To buy or not to buy : empirical studies on buyer-supplier collaboration

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Agnieszka Blonska

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CHAPTER 1

INTRODUCTION

1.1 Research Problem

Building close supplier relationships is on the strategic agenda of a growing group of leading companies in different industries (e.g. Philips, Unilever, P&G, IBM, Ford, Nokia (Geraint, 2008). Not surprisingly, because developing and managing value-adding working relationships with suppliers was identified as one of the major future trends in Purchasing and Supply Management (A.T.Kearney, 2007). Over the last decade a number of academics and practitioners claimed that closer relationships with suppliers will result in increased business value (Anderson and Jap, 2005). Apart from Honda and Chrysler, an example that has been used very often as a best practice in this area is that of Japanese automakers, and especially Toyota (Dyer, 1996). These automotive companies managed to become the buyer of choice for their suppliers and by that they are able to receive a greater portion of their suppliers' brainpower and attention than their competitors (i.e., preferential value; Milas, 2006). Inspired by the story of Toyota and the likes, many companies started trying to work on building closer relationships with suppliers. A lot of money and time is invested by these companies to get closer to their suppliers and improve collaboration, before they find out that it is very difficult to copy the unique way of Toyota. The supplier relationship development tools and techniques are easy to understand and to copy, but the way in which companies like Toyota are able to win the hearts of their suppliers appears to be very difficult to encode and to imitate by other companies in other industries and supply networks. The investment in time and resources needed to develop close buyer-supplier relationships should not be under-estimated. Therefore, both buyers and suppliers need to make critical choices. It is the joint changes in the ways of working that truly payoff, not just the changes of one company. It requires a long-term commitment of both parties. What makes supplier decide to invest in a specific customer? To find the answer to that question it is important to get insights in what suppliers think and feel about their customers and the working relationships with them. It might be expected that these supplier opinions and thoughts influence supplier behavior (e.g., the way they allocate their time and resources to their customers). One way in which buyers try to get a clearer view on the opinions and thoughts of their suppliers is by conducting supplier satisfaction surveys (e.g. NOKIA (Maunu, 2003), Ericsson (Henningsson and

Nilsson, 2009), IKEA (Davies, 2004), Honda and Chrysler (Essig and Amann, 2009). So far, supplier satisfaction has attracted relatively little attention (Goffin, Lemke and Szwejczewski, 2006; Liker and Choi, 2004) and resulted only in a few academic studies (Benton and Maloni, 2005; Carter, 2000; Maunu, 2003; Wong, 2000).

These studies show that, despite the fact that it is a good instrument to get a snapshot of how the supplier thinks and feels at a certain moment in time, supplier satisfaction surveys are not capable to fully explain supplier behavior with regard to giving preferential benefits. Relationships between buyers and suppliers are coordinated and managed by people, and thus, strongly influenced by them. Despite the recognized value of close relationships, which could not be expressed easily in economic terms (Jap, 1999), there is still a lack of understanding on how close social relationships between buyer and supplier employees influence the behaviors of their companies.

How do suppliers react on supplier development initiatives from their customers? What is the return on investment of investing in social relationships? How to increase the commitment of suppliers? What role does trust play in getting preferential benefits? Will suppliers be willing to adapt their processes to a single buyer if this buyer invests in closer social relationships? What is the effect of increasing information sharing and providing feedback to suppliers? These and many other questions of purchasing professionals still remain unanswered. Therefore, we dedicated our research to finding the answers to some of the above questions.

The fundamental objective of this dissertation is to tackle several of the above questions from a supplier as well as a dyadic perspective. First, we explore the role of close social relationships in accessing and exchanging critical resources between supplier and buyer. The first study provides insights into whether suppliers that receive supplier development allocate preferential resources to buyers and what benefits are generated from there for suppliers. Second, we will shed light on the impact of close social relationships on customization behavior of buyers and suppliers from a dyadic perspective. Additionally, our second study investigates the role of customization and information sharing in satisfaction with feedback and gaining affective commitment in a buyer-supplier relationship. Finally, the third study explores the effect of close social relationships on information sharing behavior of buyers and suppli-

ers and the impact of Enterprise Information Portal on the improvement of the linkage between close social relationships and information sharing behavior.

This chapter continues with the introduction of the central construct of interest in this dissertation, a close social relationship. Next, we present the research objectives of our three studies and our database. Finally, an outline of the dissertation is provided.

1.2 A Close Social Relationship Theoretical Foundations

A number of scholars have so far been attracted to study social capital theory (e.g., Ahuja, 2000; Tsai, 2000; Tsai and Ghoshal, 1998) also in supply chain management (e.g., Krause, Handfield and Tyler, 2007; Lawson, Tyler and Cousins, 2008; Min, Kim and Chen, 2008). Regardless of the operationalizations and conceptualization of the social capital construct, academia has been widely attracted to it because of benefits that it may bring (e.g., in Adler and Kwon, 2002; Krause et al., 2007; Lawson et al., 2008). Social capital encourages access to and exchanges of resources (Wasko-McLure and Faraj, 2005), and unique opportunities (Uzzi, 1996). The roots of social capital may be sought in network theory, and especially, in Granovetter's (1985) study of social embeddedness in economic exchange. Granovetter (1992) points to the exclusive role of *social relationships* in social capital. A social relationship between actors originates from social network where it is referred to as a tie (Seibert, Kraimer and Liden, 2001). In this dissertation we focus on a strong close social relationship. Our choice is based on a claim in network closure theory that a close social relationship is more beneficial than a distant one (Ahuja, 2000; Cohen, 1988). A close social relationship is characterized by a higher level of closeness, reciprocity and indebtedness compared to a 'distant' relationship (e.g., Granovetter, 1973; Rindfleisch and Moorman, 2001). There are several reasons why dense, close social relationships tend to be more beneficial than loose ones (Ahuja, 2000; Cohen, 1988; Lin, Cook and Burt, 2001; Uzzi, 1997). Among them the most important for our study is that a close social relationship offers access to sensitive information (e.g., Granovetter, 1973), privileged information, or even privileged economic resources such as subsidized loans or protected markets (Coleman, 1988; Portes, 1998).

Building upon this conceptualization of a close social relationship and recognizing its significant role in accessing and exchanging exclusive resources, this dissertation portrays the roles of a close social relationship between buying and supplying companies and benefits that this may generate in their cooperation. We define the objectives of this dissertation hereafter.

1.3 Research Objectives

The central purpose of this dissertation, as indicated earlier, is to address a gap in research on the role of a human factor, a close social relationship between employees of a buyer' and a supplier' company, on resource exchanges in a buyer-supplier relationship. Therefore, the main problem statement that we will answer in this dissertation is:

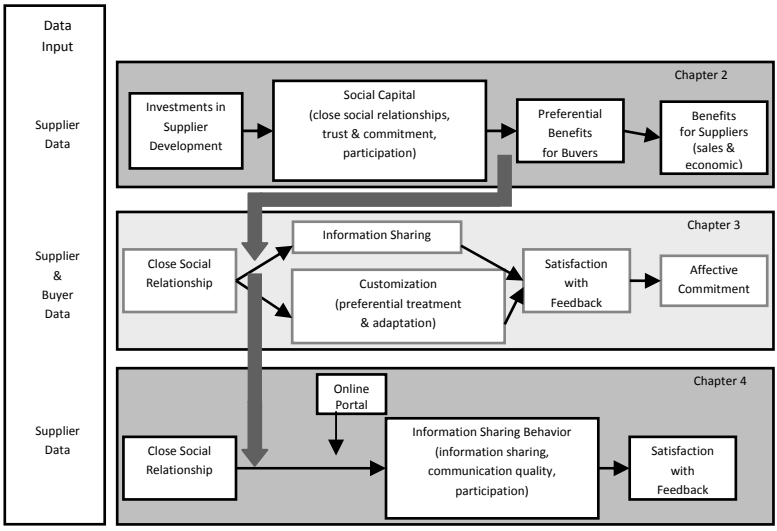
What is the impact of close social relationships on the exchange of resources in a buyer-supplier relationship?

To answer the overall problem statement we emphasize the importance of close social relationships and explore several benefits they may bring both to buyers and suppliers.

Figure 1.1 depicts the conceptual models of the three papers and how they are connected.

Paper 2 (P2) is a deeper, dyadic look into the relationship between close social relationships and preferential benefits from Paper 1 (P1). Paper 3 (P3) examines more extensively the linkage between close social relationships and cross-functional information sharing behavior that we have first incorporated in P2.

Figure 1.1 Graphical Representation of the Three Studies



1.3.1 Chapter 2 Objective: Examine the role of close social relationships in gaining preferential benefits

The objective of the first study is threefold. First, we develop a sound theoretical support for conceptualizing relationships among social capital dimensions (e.g., structural and relational capital) based on commitment-trust theory rather than on the dominant network theory. Second, although extant research (e.g., Adler and Kwon, 2002) has made a claim that social capital mediates resource exchanges by acting as an asset that receives resource support (e.g., investments in supplier development) and might lead to the provision of other resources or benefits (e.g., preferential buyer benefits), we rely on social capital theory to test this claim empirically. As such, we not only enrich current literature on various drivers of social capital (Moran, 2005) but we also extend the established perspective on the relationship between investments in supplier development and manufacturing performance. By taking this supply-side perspective (e.g., Prahinski and Benton, 2004), we complement studies from the buyer's perspective.

