined relationship between buyer and supplier dependence and its effect on supplier satisfaction, including significance testing. We applied a significance level of .05 (one sided) for all subsequent analyses.

Table 13 - Frequencies of Dependency Levels of Buyer and Supplier Dependencies

Groups	N	%	Buyer Dependence		Supplier Dependence	
			M	SD	M	SD
Buyer Dominance	39	36	2.02	0.86	4.35	0.87
Similar Dependency	31	28	2.74	0.90	3.48	0.99
Supplier Dominance	39	36	3.45	1.03	2.49	0.90
Total	109	100	2.74	1.11	3.44	1.20

Notes: N= Number of cases; M=Mean; SD= Standard Deviation; Dominance groups are based on half a SD (and more) difference between the standardized scores of the two constructs, for details see Shanock et al. (2010).

4.5. Results

Table 14 shows the results of the polynomial regression analyses. We used a hierarchical regression consisting of three steps. The first step regressed the control variable (relationship length) on supplier satisfaction (Model 1). This procedure revealed a non-significant effect. The second step added the explanatory variables (i.e., buyer and supplier dependence) to the regression (Model 2), showing a significant increase in the explained variance (R^2 change = .35). The third step in the regression analysis revealed a significant cross-product of buyer dependence with supplier dependence (Model 3). We used surface analysis to interpret the results of this model.

Table 14 - The impact of buyer and supplier dependence on supplier satisfaction

Variables	Dependent: Supplier satisfaction					
	Model 1		Model 2		Model 3	
	B	SE	B	SE	B	SE
Step 1						
Length of relationship	.00	.00	.00	.00	.00	.00
Step 2						
Buyer dependence (X)			.21**	.05	.05**	.36
Supplier dependence (Y)			.08*	.04	.12*	.07
Step 3						
X^2					.04	.04
Y^2					.04	.04
X * Y					-.06*	.04
Adjusted R^2	-.01		.18		.20	
R^2 change	.00		.20**		.04	

*Notes: *=p<0.05; **=p<0.01; B=unstandardized regression coefficient; SE= Standard error; N=109; Bootstrap samples=5,000.*

Figure 10 - Response Surface Model

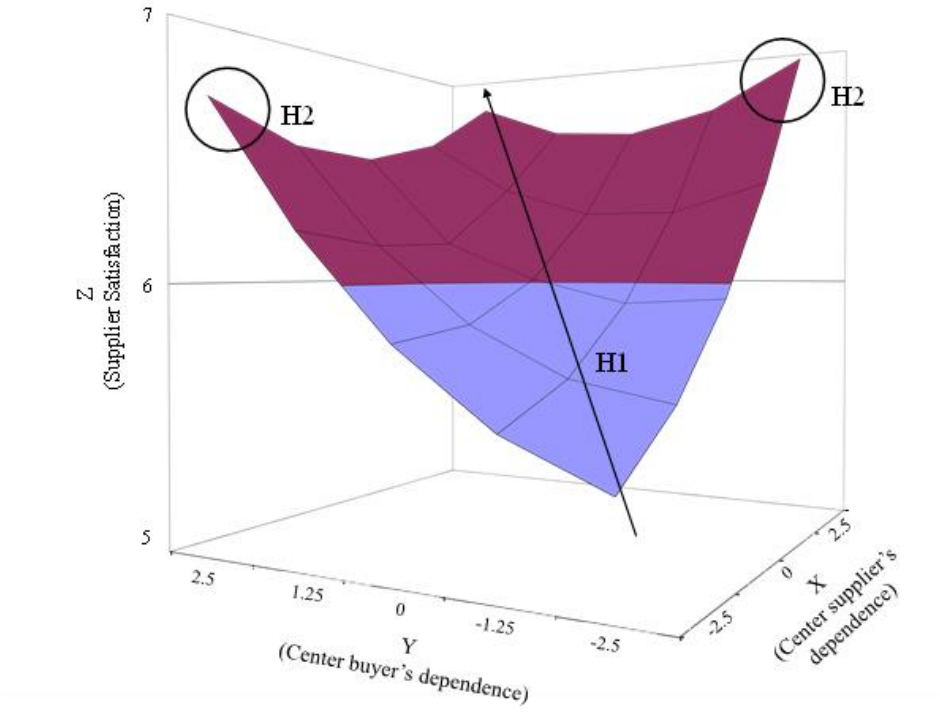


Figure 10 shows the three-dimensional response surface of the polynomial regression. We differentiate between balanced dependence situations (H1) and asymmetric dependence situations (H2). Figure 10 can be interpreted with the help of four surface test values for the slope and curvature along the X = Y line and the X = -Y line (Table 15). The slope of the line of balanced dependence (X = Y, buyer dependence equals supplier dependence) is given by a1 (= b1 + b2, where b1 is the β for buyer dependence and b2 is the β for supplier dependence). Curvature along the X = Y line is indicated by a2 (= b3 + b4 +b5, where b3 is the β for buyer dependence squared, b4 is the β for the cross-product of buyer dependence and supplier dependence, and b5 is the β for supplier dependence squared). We find that a1 differs significantly from zero and a2 does not; hence, there is a linear slope along the line of balanced dependence. The positive value of a1 indicates that higher levels of mutual dependence are related to higher levels of supplier satisfaction. In Figure 10, this relationship is indicated with the upward pointing arrow. These findings support Hypothesis 1.

The impact of asymmetric dependence can be assessed by the slope and curvature along the line perpendicular to the line of perfectly balanced dependence, i.e., the X = -Y line. We find that a3 (= b1 - b2) does not significantly differ from zero, while a4 (= b3 - b4 + b5) does (Table 15). Hence, our data show a curve along the X = -Y line. The positive value for a4 indicates a convex surface along the line of perfect asymmetry, i.e., there is a U-shaped curvature along this line. Hence, we find that at intermediate levels of total dependence, extreme asymmetries have a positive impact on supplier satisfaction. In fact, the U-shape suggests that asymmetric dependence situations are associated with higher supplier satisfaction than balanced dependence situations. This finding supports Hypothesis 2.

Table 15 - Analysis of Slopes and Curvatures, effects as related to supplier satisfaction

	Shape along balance line; Supplier dependence = buyer dependence (X=Y)		Shape along asymmetry line; Supplier dependence = - buyer dependence (X=-Y)	
Slope	a1 = b1 + b2	.30**	a3 = b1 – b2	.06
Curvature	a2 = b3 + b4 + b5	.02	a4 = b3 – b4 + b5	.13*

*Notes: * p < .05, ** p < .01. a1 and a2 represent the slope of each surface along the X=Y line, while a3 and a4 represent the slope of each surface along the X=-Y line, where b1, b2, b3, b4, and b5 are the unstandardized coefficients on X, Y, X², XxY, and Y², respectively.*

4.6. Discussion and conclusion

4.6.1. Discussion and implications

This study aimed to increase current knowledge on how relative dependence in buyer-supplier relationships is related to supplier satisfaction. In business practice, dependence asymmetry is often observed; therefore, research into dependence asymmetry in buyer-supplier relationships is crucial (Belaya, Gagalyuk, & Hanf, 2009; Nyaga et al., 2013). Moreover, in reality, most buyer-supplier relationships are characterized by intermediate levels of total mutual dependence, which makes analysis of these situations particularly relevant. With the help of polynomial regression analysis combined with surface response analysis, we investigated the impact of balanced dependence situations versus asymmetric situations on supplier satisfaction. It is important to distinguish between balanced and asymmetric dependence, as many studies assume a positive effect of the former and a negative effect of the latter (Griffith et al., 2017; Mentzer et al., 2000). However, several empirical works show how this assumption is not necessarily correct. For instance, Kemp and Ghauri (2001) find that dependence asymmetry does not influence conflict between partners and that other, intermediate factors play a more important role. Similarly, Geyskens et al. (1996) report that, contrary to their expectations, dependence asymmetry does not negatively influence relational commitment.

The effects of asymmetry in a relationship may be less straightforward than is often realized, because having power over a partner does not necessarily relate to (ab)using this power, especially in situations in which total dependence is at a moderate level. As noted, Gaski (1984) argued that power usage by a dominant partner generally leads to dissatisfaction of the dependent partner, while non-usage of power leads to satisfaction at the end of the dependent partner. Hence, although conventional dependence reasoning may suggest that asymmetry is directly related to the (ab)use of power, this relationship may actually be less unequivocal (Gulati, 2007). Therefore, this study aimed to increase insights into how configurations of relative dependence relate to supplier satisfaction.

For *balanced* dependence, we find support for the hypothesis that mutual dependence has a positive impact on supplier satisfaction (slope X=Y). This finding is in line with previous studies showing that increased levels of mutual dependence are associated with supplier satisfaction (Kaiser et al., 2013; Lai, Chu, Wang, & Fan, 2013). Supply chain management

studies have shown that to the satisfaction of all involved, high mutual dependence among supply chain parties is related to high degrees of integration (Lai et al., 2013), because commitment is enhanced and supply chain management processes are streamlined (Wu, Chiag, Wu, & Tu, 2004). Similarly, Benton and Maloni (2005) found that dependence has a positive impact on various aspects of buyer-supplier relationships (e.g., trust, commitment, and conflict resolution), which in turn enhance supplier satisfaction. Our study advances previous research by confirming this relationship using dyadic data, whereas existing studies are predominantly based on single source data. Furthermore, previous research has noted that symmetry is preferable to asymmetry, whereas with our data set, it was possible to demonstrate that symmetry at a high level of total mutual dependence generates more supplier satisfaction than symmetry at a low level of total mutual dependence. The idea of high total dependence being beneficial for buyer supplier relations has been stated before (Casciaro & Piskorski, 2005; Gulati & Sytch, 2007), but until now, it has not been tested for balanced dependency situations specifically.

For *asymmetric* dependence, our data suggest that at intermediate levels of total dependence, extreme dependence asymmetries have a positive impact on supplier satisfaction (curvature X=-Y). The response surface analysis indicates that there is a U-shaped curvature along the line of perfect asymmetry. Moreover, it does not matter whether the buyer dominates the supplier or vice versa. This finding adds more clarity to the current literature on how dependence influences buyer-supplier relationships at intermediate levels of total mutual dependence. We find that suppliers are most satisfied when either (a) the buyer is highly dependent on the supplier or (b) the supplier is highly dependent on the buyer. The second finding (b) counters the often-accepted assumption in the literature that dependence on a dominant party has negative consequences for the dependent party. Why would highly dependent suppliers still be satisfied in a buyer-dominated relationship? The underlying assumption of dependence-based buyer-supplier relationship typologies is that a party that has a dominant position in the relationship will (ab)use this position and exploit the more dependent party (Tangpong, Michalisin, & Melcher, 2008). However, asymmetric dependence may not necessarily imply exploitation of the dependent party (Kumar et al., 1998). Dominance can also be used to benefit the value-generating capacity of the relationship. For instance, Pulles et al. (2014) found that buyer dominance most effectively generates a change in supplier behavior when it is used for rewarding rather than coercing

the supplier. Additionally, a dominant buyer can provide guidance when buyer and supplier collaborate on joint tasks (Gulati, 2007; Jap, 1999; Kaiser et al., 2013) (Castellucci & Ertug, 2010). The work of Gaski (1984) suggests that the non-usage of power by a dominant partner actually leads to satisfaction of the dependent partner. In earlier work, Molm (1981) found that power usage is often much lower than relative dependence would suggest. Additionally, Kumar (1996) notes how large manufactures instill practices that strive to prevent the supplier from perceiving inequity, despite relative dependence. Hence, the relationship between power use and dependence asymmetry is arguably less direct than suggested in classic power thinking (Gulati & Sytch, 2007).

In addition, we argue that even if a dominant buyer extracts higher *relative* value in a relationship, a supplier may still be satisfied in a relationship due to the *absolute* value it perceives. Instead of a symmetric relationship with a small partner with low turnover potential, suppliers may actually prefer to cooperate with a large partner, opting for higher turnover potential while accepting the relative dependence. Although a dominant buyer may extract the highest relative value from the relationship, a supplier would still be satisfied due to the absolute value it perceives. The apparently counter-intuitive observation of high supplier satisfaction in the presence of a supplier's dependency also becomes understandable from a closer view of the so-far identified antecedents of supplier satisfaction: growth, profitability, relationship quality and operative excellence (Vos et al., 2016). Regardless of the exact dependency configuration, suppliers may extract value from the growth opportunities offered by a certain buyer or from operative excellence on part of the buyer, such as having accurate planning systems and well-working payment systems. It is likely that these factors offset possible negative effects from being the non-dominant party. Future research may want to analyze how these factors interact with the dependency configuration in determining supplier satisfaction.

Our findings provide new insights for the literature on supplier satisfaction. Hüttinger et al. (2012) discussed drivers of supplier satisfaction and indicated that more research is needed. We advance insights in this field by showing the complex interplay between buyer and supplier dependence in relation to supplier satisfaction. We show that asymmetric dependence situations can still be satisfactory to suppliers (even more so than balanced dependence situations). A few studies found evidence that point in this direction (Kaiser et al., 2013), however, no prior study has investigated the relationship between dependence

asymmetry and supplier satisfaction.

Finally, the polynomial regression approach used here is helpful for understanding the complexities of the relationship between buyer and supplier dependence with respect to supplier satisfaction. Although the potential of the technique has already been elucidated by Kim Kim and Hsieh (2003), Caniëls and Veld (2016) and (Venkatesh & Goyal, 2010), studies into buyer-supplier relationships have left it unnoticed. Because this technique allows us to use buyer dependence and supplier dependence as two distinct constructs with separate measures, we do not reduce the available information, which is a drawback of current studies that collapse buyer and supplier dependence into a single score. The possibility of finding a significant curvature makes it possible to distinguish between asymmetric and symmetric dependence situations at the same level of total mutual dependence. This analysis has not been conducted before, and it is not possible with other techniques.

4.6.2. Managerial *implications*

From a managerial perspective, dependency from a business partner is typically perceived as a negative situation that should be avoided. This study casts new light on this assumption: concerning supplier satisfaction, it is not so much dependency asymmetry that matters but the degree of dependency. The more dependent both parties are on each other, typically, the more satisfied the supplier is. Hence, the general rule to avoid dependency – as postulated, for instance, by resource dependency theory – may not necessarily be the best recommendation in all cases. To benefit from satisfied suppliers and the associated advantages – notably, supplier innovation and fair pricing behavior (Schiele et al., 2011c) – dependency is both acceptable and, under many circumstances, necessary. In fact, synergetic high (mutual) dependence is desirable from a satisfaction point of view, while a lack of dependency is associated with low supplier satisfaction. This finding calls for a re-evaluation of the "routine" quadrant in the Kraljic matrix, which is exactly characterized by mutual independence.

The finding that high mutual dependence is found to generate benefits is an argument for single source tactics. This argument is further underscored by the observation that asymmetric dependence of a supplier on a buyer is also a condition that, in our data, led to supplier satisfaction, on average. Furthermore, counter-intuitively, the buyer may accept situations of dependency from the supplier (Schiele & Vos, 2015). Our study shows that such

situations are associated with high increases in supplier satisfaction, and hence, the supplier has no incentive to commit moral hazard and abuse the situation of its client's dependency. The typical recommendation for the situation of dependency from suppliers (the bottleneck quadrant in the Kraljic logic) is to avoid such cases. Here, our findings are a call to revisit this case by challenging the assumption that dependency automatically has detrimental effects.

In today's business environment, typical buyer-supplier relationships are characterized by intermediate levels of mutual dependency. Suppliers deliver to several buyers, and buyers source from various suppliers. Our study shows that at intermediate levels of total dependency, asymmetric dependence situations are preferable over symmetric dependence situations in terms of generating supplier satisfaction. A dominant position can be used to provide guidance and direction in joint projects. Managers of dominant forms are advised to use the dominant position of their firm in a non-coercive, rewarding way. This behavior will lead to supplier satisfaction, which in itself is related to various positive outcomes for buyers and suppliers alike.