Finally, in contrast to current literature on social capital theory which primarily refers to benefits obtained by one party in a buyer–supplier relationship

(Krause et al., 2007; Lawson et al., 2008; e.g., Min et al., 2008, p. 287), we present a model that includes both a supplier's (sales, economic performance) and a buyer's (preferential benefits) benefits. In sum, we unfold our first research objective by: *1) defining and operationalizing relationships among social capital dimensions, and 2) defining and empirically testing the role of social capital, and especially its structural dimension (a close social relationship), in accessing and exchanging preferential resources*.

1.3.2 Chapter 3 Objective: Examine the impact of close social relationships on customization and its outcomes

Complementary to defining and operationalizing the effects of social capital, and especially, close social relationships in accessing and exchanging resources, the second study focuses on the process through which close social relationships contribute to customization. First, for this purpose, we integrate two separate streams of literature on adaptation and customization. While extant studies on adaptation provide insights into its nature, types, antecedents and consequences (Brennan, Turnbull and Wilson, 2003; Hallen, Johanson and Seyed-Mohamed, 1991; Mukherji and Francis, 2008; Rogers, Purdy, Safayeni and Duimering, 2007), we acknowledge the relevance of studies on customization as a relational benefit, that includes preferential or special treatment (Gwinner, Gremler and Bitner, 1998) in adaptation, and we integrate these views together. Supply chain studies have so far paid relatively little attention to this phenomenon of preferential or special treatment in contrast to extensive investigations in service settings (e.g., Colgate and Land, 2001; Lacey, Suh and Morgan, 2007). Furthermore, even though Kraatz (1998) pointed to the roles of a close social relationship and information sharing in customization, empirical evidence in supply chain is not existent. Thus, to address this gap and extend existing models of customization, we rely on network and social capital theories to design our conceptual framework. Neither social capital nor network theory perspectives have ever received attention in studies on customization in a buyer-supplier relationship. Next, following current literature indications that "alike thinking and acting" might not hold for both, buyers and suppliers, as their wants and needs might differ (Ross, Buffa, Droge and Carrington, 2009), we gather data from both sides of a buyer-supplier relationship. This is

in contrast to existing papers that study supplier and buyer customization only from a purchasing perspective (e.g., Cannon and Perreault Jr., 1999; Mukherji and Francis, 2008). In sum, our approach extends research designs and analytical approaches to buyer–supplier relationships by: *1) defining and operationalizing customization, and 2) examining the impact of a close social relationship on information sharing and customization, and their effects on satisfaction with performance feedback and affective commitment*.

1.3.3 Chapter 4 Objective: Examine the effect of close social relationships on cross-functional information sharing behavior provided the use of enterprise information portals

Apart from the role of close social relationships in sharing information as indicated by Kraatz (1998), and acknowledged in Objective 2, many companies enhance the information sharing process with the use of IT tools such as enterprise information portals (Sambamurthy, Bharadwaj and Grover, 2003). While prior studies have demonstrated a significant influence of communication technology in improving performance (Baglieri and Secchi, 2007), we aim to deepen our understanding about the impact of enterprise information portals (EIPs) on information sharing behavior in supply chains. Although EIPs seem the most suitable technological solutions for answering the need of cooperation and strategic relationships between buyers and suppliers (Baglieri and Secchi, 2007), as presenters of communication technology, they do not replace direct contact between buyers and suppliers. Similarly, despite widespread research on buyer–supplier relationships, there is a lack of sufficient understanding of how the use of portals may enhance the impact of buyer' and supplier' employees' close social relationships on information sharing behavior in a buyer-supplier relationship. To the best of our knowledge no study has looked at the impact of close social relationships on information sharing behavior and whether an EIP may diminish or amplify their effects on information sharing behavior in a buyer-supplier relationship.

As such, the central purpose of this paper is to broaden understanding of the role of close social relationships and an EIP in information sharing behavior. Additionally, we examine the impact of information sharing behavior on supplier's satisfaction with feedback from a buyer on supplier performance. In

sum, we intend to: *1) deepen our understanding about the impact of enterprise information portals (EIPs) on cross-functional information sharing behavior, 2) examine whether the use of EIPs may enhance the influence of close social relationships on cross-functional information sharing behavior, and 3) test empirically the effect of cross-functional information sharing behavior on satisfaction with feedback*. By investigating these effects our study aims to provide practitioners with an understanding of how they may enhance cross-functional information sharing behavior and boost satisfaction with feedback in a buyer-supplier relationship.

1.4 A Database

To pursue the research objectives, we set up three complementary studies. Each study presents a theoretical logic developed based on insights from social capital, network and information systems research in the area of purchasing and supply chain management. To examine the hypotheses built upon the three conceptual frameworks, we collected data using two online surveys at the end of 2007 (supplier satisfaction survey) and the summer of 2008 (buyer satisfaction survey). This resulted in a database consisting of 185 data points from suppliers and 103 data points from purchasing officers.

1.4.1 Data Collection

As our unit of analysis is a buyer-supplier relationship, to the best of our knowledge there is no objective data to test our conceptual models. Additionally, the majority of the concepts in our model refer to relational atmosphere (e.g., trust, commitment, information sharing behavior, investments in supplier development; see Appendix 1 for all constructs), they have been defined and operationalized as latent constructs, with some of them being multidimensional. Therefore, we collected our primary data through setting up two online surveys. Prior to online data collection we conducted interviews with five buyer representatives and eight representatives of supplier companies. This led us to identify the essential concepts for our study, as well as the appropriate decision makers who could serve as respondents and assess the buyer–supplier rela-

tionship from both sides. All participants in these interviews agreed that key account managers would be most knowledgeable about buyer-supplier relationship interactions from a supplier point of view and purchasing officers from a buyer point of view. Following the interviews, we conducted a pilot study and discussed the questionnaire with the interview participants. Only minor wording issues emerged and were addressed, mainly with minor changes to the layout.

Furthermore, our preference for online data collection over the traditional paper and pencil surveying was due to four reasons. First, because we had to collect data from several European locations online surveys allowed for a relatively large data collection in cost and time effectiveness and efficiency. Second, online surveys proved to be very convenient in increasing the response rates because respondents can not only manage their responses in terms of time and preparation, but also the researchers can easily manage the reminders. Third, even though our conceptual models build on network theory we use an online survey to collect data. Because it is quite common to regard a dyadic relationship, a buyer-supplier relationship and a close social relationship as a network phenomenon (Borgatti, Mehra, Brass and Labianca, 2009), using questionnaires to gather data based conceptually on network theory is not new (Friedkin, 1980; Gargiulo and Benassi, 2000; McEvily and Zaheer, 1999; Wathne and Heide, 2004). Finally, online data collection fits the sampling frame of our study, and empirical results are equally reliable and valid when compared to mail surveys (Deutskens, de Ruyter, Wetzels and Oosterveld, 2004).

1.4.2 Sampling

Our data collection mirrors that of many previous studies on buyer-supplier collaboration (Krause et al., 2007; Krause, Scannell and Calantone, 2000; Lawson et al., 2008; Mukherji and Francis, 2008). The buying company that participated in this study represents a large multinational manufacturer of industrial equipment, a part of a global industrial group, with total annual turnover of close to 3 billion euro and headquarters in Europe. We selected the suppliers of a single, core buying company as potential participants in the empirical study, to exclude contextual effects and allow for a single frame of reference. Suppliers represent key suppliers of the buyer that are production related.

Our dataset represents a larger data collection that had two phases. First, we collected data from suppliers' key account managers, and then from purchasing officers of the buying company. The buying company provided the contact data of the suppliers and the purchasing officers. In the first phase of data collection the selected key account managers (n = 254) received e-mail invitations, including a letter of encouragement from the Vice President Purchasing of the buying company. They were reminded that they could evaluate the relationship anonymously and send their responses to a neutral external party, a university. In the second phase of data collection, every purchasing officer that participated in the study (n=28) evaluated 4 suppliers. The procedure for data collection from purchasing officers was the same as for suppliers. The e-mail invitations for an online survey contained an URL link to the Web site hosting the survey, as well as a unique username and password for each respondent. We also carefully planned reminders to increase the response rate; we sent reminders at times our respondents might feel more inclined to complete it, Monday mornings and Friday afternoons, that is when they might have some time to perform a work-unrelated activity. Respondents were also offered a report of the results as an incentive. Furthermore, they received a pdf version of the survey to prepare themselves before answering the questions online. Of the 254 suppliers invited to participate, 185 responded, for a response rate of 72.83%. This dataset was used for study 1 and study 2. For study 3 we needed the dyadic dataset. To collect the data from the buyer side of the dyad, of the 185 suppliers 28 purchasing officers were allowed to choose 4 suppliers, in sum 112 suppliers for evaluation, from which 9 were deleted due to incomplete responses, resulting in a response rate of 91.96%. This approach is similar to other dyadic studies where purchasing officers themselves select the supplier to be evaluated or the supplier contact person provides contact details of their customers (Homburg and Stock, 2004; Jap, 1999; Johnston, McCutcheon, Stuart and Kerwood, 2004; Perrone, Zaheer and McEvily, 2003; Rokkan, Heide and Wathne, 2003; Selnes and Sallis, 2003). Furthermore, to evaluate non-response bias, we used a time-trend extrapolation test and found no significant differences between early and late respondents (Armstrong and Overton, 1977).