Finally, another important, though challenging, managerial implication is that it is not the relative dependency matters, but the absolute value. It is challenging because of the difficulty of measuring dependencies in an objective and multi-scaled way. It is one thing to measure dependency in an anonymous scientific survey; it is another thing for firms to objectively assess their business relation. Here, future research could work on refining measurements applicable in a single-sided way, either by a supplier trying to rate its dependency from a buyer or a buyer trying to assess its dependency from a supplier.

4.6.3. Limitations and future research

The results of this study should be viewed in light of some limitations. First, the most serious shortcoming of our study stems from our data set, which has one company at its origin. It cannot be fully excluded that the particularities of this firm may influence the results. Our sample consists of suppliers that had lengthy satisfying relationships with their buyer. With regard to our data set, the suppliers of the focal company on average indicated a very high commitment towards the focal company in the questionnaire, since the mean relationship length was 21 years. This may limit the generalizability of our findings. More research is needed that employs more-diverse datasets and different contextual situations.

Second, similar to other studies on buyer-supplier relationships, we adopted a cross-sectional research design, which prevents us from investigating the direction of causality. Although we have theoretical reasons for expecting that dependence leads to satisfaction, our statistical method cannot rule out a reversed causal relationship. Future research may adopt a time-lagged research design.

Third, it would be worthwhile to further investigate how relative dependence interacts with power usage by the buyer. In this paper, we referred to the important work of Gaski (1984), who differentiated between power usage and non-usage and who suggested that power non-usage is important for partner satisfaction. In a similar vein, a study by Hausman and Johnston (2010) indicated that coercive power strategies are counterproductive, while non-coercive power strategies can generate commitment and positive outcomes in buyer-supplier relationships. However, more research is needed that explores interaction effects between dependence and power usage. Chen, Zhao, Lewis, and Squire (2016a) made a first step in showing an interaction between dependence and information sharing. Similarly, Crook, Craighead, and Autry (2017) discuss how the use of dependence advantages could be constrained by ineffective capabilities internal to the buying firm's organization. These works suggest that power use is not a straightforward outcome of dependence advantages but is contingent on organizational factors. Recent calls for research into these and similar dependence questions (Reimann & Ketchen, 2017) demonstrate that dependence remains one of the most salient research topics within the supply management literature.

Finally, a further exploration of the links between dependence, satisfaction and supplier performance may be a fruitful avenue for future research. A major question in this context is whether supplier performance is directly related to supplier satisfaction or whether the shape of the graph shown in Figure 9 is different for the effects of dependence on supplier performance. Are dependence asymmetries and mutual dependence beneficial to supplier performance to the same degree as they appear to be to supplier satisfaction? There may be a dark side to dependence asymmetries on certain dimensions of supplier performance, such as price or quality performance. Future research is necessary to assess the relationships between dyadic dependence, supplier satisfaction and performance.

Chapter 5. Usage of buyer power and its influence on supplier satisfaction: The mediating role of conflict and impact of buyer status

Chapter 5. Usage of buyer power and its influence on supplier satisfaction: The mediating role of conflict and impact of buyer status

Abstract

Supplier satisfaction is seen as a necessary condition to receive preferred customer status from suppliers, which leads to competitive advantages for the buying firm. This study examines the influence of three major social concepts (i.e. power, conflict and status) on supplier satisfaction. Data from 100 suppliers of a Dutch public organization suggests that the use of coercive power has an indirect effect on supplier satisfaction, mediated by conflict. Also, a higher buyer status increases supplier satisfaction and decreases conflicts. There is no evidence for a relationship between the use of reward power and supplier satisfaction.

Keywords: Power, Conflict, Status

5.1. Introduction

Suppliers can help a firm to achieve competitive advantage not only by providing essential resources like raw materials and semi-finished products, but also by providing ideas, knowledge and capabilities which a firm cannot get elsewhere (Koufteros, Vickery, & Dröge, 2012). Obviously, it is possible that competitors try to get the same resources at the same supplier (Takeishi, 2002). Hence, it is important that a buying firm is capable of getting better resources from its suppliers than its rivals (Hunt & Davis, 2008). The fact that some buyers get better resources than their competitors means that the allocation of resources to buying firms is a selective process (Pulles et al., 2016b). The management of the relationship between buyer and suppliers is key to the success of the supply chain and thus impacts the performance of a firm overall (Ambrose, Marshall, & Lynch, 2010). Here, supplier satisfaction directly links to value creation (Vos et al., 2016). Supplier satisfaction is defined as "a condition that is achieved if the quality of outcomes from a buyer-supplier relationship meets or exceeds the supplier's expectations" (Schiele et al., 2012a, p. 1181). Operational antecedents increasing supplier satisfaction have been extensively researched, such as growth opportunities, profitability, relational behavior and operative excellence of the buyer (Vos et al., 2016), but how broader theoretical concepts like power influence supplier satisfaction remains largely unknown. Here, we want to study the impact of power, relational conflict and status on supplier satisfaction.

Power allows one firm to induce desired actions on another firm (Maloni & Benton, 2000). The most widely recognized and used sources of power in literature are coercive and reward power (Pulles et al., 2014; Zhao, Huo, Flynn, & Yeung, 2008). Additionally, in psychological research the usage of power has been linked to conflict in a relationship (Anicich, Fast, Halevy, & Galinsky, 2015), but this link has not yet been studied in buyer-supplier relationships. Past organizational research already showed that coercive power and conflict apart can be detrimental to the quality of a relationship, but did no test them in the same research model (Gaski & Nevin, 1985; Geyskens et al., 1999; Lusch, 1976). This is a flaw in literature, since both are strongly inter-related (Anicich et al., 2015).

The benefit of adding conflict to an assessment of power allows us to get a more detailed view on the effects and consequences of power. Also, scholars up to now focused mainly on the negative side of the usage of power. However, the usage of power might also have functional aims. For example, when a supplier does not fulfil its obligations, the buyer can

use coercive power to change the behavior of the supplier to comply with the promised obligations. In these situations, the supplier perceives the usage of power as legitimate action of a buyer, since the supplier did not perform according to the agreement. Reversely, when the supplier experiences a specific usage of power as illegitimate, but as one-sided value appropriation, conflicts are appearing in a relationship (Lawler, Ford, & Blegen, 1988). Hence, the use of power might not automatically lead to reduced satisfaction in the relationship, but could depend on the extent to which it induces conflict. To test this proposition, we include conflict as a mediator between the usage of power and supplier satisfaction in our research.

As additional factor, we include buyer status in this study. Recent psychological research found that status should be taken into account when studying power-conflict dynamics. Status is a concept from psychology and strategic management. It influences a plenitude of individual and corporate-level perceptions of relational aspects (Anicich et al., 2015; Piazza & Castellucci, 2014; Shipilov & Li, 2008; Shipilov, Li, & Greve, 2011). For example, Anicich et al. (2015) found that high coercive power combined with low status is a direct source of demeaning treatment in relationships. Also, they showed that increasing the status of a high-power role reduces conflict whereas decreasing its status increases conflict (Anicich et al., 2015). Hence, psychological and strategic management literature suggests that a party's status should be taken into account when studying relational conflict and power effects on relational outcomes. Altogether, this leads us to our research question:

Research Question: How are a buyer's usage of power, relational conflict and status related to the satisfaction of a supplier with the relationship?

This research contributes to literature in two ways. Firstly, this study explicitly tests the mediating role of conflict in the relationship between coercive power and supplier satisfaction. We want to uncover whether the usage of power automatically affects supplier satisfaction or whether the negative effect of coercive power is mainly driven by the degree to which it elicits conflict. We uncover whether power is always detrimental to relational atmosphere or whether the usage of power also could have its function in a relationship. Secondly, this study contributes to purchasing and supply management literature by assessing the role of buyer status in an interplay with power and conflict. Strategic management and psychological literature already suggests that status of a party can influence relational

behavior and outcomes, such as resource allocation of partners (Castellucci & Ertug, 2010). Yet, status has not been introduced to the study of buyer-supplier relationships until now. We contribute to literature by explicitly assessing the effects of buyer status on supplier satisfaction dynamics. Status might be a potential high impact variable in buyer-supplier relationships, since strategic management findings suggest that status plays a major role in alliance formation and collaboration (Castellucci & Ertug, 2010; Piazza & Castellucci, 2014). Summarized, the study contributes on the one hand assessing the mediating role of conflict in power dynamics and introduces status to the study of buyer-supplier relationships. The next section continues with the hypotheses and the research model.

5.2. Hypotheses

The first hypothesis concerns the relationship between conflict and supplier satisfaction. According to Thompson and Thompson (1998), "conflict is the perception of differences of interests among people" (Thompson & Thompson, 1998, p. 4). Here, Rosenberg (1974) identified that relational conflicts lead to a decrease in efficiency in distribution channels and consequently to increased costs. Also, conflicts increase the resistance to resolve future conflicts, cause emotional disruption and damage the relationship through subjectivity and distorted judgments. This is in line with other studies, which found direct links between conflict and relational atmosphere. Specifically, Jehn (1994) and Gaski (1984) reported that conflicts reduce intragroup as well as channel member's performance and satisfaction. Hence, these findings suggest that conflict in buyer-supplier relationships reduces supplier satisfaction.

H1: Conflict level in the relationship has a negative impact on supplier satisfaction.

The next hypotheses focus on the direct effects of power on supplier satisfaction and the mediating role of conflict. According to Russell (1938), power is a basic force in social relationships and therefore plays a role in almost all interactions (Fehr, Herz, & Wilkening, 2013; Rucker & Galinsky, 2008; Sturm & Antonakis, 2015). The definition of power varies in different research fields, but most definitions have the same base, namely as Sturm and Antonakis (2015) summarize: "power is having the discretion and the means to asymmetrically enforce one's will over entities" (Sturm & Antonakis, 2015, p. 139). Power is seen as the mechanism of one firm to induce actions on another firm, most commonly

through the use of coercive or reward power (Maloni & Benton, 2000; Pulles et al., 2014).

On the one hand, coercive power refers to the ability to punish the target if it does not comply with the wishes of the power holder (Kim, Pinkley, & Fragale, 2005; Maloni & Benton, 2000; Pulles et al., 2014; Terpend & Ashenbaum, 2012). Accordingly, coercive power is exhibited through threats, which will be executed unless the other party performs the desired behavior. Studies showed that being exposed to a buyer's coercive power often brings costs with it (Anderson & Narus, 1990) and reduces the value of the outcome of the relationship for the supplier (Scheer & Stern, 1992). Accordingly, we expect that the use of coercive power leads to lower supplier satisfaction, due to common one-sided value appropriation. On the other hand, reward power refers to the ability of a buying firm to offer benefits that are attractive to the supplier (Geyskens et al., 1999). This source of power is also used to influence the other party's behavior, but in a more benevolent way than coercive power. The other party chooses to act like the power holder desires, because it prefers to increase in economic value. In turn, an increase of the economic value has a positive effect on the level of satisfaction with the relationship (Ramaseshan, Yip, & Pae, 2006). Accordingly, usage of reward power is expected to lead to increased supplier satisfaction. Summarized, we expect that a buyer's usage of coercive power lowers supplier satisfaction (by reducing the relationship value) and the usage of reward power increases supplier satisfaction (by increasing the relationship value).

H2: The use of coercive power has a negative impact on supplier satisfaction.

H3: The use of reward power has a positive impact on supplier satisfaction.

When coercive power is used, this is unpleasant for the one over whom the power is wielded and leads to negative feelings (Skarmeas, 2006). Such negative feelings, which emerge in the interaction between two companies, can create a tense atmosphere (Gaski & Nevin, 1985; Lusch, 1976). Correspondingly, Welch and Wilkinson (2005) argue that the use of coercive power is a source of conflict, since it leads the target firm to do things against its will. When this happens, disagreements are expected to be expressed frequently between supplier and buyer (Frazier & Rody, 1991). Therefore, we expect that the use of coercive power of the buying firm leads to increased conflicts in the relationship. In relation to reward power, as explained before, it is the capacity of a party to offer benefits that are considered attractive. An example of such benefits is to increase the business with the supplier in future

(Pulles et al., 2014). The supplier feels a higher tendency to agree with the power holder, since the power holder provides more value than normally provided (Lusch, 1976). Accordingly, Nyaga et al. (2013) and Skinner, Gassenheimer, and Kelley (1992) found that the use of reward power is positively related to a supply chain partner's adaptive behavior and more willingness to cooperate with the power holder. Hence, we expect that the usage of reward power leads to less conflict in the relationship. Combined with the expectation that the use of coercive power increases conflict, we state the following hypotheses:

H4: The use of coercive power has a positive impact on conflict in the relationship.

H5: The use of reward power has a negative impact on conflict in the relationship.

After outlining the effects of power on conflict and of conflict on supplier satisfaction, the next section will describe how buyer status is related to power, conflict and supplier satisfaction.

5.2.1. The impact of buyer status on conflict and supplier satisfaction

The root of status lies in sociological research. A commonly used definition of status comes from Goldhamer and Shils (1939), who observed that "men evaluate the objects, acts, and human attributes with which they come into contact. These evaluations may become systematized into a hierarchy of values. Such a judgment of rank made about either the total person or relatively stable segments of the person constitutes the social status" (Goldhamer & Shils, 1939, p. 179). In other words, social status is the ranking of an entity into a hierarchy. This study explicitly draws on the definition of status from sociology, because the popular definitions used in operations research narrow status too much to perceptions of product quality (Podolny, 1993). Hence, we introduce a new view on organizational status to the purchasing & supply management field, which goes beyond merely "the quality of products" (Podolny, 1993, p. 830).

Research suggests that status could have consequences for power dynamics. The idea of a direct link between power and status is based on the similarity of the two concepts: power and status are both sources of potential influence over others (Fragale, Overbeck, & Neale, 2011; French, Raven, & Cartwright, 1959). Yet in contrast to power, status is attributed voluntarily by the partner (Magee & Galinsky, 2008). Status serves functions. One main function of status is that it is a signal that helps market participants to assess attributes of a

firm, such as cooperativeness, innovative potential and product quality (Piazza & Castellucci, 2014). It is build-up by a firm's actions over time (Podolny, 2005).

The use of coercive power might be reversely related to buyer status. For example, Geyskens et al. (1999) and Geyskens and Steenkamp (2000) found that channel members that are exposed to coercive power do not want to be involved with the user of this power. A reasoning for this is that the use of coercive power reduces the value of the relationship as experienced by the other party (Anderson & Narus, 1990; Scheer & Stern, 1992). Because of the negative impact of coercive power, it is likely that a buyer with high status might refrain from using coercive power, since this could send out a negative signal to the market place. Also, Washington and Zajac (2005) found that high status organisations receive benefits above and beyond what they would receive based upon their performance or quality. Since these privileges and benefits are only accessible for a limited number of firms (Castellucci & Ertug, 2010), it is likely that high status buyers have also less incentive to use coercive power, in particular because they already get more benefits. We expect that the higher the buyer's status, the more the buyer refrains from using coercive power. In relation to reward power, status is similar to reward, representing a source of influence over others in a positive way (Fragale et al., 2011; French et al., 1959). So having a high status as a buyer ensures that suppliers comply more with its wishes. Hence, we expect that high status buyers are less inclined to use reward power in a relationship, since it also comes at a cost. With high status, an additional usage of reward power is unnecessary. Summarized, this leads us to the following hypotheses:

H6: Higher buyer status reduces the use of coercive power.

H7: Higher buyer status reduces the use of reward power.