1.4.3 Description of the Database

This section provides a first description of our database. We therefore highlight some critical key characteristics of the buyer and supplier samples. More sophisticated check-ups of the database and measures will follow later in this dissertation. Table 1.1 gives an overview of the most important characteristics of the companies in our sample. The table compares the buyer and supplier data points in terms of business-to-business (B2B) cooperation duration between companies and person-to-business (P2B) between company representatives and a partner company as well as sales level, supplier turnover and buyer purchase spend.

Table 1.2 gives an overview of the most relevant characteristics of the buyer and supplier data points in the database. The table compares a total sample of 185 suppliers to a dyadic sample of matched pairs of 103 data points from a buyer and suppliers. Based on the comparison criteria, we can infer that buyers and suppliers are similar in terms of business-to-business collaboration length. However, buyer sample reveals that purchasing officers collaborate with the same supplying company much shorter than a key account manager with the same buying company.

Table 1.1 Buyer and Supplier Samples' Descriptives

Sample Descriptives	Supplier Sample N=185 (%)	Buyer Sample N=103 (%)	Dyadic Supplier Sample N=103 (%)
B2B Relationship Length in years			
< 3	10.3	9.7	9.7
> 3-5	15.2	14.6	13.6
> 5-10	24.5	36.9	27.2
> 10-15	19.6	18.4	15.5
> 15	30.4	20.4	34.0
P2B Relationship Length in years			
< 3	25.0	71.3	21.4
> 3-5	18.5	16.8	17.5
> 5-10	28.8	5.9	33.0
> 10-15	14.7	5.9	13.6
> 15	13.0	0.0	14.6
Supplier Turnover/Purchasing Spend/Sales Level in mln Euros			
< 0,25	0.0	22.2	10.7
> 0,25-1	5.0	42.9	16.5
> 1-2	6.2	20.6	17.5
> 2-6	12.4	14.3	22.3
> 6-10	11.8	0.0	5.8
> 10-80	39.1	0.0	13.6
> 80	25.5	0.0	13.6

1.5 Dissertation Outline

This dissertation contains three empirical studies that pursue our research objectives. Each study presents a theoretical logic developed based on insights from social capital, network and information systems research in the area of purchasing and supply chain management. To examine the hypotheses built upon the three conceptual frameworks, we set up data collection through two surveys. Table 1.2 offers a summary of the outline of the chapters.

Table 1.2 Overview of chapters

Chapter	Study	Objective	Research Context
1	Introduction		
2	Study 1: Some Buyers Are More Equal Than Others: How Social Capital Affects Preferential Treatment By Suppliers	Examine the role of close social relationships in gaining preferential benefits (supplier perspective)	164 independent suppliers in a buyer-supplier relationship in a manufacturing industry
3	Study 2: It Takes Two to Tango: A Dyadic View on Customization and Its Outcomes	Examine the impact of close social relationships on customization and its outcomes (dyadic perspective)	103 matched pairs of buyers and suppliers in a buyer-supplier relationship in a manufacturing industry
4	Study 3: Man vs Machine: The Roles of Close Social Relationships and Enterprise Information Portal in Cross-Functional Information Sharing Behavior and its Outcomes	Examine the effect of close social relationships on cross-functional information sharing behavior provided the use of an enterprise information portal (supplier perspective)	185 suppliers in a buyer-supplier relationship in a manufacturing industry
5	Summary and Conclusions		

1.6 Appendix 1

A List of Indicators in a Database

	General Satisfaction
1	Overall, we are very satisfied with the relationship we have with Buyer X/Supplier X.
2	If we had to do it all over again, we would still choose this Buyer X as a customer/Supplier X as a supplier.
3	We are very pleased with what Buyer X/Supplier X does for us.
4	Our firm regrets the decision to do business with Buyer X /Supplier X.

	Social Satisfaction
1	The working relationship between our firm and Buyer X/SupplierX can be characterized by feelings of opposition.
2	Buyer X/Supplier X expresses criticism tactfully.
3	Interactions between our firm and Buyer X/Supplier X are characterized by mutual respect.
4	Buyer X/Supplier X leaves our firm in the dark about things that we should know.
5	Buyer X/Supplier X does not want to explain their working procedures to us.

	Economic Satisfaction (Part 1)
1	Buyer X/Supplier X provides our firm with support of high quality.
2	Buyer X/Supplier X provides competent resources for problem solving.
3	Buyer X/Supplier X provides resources for problem solving at the right time.

	Economic Performance (Economic Satisfaction Part 2)
1	The relationship with Buyer X/Supplier X has provided our firm with a profitable market position.
2	Through the relationship with Buyer X/Supplier X we were able to attract other customers.
3	The supplier improvement programs of Buyer X help us to perform better./ The supplier improvement programs provided by Buyer X help Supplier X to perform better.

	Affective Commitment
1	It is pleasant working with Buyer X /Supplier X that is why we continue the relationship.
2	We want to remain a supplier to Buyer X/a customer to Supplier X.
3	Our decision to remain a supplier for Buyer X/customer of Supplier X is based on our attraction to the things that Buyer X/ Supplier X represents as a company (e.g., image, brand, reference).

	General Commitment
1	The relationship that our firm has with Buyer X/Supplier X is something we are very committed to.

	Dependence (Calculative Commitment)
1	There is too much effort (time and/or energy and/or expense) in switching to another customer/ supplier, that is why we stay with Buyer X/Supplier X.

2	Right now staying with Buyer X/Supplier X is a matter of necessity since no feasible alternatives exist.
3	It would be hard for us to transfer the investments we have made in support of Buyer X to another customer/Supplier X to another supplier, so we continue the relationship.
4	It is too difficult to switch to another customer/supplier because of the lack of good alternatives, therefore we stay with Buyer X/ Supplier X; otherwise, we would consider leaving.

	A Close Social Relationship
1	Our employees share close social relations with the employees from Buyer X/Supplier X.
2	We feel indebted to Buyer X/Supplier X for what they have done for us.
3	We expect that we will be working with Buyer X/Supplier X far into the future.

	A Perception of A Close Social Relationship
1	Buyer X/Supplier X feels indebted to our company as a supplier for what we have done for them.
2	Buyer X/Supplier X employees share close social relations with our employees.
3	Buyer X/Supplier X expects that we will be working together far into the future.

	Trust
1	We can count on Buyer X/Supplier X to follow through on their commitments.
2	Hidden motives are not a concern in this relationship with Buyer X/Supplier X.
3	When making decisions, Buyer X/Supplier X considers our business interest as well as its own.
4	We trust that Buyer X/Supplier X keeps our best interest in mind.
5	Buyer X/Supplier X is honest with us.

	Enterprise Information Portal
1	All forecasts that can be found on EIP are clear.
2	All forecasts that can be found on EIP are reliable.
3	All specifications that can be found on EIP are clear.
4	All specifications that can be found on EIP are reliable.
5	All drawings that can be found on EIP are clear.
6	All drawings that can be found on EIP are reliable.
7	All pricelists that can be found on EIP are clear.
8	All pricelists that can be found on EIP are reliable.
9	All quality rejection data that can be found on EIP are clear.
10	All quality rejection data that can be found on EIP are reliable.

	Direct Contact Accessibility
1	We have problems in accessing our contact persons from the following Buyer X/ Supplier departments: Engineering
2	We have problems in accessing our contact persons from the following Buyer X/ Supplier departments: Production
3	We have problems in accessing our contact persons from the following Buyer X/ Supplier departments: Quality (SQA)

4	We have problems in accessing our contact persons from the following Buyer X/ Supplier departments: Purchasing
5	We have problems in accessing our contact persons from the following Buyer X/ Supplier departments: Accounting

	Preferential Treatment
1	Buyer X/Supplier X receives special treatment from us.
2	Buyer X /Supplier X receives invitations to special internal events (internal managerial meetings, engineering day, customer day) organized by our company
3	Buyer X/Supplier X receives special information from us.

	Preferential Structural Benefits
1	Buyer X/Supplier X receives special value-added benefits from us (e.g., inventory control, expediting, training).
2	We have made specific investments for Buyer X (e.g. EDI, packaging, delivery, KANBAN)/Supplier X (EDI, packaging quantity, delivery terms, kanban).
3	We adapt our procedures to Buyer X/Supplier X requirements.
4	We assigned additional dedicated personnel to Buyer X/Supplier X.

	Supplier Evaluation (only a supplier's perspective thus not applicable for buyer sample)
1	Buyer X sets clear improvement targets.
2	Buyer X uses a formal procedure to evaluate our performance (e.g. audits, quality and/ or delivery measurement).
3	We are recognized by Buyer X for the improvements we realize.
1	We have been certified to work with Buyer X.

	Relationship Investments: Buyer and Supplier Development
1	Buyer X visits our site to assess our processes./Supplier X visits our sites to familiarize themselves with our processes.
2	We receive training from Buyer X./We receive training from Supplier X.
3	We are early involved in the new product development process of Buyer X/Supplier X.
4	Buyer X/Supplier X standardizes product specifications together with us.
5	Buyer X/Supplier X collaborates with us to improve our manufacturing processes.
6	Buyer X/Supplier X gives us technological advice (e.g. on materials, software).
7	Buyer X/Supplier X gives us product development advice (e.g., on processes, project management).
8	Buyer X/Supplier X gives us quality related advice (e.g., on the use of inspection equipment, quality assurance procedures).

	Power
1	We are confronted with strong penalties when violating Buyer X's/Supplier X's procedures.
2	Buyer X/Supplier X can pretty much dictate how well we produce the product.
3	Buyer X/Supplier X has a significant influence on our operations.

4	In the past 6 months, Buyer X/Supplier X has changed and/ or influenced our programs and/ or procedures and/ or policies.

	Payment and contract terms
1	Contracts are fair.
2	Agreements are fair.
3	Buyer X is paying according to agreements. / Supplier X is invoicing us correctly according agreements.
4	Payment terms are fair.
5	Doing business with Buyer X/Supplier X is profitable.
6	Supplier X sends us invoices on time

	Total Company Turnover
1	What is your company total turnover in millions of euro?

	Person-to-business (P2B) Relationship Length
1	How long have you, as a representative of your firm, been cooperating with Buyer X/Supplier X?

	Business-to-business (B2B) Relationship Length
1	How long has your company been a supplier to Buyer X/a customer of Supplier X?

	Supplier Satisfaction with Feedback
1	Mean for question 1: We are satisfied with the feedback we receive from the following Buyer X departments about our quality performance. (departments are combined here)
2	Mean for question 2: We are satisfied with the feedback we receive from the following Buyer X departments about our delivery performance. (departments are combined here)
3	Mean for question 3: We are satisfied with the feedback we receive from the following Buyer X departments about our product development performance. (departments are combined here)
4	Mean for question 4: We are satisfied with the feedback we receive from the following Buyer X departments about our process development performance. (departments are combined here)
5	Mean for question 5: We are satisfied with the feedback we receive from the following Buyer X departments about the invoicing and payment status. (departments are combined here)
6	Mean for question 6: We are satisfied with the feedback we receive from the following Buyer X departments about our total cost reduction performance. (departments are combined here)
7	Mean for question 7: In general feedback from the following Buyer X departments is on time. (departments are combined here)
8	Mean for question 8: In general feedback from the following Buyer X departments is reliable. (departments are combined here)

	Buyer Satisfaction with Feedback
1	We are satisfied with the feedback we receive from Supplier X about their ability to meet our quality requirements.

2 We are satisfied with the feedback we receive from Supplier X about their ability to meet agreed delivery terms.
3 We are satisfied with the feedback we receive from Supplier X about their ability to meet our product development requirements.
4 We are satisfied with the feedback we receive from Supplier X about their ability to meet our process development requirements.
5 We are satisfied with the feedback we receive from Supplier X about our invoices' and payment status.
6 We are satisfied with the feedback we receive from Supplier X about their ability to meet our total cost reduction requirements.
7 In general feedback from Supplier X is on time.
8 In general feedback from Supplier X is reliable.

Buyer Cross-Functional Information Sharing Behavior

Departments: engineering, production, quality, purchasing and accounting

Communication Quality

1 Mean for question 1: The communication of the following Buyer X departments with our company is on time. (departments are combined here)
2 Mean for question 2: The communication of the following Buyer X departments with our company is accurate. (departments are combined here)
3 Mean for question 3: The communication of the following Buyer X departments with our company is complete. (departments are combined here)
4 Mean for question 4: The communication of the following Buyer X departments with our company is satisfactory. (departments are combined here)
5 Mean for question 5: The communication of the following Buyer X departments with our company is reliable. (departments are combined here)

Participation

1 Mean for question 1: The following Buyer X departments ask us for our advice. (departments are combined here)
2 Mean for question 2: The following Buyer X departments ask us to participate in goal setting. (departments are combined here)
3 Mean for question 3: The following Buyer X departments ask us to participate in planning activities. (departments are combined here)
4 Mean for question 4: The following Buyer X departments encourage us to come with suggestions for improvements. (departments are combined here)
5 Mean for question 5: The following Buyer X departments ask us to participate in forecasting activities. (departments are combined here)
6 Mean for question 6: The following Buyer X departments are collaborative. (departments are combined here)

Information Sharing

1 Mean for question 1: The following Buyer X departments inform us in advance about their changing needs. (departments are combined here)
2 Mean for question 2: The following Buyer X departments are providing us with all the information we need to serve them best. (departments are combined here)

3 Mean for question 3: Buyer X keeps us informed about events that may affect our company. (departments are combined here)
4 Mean for question 4: Buyer X keeps us informed about changes that may affect our company. (departments are combined here)
5 Mean for question 5: The information provided by the different Buyer X departments is reliable. (departments are combined here)

Supplier Information Sharing Behavior

Communication Quality

1 The communication of Supplier X with our company is on time.
2 The communication of Supplier X with our company is accurate.
3 The communication of Supplier X with our company is complete.
4 The communication of Supplier X with our company is satisfactory.
5 The communication of Supplier X with our company is reliable.

Participation

1 Supplier X asks us for our advice.
2 Supplier X asks us to participate in goal setting.
3 Supplier X asks us to participate in planning activities.
4 Supplier X encourages us to come with suggestions for improvements.
5 Supplier X asks us to participate in forecasting activities.
6 Supplier X is collaborative.

Information Sharing

1 Supplier X informs us in advance about their changing needs.
2 Supplier X is providing us with all the information we need to serve them best.
3 Supplier X keeps us informed about events that may affect our company.
4 Supplier X keeps us informed about changes that may affect our company.
5 The information provided by Supplier X is reliable.

CHAPTER 2

Some Buyers Are More Equal Than Others: How Social Capital Affects Preferential Treatment By Suppliers[1]

Drawing on social capital theory, the authors investigate the role of three social capital dimensions—structural, relational, and cognitive—in providing benefits to both parties in a buyer–supplier relationship. According to suppliers, investments in supplier development will prompt preferential benefits for a buyer only if social capital exists. This finding extends existing social capital models by demonstrating the mediating effect of social capital between investments and benefits and revealing different drivers of social capital. This study also contributes to investigations of the effects of supplier development by focusing on its influence on preferential treatment by suppliers. In contrast with other social capital theory studies, this research includes benefits for both sides of the buyer–supplier relationship and shows that if suppliers grant preferences to a buyer, they generate increased sales and economic performance.

[1] This study is in the second round at Journal of Operations Management

2.1 Introduction

Suppliers implement key account management and customer relationship programs to enhance their performance and competitive position by fostering close, strong relationships with important buyers in their customer portfolio (Ryals and Rogers, 2007). Despite widespread research on buyer–supplier relationships though, we lack sufficient understanding of how close and strong relationships influence suppliers' behavior, including their choices with regard to specific buyers and the benefits of these choices. We build on social capital theory to introduce the concept of "preferential buyer benefits," granted exclusively to a specific buyer but not other buyers in the supplier's customer portfolio. These benefits involve preferential treatment, exchanges of unique information, and personal invitations from the supplier to join special internal events (e.g., management meetings, engineering workshops, seminars, training).

According to social theory, these preferential benefits are uncertain (Blau, 1964), because suppliers cannot be forced to provide preferential treatment but instead voluntarily choose to do so (Das and Teng, 2002). Buyers prefer to decrease such uncertainty and safeguard their preferential benefits from key suppliers by investing in the relationship, perhaps through supplier development (SD; Krause, Handfield and Scannell, 1998; Krause et al., 2007; Krause et al., 2000; Wagner, 2006a, 2006b). Supplier development involves evaluating supplier performance and then helping them improve their operational processes directly. For example, by investing significant resources in their key suppliers' development, Toyota and Honda obtained "customer of choice" status (Milas, 2006; Sako, 2004). A manufacturing company similarly might send a SD team to the supplier's work site to provide process, technological and/or quality-related advice. Suppliers also could participate in training workshops organized by the buyer or collaborate early in new product development processes. Yet not all SD investments bring the expected outcomes (Krause et al., 2000), which suggests that some buyers may be more equal than others. By investigating suppliers' responses to SD initiatives, we attempt to clarify the role of social capital for prompting preferential treatment from suppliers.