Next to its effects on power, status is also expected to have an impact on supplier satisfaction and conflict. The reasoning behind this is that a buyer's possibility to offer benefits to another party, which go beyond purely transaction-related exchanges, increases the satisfaction of suppliers (Pulles et al., 2014). It can be expected that being in a relationship with a high status buyer has a positive impact on the own status suppliers (Piazza & Castellucci, 2014; Podolny, 2001). This is due to the mechanism that status of an actor can change over time, including status transfers from one actor to another (Piazza & Castellucci, 2014). It is likely that buyer status is an additional social outcome and therefore increases the

value of the relationship (Emerson, 1976). As such, it can be expected that suppliers are more satisfied with a relationship with a high status buyer.

In relation to conflict, scholars showed that status plays an important role in the formation and development of cooperative relationships (Piazza & Castellucci, 2014). This suggests that parties might want to maintain long-term relationships with high-status buyers to maximize advantages. Therefore, it can be expected that the supplier might avoid conflicts and concede easier to wishes when interacting with a high status buyer. In other words, the compliance of the supplier compensates the buyer for the benefits the supplier receives through status transfer (they engage in reciprocity) (Castellucci & Ertug, 2010). Summarized, we expect, on the one hand, that buyer status has a positive impact on supplier satisfaction and, on the other hand, that a supplier is motivated to work more cooperatively together with a high status buyer, leading to reduced conflicts in the relationship.

H8: Buyer status has a positive impact on supplier satisfaction.

H9: Buyer status has a negative impact on conflict level in the relationship.

5.3. Methods

Concerning *data collection & sampling*, the data for this study was collected in collaboration with the purchasing department of a Dutch company from the educational sector i. Out of 6.679 suppliers, only suppliers with a spent volume above €10.000 in the previous year were included in this research. This threshold eliminated smaller suppliers from the sample who just sold to the focal company in a few instances and did not build a relationship yet. 620 suppliers were contacted. Out of this sample, after excluding cases which indicated insufficient knowledge about the buyer to complete the questionnaire (N=4), 100 useable responses were gathered (16.12%).

In relation to the *questionnaire design*, we used existing measures (see Appendix D). Measures for supplier satisfaction and preferred customer status were based on the research of Vos et al. (2016). Both power measures, the use of coercive power and the use of reward power, were adapted from the article of Pulles et al. (2014). The measure of conflict came from the study of Kumar, Stern, and Achrol (1992). For status, the measurement of Torelli, Leslie, Stoner, and Puente (2014) was adapted. The questions were originally made for measuring the status of individuals, but were adjusted to organizational status. All items were measured on a five-point Likert scale ranging from ‘strongly disagree’ to ‘strongly agree’.

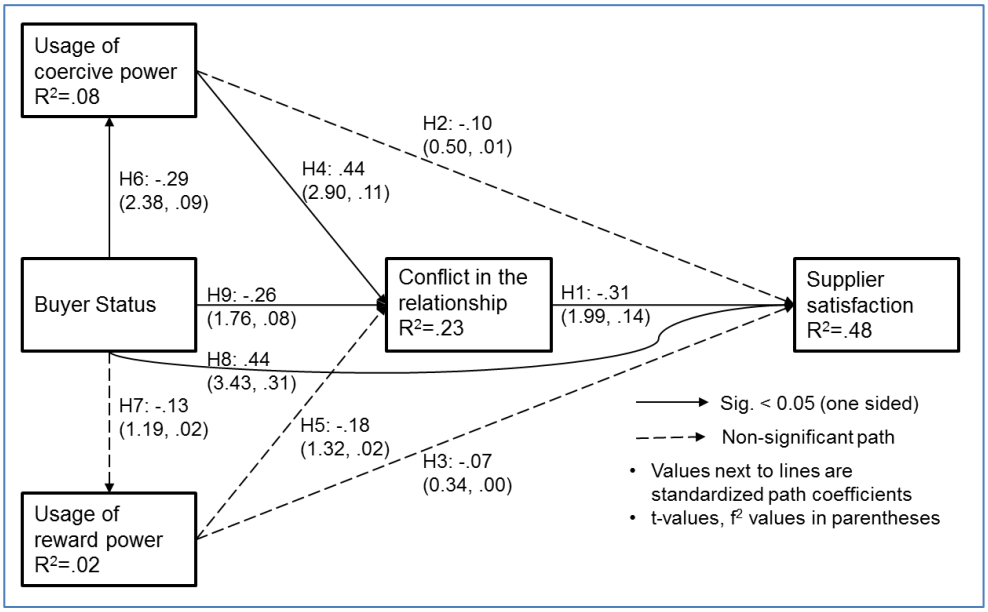
Regarding s*tatistical methods & data assessment*, the obtained data was first assessed in SPSS 24 and then empirically tested through Partial Least Squares (PLS) path modelling. For data assessment (in SPSS 24), first, a factor analysis with the default options for both Varimax and Oblique (Delta = 0) rotations were performed. Results showed loadings of items on the intended factors of higher than 0.55 for all solutions. The communalities for each individual item were all above 0.50, the factor averages above 0.60 and the total average above 0.70. Reliability and validity of the indicators and the latent factors were assessed in SmartPLS 3.0 (bootstrapping 5000). One indicator of reward power loaded too low on the intended construct (t=0.29). Therefore, this indicator was left out. Concerning internal consistency, AVEs for all constructs were higher than 0.5 and composite reliabilities above .70. Concerning discriminant validity, no correlation coefficient were higher than the square roots of AVE. The HTMT-approach showed that all scores are lower than the threshold (0.90) and the confidence intervals didn't contain 1. Summarized, both convergent and discriminant validity were satisfactory. For testing the model, we used the consistent PLS algorithm (due to our reflective measurement constructs) and handled a significance level of 0.05 (one-tailed).

5.4. Results

The results of the consistent PLS-PM analysis are presented in Figure 11. Firstly, concerning hypothesis 1, we found that the level of conflict in a relationship has a negative impact on supplier satisfaction (H1: $t=1.99$; $\beta=-.31$; $p<0.05$). The data does not support the hypothesis that coercive power has a negative impact on supplier satisfaction (H2: $t=0.50$; $\beta=-.01$; p=n.s.). Also, hypothesis 4 stating that reward power has a positive impact on supplier satisfaction is not supported (H3: $t=0.34$; $\beta=-.07$; p=n.s.). Hypothesis 4, which supposes that the use of coercive power has a positive impact on the level of conflict is supported (H4: $t=2.90$; $\beta=0.44$; $p<.05$). There is no empirical evidence that reward power has a negative impact on the level of conflict in a relationship (H5: $t=1.32$; $\beta=-.18$; p=n.s.). Additionally, hypothesis 6, which assumes that there is a negative relationship between the use of coercive power and the buyer status is supported by the results (H6: $t= 2.38$; $\beta=-.29$; $p<0.05$). Concerning hypothesis 7, assuming a negative impact of buyer status on the use of reward power, is not supported by the data (H7: $t=1.19$; $\beta=-.13$; p=n.s.). In relation to hypothesis 8, the findings support the assumption that buyer status has a positive impact on supplier

satisfaction (H8: t=3.43; β=.44; p<0.05). Hypothesis 9 is also supported, status of the buyer has a negative impact on conflict (H9: t=1.76; β=-.26; p<0.05).

Figure 11 - Analysis Results



In the tested model, the level of conflict mediates the relationships between reward/coercive power, status and supplier satisfaction. To test whether these mediation effects are significant or not, we used percentile bootstrap confidence intervals. The results show that indirect effect of coercive power on supplier satisfaction through level of conflict is significant (95% CI_{low}=-0.42; 95% CI_{high}=-0.02; VAF= 0.57), whereas the indirect effect of status on supplier satisfaction mediated by conflict is not significant, since confidence interval includes 0 (95% CI_{low}= -0.01; 95% CI_{high}= 0.31; VAF= 0.16). Correspondingly, conflict serves as a mediator between coercive power and supplier satisfaction, but not as mediator between the buyer's status and supplier satisfaction. The Implications of the findings are discussed in the next section.

5.5. Discussion, Limitations and Future Research

This paper aimed to contribute to supplier satisfaction research by (1) analyzing which

role conflict plays in bridging between the buyer's use of power and supplier satisfaction and (2) introducing the concept of buyer status to purchasing literature and assess how it is related to power, conflict and supplier satisfaction.

The findings show, firstly, that conflict has a direct negative influence on supplier satisfaction, which is not surprising, since conflict is commonly associated with tensions in relationships, thereby supporting previous research (Gaski, 1984; Jehn, 1994).

Secondly, it was found that the use of coercive power does not have a direct significant effect on supplier satisfaction. Yet coercive power influences supplier satisfaction indirectly via the creation of conflict in a relationship. Since most scholars already found a direct effect of coercive power on satisfaction, this finding was novel. The findings of this study suggest that no direct relationship between coercive power and supplier satisfaction exists, but that this link is influenced by the degree to which coercive power evokes conflicts. This indirect effect gives support to the assumption that coercive power might sometimes be perceived as legitimate or at least does not automatically need to lead to conflict.

Thirdly, the results show that reward power does not affect supplier satisfaction or conflict significantly. This result is unexpected, since previous studies suggested a relationship between reward power, conflict and satisfaction. This finding could have been affected by the context of the focal buying firm (public purchasing domain). Possibilities to offer rewards to suppliers are often limited in public organizations. Yet the findings could indicate that the use of reward power itself might not be enough to produce satisfaction and reduce conflict.

Finally, the inclusion of the buyer's status revealed that status does not only increase a supplier's satisfaction and reduces the tendency to use coercive power, but is also reducing conflicts in a relationship. A buyer's status decreases the negative fall-out of using coercive power. Hence, these findings support the notion that status is a source of power and an asset of a company, which can be used by buyers for their advantage.

Summarized, this study provides several theoretical implications. Firstly, the findings showed that the effect of coercive power on supplier satisfaction is significant mediated by conflict. This means that coercive power appears to reduce supplier satisfaction only when it leads to conflict in the relationship. Opposed to previous theoretical arguments, the usage of coercive power does not automatically lead to reduced satisfaction and, thus, coercive power might have a certain relational functions. Yet more research is needed to uncover the specific

mechanisms underlying this mechanism. Moreover, our research showed that buyer status is an influential concept also in buyer-supplier relationships and not only in the formation of alliances not only in alliances (strategic management research). As shown, status has the potential to reduce the need to use coercive power, mitigates conflict and leads to satisfaction. Yet the exact mechanisms underlying the positive influence of status on supplier satisfaction, on the reduced conflict level and on less use of coercive power are fruitful avenues for future research. We contributed to purchasing and supply management research by linking it to status and thus to recent discussions in strategic management and psychology research, emphasizing the importance of status as a relational construct (Anicich et al., 2015; Piazza & Castellucci, 2014).

The study has its limitations. Firstly the sample size was moderate and based on indirect procurement of a public company in the Netherlands. This makes generalizing findings to other populations difficult, like private sector forms. In particular the effect of reward power might have been insignificant due to the constraints of public purchasing, which limits the possibility to actually reward suppliers. Thus, additional research in other contexts and for other product categories is needed. Secondly, we advise that the general measurement of relational conflict (as used in this research) might need to be further refined into dysfunctional and functional types of conflict in future. Right now this study took only the dysfunctional type of conflict into account. Finally, as this research shows, buyer status has a negative influence on the use of coercive power, reduces conflict in the relationship and increases supplier satisfaction. However, we do not know yet what the antecedents and influencing factors of buyer status are. Consequently, future research should aim at theory development and assess the antecedents of a firm's status, to discover how status can be influenced over time. The cross-sectional character of this study limits the possibility to assess effects over time.

Chapter 6. Objects may be closer than they appear: Dyadic trust & dependence and their impact on perception differences in buyer-supplier relationships

Chapter 6. Objects may be closer than they appear: Dyadic trust & dependence and their impact on perception differences in buyer-supplier relationships

Abstract

The aim of this paper is to examine factors affecting perception differences between buyers and suppliers. The main focus of this study is on the buyer's possible over- and underestimation of preferred customer status influenced by dyadic trust and dependencies. We employ polynomial regressions with surface response analyses for testing for curvilinear effects in data from 125 matched dyads. The results show strong influences of asymmetric trust on a buyer's misperception, but no influence of dependence. Based on our findings we suggest that the "dark side" of trust is more complex than discussed in recent studies, which assumed simply an inverted-*U* impact of trust on perception difference of a buyer.

Keywords: Perception difference, Polynomial Regression, Trust

6.1. Introduction

Partners in inter-organizational relationships can have different perceptions of attributes such as communication, demand and technology uncertainty, as well as dependence and performance (Oosterhuis et al., 2013). Specifically, in buyer-supplier relationships both sides might perceive relational attributes and outcomes in different ways (Chen et al., 2016b). It appears even that such perception differences in buyer-supplier relationships are rather the norm instead of just being an exception (Chen et al., 2016b; Oosterhuis et al., 2013). Even though differences in perceptions are beginning to be addressed in literature (Oosterhuis et al., 2013) and first attempts are made to explain the underlying mechanisms (Villena et al., 2011), it is still unclear how perception differences emerge. Yet it is an important topic, since these differences can have severe consequences for the interactions. Scholars argued that perceptions differences of, for example, product quality, commitment and other relational attributes can lead to irritation, misunderstandings, conflict, dissatisfaction, opportunism and even relationship collapse (Anderson & Weitz, 1992; Cousins & Menguc, 2006; Gundlach, Achrol, & Mentzer, 1995; Nyaga et al., 2013). Yet, despite the prevalence of perception differences in practice and the potentially severe consequences of them, there is currently very little understanding of what constitutes these perception differences and how they are influenced.

Several findings by scholars suggest that the key influencing factors leading to perception differences could be trust and dependence. On the one hand, recent findings show a reversed U relationship between buyer trust and a supplier's performance, arguing that parties might lose objectivity if too much relational capital is involved (Villena et al., 2016; Villena et al., 2011). On the other hand, psychological research showed that experiencing dependence differences can lead to blurred perceptions of reality and influences the way parties perceive relational attributes (Fiske, 1993; Fiske & Dépret, 1996; Overbeck & Park, 2001; Vescio, Snyder, & Butz, 2003; Weick & Guinote, 2008). Hence, this paper examines the role of dyadic trust and dependence in perception differences. As dependent variable, the perception difference between how buyers estimate their preferred status at suppliers and how suppliers actually awarded it is assessed. Hence, the research question is:

> *How do trust and dependence influence perception differences between buyers and supplier regarding preferred status of the buyer?*

This paper constitutes three contributions to literature. First, this study gives insights into

dyadic perception differences in inter-organizational relationships. Similar to studies of Oosterhuis et al. (2013) and Chen et al. (2016b) we assess perception differences between buyers and suppliers. We aim at understanding the psychological mechanisms underlying perception differences between partners. Previous research often only describes perception differences. Hence, this study is the first one to specifically analyse the influence of relational factors, such as trust and dependence, on perception differences. Second, despite the common agreement in literature that too much trust could be harmful to perceptions, this research argues that the negative impact of trust is contingent on both sides of a dyadic. As the findings will show, only high levels of trust asymmetry lead to a buyer's overestimation of preferred status, whereas merely one-sided distrust can lead to a systematic underestimation. This implies that trust literature might need to refine its assumptions about the inverted-U effects of trust, which appear more complex than initially supposed. Thirdly, as shown by Villena et al. (2016), it is also important to take dependencies into account when assessing the potential "dark side" of trust in a relationship. Accordingly, we explicitly test for the effects of dependencies on perception differences, thereby adding new insights to dependence literature regarding its insignificant influence on perception differences.

This study also has practical implications. It is the first research to assess how the perceptions of the buying firm differs from the perceptions of the supplier and which factors influence it. To know the factors that influence perception differences can enable buyers to estimate more precisely supplier perceptions in future. As important take-away for practitioners, the study shows that buyers tend to overestimate when trust is not shared by the supplier and systematically underestimate when they distrust suppliers, no matter if this distrust is shared or not. Especially underestimations may have negative long-term consequences for buyers, as they might lead buyers to miss opportunities to work closer together with suppliers and reap additional benefits from the relationship, such as earlier access to innovations, engaging in new product development together (Ellis et al., 2012; Schiele et al., 2011c), mitigating negative effects of dependencies (Schiele & Vos, 2015) and receiving benevolent pricing (Schiele et al., 2011c).