We thus make several contributions to extant literature. First, from a theoretical perspective, we extend existing models of social capital by proposing

relationships among social capital dimensions (e.g., structural and relational capital) that derive from commitment-trust theory rather than the dominant network theory. We also empirically test Adler and Kwon's (2002) claim that social capital mediates resource exchanges by acting as an asset that receives resource support (e.g., SD) and might lead to the provision of other resources or benefits (e.g., preferential buyer benefits). In that respect, we respond to Moran's (2005) request for investigations of various, carefully distinguished drivers of social capital. We thus extend research designs and analytical approaches to buyer–supplier relationships.

Second, from a practical perspective, most SD studies have focused on the effects on manufacturing performance (e.g., Carr and Kaynak, 2007; Krause et al., 1998; Krause et al., 2007; Krause et al., 2000; Modi and Mabert, 2007; Rogers et al., 2007; Wagner, 2006a, 2006b; Wagner and Johnson, 2004), but buying companies affirm that they should be gaining something in return from suppliers as well. We therefore respond with research on supplying behavior, with an explicit focus on preferential treatment. In our study suppliers provide insights into what triggers them to allocate preferential resources to buyers, and by taking this supply-side perspective (e.g., Prahinski and Benton, 2004), we complement studies from the buyer's perspective.

Third, studies on social capital theory primarily have referred to benefits obtained by one party in a buyer–supplier relationship (Krause et al., 2007; Lawson et al., 2008; e.g., Min et al., 2008, p. 287). We instead present a model that includes both a supplier's (sales, economic performance) and a buyer's (preferential benefits) benefits. Therefore, our study bridges the research gap that marks the role of social capital in resource exchanges and the effects of SD on actual preferential supplying behaviors (preferential buyer benefits).

We next provide a brief introduction of social capital theory, and then develop our hypotheses pertaining to social capital's mediating role between investments in supplier development and buyer–supplier relationship benefits. After we describe our research setting, the data, its collection, and the measures, we present our analytical approach and hypotheses tests. We elaborate on our findings in the discussion section. Finally, we provide managerial implications and directions for further research.

2.2 Social Capital Theory

To date, social capital theory has served as an attractive method for explaining various socially related, cooperative behaviors between people and organizations (e.g., Ahuja, 2000; Tsai, 2000; Tsai and Ghoshal, 1998). Lately, it also has gained significant attention in supply chain studies (e.g., Krause et al., 2007; Lawson et al., 2008; Min et al., 2008). Social capital consists of three dimensions: (1) relational, (2) structural, and (3) cognitive capital (Nahapiet and Ghoshal, 1998), which enhance access to and exchanges of resources (Wasko-McLure and Faraj, 2005), resulting in value creation for the parties involved in a buyer–supplier relationship (Nahapiet and Ghoshal, 1998). Various scholars continue to conceptualize and operationalize social capital differently (e.g., in Adler and Kwon, 2002; Krause et al., 2007; Lawson et al., 2008), though they share a common understanding of its potential benefits.

Specifically, social capital is not only a valuable asset in itself (Granovetter, 1992) but also creates more value for buyers and suppliers by providing access to resources and unique opportunities (Uzzi, 1996). Social capital contributes to building competitive advantages. unlike other types of capital, such as physical, financial, or human, social capital is unique to the organization and the particular buyer–supplier relationship (Coleman, 1988). Therefore, it is difficult to extract value from it outside the context of that organization or relationship (Moran, 2005; Nahapiet and Ghoshal, 1998). Furthermore, similarly to other types of capital, social capital is an asset, thus, resources can be invested in it along with the expectation of future benefits (Adler and Kwon, 2002, p. 21). Finally, the expectation of reciprocity is present in both social capital theory (Adler and Kwon, 2002; Portes, 1998) and social exchange theory (Noordewier and Nevin, 1990; Ring and Van de Ven, 1992).

These characteristics suggest social capital provides an appropriate theoretical framework for studying buyer–supplier relationships. It can reveal value, in terms of the benefits buyers and suppliers might earn from investing in a relationship, and it recognizes the unique preferential advantage that the buyer can obtain as a benefit of its resource investments (Portes, 1998). Therefore, we position social capital as a mediator between buyer investments in SD and preferential buyer benefits provided by a supplier.

2.2.1 Benefits of Social Relationships

Social capital derives from network theory and Granovetter's (1985) study of social embeddedness in economic exchange. Although social capital as a whole offers access to preferential buyer benefits, Granovetter (1992) particularly underlines the important role of one of its dimensions, namely, structural capital. Various studies refer to this form with different names, including *social interaction ties* (Tsai and Ghoshal, 1998), *social relationships* (Coleman, 1990; Granovetter, 1992), *closed networks of social relationships*, *close or strong ties* (Coleman, 1988), and *embeddedness* (Moran, 2005). The concept of structural capital refers to the advantages of a network's configuration, whether it consists of weak, sparse, close, or dense ties (Moran, 2005). In turn, the benefits of structural capital relate closely to network closure theory (Moran, 2005), in which a tie refers to a social relationship between two actors (Seibert et al., 2001). A strong social relationship demonstrates a higher level of closeness, reciprocity, and indebtedness compared with a weak social relationship (e.g., Granovetter, 1973; Rindfleisch and Moorman, 2001). Dense, close social relationships tend to be more beneficial than loose ones (Ahuja, 2000; Cohen, 1988; Lin et al., 2001; Uzzi, 1997) by offering access to sensitive information (e.g., Granovetter, 1973), privileged information, or even privileged economic resources such as subsidized loans or protected markets (Coleman, 1988; Portes, 1998).

We adopt the view that privileged access to resources results from a strong social relationship (Cook and Emerson, 1978). Furthermore, Rowely, Behrens and Krackhardt (2000, p. 371) claim that a strong social relationship governs behaviors in a relationship and therefore acts as a social control mechanism. A close, reciprocal, long-term–oriented social relationship should govern suppliers' behavior in terms of whether they grant buyers access to specific privileges.

2.2.2 Developing a Social Relationship

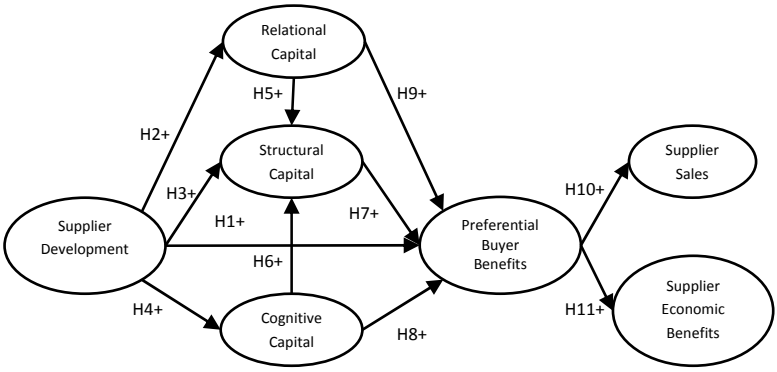
However, a strong social relationship (structural capital) is not readily or widely available for exploitation; it first must be developed (Portes, 1998). This development can take two forms. First, according to the *guanxi* (i.e., bonding) ap-

proach, a strong social relationship results from trust and commitment (Chen and Chen, 2004; Ramasamy, Goh and Yeung, 2006). High levels of trust and commitment not only characterize strong relationships (Dwyer, Schurr and Oh, 1987; Jap, Manolis and Weitz, 1999) but also provide important supports for relationship establishment and maintenance (Berry and Parasuraman, 1991; Palmer, 2002). Furthermore, trust and commitment distinguish social from economic exchanges by binding the parties more closely (McDonald, 1981). Thus, a strong social relationship (structural capital) is a result of trust and commitment (relational capital). Second, a social relationship can emerge "through investment strategies" (Portes, 1998, p. 3) or resource commitments (Rowley et al., 2000), which might include supplier development investments.

2.3 Social Capital, Supplier Development, and Benefits

Adler and Kwon (2002) state that social capital is an asset in itself, which extends the social capital definition and thus requires empirical testing. We build on their claim to offer theoretical support for the idea that social capital not only enables investments but is also enforced by them. Accordingly, we present a series of hypotheses (see Figure 2.1) that examine the interplay among social capital dimensions, investments, and benefits. We start by analyzing the effects of buyer investments (i.e., SD) on the actual benefits for the buyer, which consist of supplier investments in the relationship (i.e., preferential buyer benefits). We then suggest some effects of social capital enforcement through investments and relations among the three dimensions of social capital (relational, structural, and cognitive), which also may boost the benefits for the buyer. Finally, we consider whether the benefits granted from a supplier to a buyer (preferential buyer benefits) generate value for that supplier (sales and other economic benefits).