After this short introduction, the next section provides the theoretical background and hypotheses of this study.

6.2. Theoretical background & hypotheses

To compare the dissimilarities in perception, we choose to assess the differences in

perception in buyer-supplier dyads with regard to suppliers awarding preferred customer status to buyers. Following Steinle and Schiele (2008), a firm is a preferred customer if the supplier offers the buyer preferential resource allocation. This definition mirrors the idea that suppliers make a distinction between regular and preferred customers (Hüttinger et al., 2012; Vos et al., 2016). Perception assessments used in previous research, such as technological uncertainty (Oosterhuis et al., 2013), are based on the subjective perceptions of both sides of a dyad. Contrary, in the case of preferred customer status, suppliers deliberately assign buyers a certain status. Thus, one side of the dyad (i.e., the suppliers) is not affected by a perception difference, since it just describes its behavior. This makes it possible to identify to which extent the other side (i.e., the buyer) has indeed misconceptions of the same phenomenon. This allows us to assess factors influencing this discrepancies with less bias than with measures which might be different for both sides of the dyad. Hence, perception difference is defined in this study as the difference in awarded/perceived preferred customer status of suppliers and buyers.

Regarding the factors influencing perception differences, trust between parties is expected to play a major role. Generally, trust has its function in a relationship. From social psychology stems the idea that trust is needed to fill the void of incomplete information (Blomqvist, 1997). Conversely, Simmel (1906) argued that under perfect information no trust is needed (Simmel, 1906). Hence, trust makes uncertain environments more predictable. Trust allows partners to put mutual confidence in each other concerning capabilities and actions (Myers & Johnson, 2004). It leads to cooperative relationship behaviors, which ultimately foster beneficial relationship outcomes (Myers & Johnson, 2004; Weber, Johnson, & Corrigan, 2004). In other words, trust is important in interfirm relationships, because it allows “confident expectations and a willingness to be vulnerable” (Rousseau, Sitkin, Burt, & Camerer, 1998, p. 394). It is “a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another” (Poppo, Zhou, & Li, 2015, p. 726; Rousseau et al., 1998, p. 395). When focussing on trust in to buyer-supplier interactions, trust has the potential to enhance the relationship between buyer and supplier and establish an environment promoting economical exchange and cooperation (Hagen & Choe, 1998; Kim & Hsieh, 2003; Liu, Luo, & Liu, 2009; Morgan & Hunt, 1994). Yet as shown in the definition of Rousseau et al. (1998), trust also makes a party more vulnerable towards opportunism of its partner. This weak spot of trust was further

discussed by Villena et al. (2011) and Villena et al. (2016), who outlined that there might exist a "dark side" of close buyer supplier relationships. Their argument suggests that too much trust could have negative consequences for the relationship, since parties might lose objectivity if too much relational capital is involved (Villena et al., 2011). Also, Stevens, MacDuffie, and Helper (2015) noted that an optimum of trust and distrust is supposed to lead to an optimal performance in organizational relationships. Following this reasoning, buyers who trust too much their suppliers might loose objectivity and thus potentially overestimate the benefits they reap from a relationship. Correspondingly, we expect that:

H1: The more the buyer trusts the supplier, the more the buyer will overestimate its status

Next to trust, psychological researchers showed that the possession of power (i.e., from their conceptualizations dependency of one party) induces a simplified processing orientation and leads to stereotyping (Fiske, 1993; Fiske & Dépret, 1996; Overbeck & Park, 2001; Vescio et al., 2003; Weick & Guinote, 2008) (please note that this conceptualization of power is disputed, for discussions on this topic see Sturm and Antonakis (2015)). A reason for this is that powerful actors tend to perceive things more global and universalistic, thereby emphasizing on single sources of information and relying on ease of information retrieval to make judgments (Goodwin, Operario, & Fiske, 1998; Lammers & Stapel, 2009; Lammers, Stapel, & Galinsky, 2010). Furthermore, powerful actors are often self-anchored and focus on themselves rather than on others (Anderson & Berdahl, 2002; Overbeck & Droutman, 2013; Sturm & Antonakis, 2015; Weick & Guinote, 2008). Dependence of another party engenders a sense of entitlement in the powerholder, potentially leading the powerholder to have exaggerated perception of the benefits derived from a relationship. We expect that these findings from psychology can be transferred to buyer-supplier relationships. Therefore, we anticipate that powerful buyers with a dependence-dominance overestimate their status at a supplier.

H2: Buyer dependence dominance has a positive impact on overestimating the preferred status

After having outlined the hypotheses of this study, the next section describes the data

collection and research methods.

6.3. Methods

This study uses data collected in a study conducted at a German chemical company and its suppliers of indirect material. Out of the 281 contacted buyer-supplier dyads, the suppliers returned 177 and the buyers returned 263 surveys, which reflect response rates of 63% and 93%. Combining the buyer and supplier questionnaires yielded 132 matched dyads. After removing 7 suppliers who indicated insufficient knowledge of their partner, the final dataset included 125 valid responses. Part of the data was already used in the study of Vos et al. (2016), taking a one-sided view on buyer-supplier relationships.

Concerning the questionnaire content (see Appendix E), this research used six-point Likert scales ranging from 1 (strongly disagree) to 6 (strongly disagree) for all dependent and independent variables. The items regarding dependency included statements such as "In order to achieve our business goals, our company has to maintain the relationship to this buyer [supplier]" (Hibbard et al., 2001; Kaiser et al., 2013). Trust was measured through such items as "This buyer [supplier] keeps promises it makes to our firm." (Doney & Cannon, 1997; Hüttinger, 2014). Finally, the measures for preferred customer status included statements such as "compared to other buyers [suppliers] in our firm´s customer [supply] base, this buyer [supplier] is our preferred customer" (Hüttinger et al., 2014; Vos et al., 2016). The perception difference of preferred customer status was calculated by subtracting the results of each supplier questionnaire item from the corresponding buyer questionnaire item. Then, the difference scores were averaged to get the "difference preferred customer status" construct values. Above 0, the buyer overestimated its status, below 0, the buyer underestimated its status.

Three control variables were included in the model. Previous studies found a significant influence of the length of the relationship on performance in buyer-supplier relationships (Nagati & Rebolledo, 2013). Thus, we included relationship length as control. Secondly, buyer's perceived knowledge of the supplier was included since this variable can be linked to estimation accuracy of preferred customer status. In addition, we took potential external influences affecting perception differences into account, namely the buyer's market concentration. For market concentration suppliers answered items like "The market for our products/services is mostly dominated by 4-5 buyers." (Achrol & Stern, 1988; Fink et al.,

2006).

For analyses, we applied polynomial regression with response surface modelling (Edwards & Parry, 1993). This analysis technique has been used in a variety of fields, such as psychology (Caniëls & Veld, 2016; De Stobbeleir et al., 2016) marketing (Kim & Hsieh, 2003), innovation management (Lee et al., 2016), organizational behavior (Hecht & Allen, 2005; Kristof, 1996), information systems (Venkatesh & Goyal, 2010), and personnel psychology research (Shaw & Gupta, 2004; Venkatesh & Goyal, 2010). Polynomial regressions help to understand the impact of composite constructs on a dependent variables more precisely (Lee et al., 2016). Thus, its main contribution exists in testing for higher-order (i.e., curvilinear) effects without losing statistical information (Venkatesh & Goyal, 2010). When combined with response surface modelling, polynomial regressions have the ability to go beyond regular regression or structural equation models, in particular when interactions of variables are studied (Edwards, 2001; Lee et al., 2016; Venkatesh & Goyal, 2010).

To test data quality, a principal component analysis (PCA) was conducted to assess the unique loading of items on their hypothesized components (Petter et al., 2007). Results retained all components with cut-off loadings above 0.5 (Hair et al., 2014) for all varimax rotations. Considering the quality criteria of the latent factors, Cronbach's alpha scores were all above the threshold of 0.7 except for the control variable supplier market uncertainty (0.62). Discriminant validity was supported through variance inflation factors below 4 (Diamantopoulos & Siguaw, 2006; Field, 2009; Pan & Jackson, 2008). Also, the data was analyzed with regard to linearity of residuals, independence of residuals, heteroscedasticity and potential outliers. The residuals appeared to be normality distributed (Shapiro Wilk Test, $WI_{(125)} = .98$; $p = 0.13$) and independent (Durbin Watson tests, DW= 1.9 p=0.54), since both tests were insignificant (Field, 2009). When testing for heteroscedasticity with the Koenker test (Koenker, 1981), the test statistic showed no violation of the assumption of homoscedasticity ($\chi 2_{(1)}$=2.98, p=.08). Finally, when analyzing for outliers it appeared that cooks distances were within the range of .08 to 0.0 which did not exceed the threshold of 1 for influential cases (Bollen & Jackman, 1990).

Moreover, to justify the usage of a polynomial regression, the discrepancy between buyer and the supplier scores on trust and dependency needed to be assessed (Shanock et al., 2010). First, the buyer and supplier responses were standardized. Then, it was determined which suppliers had a discrepancy of more than 0.5 standard deviation above or below the buyers'

views on trust and dependency. In line with the recommendation of Shanock et al. (2010), when the difference of standardized values was above 0.5, they were coded as buyer understrust/ buyer dominance, below -0.5 coded as buyer overtrust/supplier dominance and between -49 and 0.49 coded as equal trust/equal dependence. In line with the recommendation of Shanock et al. (2010) that at groups should have the size of at least 10%, we found that both dependency and trust discrepancies had a satisfactory distribution of cases among our dataset (see Table 16).

Table 16 - Discrepancy analysis including frequencies of trust & dependence levels

Groups	N	%	Groups	N	%
Customer's Under-trust	45	36%	Customer Dominance	43	34%
Equal Trust	39	31%	Equal Dependence	36	29%
Customer's Over-trust	41	33%	Vendor Dominance	46	37%
Total	125	100%	Total	125	100%

Notes: N= Number of cases; Upper and lower groups are based on half a standard deviation (and more) difference between the standardized scores of the two constructs, for details see Shanock et al. (2010).

Additionally, we calculated the correlation between buyers' perceived preferred status and the suppliers' answers. A significant positive correlation ($r_{(125)}$=.36, p<.05) revealed that the dyadic perceptions are indeed related to each other, but only at a low R^2 level of 13% .

Both trust and dependence were centered around the midpoint of their respective scales (Cohen et al., 2013; Edwards, 1994). Then, we performed the polynomial regression and used the Excel spreadsheet of Shanock et al. (2010) to generate a three dimensional view (i.e., surface analysis), including significance testing. We used a significance level of .05 (one-tailed) for all subsequent analyses.

6.4. Results

The model was tested in four steps (see Table 17). First, the control variables were included in the equation for model 1. Relationship length appears to have no effect on the perception differences (β=.01, p=n.s.), whereas the knowledge a buyer thinks to have about a supplier has a positive (β=.25, p<.05) and market concentration a negative (β=-.16, p<.05) influence

on perception differences. As second step, the predictors were included in the model (model 2). As before, the control variable market concentration has a positive influence on a differing perception of the buyer (β=-.17, p<.05). Regarding the hypotheses, the results show that the buyer's trust has a direct positive influence on the degree to which the buyer has a perception differences (β=.67, p<.05), so hypothesis 1 is supported based on standard OLS regression. The other predictors were insignificant, thus the second hypothesis expecting an influence of dependence on perception differences is not supported. However, these findings are not yet final, because the curvilinear effects were tested in the following step including polynomial regression.

To test for curvilinear effects of trust and dependence (i.e. polynomial analysis and response surface modelling), the polynomial terms were inserted in the model in steps 3a and 3b (Table 17, models 3a and 3b). Whereas the polynomial term revealed a significant effect of trust (β=.89, p<.05) and the squared term of trust (β=.26, p<.05) on the difference of preferred customer status, no polynomial effects of dependence were found. Again, hypothesis 1 is supported, whereas hypothesis 2 is rejected. To further interpret the results, the regression findings were imputed in the Excel analysis file provided by Shanock et al. (2010). The results of this analysis (see Table 18 and Figure 12) revealed that the slope of the asymmetry line of trust is significant (β=1.51, p<.05). The follow-up surface analysis presented in Figure 12 revealed the peak of overestimation on the right side of the figure. This implies that the higher the asymmetry in trust between supplier and buyer, the higher the overestimation of the preferred customer status of the buyer. Hence, it is not the overall trust level of the buyer which leads to overestimating preferred customer status, but only a very high buyer trust in combination with very low supplier trust which lead to an overestimation (when buyer trust is not reciprocated).

Additionally, the low-level plateau on the left side of Figure 12 indicates that low buyer trust leads to a systematic underestimation of preferred customer status, no matter how much the supplier trusts the buyer. Concerning curvilinear effects of dependence, the analyses revealed that neither slope nor curvature lines are significant, meaning that neither buyer dependence dominance nor supplier dependence dominance have a significant influence on the difference in perception of preferred customer status (see Table 18). Due to insignificance, no surface analysis was performed for dependence.

Table 17 - Results of Hierarchical Regression on Difference Preferred Customer Status

Variables	Dependent: Difference preferred customer							
	Model 1		Model 2		Model 3a		Model 3b	
	B	SE	B	SE	B	SE	B	SE
Step 1								
(Constant)	-1,51**	,44	-1,45**	,47	-1,35*	,66	-1,61**	,48
Knowledge Relationship	,25**	,08	,14	,07	,14	,07	,15*	,07
Length of Relationship	,01	,01	,00	,01	,00	,01	,00	,01
Market Concentration	-,16**	,06	-,17**	,06	-,18**	,06	-,18**	,06
Step 2								
Buyer Dependence (BD)			-,04	,07	-,04	,07	-,12	,09
Supplier Dependence (SD)			-,05	,07	-,04	,07	-,02	,08
Buyer Trust (BT)			,67**	,11	,89**	,34	,70**	,11
Supplier Trust (ST)			-,17	,11	-,74*	,43	-,14	,11
Step 3a								
BT * ST					-,08	,15		
BT^2					-,05	,11		
ST^2					,26*	,12		
Step 3b								
BD * SD							,06	,06
BD^2							-,07	,05
SD^2							,02	,05
Adjusted R^2	,07		,28		,29		,28	
R^2 change	,08**		,24**		,03		,02	

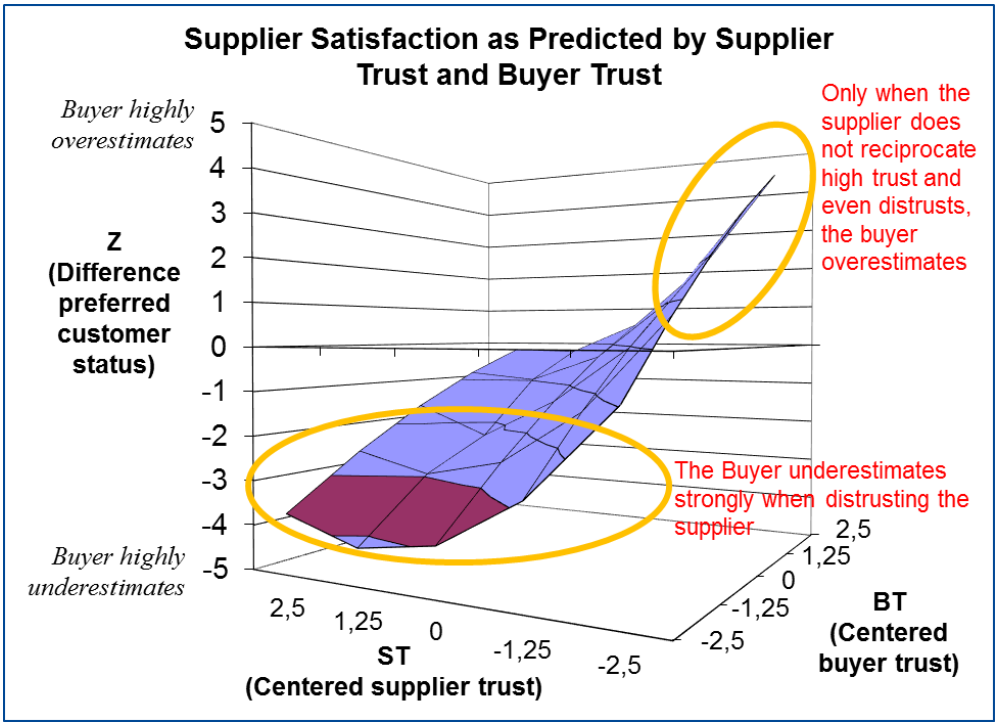
*Notes: *=p<0.05; **=p<0.01; B=unstandardized regression coefficient; SE= Standard error; N=112; Bootstrap samples=5,000.*