Figure 2.1 Conceptual Model



2.3.1 Linking Supplier Development and Preferential Buyer Benefits

Supplier development (SD) generally has been studied as a resource commitment that attempts to improve relationship outcomes for both the buyer and the supplier (e.g., Krause et al., 2007; Vondermbse and Tracey, 1999). According to these studies, SD comprises "goal setting, supplier evaluation, performance measurement, supplier training" and other related practices (Krause et al., 2007, p. 529). We categorize the concept on the basis of the buyer's involvement in the supplier's core processes, as well as the complexity of its implementation (based on Sanchez-Rodriguez, Hemsworth and Martinez-Lorente, 2005).

Thus, SD consists of three dimensions: supplier evaluation, operational supplier development, and strategic supplier development. Supplier evaluation corresponds to indicators of the requirements suppliers must fulfill (e.g., targets, certificates). The buyer regularly measures suppliers according to those indicators and recognizes those who fulfill them. Operational supplier development refers to activities carried out at the supplier's site that are designed to improve the "supplier capabilities (e.g., technology, production, process, quality) for long-term mutual benefit of both parties" (Hahn, Watts and Kim, 1990, p. 3). Finally, strategic supplier development represents investments that are specific, advanced, and expensive in terms of time and resources, as well as

complex to implement by the buyer. For our study, strategic SD entails early supplier involvement in new product and process developments and supplier training, such that the buyer is deeply involved in the core processes of the supplier and goes beyond realizing basic operational improvements.

According to prior research on buyer–supplier relationships, parties make investments that may provide future benefits in the form of superior value (Briggs, Landry and Daugherty, 2007; Madhok and Tallman, 1998). To keep balance in the relationship over time (Noordewier and Nevin, 1990; Ring and Van de Ven, 1992), a supplier must reciprocate investments made by the buyer (Shipilov, Rowley and Aharonson, 2006). Thus, these who own resources and invest them in supplier development increase profitability (Dyer, 1996). We expect that reciprocation of the buyer's investments takes the form of preferential buyer benefits, exclusively granted by the supplier to a specific buyer in the form of unique treatments, special information and participation in special internal events. We hypothesize:

H1: Supplier development relates positively to preferential buyer benefits.

2.3.2 Linking Supplier Development and Social Capital

Because social capital consists of three dimensions, we discuss separately how SD influences (1) relational capital, (2) structural capital, and (3) cognitive capital.

According to social exchange theory, parties make relational investments to express their trustworthiness (Hallen et al., 1991). Weitz and Jap (1995) indicate that such investments create trust, which is an important component of relational capital (Tsai and Ghoshal, 1998), as is commitment (Wasko-McLure and Faraj, 2005). Relational capital represents the affective nature of a relationship (Nahapiet and Ghoshal, 1998), or relationship quality (Bolino, Turnley and Bloodgood, 2002), and it consists of trust and commitment as its two dimensions. Commitment is critical in buyer–supplier relationships because it reflects the desire to continue a relationship that offers perceived value (Moorman, Deshpande and Zaltman, 1993). Because SD is a resource commitment to improve the relationship and make it more valuable, it should enhance the supplier's commitment to investing in the buyer due to its desire to con-

tinue the relationship with that investing buyer. When a buyer invests resources in SD, we expect the investments to be perceived as efforts to increase the supplier's trust and commitment and hypothesize:

H2: Supplier development relates positively to relational capital.

With regard to structural capital, Wasko-McLure and Faraj (2005) refer to it as dense connections or a high proportion of direct social ties, whereas other researchers conceptualize it as social interaction ties, measured according to close contacts and time spent during social occasions (Tsai and Ghoshal, 1998). Rindfleisch and Moorman (2001) note the ongoing debate about the conceptualization and components of strong ties (a strong social relationship; Seibert et al., 2001) and use Granovetter's (1973) view of strong ties as the structure of a social network ("strong linkages between supply chain members"; Chen and Paulraj, 2004a, p.125) to develop their concept of relational embeddedness. Combining Granovetter's (1973) notion of a strong tie with Tsai and Ghoshal's (1998) view, we propose that structural capital involves a close, reciprocal, long-term–oriented social relationship between a buying and a supplying company. As structural capital between a buyer and supplier is "constructed through investment strategies" (Portes, 1998, p. 3) or resource commitments (Rowley et al., 2000), a buyer that invests resources in SD should create structural capital. In other words, SD should result in a close, reciprocal, long-term–oriented social relationship, and we hypothesize:

H3: Supplier development relates positively to structural capital.

Finally, buyer–supplier interactions enhance sharing goals and values, or cognitive capital (McFarland, Bloodgood and Payan, 2008). Cognitive capital represents shared interpretations and meanings, that originate from participation in setting mutual goals and plans for the relationship's shared future (Wasko-McLure and Faraj, 2005). By committing resources to SD, a buyer interacts with the supplier to build such a shared future (Heide and John, 1990). Therefore, we claim that when a buyer invests resources in SD and works with the supplier to improve relationship performance at the organizational level, the buyer

should develop more cognitive capital (shared visions, plans, and goals) with the supplier; that is,

H4: Supplier development relates positively to cognitive capital.

2.3.3 Relations of Social Capital Dimensions

Existing research on relationships predominantly relies on the concept of embeddedness (Granovetter, 1992). Both network theory and social capital studies influence prior research, which places close social and reciprocal relationships (structural capital) as antecedents of relational capital (trust and commitment; e.g., Lawson et al., 2008; Rooks, Raub and Tazelaar, 2006; Tsai and Ghoshal, 1998; Uzzi, 1997). We instead suggest that a strong social relationship develops through relational capital, not vice versa, consistent with extant studies (Berry and Parasuraman, 1991; Gu, Hung and Tse, 2008; Ramasamy et al., 2006). For the purpose of this study, we define trust as the supplier's perception of honesty, including its confidence in the reliability and integrity of the buyer (Morgan and Hunt, 1994), and its motivation to rely on that confidence (Moorman et al., 1993). Commitment is the supplier's psychological feeling-based attachment to a buyer (Geyskens, Steenkamp, Scheer and Kumar, 1996). In line with Palmer (2002), we propose to take the view that these social phenomena explain the formation of strong, close, reciprocal, long-term–oriented social relationships and hypothesize:

H5: Relational capital relates positively to structural capital.

Tsai and Ghoshal (1998) further propose that structural capital influences positively cognitive capital. This is the case since a close social relationship helps partners realize and adopt collective goals and plans. However, the linkage is not significant in their study. We also consider the possibility of the opposite relationship, such that an attractive shared future may motivate the development of collaborations (Spekman, 1988). However, building a strong (Kendrick, 2004, p. 142) and close (Heide and John, 1990; Jap, 1999) relationship demands that parties act jointly to create shared goals and plans (Anderson and Jap, 2005). Therefore, the more a cooperative course of action toward shared fu-

ture exists between a buyer and a supplier, the stronger, closer, and more reciprocal their long-term–oriented relationships should be:

H6: Cognitive capital relates positively to structural capital.

2.3.4 Linking Social Capital and Preferential Buyer Benefits

Social capital provides access to a variety of benefits. We prioritize privileged access to resources as the most important benefit (Coleman, 1988; Portes, 1998). Further, for the purpose of this study we incorporate Uzzi's (1997) findings about preferred treatment into our concept of preferential buyer benefits. Preferential buyer benefits imply a priority status in the supplier's customer portfolio compared to competitors. These benefits, typically take the form of the supplier's efforts to customize dyadic exchanges with unique treatment, invitations to special social events and sharing unique information. Jap (1999) suggests that preferential buyer benefits from close, reciprocal buyer–supplier relationships enhances the company's competitiveness over its rivals. In line with social capital theory, we posit that a supplier that has a strong social relationship with a buyer grants that buyer privileged access to resources. Therefore, the quality of the relationship (trust and commitment) affects access to resources through the social relationship (i.e. structural capital; (e.g., Moran, 2005). Therefore,

H7: Structural capital relates positively to preferential buyer benefits.

Furthermore, sharing the same perceptions about the future of the relationship, including collective goals and plans, allows parties to interpret events in similar ways (Boland and Tenkasi, 1995). The collective view regulates their interactions and facilitates communication, helping recognize the prospective value of their resource exchanges (Tsai and Ghoshal, 1998). Therefore, when the future goals and plans of a buyer and a supplier are well aligned, suppliers are motivated to invest in the buyer to capture the full potential of the relationship (Jap, 1999). A supplier involved in creating a shared future with a buyer should be more willing to treat that buyer in an exclusive manner, compared with other buyers that compete for the same resources. The supplier

then would share special information with and make specific investments in the buyer. We hypothesize:

H8: Cognitive capital relates positively to preferential buyer benefits.