Table 18 - Polynomial analysis of slopes and curvatures for effects of trust

	Trust			Dependence		
	Coefficient	SE	t	Coefficient	SE	t
Effects along balanced line (Buyer=Supplier)						
Slope (a1 = b1 + b2)	0,15	0,63	0,24	-0,14	0,12	-1,22
Curvature (a2 = b3 + b4)	0,12	0,21	0,57	0,01	0,08	0,13
Effects along asymmetry line (Buyer=- Supplier)						
Slope (a3 = b1 – b2)	1,63	0,44	3,74**	-0,11	0,12	-0,89
Curvature (a4 = b3 – b4 + b5)	0,29	0,26	1,12	-0,12	0,08	-1,42

*Notes: **=p<0.01; BT= Customer Trust; ST= Vendor Trust; BD= Customer Dependence; SD= Vendor Dependence; Coefficient= Unstandardized beta coefficient; SE= Standard error; t= t-test statistic; Sig= Significance level; a1 and a2 represent the slope of each surface along the X=Y line, while a3 and a4 represent the slope of each surface along the X=-Y line, where b1, b2, b3, b4, and b5 are the unstandardized coefficients on BT [BD], ST [SD], BT² [BD²], STxBT [SDxBD], and ST² [SD²], respectively; Tables based on Shanock et al. (2010).*

Figure 12 - Surface Analysis of Trust Influencing Difference of Preferred Customer Status



6.5. Discussion

The aim of this paper was to discover which relational factors influence dissimilarities in the way the buyer perceives its preferred customer status in contrast to how the supplier awards it. Perception differences in buyer-supplier relationships can lead to conflict and dysfunctional interaction. Hence we were interested how they are influenced. Therefore, we examined the impact of trust and dependence on these differences.

In relation to trust, the initial findings showed indeed support for a "dark side" of buyer supplier relationships. This view implies that well-established relationships on the one side (the bright side) generate value, but at the same time can have negative impact via overly positive relationship perceptions (the dark side) (Villena et al., 2011; Wang, Kayande, & Jap, 2010). This view argues that trust can be harmful for performance if it is too excessive: When too of it is involved, this leads amongst other influences to a loss of objectivity (Villena et al., 2016; Villena et al., 2011). This notion implies that the buyer should be careful to trust its supplier too much.

However, based on the extended polynomial analyses of this study, such an interpretation does not appear to provide the full picture. By combining dyadic data with polynomial regression and surface analysis we assessed more precisely how supplier and buyer trust interact in influencing perception differences. In contrast to other studies, our findings suggest that a high level of trust is only harmful when buyers trust their suppliers much more than suppliers trust them. In other words, only when the buyer has high levels of trust in the supplier and, at the same time, the supplier does not trust the buyer (i.e., the supplier is distrusting), preferred status is overestimated. If the trust is symmetric (i.e., the supplier also has high levels of trust in the buyer), highly trusting buyers are able to accurately estimate the degree of having preferred customer status. These findings imply that buyers can actually have high levels of trust in a relationship without losing objectivity, but only when trust is shared. Otherwise, buyers might overestimate their preferred status.

Also, the findings suggest that when the buyer has a *low* level of trust towards a supplier, the buyer has a tendency to overlook preferred customer status. Distrusting the supplier too much, no matter whether the supplier shares this distrust or not, opens the possibility that the buyer misses opportunities for obtaining more benefits from the relationships and closer collaboration. Hence, feelings of distrust seem to cloud the buyers' judgement.

Concerning dependence, the findings indicate that neither buyer dependence dominance nor supplier dependence dominance have an impact on the buyer's accuracy to estimate preferred customer status. Findings of past psychological studies supposed an influence of power (conceptualized as dependence in those studies) on perception differences, thus buyer dependence dominance was expected to lead to an overestimation. Yet no effect was found. This could be explained from the observation that the psychological research, which formed the foundation for this argument, was mainly based on findings derived from experiments and scenario-based research. It might be possible that the effects of dependence on the buyers' perception might be too subtle to be measured outside the laboratory. Additionally, newer research indicated that a distinction should be made between dependence and influence/power (Sturm et al., 2015). Dependence has more subtle effects than the actual usage of power, therefore the effects of dependence might not have been strong enough to be detectable in our study. Future research could assess the effects of the actual use of power, rather than dependency of actors, and its influence on perception differences.

This study provides new theoretical insights into perception differences. Firstly, more dyadic research on this topic is needed, which became apparent in the low correlation of 36% (R^2=13%) between the suppliers' actually awarded status and the buyers' perception of it. Moreover, this research was the first one to specifically analyse the influence of relational factors on perception differences and revealed that dyadic trust influences the degree to which partners over- and underestimate relational benefits. Despite the common agreement in literature that too much trust is harmful to perceptions and objectivity (Villena et al., 2016; Villena et al., 2011), this research showed that only asymmetric high levels of buyer trust are leading to overestimations, whereas one-sided distrust leads to a systematic underestimation. This implies that trust literature needs to refine its assumptions about the effects of trust, which appear more complex than initially supposed.

A recommendation for purchasing managers is that the common argument that trusting a supplier too much leads to a loss in objectivity should be approached with more consideration. The findings provide an indication that only in situations in which the buyer is highly trusting and, at the same time, this trust is not shared by the supplier, the buyer is

running a risk of overestimating its status. Also, the findings show that distrusting the supplier, no matter whether the supplier shares this distrust or not, might imply the risk of missing opportunities to benefit more from the relationships, e.g. through more collaboration in innovation projects. Hence, buyers are advised to be more cautious in assessing their status and the benefits derived from a relationship, especially when they distrust suppliers. Furthermore, the analyses revealed that a lower number of competitors in the buying-market seems to reduce differing perceptions and increases accuracy in estimating preferred customer status. In this case, the buyers of a firm tend to be better at estimating preferred customer status, which means in turn that buyers in low concentrated markets (i.e. with many buyers) need to be aware of potentially overestimating their status. Finally, buyers are advised to be aware to not become too overconfident about thinking to know their supplier-portfolio too well, as this might lead to an overestimation of relational benefits. The reported knowledge of a supplier showed to be related to an overestimation of preferred status in our study. To test the knowledge of their relationship, we advise buyers to assess this knowledge regularly through more objective means, such as company visits and supplier satisfaction surveys (Vos et al., 2016).

This study has also its limitations. One limitation is the sampling context. The data was gathered in the context of indirect procurement of a chemical company in Germany. The findings may not be directly transferable to direct procurement, other industries or countries. Future research is needed with a more diverse sample to replicate the findings of this research. Secondly, recent research distinguished trust between relational/affective and calculative trust (Poppo et al., 2015). These two sub-dimensions are considered to have different logics and thus affect relational outcomes differently. It might be valuable to further distinguish the effects of these two sub-dimensions of trust on perception differences. Finally, future research is needed to determine how companies can identify over- and underestimations. Identifying especially underestimations in preferred customer perceptions might help firms to reap more benefits from their preferred customer status, such as earlier access to innovations (Ellis et al., 2012; Schiele et al., 2011b), mitigating negative effects of dependencies (Schiele & Vos, 2015) and receiving benevolent pricing (Schiele et al., 2011c).

To our knowledge, this study is the first to empirically explore factors influencing perception

differences in dyads. We hope to inspire new research which focusses on the factors influencing differences and reasons for perception differences in inter-organizational relationships. We encourage future research to extent this research and illuminate the black box of perception differences.

Chapter 7. Discussion – Findings and Implications

Chapter 7. Discussion – Findings and Implications

7.1. Summary of Key Findings and Contributions

The following sub-sections summarize and discuss the research findings of chapters 2 to 6. The findings are linked to the three research objectives of this dissertation and discuss their implications for theory. This is followed by a detailed outline of the practical implications for managers and companies. We begin with a discussion of the key findings of chapter 2, in relation with research objective 1.

7.1.1. Chapter 2 – replicating and extending previous supplier satisfaction research

The second chapter of this dissertation addressed the question whether the original model of Hüttinger et al. (2014) is still consistent when tested in the context of both direct and indirect material. Hence, the paper addressed the question whether supplier satisfaction is contingent on the product type of materials being purchased (research objective 1). The model appeared overall robust for both direct and indirect procurement. Based on further analyses, a new hierarchical model for the operational antecedents of supplier satisfaction was created. Ultimately, the research came up with a revised model of antecedents of supplier satisfaction. In this revised model, growth opportunity, profitability, relational behavior, and operational excellence have a direct influence on the satisfaction of suppliers. In turn, supplier satisfaction has a positive influence on preferred customer status, which ultimately leads to preferential treatment of the buyer. Concerning research objective 1, no contingency effects of product type on supplier satisfaction were found.

Through the combination of replication and extending the research model in a new context, chapter 2 constituted several contributions to literature. Firstly, as already described above, the results showed that the original model proposed by Hüttinger et al. (2014) is largely valid for both direct and indirect procurement. Yet unlike Hüttinger et al. (2014), relational behavior did not have significantly positive influence on supplier satisfaction. As

a result, it was pinpointed that inter-correlated antecedents, such as buyers' reliability and support, might have suppressed the effects of relational behavior. Therefore, a new model was created, which took the interdependencies between antecedents of supplier satisfaction into account. As a second contribution to literature, the results showed that profitability of the relationship should be taken into account when assessing antecedents of supplier satisfaction. Additionally, the study showed that relational factors have a similar importance in affecting supplier satisfaction as economic factors do for both indirect and direct materials. Among both models (i.e., the original and revised model) and product types (i.e., direct and indirect materials), relational behavior, reliability, and operators' excellence explain similar variance in supplier satisfaction as profitability and growth potential do. Hence, the results showed that even when buyers cannot offer large economic value to suppliers, buyers can still influence supplier satisfaction by being reliable, operationally excellent, and enacting in good relational behavior. As a third contribution, this study confirmed previous expectations by Schiele et al. (2012a) and Nollet et al. (2012) that supplier satisfaction has a positive impact on the tendency to award preferred customer status. For purchasing and supply management literature, these findings mean that supplier satisfaction is a prerequisite for achieving preferred customer status and that the interrelationships between the operational antecedents of supplier satisfaction need to be considered. Product type had no effect on the relationships. The validity of these findings was further supported by applying a novel method including PLS point predictions. With cross-validated point predictions of cases outside the modeling sample the predictive performance of the PLS models was confirmed. The idea behind this was, that if the regression coefficients based on a part of the total sample are able to predict the findings of another part of the sample accurately, then the model has good predictive capabilities. The findings showed that prediction qualities are satisfactory and similar for both direct and indirect procurement.

Summarized, in relation to **research objective 1**: *To assess whether and how different product types (indirect and direct materials) are contingency factors affecting supplier satisfaction and preferred customer status*, the results showed that product types are only partially influencing differences in supplier satisfaction or preferred customer status. More specifically, by applying PLS-MGA, we did not find great differences in significant different paths when comparing models for direct and indirect materials. In particular, when creating

the revised models and incorporating inter-dependencies between factors, the effects for the two product categories appeared almost identical. Accordingly, product type was not a contingency factor influencing supplier satisfaction and preferred customer status.

7.1.2. Chapter 3 – buyer dependence and preferred customer status increasing supplier contributions to innovations

The third chapter assessed which role buyer dependency and preferred customer status play in receiving access to innovations of suppliers. It was expected that the buyer's dependency on supplier has a negative effect and preferred customer status a positive effect on suppliers' contribution to innovations. Hence, it was assumed that preferred customer status mitigates the negative consequences of being dependent on suppliers. The results showed that preferred customer status has a positive influence on suppliers' contribution to innovation. However, the study found a positive relationship between dependency and innovation contribution instead of a negative one. With these findings, chapter three provided three contributions to literature.

The first contribution of this study was to discover that the reasoning behind resource dependency theory (Pfeffer & Salancik, 2003) and principal agent theory (Eisenhardt, 1989) are not always applicable, namely that dependency is negative in relationships. It was found that buyer dependency has a positive effect on a supplier's resource allocation, instead of a negative one. The data suggests that dependency can be acceptable for buying firms, as long as they aim to increase contributions of suppliers to innovations. Secondly, the paper contributed to new product development literature by showing that preferred customer status has a direct and strong impact on supplier's contribution to innovations. The strong influence of preferred customer status was indicated by the high effect size (f^2=0.89) on the supplier's contribution to innovations. As the final contribution, the study showed that preferred customer status and dependency often coincide by having a positive correlation between each other. The follow-up analysis showed that dependency itself is not a problem, but only the combination of low preferred customer status and a high degree of dependence on a supplier can be problematic for buying firms. Preferred customer status can mitigate negative consequences stemming from buyer dependencies.

In relation to **research objective 2:** *To assess whether and how dependency and power are contingency factors impacting supplier satisfaction and preferred customer status*, this study provides new insights. Even though preferred customer status and dependency are often discussed to be important constructs in studies of buyer supplier relationships, it was not known how dependency links to resource allocation of suppliers and preferred customer status. Until now, discussions of these interrelations were mostly theoretical. The empirical analysis of the topic showed that buyer dependency is not only positively impacting the supplier's contribution to innovations (which is counterintuitive when looking at resource dependency theory reasoning), but that the buyer's preferred status at the supplier also has a positive relationship with it. Based on the surprising, positive contingency effects of buyer dependency on achieving benefits from a supplier, we wondered whether dependency is really as negative as often described in literature. This question led to chapter 4 of this dissertation, to see how a supplier's satisfaction is influenced by dependency.

7.1.3. Chapter 4 – mutual and asymmetric dependencies both increasing supplier satisfaction

The previous section discussing chapter 3 showed that dependency is not necessarily negative in buyer-supplier relationships. As a follow-up, in chapter 4, this dissertation took a dyadic perspective on buyer-supplier relationships and analyzed how dyadic dependence influences supplier satisfaction. It was examined whether asymmetric buyer-supplier dependencies can lead to supplier satisfaction. In fact, the study found that both buyer-dominated as well as supplier-dominated relationships are associated with a high satisfaction of suppliers. Thus, dependency does not constrain the creation of supplier satisfaction, but can even foster it.

With this finding, the study provided several contributions to our understanding of perception differences in buyer-supplier relationships. Firstly, the findings contradict with traditional resource dependency theory. Traditional dependence theory suggests that relationships are most effective and satisfactory when they are balanced (Emerson, 1962; Jacobs, 1974) . Thus, buyer-dominance should lead to a lower satisfaction of a supplier, since suppliers are unilateral dependent on the buyer for valuable resources. Nevertheless, based on the notion of relative and absolute value of a relationship, the study showed that even

buyer-dominance can lead to increased supplier satisfaction. Therefore, dominance of one party might also be used to benefit the value generating capacity of the relationship. Yet more research is needed. Secondly, supplier satisfaction research was advanced by showing that the level of satisfaction in a relationship is contingent on dependencies of both buyers and suppliers. The study showed that both mutual dependencies as well as asymmetric dependencies can lead to increased supplier satisfaction. In essence, buyer-dominance might provide guidance for the supplier when collaborating on joint tasks. This is particularly supported by innovation literature, which argues that dependence is a prerequisite for many new product innovation projects and close collaboration. The dyadic viewpoint of this study enabled us to reach these conclusions. Related to this and as the third contribution, the study showed the usefulness of novel methods to assess curvilinear effects of relative buyer-supplier dependence on supplier satisfaction. Previous methodologies only combined dyadic scores into one score for relative dependence and dependence advantages. This approach lost valuable information during the process. The remedy for this problem was to use polynomial regressions with response surface analysis to analyze our data. It assessed curvilinear relationships without losing data richness. The main contribution of this study was to show the usefulness and applicability of this relatively novel technique to the purchasing and supply management field and research into supplier satisfaction.

Relating to **research objective 2,** t*o assess whether and how dependency and power are contingency factors impacting supplier satisfaction and preferred customer status*, chapters 3 and 4 gave a clearer vision on the effects of buyer-supplier dependency. In essence, it was discovered that both buyer and supplier dependency can actually facilitate supplier satisfaction and improve access to innovations of suppliers, instead of reducing both (as supposed by resource dependency theory). As a conclusion, dependency in its form as structural attribute of a relationship can have positive effects on supplier satisfaction and preferred customer status.

Yet after this study, the question emerged how an active usage of power might impact supplier satisfaction. Hence, next to dependencies, it is important to know how the actual use of power, i.e. rewarding and coercion power, influence supplier satisfaction. Here, chapter 5 was aiming to give answers on how the actual use of power, in combination with conflict and buyer status, is a contingency factor in influencing supplier satisfaction.

7.1.4. Chapter 5 – Conflict and status mediating the negative impact of coercive buyer power on supplier satisfaction

Chapter 5 addressed how power in combination with conflict and buyer status influence supplier satisfaction. Power, conflict, and status were previously assessed separately, but have not been incorporated in one model before. Incorporating them together is important because the use of power, conflict, and buyer status have been argued to be closely linked with each other. The findings showed that the usage of coercive power increases conflicts, but does not directly impact supplier satisfaction. Status had a positive link to supplier satisfaction and reduced both the use of coercive power and conflicts. Conflict in turn had a negative effect on supplier satisfaction. Reward power had no effect on conflicts or supplier satisfaction. The follow-up mediation analysis showed that conflict significantly mediates the relationship between the use of coercive power and supplier satisfaction. Hence, coercive power is a contingency factor affecting supplier satisfaction and conflict in a relationship needs to be taken into account simultaneously.

The findings have two implications for literature. Firstly, conflict mediated the relationship between the use of coercive power and supplier satisfaction. This means that supplier satisfaction is only negatively influenced by the use of coercive power when it leads to conflict within the relationship. Since several scholars found a direct relationship between coercive power and supplier satisfaction in the past, these findings were surprising. Similar to other studies that did not find a direct effect of coercive power on supplier satisfaction, the findings support the notion that conflict within the relationship could be a crucial mediating factor. Conflict and coercive power should be assessed simultaneously in future studies. Secondly, the study found that status has a strong influence on the creation of supplier satisfaction. Status did not only reduce conflicts, but has also a positive impact on supplier satisfaction. Even though the exact mechanisms underlying the influence of buyer status on supplier satisfaction conflict are still not fully understood, this study is the first to emphasize the importance of status as a relational construct in buyer-supplier relationships.

Related to *research* **objective 2:** *To assess whether and how dependency and power are contingency factors impacting supplier satisfaction and preferred customer status*, the study revealed that the use of coercive power only influences supplier satisfaction negatively if it leads to conflict. With the findings discussed in the chapters before, two main contingency

effects of power and dependency were observed. On the one hand, dependency seems to foster supplier satisfaction, even when it is highly favorable for the buyer. On the other hand, the usage of coercive power appears to lead to conflict and reduces supplier satisfaction, whereas the usage of reward power seems to have no impact. In summary, the studies showed that dependency and power are contingencies, but have different effects/logics and need a clear distinction in research. Hence, the findings support the argument that power and dependency are crucial and separate relational factors, which both follow different logics in affecting the behavior of partners in buyer-supplier relationships (Chen et al., 2016a; Huo, Wang, Zhao, & Schuh, 2016; Rehme et al., 2016; Sturm & Antonakis, 2015).

After discussing the contingency effects of power and dependency, the next section addresses findings in relation to research objective 3, focusing on perception differences of preferred customer status.

7.1.5. Chapter 6 – the dark side of trust is contingent on both partner's trust levels

Chapter 6 used a dyadic view to examine which factors influence perception differences between buyers and suppliers. Suppliers were asked whether they awarded a certain buyer with preferred status, and buyers were asked how they perceived this preferred status. The difference between these two views served as perception differences assessed in this chapter. Then, it was analyzed whether dyadic trust and dependencies influence the different perceptions of preferred customer status. The findings showed that buyer and supplier trust are crucial factors leading to over- and underestimation of preferred status from the viewpoint of the buyer. "Suspicious buyers" tended to underestimate their status systematically, whereas trustful buyers ran into the risk of overestimation preferred customer status when the supplier did not share that trust.

Essentially, this study made three contributions to literature. Firstly, the study addressed the "dark side" of trust in buyer-supplier relationships (Villena et al., 2016; Villena et al., 2011). Scholars argue that relationships with too much trust causes partners to have an exaggerated, positive perception of the other partner; this leads to lower relationship performance and perception differences. Opposed to this view, this dissertation did not find that high buyer trust automatically leads to buyers overestimating preferred customer status.

Only when the buyer highly trusted the supplier and the supplier simultaneously distrusted the buyer, buyers overestimated preferred customer status. Hence, when high buyer trust is not shared by the supplier, this can lead to perception differences. This implies that the effect of trust on overestimation is not an inverted-U, but that it depends on shared trust by the partner. With this finding, this dissertation reveals that the effect of trust is more complex than what was initially thought, and needs to be studied from a dyadic perspective. Secondly, it was found that low levels of buyer trust systematically lead to an underestimation of preferred status. Essentially, significant distrust to suppliers led buyers to underestimate their preferred customer status. Hence, there is a "dark side" of distrusting suppliers, which corresponds with the assumptions of an inverted-U effect of lower levels of trust. In this context, buyers could miss opportunities for reaping benefits from the relationship and engage in closer collaborations. Yet more research is needed to identify the specific impact of underestimating preferred status, i.e buyer's change in relational behavior and collaboration with suppliers. Finally, the study also provided insights into the value of dyadic research in combination with assessing factors influencing perception bias. The need for a dyadic approach of this topic became clear when only a correlation of 36% between the suppliers awarded status and the buyer's perception of it was found. In this contact, this chapter contributed to literature by being the first to explicitly focus on factors and reasons that influence these perception differences. In particular, the use of dyadic data and polynomial regressions with surface response analyses appeared to be a powerful combination to uncover previously hidden curvilinear effects of trust on perception differences.

Related to research **objective 3:** *To assess whether buyer-supplier perceptions of preferred customer status differ and on which factors they are contingent*, this dissertation showed that differences exist and that buyer-supplier trust had a major influence. One implication of these findings is that it appears difficult for interaction partners to accurately estimate behavior and attitudes of their partners. Surveys asking for estimations of a partner's behavior and attitudes need to be applied with caution, since responses might be different from the actual behavior and perception of the partner in question. Additionally, this study showed that the "dark side" of trust is not that dark after all. Even highly trusting buyers do not necessarily run the risk of having an exaggerated positive view on the relationship, as

long as suppliers share trust. Nevertheless, distrusting the supplier led buyers to systematically underestimate their preferred customer status. As a consequence, avoiding the "dark side" of trust requires the buyer to engage with suppliers and discover whether the high/low trust put in them is actually shared; otherwise, the buyer could over- or under-estimate its status.

After presenting key findings, theoretical contributions, and links to research objectives of chapter 2 to 6, the next section discusses the practical implications of this dissertation.

7.2. Implications for practice

The findings of this dissertation have several implications for practice. The next paragraphs will outline what the findings mean for buying firms and managers.

In relation to **research objective 1**: *To assess whether and how product types (indirect and direct materials) impact supplier satisfaction and preferred customer status*, there are two contributions to practice. The comparison of indirect and direct materials showed no major impact of material types on supplier satisfaction. The results showed that growth opportunities, profitability, relational behavior, and operative excellence are important for supplier satisfaction for direct and indirect materials. Buyers should mainly focus on these four dimensions when they want to have satisfied suppliers and receive preferential treatment. To support buyers in practice, the questionnaire items (see Appendix A) underlying each dimension can be a guide to focus on specific activities to improve satisfaction. For example, to improve operative excellence, buyers should focus on timely and correct forecasts. In this way, practitioners can better adjust their relational efforts towards suppliers. Also, the findings showed that the common belief that economic factors are much more important to suppliers than relational factors is misleading. Factors such as relational behavior, reliability, and operative excellence explain similar or even greater (for direct materials) variance in supplier satisfaction than economic factors, such as profitability and growth potential. In other words, even when buyers cannot offer a large economic value to suppliers, these buyers can still influence the suppliers' satisfaction and receive preferential treatment by being reliable, operationally excellent, and showing good relational behavior. In contrast, being an economically attractive buyer without relational effort does not automatically lead to a preferred status. This appears valid for both direct and indirect materials.

In relation to **research objective 2**: *To assess whether and how dependency and power are contingency factors impacting supplier satisfaction and preferred customer status*, this dissertation has three managerial implications. Firstly, the findings of chapters 3 show that buyer dependency, which is often a result of supply base reduction and highly concentrated supply markets, can enhance the supplier's contribution to innovations instead of reducing it. Focusing on a limited set of suppliers appears to be a viable option for ensuring the contribution of suppliers to innovations. Additionally, chapter 4 showed that even extreme dependence asymmetries in relationships disfavoring suppliers can have a positive influence on supplier satisfaction. In combination, both findings imply that dependency by itself does not need to be negative. Accordingly, companies which avoid becoming dependent on individual suppliers might find it more difficult to achieve supplier satisfaction and preferred customer status. For example, companies which shift late to open innovation models and outsourcing might need to work harder to become preferred customer of any of their preferred suppliers. A certain degree of dependence might even be beneficial and preferable to the relationship~~,~~ through the creation of mutual dependency. An important factor mitigating negative consequences of buyer dependence is preferred customer status. Dependent buyers should assure that they are preferred customers at their key suppliers. Secondly, in relation to the effects of the usage of power, chapter 5 indicates that buyers can use coercive power without negative consequences for the relationship, if they prevent conflict. In this context, coercive power does not impact supplier satisfaction directly, because it might have a controlling function in a relationship. Punishing suppliers when they did something wrong could be viewed as a legitimate action of a buyer. Nevertheless, when the use of coercive power is viewed as illegitimate by the supplier, this leads to opposition and conflict, thereby reducing supplier satisfaction. Therefore, an advice for buyers is to clearly communicate the reasons behind using coercive power and refrain from using it without a legitimate reasoning. Coercive power should not be experienced by suppliers as a buyer's unilaterally attempt of absorbing value from the relationship, since this might lead to a reduction of value-creation potential of the whole relationship when reducing the satisfaction of the supplier. Finally, the findings of chapter 5 show that high status (within an industry) of a buying firm can benefit the company through reduced conflicts with suppliers, increased supplier satisfaction, and the resulting benefits arising from supplier satisfaction. Status can thus be a strategic

resource, to be used by buyers to increase their attractiveness and gain more benefits from the marketplace. Nevertheless, the practical means to increase status when it is low have not been discovered and need further investigation.

Finally, in relation to **research objective 3**: *To assess whether buyer-supplier perceptions of preferred customer status differ and on which factors they are contingent*, this dissertation has three implications for practice. Firstly, it was found that the common belief that buyers should not trust suppliers too much, because this will influence their objectivity should be interpreted with caution. The results showed that trusting buyers were able to assess their preferred status accurately. Buyers only overestimated their preferred customer status when suppliers did not reciprocate the buyer's trust. Therefore, buyers need to actively engage with suppliers to identify whether trust is shared.. If trust is shared, the perceptions of the buyer appear accurate. Hence, this dissertation showed that the "dark side" of trust is not that dark after all, and needs more attention in future. Secondly, distrusting the supplier could result in missing opportunities for collaboration. As the dyadic analyses showed, a "suspicious buyer" might not recognize the potential that lies in a relationship. Distrusting buyers underestimated their preferred status regardless of the supplier's trust. Naturally, distrust has a reason and cannot easily be revoked, but the findings urge "suspicious buyers" to access relational behavior of suppliers more frequently and avoid being influenced by distrust in the long term. Finally, the findings showed that buyers need to be aware of their competition in supply markets. A higher number of competitors in the supply market caused buyers to overestimate their preferred customer status. Since few companies can acquire preferred status and reap the associated competitive benefits from it, we advise buyers to analyze their preferred customer status at a supplier in more depth when the number of competitors in the market is higher. Misinterpreting preferred customer status could enable competitors to shield supplier innovations from the buyer and increase long-term competitive risks.

After outlining the practical implication of this dissertation, the next section will consider the future of supplier satisfaction and preferred customer research.

7.3. Future Research Directions – Need to provide a Theory of Preferred Customership and Assess the Impact of Digitalization of Interactions

The contingency perspective taken in this dissertation showed that dependency, power, and trust have effects on supplier satisfaction, preferred customer status, and differences in perceptions. Based on these findings, four potential directions for future research emerged.

The first possible direction for future research is to further deepen our knowledge of contextual factors influencing supplier satisfaction and preferred customer status. This includes the assessment of supplier satisfaction in relation to different procurement contexts, such as public or private sector purchasing. Developed economies spend up to 30% of their gross national product on public purchases (Carter & Grimm, 2001), which emphasizes to the importance of studying public procurement. However, research in the public domain regarding preferential resource allocation and satisfaction of suppliers is non-existent. Since rules and regulations in the public purchasing domain are often argued to constrain relational activities compared to the private context (Johnson, Leenders, & McCue, 2003), it will be interesting to assess what the differences between these procurement contexts are. Potential questions that emerge are: how do supplier satisfaction and preferred customer status emerge in the public domain? Are the mechanisms affecting and underlying supplier satisfaction and preferred customer status comparable to those in the private sector? What is the impact of preferred customer status on the performance of public purchasing? These are just a few potential questions, but they have powerful implications for both supplier satisfaction and preferred customer theory, as well as companies and institutions in practice.

The second future research direction relates to dyadic and longitudinal analyses of supplier satisfaction and preferred customer status. For example, as chapter 6 of this dissertation showed, a dyadic perspective together with novel research methods can yield findings, which would have not been discovered otherwise. In particular, the use of dyadic data allows researchers to identify complex, underlying mechanisms and processes. Connected to this, assessing changes over time is needed to discover how supplier satisfaction and preferred customer status develops, and how it can be changed by specific actions of a buyer. Potential questions that emerge are: Are there certain events which increase or reduce supplier satisfaction? Which techniques are most effective for changing supplier satisfaction and achieving preferred status over time? Is there even a process of losing preferred status? How stable are supplier satisfaction and preferred customer status over time? These questions

do not only need a careful collection of data, but also requires analytical methods and theoretical reasoning to capture the full spectrum of factors influencing them. Future research can continue the road taken in this dissertation, use novel methods and replicate/extent past studies to uncover whether the relationships discovered back then might be more complex than initially suggested.

As third avenue for future research, scholars are urged to create an overarching theoretical framework for supplier satisfaction and preferred customer concepts. Most theoretical reasoning for factors influencing supplier satisfaction and preferred customer status stem from other fields, such as psychology, marketing, or strategic management literature. A first attempt towards an overarching theoretical perspective was already presented by Schiele et al. (2012a), discussing the circle of preferred customership (shown in chapter 1). Nevertheless, a dedicated theory of buyer-supplier relationship dynamics focused on supplier satisfaction and preferred customer status might further promote research. A common theoretical framework allows scholars to use a standard set of concepts and promote the topic in a structured manner.