According to Uzzi (1997), trust also leads to preferred treatment. Yet Jap (1999) notes that any party's motivation to provide resources depends on the quality of the relationships. Relationship quality usually appears as a multidimensional construct that consists of trust, commitment, satisfaction, and norms (Palmatier, 2008), similar to relational capital in social capital theory (Wasko - McLure and Faraj, 2005). We build on the premise that the core values of relationship quality and the relational dimension of social capital are trust and commitment. In line with commitment-trust theory, they also determine relationship performance (Morgan and Hunt, 1994). Specifically, whether trust and commitment act together or in isolation, they should produce positive performance outcomes (Anderson and Weitz, 1992). Trust enhances a supplier's willingness to share resources, including information (Ridings, Gefen and Arinze, 2002), without fear of opportunistic behaviors (Tsai, 2000; Tsai and Ghoshal, 1998). Additionally, commitment evokes a strong feeling of duty to assist the partner and make valuable contributions (Wasko-McLure and Faraj, 2005). Thus, we hypothesize:

H9: Relational capital relates positively to preferential buyer benefits.

2.3.5 Linking Preferential Benefits and Value Creation

Tsai and Ghoshal (1998) report that resource exchange also leads to the creation of value, that refers to not only innovations but also improved performance. Krause et al. (2007) study the influence of resource exchange on a buyer's perceptions of performance improvement. Yet Moran and Ghoshal (1996) propose using resources in new ways to create value. For instance, the application of new ways to improve, either products or processes demands specific investments from the buyer. Rearranging resources and making specific investments thus may be associated with value creation (Tsai and Ghoshal, 1998). We focus on the supplier's sales and economic benefits to measure the

value that the supplier earns from granting preferential benefits to a buyer. In line with Portes (1998), we assess supplier economic performance according to positive outcomes derived from not only the relationship with a buyer (profitability and improved performance) but also outside that relationship (profitable market position and customer attraction). In summary, increasing supplier benefits is not possible without unique investments in a relationship with a buyer (Anderson and Jap, 2005). We hypothesize:

H10: Preferential buyer benefits relate positively to supplier sales.
H11: Preferential buyer benefits relate positively to supplier economic benefits.

2.3.6 Control Variables

We include relationship length as a control variable because, as Subramani (2004) suggests, doing so enables us to control for its effects on benefits as well as for recursive relationships that would confound the results if they existed (Jap and Ganesan, 2000). We also consider the buyer's power (Mohr, Fisher and Nevin, 1996; Narasimhan, Nair, Griffith, Arlbjörn and Bendloy, 2009).

2.4 Methodology

2.4.1 Research Setting

We selected the suppliers of a single, core buying company as potential participants in the empirical study, to exclude contextual effects and allow for a single frame of reference. These suppliers evaluated how they granted preferential buyer benefits to the buying company, compared with to the population of their other buyers. Since social theory considers benefits as uncertain and voluntary (Blau, 1964; Das and Teng, 2002). Thus, we chose to analyze our model at the part of the sample that was not dependent on the buyer (164 of 185 suppliers, see chapter 1). We adapted a measure of the supplier's dependence from scales used by Kumar, Hibbard, and Stern (1994) and thereby divided the sample according to the level of dependence.

2.4.2 Sample Demographics

Of the 185 respondents, 43.48% had a short-term relationship (< 5 years) with the buyer, 43.48% had a medium-term relationship of up to 15 years, and 13.04% had a long-term relationship (> 15 years). Their company-to-company collaboration durations showed that 25.54% had a short-term (< 5 years), 44.1% had a medium-term (5–15 years), and 30.36% had a long-term (>15 years) relationship.

2.4.3 Measurement Instruments

The survey included a set of items measured on seven-point Likert-type scales, of agreement ranging from 1 = "completely disagree" to 7 = "completely agree" (for relational capital, evaluation dimension of supplier development, structural capital, and economic benefits for the supplier), as well as seven-point Likert-type scales ranging from 1 = "never" to 7 = "always" (for preferential benefits for the buyer, operational and strategic dimensions of supplier development, cognitive capital, and power). For both, theoretical and empirical considerations, all the concepts we studied were reflective measures at both first- and second-order levels (Coltman, Devinney, Midgley and Venaik, 2008). All items from this study are presented in Appendix 2.

Supplier Development was operationalized as a multidimensional construct, that included supplier evaluation and operational and strategic supplier development that we adapted based on Krause et al. (2007), Sanchez-Rodriguez et al. (2005) and Wagner (2006a), (2006b).

Social capital also was a multidimensional construct consisting of relational, structural, and cognitive dimensions. Relational capital consisted of trust and commitment; Kaufman, Satish, and Randall (2006) provided the scales to measure trust, and the commitment scale comprised three items investigated by Kumar et al. (1994). The structural capital measurement included items introduced by Rindfleisch and Moorman (2001). For the cognitive capital measure, adapted from Mohr and Spekman (1994), we assessed scores for five departments (engineering, production, quality, purchasing and accounting), then calculated a mean score for the analysis.

The preferential buyer benefits scale was based on Palmatier et al. (2007). We also collected information about suppliers' turnover and sales level. Turnover was an objective measure of the company's total turnover; supplier sales level related to how much of the turnover, as a percentage, represented sales to the buying company. These two inputs provided supplier sales value. Supplier economic performance was measured with scales from Geyskens and Steenkamp (2000).

For the control variables, we measured the power of the buyer with a three-item construct we adapted from Mohr et al. (1996) and relationship length using the measure provided by Jap and Ganesan (2000).

2.5 Findings

2.5.1 Analysis Approach

We used partial least square (PLS) path modeling with latent variables, as implemented in SmartPLS, to obtain the parameter estimates in the measurement and structural models (Chin, 1998; Ringle, 2006a; Ringle, Wende and Will, 2005, 2007). Before beginning the path modeling, we followed the guidelines proposed by Marcoulides and Saunders (2006), and we evaluated the distributional properties of our manifest variables using the NORMTEST macro developed by DeCarlo (1997). Assessing univariate normality, we found that most of our measures did not exceed |3| for skewness (√b1) and kurtosis (b2-3). However, univariate normality is a necessary but not sufficient condition for assessing normality, because it is a weaker assumption than multivariate normality (DeCarlo, 1997). Small's test of multivariate skewness (Q1 = 490.71, $p < .01$) and multivariate kurtosis (VQ2 = 575.97, $p < .01$) indicated violations of the multivariate normality assumption (DeCarlo, 1997).

We chose PLS path modeling, or component-based structural equation modeling (SEM), over covariance-based SEM due to its robustness with regard to multivariate normality and its limited constraints on the measurement levels of the manifest variables or sample size (Chin, 1998; Tenenhaus, Vinzi, Chatelin and Lauro, 2005). A component-based SEM approach also allows for the appli-

cation of complex models that include many constructs and indicators and/or relationships (Chin, 1998).

To test for mediation effects, we followed the approach for conducting mediation analysis with SEM outlined by Iacobucci, Saldanha and Deng (2007), as well as a bootstrap-based method to obtain the standard errors for the indirect effects (Shrout and Bolger, 2002). According to the results in Table 2.1, the direct path between relational capital and preferential buyer benefits was not significant, nor was the path between cognitive capital and preferential buyer benefits. However, structural capital fully mediated the relationship between relational capital and preferential buyer benefits ($z = 2.26$, $p < .05$) and that between cognitive capital and preferential buyer benefits ($z = 1.86$, $p < .05$). The relationship between supplier development and structural capital was not significant, but relational ($z = 5.02$, $p < .01$) and cognitive ($z = 2.61$, $p < .01$) capital fully mediated the relationship between supplier development and structural capital.

Table 2.1 Intercorrelations of the Latent Variables [a]

Construct	Mean	Sd	1.	2.	3.	4.	5.	6.
1. Cognitive capital	4,47	1,41	***0,86***					
2. Supplier economic benefits	4,99	1,00	0,46	***0,80***				
3. Preferential buyer benefits	4,96	1,24	0,31	0,17	***0,79***			
4. Relational capital	5,79	0,81	0,43	0,67	0,12	***0,71***		
5. Structural capital	4,73	1,05	0,53	0,56	0,29	0,65	***0,73***	
6. Supplier development	3,05	1,15	0,70	0,39	0,28	0,43	0,48	***0,75***

[a] Square root of AVE on the diagonal

2.5.2 Psychometric Properties

The psychometric properties of the measurement instruments, as assessed by SmartPLS, included reliability, convergent validity, and discriminant validity (Tenenhaus et al., 2005). For empirical tests, the internal consistency and reliability of reflective constructs can be assessed with composite reliability (CR) (Fornell and Larcker, 1981; Wetzels, Odekerken-Schroder and van Oppen, 2009), average variance extracted (AVE), and factor loadings (Nunnally and Bernstein, 1994). Similar standards apply to investigations of content, conver-

gent, and discriminant validity (Diamantopoulos and Siguaw, 2006). All CRs exceeded the cut-off value of .7, and the AVEs exceeded .5 (see Appendix 2). In support of convergent validity, every item's standardized loading on its respective construct was greater than .5 (Hulland, 1999). When constructs shared more variance with their own measures than with other constructs in the model (Fornell and Larcker, 1981), the value of the square root of the AVE exceeded the construct's intercorrelations (see Table 2.1), and discriminant validity was satisfactory.