Finally, the impact of new technological trends should be studied in future. Scholars argue that purchasing and supply management is experiencing a shift to the fourth industrial revolution (industry 4.0) (Batran, Erben, Schulz, & Sperl, 2017), also called: smart industry (Haverkort & Zimmermann, 2017), smart factory (Kang et al., 2016), smart manufacturing (Wang, Wan, Zhang, Li, & Zhang, 2016) or purchasing 4.0 (Kleemann & Glas, 2017). It implies digitalization of processes, communication in real time, multi-layered networking, and intelligent systems (Kleemann & Glas, 2017). Also, it is characterized by cyber-physical connections and machine to machine communications (Lee, Bagheri, & Kao, 2015; Wan, Chen, Xia, Di, & Zhou, 2013). Computer systems communicate autonomously with each other, thereby connecting to the physical world by e.g. triggering robots or product movements (Lee et al., 2015). In relation to the topic of this dissertation, a major question in this transition to the fourth industrial revolution is how relational concepts such as supplier satisfaction and preferred customer status are affected by digitalization of processes and the emergence of machine-to-machine communications. In its most extreme form, a future without human interaction can be envisioned (Kleemann & Glas, 2017). This would mean that the knowledge accumulated in this dissertation becomes obsolete in future. Yet in the foreseeable future, buyer-supplier interactions are probably increasing instead of decreasing.

The reason for this is the need for an increased coordination and integration of systems and processes internally and externally (Kleemann & Glas, 2017). Digital efforts need to be orchestrated both within the own company and in the supply chain. The importance of choosing the right "digital partners" to implement strategic industry 4.0 projects increases. Future research could focus on the intersection between preferred customer status and industry 4.0 to help theory and practice understand and facilitate coordination, collaboration, and integration with internal and external stakeholders. For future studies, it would be interesting to assess how these ongoing trends towards digitalization influence the need for (and effects of) supplier satisfaction and preferred customer status on buyer-supplier relationships.

8. Included Publications

This dissertation is cumulative in nature, this means that chapters two to seven are based on individual papers. These papers have either been published in peer-reviewed journals or included in the proceedings of conferences at which they were presented. The following list summaries the included publications

Chapter 2. Vos, F.G.S., Schiele, H., Hüttinger, L., 2016. Supplier Satisfaction: Explanation and Out-of-Sample Prediction for Direct and Indirect Procurement.
This paper is published in the Journal of Business Research, Volume 69, pages 4613–4623, 2016.

Chapter 3. Schiele, H., Vos, F.G.S., 2015. Dependency on suppliers as a peril in the acquisition of innovations? The role of buyer attractiveness in mitigating potential negative dependency effects in buyer–supplier relations.
This paper is published in the Australasian Marketing Journal, Volume 23, pages 139-147, 2015.

Chapter 4. Caniëls, M., Vos. F.G.S., Pulles, N.J., Schiele, H., 2017. Supplier satisfaction: The benefits of asymmetric relationships
This paper is accepted for publication at the Journal of Purchasing and Supply Management, 2017.

Chapter 5. Vos, F.G.S., Lelij, R., Pulles, N. J., Schiele, H., Praas, N., 2017. Conflict, Power & Status Influencing Supplier Satisfaction
This paper has been presented at (1) the 26th IPSERA conference in Balatonfured, Hungary, April 2017; and (2) the 24th EurOMA conference in Edinburgh, Scotland, July 2017. It is invited (and in preparation) to be submitted to The International Journal of Operations and Production Management, 2017.

Chapter 6. Vos, F.G.S., Laurenz, J., Pulles, N.J., Schiele, H., 2017. Objects may be closer than they appear: inter-firm factors & their impact on perception bias.

This paper has been presented at (1) the 26th IPSERA conference in Balatonfured, Hungary, April 2017; (2) the 24th EurOMA conference in Edinburgh, Scotland, July 2017; and (3) the 77th Academy of Management (AOM) conference in Atlanta, USA, August 2017. It is in preparation to be submitted to the Journal of Operations Management, 2017.

9. Additional Publications

Next to the publications which have been included in this dissertation, I also worked during my PhD project on several other papers. Since these paper do not fit into the theme of this dissertation, but could also be interesting for readers familiar with the field of purchasing and supply management, I would like to present here the publications which did not make it into my dissertation

Excluded Paper 1 Vos, F.G.S., Scheffler, P., Horn, P., Schiele, H., 2016. Does Global Sourcing Pay-Off? A Competitive Dynamics Perspective.
This paper is published in the Journal of Purchasing and Supply Management, Volume 22, Issue 4, pages 338-350, 2016.

Excluded Paper 2 Vos, F.G.S., Schiele, H., 2014. You can't Judge a Book by its Cover: Evaluating Theories in the Management and Organizational Sciences.
An earlier version of this paper has been presented at the 23rd IPSERA conference in Pretoria, South Africa, April 2014. It is in preparation to be submitted to The Journal of Purchasing and Supply Management, 2017.

Excluded Paper 3 Vos, F.G.S., Pulles, N.J., Schiele, H., 2016. Commitment and Power in the Supply Chain.
This paper has been presented at the 25th IPSERA conference in Dortmund, Germany, April 2016.

Excluded Paper 4 Pulles, N.J., Vos, F.G.S., Veldman, J., 2014. Competitor oriented supply management strategies.
This paper has been presented at the 23rd IPSERA conference in Pretoria, South Africa, April 2014.

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11. Appendices

11.1. Appendix A (Chapter 2)

Appendix Table 19 - Questionnaire Items (Chapter 2)

Reliability (Gundlach et al., 1995; Hüttinger et al., 2014)	
In working with our company, this customer…	
R1	... provided a completely truthful picture when negotiating.
R2	... always negotiated from a good faith bargaining perspective.
R3	... never breached formal or informal agreements to benefit themselves.
R4	... never altered facts in order to meet its own goals and objectives.
Relational behavior (Griffith, Harvey, & Lusch, 2006; Hüttinger et al., 2014; Palmatier, Dant, & Grewal, 2007)	
RB1	This customer is committed to improvements that may benefit our relationship as a whole and not only themselves.
RB2	We each benefit and earn in proportion to the efforts we put in.
Supplier satisfaction (Cannon & Perreault, 1999; Hüttinger et al., 2014)	
SA1	Our firm is very satisfied with the overall relationship to this customer.
SA2	On the whole, our firm is completely happy with this customer.
SA3	Generally, our firm is very pleased to have this customer as our business partner.
SA4	If we had to do it all over again, we would still choose to use this customer.
SA5	Our firm does not regret the decision to do business with this customer.
Growth opportunity (Hüttinger et al., 2014; Liu et al., 2009)	
The relationship with this customer …	
G1	... provides us with a dominant market position in our sales area.
G2	... is very important for us with respect to growth rates.
G3	... enables us to attract other customers.

G4	... enables us to exploit new market opportunities.
Profitability (Hald et al., 2009; Ramsay & Wagner, 2009)	
The relationship with this customer …	
P1	... helps us to achieve good profits.
P2	... allows us to gain high margins.
P3	... has a positive influence on the profitability of our firm.
Innovation potential (Goodale, Kuratko, Hornsby, & Covin, 2011; Hüttinger et al., 2014)	
I1	In collaborating with this customer, our firm developed a very high number of new products.
I2	In collaborating with this customer, our firm was able to bring to market a very high number of new products.
I3	The speed with which new products are developed and brought to market with this customer is very high.
Operational Excellence (Hüttinger et al., 2014)	
This customer …	
O1	... has always exact and in time forecasts about future demand.
O2	... provides us with forecasts our firm can rely and plan on.
O3	... has for our firm simple and transparent internal processes.
O4	... supports short decision-making processes.
Support of suppliers (Ghijsen et al., 2010; Hüttinger et al., 2014)	
This customer …	
S1	... collaborates with us to improve our manufacturing processes.
S2	... gives us technological advice (e.g. on materials, software).
S3	... gives us quality related advice (e.g. on the use of inspection equipment, quality assurance procedures).

Contact accessibility (Hüttinger et al., 2014; Walter et al., 2003)	
There is a contact person within the customer firm who…	
CA1	...coordinates the relevant relationship activities within and outside of the customer.
CA2	...is, for the employees of our company, the one to contact in regard to partner-specific questions.
CA3	...informs employees within the customer firm about the needs of our company.
Supplier involvement (Hüttinger et al., 2014; Liu et al., 2009)	
IV1	This customer involves us to participate in its product design and development.
IV2	We are early involved in the new product development process of this customer.
IV3	We are very active in the new product development process of this customer.
IV4	Communication with our firm about quality considerations and design changes is very close.
Preferred Customer Status (Hüttinger, 2014; Hüttinger et al., 2014; Schiele, Veldman, & Huettinger, 2011a)	
Compared to other customers in our firm´s customer base…	
PC1	… this customer is our preferred customer.
PC2	... we care more for this customer.
PC3	... this customer receives preferential treatment.
PC4	… we go out on a limb for this customer.
Preferential Treatment (Hüttinger, 2014; Newbert, 2008; Schiele et al., 2011a)	
Our firm…	
PT1	... allocates our best employees (e.g. most experienced, trained, intelligent) to the relationship with this customer.
PT2	... shares our best ideas (e.g. newest, most innovative) with this customer.
PT3	… allocates more financial resources (e.g. capital, cash) to the relationship with

	this customer.
PT4	… grants this customer the best utilization of our physical resources (e.g. equipment capacity, scarce materials).
PT5	… shares more of our capabilities (e.g. skills, know-how, expertise) with this customer.

Length of relationship (Hüttinger, 2014)	
Please indicate the length of the respective relationship in number of years.	
LR1	How long has your company been a supplier of this customer?
LR2	How long have you already been working as an employee of your firm?
LR3	How long have you already been acting as a sales representative for your company?
LR4	How long have you, as a representative of your firm, already been cooperating with this customer?

General information about your company (Hüttinger, 2014)	
Please share the following general information about your company. If your company belongs to a group of companies, please share the information and data of your site.	
GI2	Annual Turnover (in €)
GI2	Number of employees

11.2. Appendix B (Chapter 3)

Appendix Table 20 - Overview Over the Questionnaire (Chapter 3)

		no yes
	Supplier contribution to New Product Development	1 2 3 4 5
IS1	This supplier is able to design new products or make changes to existing products	☐ ☐ ☐ ☐ ☐
IS2	The level of technological capability the supplier possesses and is willing to use for our products is high	☐ ☐ ☐ ☐ ☐
IS3	The supplier is willing to share key technological information	☐ ☐ ☐ ☐ ☐
IS4	This supplier is capable of supporting collaborative processes in product development and process improvement	☐ ☐ ☐ ☐ ☐
IS5	This supplier is frequently proactive in approaching us with innovations	☐ ☐ ☐ ☐ ☐
	Dependency from supplier	1 2 3 4 5
DB3	It would be difficult to replace this supplier quickly	☐ ☐ ☐ ☐ ☐
DB4	A lot of our sources depends on the supplier's success	☐ ☐ ☐ ☐ ☐
DB5	The supplier commands resources that we would have difficulties obtaining somewhere else	☐ ☐ ☐ ☐ ☐
	Preferred customer status	1 2 3 4 5
C01	This supplier has made sacrifices for us in the past	☐ ☐ ☐ ☐ ☐
C02	This supplier cares for us	☐ ☐ ☐ ☐ ☐
C03	In case of shortages, this supplier has gone out on limb for us	☐ ☐ ☐ ☐ ☐
C04	We feel this supplier is on our side	☐ ☐ ☐ ☐ ☐
C05	The best resources of this supplier work for us	☐ ☐ ☐ ☐ ☐

11.3. Appendix C (Chapter 4)

Appendix Table 21 - Constructs and Items (Chapter 4)

Supplier's dependence (Frazier, 1983; Hibbard et al., 2001; Kaiser et al., 2013; Kumar et al., 1998)	
1	In this contractual relationship, our company is very dependent on this client.
2	To achieve our business goals, our company has to maintain this relationship to the client.
3	A cancellation of this contractual relationship with the client could be very easily compensated by our company.(Reversed)*
4	If the relationship were to end earlier than contracted, our business goals would be negatively affected.
5	Our company would face great challenges if the client did not continue the contractual relationship.
Buyer's dependence (Frazier, 1983; Hibbard et al., 2001; Kaiser et al., 2013; Kumar et al., 1998)	
1	In this contractual relationship, our company is very dependent on this supplier.
2	To achieve our business goals, our company has to maintain this relationship to the supplier.
3	A cancellation of this contractual relationship with the supplier could be very easily compensated by our company.(Reversed)*
4	If the relationship were to end earlier than contracted, our business goals would be negatively affected.
5	Our company would face great challenges if the supplier did not continue the contractual relationship.
Supplier satisfaction (Cannon and Perreault, 1999; Hüttinger et al., 2014)	
1	Our firm is very satisfied with the overall relationship to this customer.*
2	On the whole, our firm is completely happy with this customer.

3	Generally, our firm is very pleased to have this customer as our business partner.
4	If we had to do it all over again, we would still choose to use this customer.
5	Our firm does not regret the decision to do business with this customer.

Note: *= the item has been excluded, due to low factor loadings on the intended construct.

11.4. Appendix D (Chapter 5)

Appendix Table 22 - Used measures (Chapter 5)

Items	**Supplier Satisfaction**	**(Vos et al., 2016)**
SS 1	Our firm is very satisfied with the overall relationship to the Buyer.	
SS 2	On the whole, our firm is completely happy with the Buyer.	
SS 3	Generally, our firm is very pleased to have the Buyer as our business partner.	
SS 4	If we had to do it all over again, we would still choose to use the Buyer.	
SS 5	Our firm does not regret the decision to do business with the Buyer.	
Items	**Conflict**	**(Kumar et al., 1992)**
C 1	Our relationship with the buyer can be best described as tense.	
C 2	We have often disagreements in our working relationship with the Buyer.	
C 3	We frequently clash with the Buyer on issues relating to how we should conduct our business.	
Items	**Status**	**(Torelli et al., 2014)**
	According to us …	
S 1	… the Buyer has a high-status	
S 2	… the Buyer is admired by others	
S 3	… the Buyer has a high prestige	
S 4	… the Buyer is highly regarded by others	
Items	**Reward Power**	**(Pulles et al., 2014)**
RP 1*	The Buyer offers rewards so that we will go along with their wishes.	
RP 2	We feel that by going along with the Buyer, we will be favored on other occasions.	
RP 3	If we do not do as asked, we will not receive the rewards offered by the Buyer.	
RP 4	The Buyer offers us rewards if we agree with their requests.	

Items	Coersive Power (Pulles et al., 2014)
CP 1	The Buyer makes it clear that failing to comply with their requests will result in penalties against us.
CP 2	If we do not agree with the Buyer's suggestions, they could make things difficult for us.
CP 3	If we do not do as asked, we will not receive very good treatment from the Buyer.
CP 4	If we do not go along with the Buyer, they might withdraw certain services/resources we need.

* excluded item

11.5. Appendix E (Chapter 6)

Appendix Table 23 - Overview of items in the questionnaire (Chapter 6)

Items	***Buyer's Perceived Preferred Customer status*** **(Hüttinger et al., 2014; Schiele et al., 2011c; Vos et al., 2016)**
	Compared to other buyers in this supplier's buyer base…
Buyer_PCS_1	… we are a preferred buyer.
Buyer_PCS_2	... they care more for us than other buyers.
Buyer_PCS_3	... We receive preferential treatment.
Buyer_PCS_4	… they go out on a limb for us.
Buyer_PCS_5	.. their firm's employees prefer collaborating with us to collaborating with other buyers.
	Buyer Trust (reversed supplier questions)
Buyer's Trust 1	This supplier keeps promises it makes to our firm.
Buyer's Trust 2	When making important decisions, this supplier considers our welfare as well as its own.
Buyer's Trust 3	We trust this supplier to keep our best interests in mind.
Buyer's Trust 4	We consider this supplier as trustworthy.
	Buyer Dependence **(Frazier, 1983; Hibbard et al., 2001; Kaiser et al., 2013; Kumar et al., 1998)**
Buyer's Dependency 1	In this contractual relationship, our company is very dependent on this supplier.
Buyer's Dependency 2	To achieve our business goals, our company has to maintain this relationship to the supplier.
Buyer's Dependency 3	If the relationship were to end earlier than contracted, our business goals would be negatively affected.
Buyer's Dependency 4	Our company would face great challenges if the supplier

	did not continue the contractual relationship.
Buyer's Dependency 5	We have no good alternatives to this supplier
	Market uncertainty (Noordewier, John, & Nevin, 1990) (Fink et al., 2011)
Market Uncertainty 1	Product availability in the market is highly uncertain
Market Uncertainty 2	The market in which we buy the product is complex
Market Uncertainty 3	The competition in the supplier market is strong
	Knowledge of the Supplier
Knowledge	I know the supplier good enough to answer all the questions in this questionnaire

	Questions Asked to the Supplier Side
	Supplier's Awarded Preferred Customer status (reversed buyer questions)
	Compared to other buyers in our firm´s buyer base…
Supplier_PCS_1	… this buyer is our preferred buyer.
Supplier_PCS_2	... we care more for this buyer.
Supplier_PCS_3	... this buyer receives preferential treatment.
Supplier_PCS_4	… we go out on a limb for this buyer.
Supplier_PCS_5	... our firm's employees prefer collaborating with this buyer to collaborating with other buyers.
	Supplier Trust (Doney & Cannon, 1997)
Supplier's Trust 1	This buyer keeps promises it makes to our firm.
Supplier's Trust 2	When making important decisions, this buyer considers our welfare as well as its own.
Supplier's Trust 3	We trust this buyer to keep our best interests in mind.
Supplier's Trust 4	We consider this buyer as trustworthy.

	Supplier Dependence **(Frazier, 1983; Hibbard et al., 2001; Kaiser et al., 2013; Kumar et al., 1998)**
Supplier's Dependence 1	In this relationship, our company is very dependent on this buyer.
Supplier's Dependence 2	To achieve our business goals, our company has to maintain this relationship to the buyer.
Supplier's Dependence 3	If the relationship were to end earlier than contracted, our business goals would be negatively affected.
Supplier's Dependence 4	Our company would face great challenges if the buyer did not continue the contractual relationship.
Supplier's Dependence 5	We have no good alternatives to this buyer.
	Concentration of Resources (Achrol & Stern, 1988; Fink et al., 2006)
Market Concentration 1	The market for our products/services is mostly dominated by 4-5 buyers.
Market Concentration 2	The top 5 buyers represent often 80% of the total order quantity in the market of our products/services
	Length of Relationship
Length of Relationship	How long has your company been a supplier of this buyer?

Appendix Table 24 - Principal Factor analysis (Varimax, Eigen=1) (Chapter 6)

Item Name	Extracted factors						
	1	2	3	4	5	6	7
Difference Preferred Buyer 1	**0.84**	-0.09	-0.02	0.17	-0.09	-0.09	0.02
Difference Preferred Buyer 2	**0.90**	-0.02	0.01	0.15	0.01	-0.07	-0.04
Difference Preferred Buyer 3	**0.93**	0.02	-0.07	0.12	0.00	-0.07	0.01
Difference Preferred Buyer 4	**0.77**	0.00	0.08	0.27	-0.08	0.00	-0.14
Difference Preferred Buyer 5	**0.58**	0.04	-0.11	0.20	-0.14	0.01	-0.15
Buyer's Dependency 1	-0.01	**0.86**	0.02	-0.03	0.00	0.01	0.08
Buyer's Dependency 2	0.06	**0.85**	-0.08	0.10	0.18	-0.04	0.15
Buyer's Dependency 3	0.02	**0.86**	0.07	0.05	0.13	0.00	0.04
Buyer's Dependency 4	-0.06	**0.88**	0.01	0.03	-0.03	0.19	-0.03
Buyer's Dependency 5	-0.05	**0.72**	0.14	-0.03	-0.05	0.26	-0.13
Supplier's Dependence 1	-0.05	0.04	**0.85**	0.11	0.06	-0.08	0.15
Supplier's Dependence 2	-0.11	-0.02	**0.80**	0.10	0.11	0.07	-0.08
Supplier's Dependence 3	-0.05	0.05	**0.82**	0.21	0.01	-0.03	0.10
Supplier's Dependence 4	0.03	0.07	**0.83**	0.10	0.06	-0.02	0.21
Supplier's Dependence 5	0.07	0.02	**0.74**	-0.08	0.13	-0.03	0.12
Buyer's Trust 1	0.33	-0.03	0.03	**0.77**	0.07	-0.17	0.00
Buyer's Trust 2	0.30	0.19	0.28	**0.68**	-0.04	-0.06	0.14
Buyer's Trust 3	0.15	0.06	0.17	**0.89**	0.01	-0.01	0.04
Buyer's Trust 4	0.27	-0.04	0.04	**0.80**	0.16	-0.05	0.01
Supplier's Trust 1	-0.13	0.10	0.04	0.04	**0.65**	-0.02	-0.14
Supplier's Trust 2	0.04	0.10	0.11	-0.02	**0.89**	0.02	0.06
Supplier's Trust 3	0.02	0.01	0.09	0.02	**0.86**	0.07	0.04
Supplier's Trust 4	-0.16	-0.02	0.10	0.12	**0.74**	-0.04	-0.07
Market Uncertainty 1	-0.08	0.20	0.10	-0.04	-0.02	**0.87**	0.12
Market Uncertainty 2	-0.02	0.07	-0.08	-0.07	-0.11	**0.86**	0.07
Market Uncertainty 3	-0.09	0.05	-0.09	-0.09	0.16	**0.73**	0.04
Market Concentration 1	-0.12	0.01	0.20	0.09	-0.01	-0.04	**0.79**
Market Concentration 2	0.13	0.15	0.19	-0.13	-0.16	0.23	**0.51**

Summary

"Preferred Customer Status, Supplier Satisfaction and their Contingencies"

Over the last decades, firms shift increasingly from traditional in-house value creation strategies to cooperative buyer–supplier relationships as a source of value creation and competitive advantage. To reap extensive benefits from relationships with suppliers, assuring supplier satisfaction and achieving preferred customer status are key for buyers. In the past, several mechanisms have been identified that influence supplier satisfaction and preferred customer status; however, little is known about the role of major contingency factors such as: product type, dependencies and power influencing them. This dissertation examines these relationships and analyzes how they link to supplier satisfaction and preferred customer status.

The first research objective of this dissertation is to assess whether and how product types (indirect and direct materials) impact supplier satisfaction and preferred customer status. These types are associated with different management styles and might influence supplier satisfaction and preferred customer status differently. Hence, this dissertation assesses how indirect materials as compared to direct materials affect differences in supplier satisfaction and preferred customer status. The findings show that direct and indirect procurement have no significant different effect on how supplier satisfaction evolves. Yet a new arrangement of antecedents into first- and second-tier antecedents is proposed, to take inter-correlations between antecedents into account.

Secondly, with the shift towards open innovation and more collaborative buyer-supplier relationships, companies also become more dependent on each other. Dependencies in channel relationships are directly related to risks of being exploited by opportunistic behavior of others. The second research objective addresses whether and how dependency and power are contingency factors impacting supplier satisfaction and preferred customer status. The findings do not only show that preferred customer status can alleviate the potential negative consequences of buyer dependence, but even extreme asymmetric dependencies in favor of buyers do not automatically lead to lower supplier satisfaction. Additionally, the results show that the negative effects of buyers' coercive power on supplier

satisfaction is mediated by conflict it may create. Hence, the negative impact of dependencies and coercive power on supplier satisfaction seems to be dependent on the buyers' overall relational behavior and does not lead automatically to negative consequences, which were the findings of previous research.

As the third research objective, this dissertation assesses whether and how buyer-supplier perceptions of preferred customer status differ and on which factors they are contingent. Perception differences can have severe negative consequences for the interaction between buyer and supplier. For example, a buyer overestimating its status might run the risk of paying higher prices or not receiving the best services from its suppliers. Reversely, an underestimation of preferred status might hinder the buyer to engage in more interaction with the supplier, and opportunities for collaboration could be overlooked. A few scholars have already attempted initial explanations of this phenomenon, but factors influencing perception differences have not been hypothesized or tested empirically until now. The results of the analyses show that non-shared high trust of the buyer leads to an overestimation of preferred customer status. Additionally, distrustful buyers in general (no matter whether this distrust is shared or not) underestimate their preferred customer status. Summarized, the often cited "dark side" of trust is not simply associated with an inverted-U effect of buyer trust on perception accuracy, but only evolves when the supplier does not share the trust of the buyer. Also, a dyadic assessment of this phenomenon is needed.

Additionally, next to the specific research objectives and findings, this dissertation adds novel methods and a dyadic perspective to supplier satisfaction and preferred customer research. These methods enable researchers to assess predictive abilities of models and discover curvilinear as well as asymmetric relationships, which might not have been discovered otherwise. In particular regarding dependency and power, scholars argue to truly assess dependence, power and similar relational concepts in buyer-supplier relationships, it is necessary to examine them from both sides of a dyad with statistical methods that can reveal complex interaction effects. Consequently, this dissertation applied the novel methods of partial least point predictions and polynomial regressions with response surface analyses for the first time to preferred customer and supplier satisfaction research.

Samenvatting

"Preferred Customer Status, Supplier Satisfaction and their Contingencies"

Bedrijven verplaatsen steeds vaker traditionele in-house activiteiten naar externe partijen, en richten zich daarmee meer op coöperatieve inkoper-leveranciersrelaties als een bron van waardecreatie en concurrentievoordeel. Om voordelen te behalen uit de relaties met leveranciers, is het voor inkopers belangrijk om leverancierstevredenheid en de daaruit volgende 'preferred customer status' te bereiken. Hoewel er in het verleden verschillende mechanismen zijn geïdentificeerd die van invloed zijn op leverancierstevredenheid en 'preferred customer status', is er nog weinig bekend over de rol van contingentie factoren zoals producttype, afhankelijkheid en machtgebruik. Dit proefschrift onderzoekt de relatie van deze factoren met leverancierstevredenheid en 'preferred customer status'.

De eerste onderzoeksdoelstelling van dit proefschrift is om vast te stellen of en hoe producttypes (indirecte en directe materialen) de leverancierstevredenheid en 'preferred customer status' beïnvloeden. Aangezien directe en indirecte materialen geassocieerd zijn met verschillende managementstijlen en zij derhalve de leverancierstevredenheid en 'preferred customer status' verschillend zouden kunnen beïnvloeden, beoogt dit proefschrift te analyseren wat het effect is van van indirecte en directe materialen op leverancierstevredenheid en 'preferred customer status'. De resultaten van het onderzoek tonen dat er geen significant verschillen zijn tussen de effecten van directe en indirecte inkoop op leverancierstevredenheid. Desondanks bevat het proefschrift een voorstel voor een nieuw leverancierstevredenheidmodel dat de afhankelijkheden in acht neemt tussen factoren die de leverancierstevredenheid beïnvloeden.

Ten tweede, door de toename van zowel open innovatie als samenwerkingen tussen inkopers en leveranciers, worden bedrijven steeds afhankelijker van elkaar. Zulke afhankelijkheden zijn direct gerelateerd aan risico's zoals opportunistisch gedrag. De tweede onderzoeksdoelstelling gaat in op de vraag of en hoe afhankelijkheid en macht contingentie factoren zijn die de tevredenheid van leveranciers en 'preferred customer status' beïnvloeden. Het proefschrift analyseert in het bijzonder het vermogen van leverancierstevredenheid en 'preferred customer status' om de negatieve effecten van afhankelijkheden binnen inkoper-leveranciersrelaties te verminderen. De resultaten tonen

aan dat ‘preferred customer status’ inderdaad de mogelijke negatieve effecten van afhankelijkheden kan tegengaan. Bovendien laten de resultaten zien dat leveranciers in een heel afhankelijke situatie niet altijd ontevreden zijn en dat de gevolgen van machtgebruik door de inkoper allen negatief zijn als het tot conflicten leidt. Dus, de negatieve effecten van afhankelijkheden en macht op leverancierstevredenheid treden niet automatisch op; Deze effecten lijken sterk af te hangen van het relatiegedrag van de inkoper.

Als derde doelstelling beoogt dit proefschrift te onderzoeken of en hoe de inkoper- en leverancierspercepties van ‘preferred customer status’ verschillen en door welke factoren mogelijke perceptieverschillen worden beïnvloed. Perceptieverschillen kunnen negatieve gevolgen hebben voor de interactie tussen inkoper en leverancier. Een koper die zijn status overschat kan bijvoorbeeld het risico lopen om te hoge prijzen te betalen of niet de beste diensten van zijn leveranciers te ontvangen. Omgekeerd kan een onderschatting van de voorkeurstatus de koper verleiden tot het aangaan van te weinig interactie met de leverancier. Zo zouden bijvoorbeeld kansen voor samenwerking in productinnovaties over het hoofd gezien kunnen worden. Enkele onderzoekers hebben al een aanzet gedaan voor mogelijke verklaringen voor dit fenomeen, maar mogelijke factoren die de perceptieverschillen beïnvloeden zijn tot nu toe niet empirisch getest. De bevindingen met betrekking tot de effecten van vertrouwen en afhankelijkheden tonen aan, dat alleen een hoog vertrouwen bij de klant dat niet door de leverancier wordt gedeeld tot een overschatting van ‘preferred customer status’ leidt. Bovendien tonen de resultaten aan dat wantrouwige kopers te allen tijde hun ‘preferred customer status’ onderschatten. Dus vertrouwen kan de perceptie van de inkoper sterk negatief of positief beïnvloeden.

Naast de specifieke onderzoeksdoelstellingen en bevindingen, voegt dit proefschrift ook nieuwe methodes en een dyadisch perspectief toe aan leverancierstevredenheidsonderzoek. Deze nieuwe methoden stellen onderzoekers in staat om de voorspellende kracht van modellen te onderzoeken, non-lineaire en asymmetrische relaties te achterhalen die anders verborgen zouden zijn gebleven. Emerson (1962, blz. 32) merkte, in het bijzonder met betrekking tot afhankelijkheid en macht, op dat “macht een eigenschap is van een sociale relatie en niet van een attribuut of actor”. Dit impliceert dat, om daadwerkelijk afhankelijkheid, macht en soortgelijke concepten in relaties tussen inkopers en leveranciers te beoordelen, het nodig is om deze concepten aan beide kanten van een dyade te onderzoeken.

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Preferred Customer Status, Supplier Satisfaction and their Contingencies

Over the last decades, firms shift increasingly from traditional in-house value creation strategies to cooperative buyer–supplier relationships as a source of value creation and competitive advantage. To reap extensive benefits from relationships with suppliers, assuring supplier satisfaction and achieving preferred customer status are key for buyers. In the past, several mechanisms have been identified that influence supplier satisfaction and preferred customer status; however, little is known about the role of major contingency factors such as: product type, dependencies and power influencing them. This dissertation focuses on the potential of preferred customer status to mitigate the negative effects of buyer dependency, the influences of a buyer's power usage on supplier satisfaction, and potential perception differences of preferred status in buyer-supplier relationships. Additionally, this dissertation adds novel methods (i.e. partial least squares point predictions and polynomial regressions with response surface modeling) together with a dyadic perspective to supplier satisfaction and preferred customer research. These methods enable an assessment of the predictive abilities of models, reveal curvilinear interaction effects and discover asymmetric relationships between factors, which would have not been discovered otherwise.

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