As we collected our data using a survey questionnaire, we checked for common method variance (CMV), which may influence the modeled relationships, using Harman's one-factor test (Podsakoff and Organ, 1986). Specifically, we entered all the items together into a factor analysis (principal components analysis [PCA] with an unrotated solution). In case that a single factor solution emerged or one general factor accounted for most of the variance, CMV would pose a threat (Podsakoff and Organ, 1986). In our study, we included 45 items, and the PCA analysis produced a ten-factor solution. The first factor explained 30.5% of the variance. The unrotated solution did not reveal one general factor. Therefore, CMV is not a concern.

2.5.3 Hypotheses Testing

We found support for seven of our eleven hypotheses (Table 2.2). Contrary to our expectations, supplier development did not directly evoke preferential buyer benefits (H1) or structural capital (H3). As we expected though, SD investments influenced the creation of relational capital between a supplier and a buyer (H2). Furthermore, SD positively influenced cognitive capital (H4). Both relational capital (H5) and cognitive capital (H6) positively affected structural capital. Preferential buyer benefits were positively influenced by structural capital (H7) but not by cognitive capital (H8) or relational capital (H9). Finally, the effects of preferential buyer benefits on both supplier sales (H10) and supplier economic performance (H11) were positive and significant. Of the control variables, power did not influence any variables, whereas relationship length positively influenced preferential buyer benefits and cognitive capital.

To assess the fit of our data to the model in SmartPLS, we used the R^2 values of the endogenous constructs (Tenenhaus et al., 2005). According to Cohen

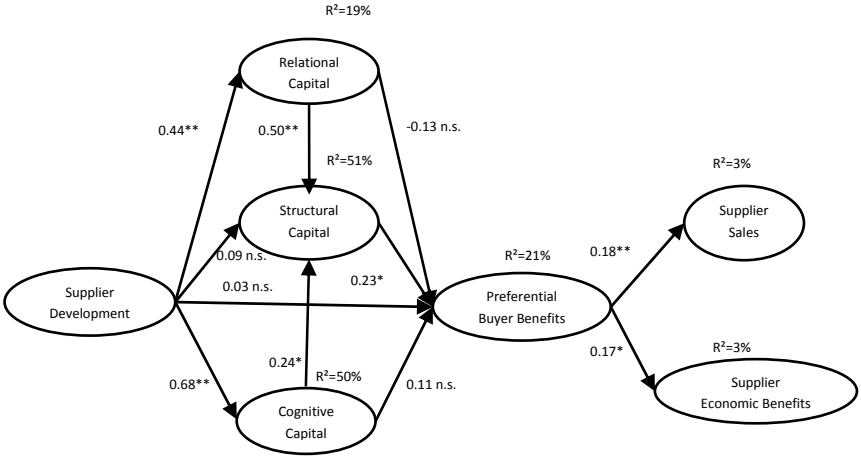
(1988), values of R^2 of .02, .13, and .26 indicate small, medium and large effect sizes, respectively, of the treatment independent of sample sizes. The individual values for R^2 indicated that the model explained 51% of the variance in structural capital, 21% of preferential buyer benefits, 3% of supplier sales, and 3% of supplier economic benefits (see Figure 2.2). Furthermore, the R^2 values for relational and cognitive capital were 19% and 50%. As a global fit measure, we used a formula developed by Tenenhaus et al. (2005). Relative to the medium-sized effects in our model, the evaluated fit of .41 indicated a good fit of the data to the model (Wetzels et al., 2009).

Table 2.2 Path Coefficients

Path/Hypothesis	**Path Coefficient**	**t-Value**
Supplier development -> Preferential buyer benefits (H1)	0.03	0.22 n.s.
Supplier development -> Relational capital (H2)	0.44	5.81**
Supplier development -> Structural capital (H3)	0.09	1.06 n.s.
Supplier development -> Cognitive capital (H4)	0.68	13.29**
Relational capital -> Structural capital (H5)	0.50	7.53**
Cognitive capital -> Structural capital (H6)	0.24	2.60*
Structural capital -> Preferential buyer benefits (H7)	0.26	2.34*
Cognitive capital -> Preferential buyer benefits (H8)	0.11	0.89 n.s.
Relational capital -> Preferential buyer benefits (H9)	-0.13	1.26 n.s.
Preferential buyer benefits -> Supplier sales profits (H10)	0.18	3.27**
Preferential buyer benefits -> Supplier economic performance (H11)	0.17	2.0*
Second-order constructs		
Supplier development		
Supplier development -> Supplier evaluation	0.85	35.19**
Supplier development -> Operational supplier development	0.96	141.86**
Supplier development -> Strategic supplier development	0.91	57.94**
Relational capital		
Relational capital -> Commitment	0.90	58.79**
Relational capital -> Trust	0.90	52.96**

*p < .05, **p < .01, one-tailed tests. n.s. = not significant.

Figure 2.2 Empirical Findings



*p < .05, **p < .01, one-tailed tests, n.s. – not significant

2.6 Discussion and Conclusions

So far most of extant literature studying results of supplier development has focused on performance improvements (e.g., Krause et al., 2007; Modi and Mabert, 2007; Rogers et al., 2007). In the context of social capital theory, we instead have considered the results for both sides of the relationship. For the buyer, the anticipated outcomes include unique, preferential treatment and a privileged allocation of resources (i.e., preferential buyer benefits). For the supplier, the expected results involve sales increases and better economic performance, including attraction of new customers. Our sample consists of suppliers that do not depend on the buyer and thus, in accordance with social exchange theory, they offer preferential treatment voluntarily (Das and Teng, 2002). It should come as no surprise that for these independent suppliers, a buyer's investments in SD do not have direct influences on preferential benefits from the supplier (rejection of H1).

Although SD investments also do not affect the formation of structural capital (rejection of H3), they have direct influences on relational and cognitive capital (support of H2 and H4). That is, a supplier is influenced by receiving SD

support, since it increases its trust and commitment toward the buyer. In line with Joshi and Stump (1999), when a buyer invests in SD, it involves the supplier in jointly building a shared future (cognitive capital). We also show that in order to receive preferential buyer benefits, the buyer needs to build structural capital. It can do so by developing trust and commitment (relational capital, H5) and a jointly built shared future (cognitive capital, H6), both of which result from SD investments. The findings thus indicate a bonding effect between a buyer and a supplier when a supplier trusts the buyer, is committed to the buyer, and is involved with the buyer in creating a collectively shared future.

The formation of a social relationship through relational capital (H5) supports the concept of *guanxi* view and commitment-trust theory. Therefore, the findings offer an interesting view on social relationship formation, through trust and commitment that reverses the dominant view in network theory studies. Furthermore, in contrast with H8, involving the supplier in jointly building a shared future does not influence receiving preferential buyer benefits, nor does building trust and commitment, which contradicts H9. Preferential buyer benefits are only granted to the buyer if structural capital is created between the supplier and that buyer (H7), in support of Gu et al.'s (2008) assertion that social relationships have the power to influence the way that businesses are managed. This also highlights the superiority of a strong bond (structural capital) between a buyer and a supplier, in enhancing preferential behavior compared with relational and cognitive capitals. Structural capital, therefore, represents the accumulation of social capital that embodies feelings of indebtedness (reciprocity), as an outcome of investments in supplier development (Gouldner, 1960). Finally, we confirm that awarding benefits to a buyer creates value for the supplier in terms of increased sales (H10) and economic performance (H11).

Furthermore, since the results indicate a lack of influence of power on any of the variables, we encourage buying companies to invest in supplier development to increase their chances of receiving access to preferential benefits. In contrast, Ramsay and Wagner (2009) call SD inappropriate, claiming it never leads to preferred buyer status. Our study shows quite the opposite: supplier development leads to preferential benefits through the social capital dimen-

sions. Thus, the intermediary role of social capital in resource exchange and value creation, as suggested by Adler and Kwon (2002), receives support.

2.7 Managerial Implications

This study provides several implications for buying firms that want to improve their competitive positioning in a supplier's customer portfolio. The benefits of strong and close relationships appear in social theories (Putnam, 1995), with limited elaboration of their potential dark sides (Anderson and Jap, 2005). Many companies attempt to accomplish close collaborations with their suppliers and invest heavily in supplier development with the expectation of a close relationship similar to Toyota's with its suppliers (Milas, 2006). However, as our results indicate, SD investments do not lead directly to a strong and close social relationship or preferential buyer benefits. Rather, a buyer's SD investments create supplier trust and commitment (relational capital) and a shared sense of the future (cognitive capital). Then, these forms of capital encourage the formation of a strong and close social relationship. Preferences are granted only to buyers in such strong and close social relationships (structural capital). Thus, building relational and cognitive capital through SD investments are means to form structural capital, which prompts the supplier to grant preferential benefits to the buyer.

In a sense, cognitive capital may act as a safeguard of prior buyer investments (Joshi and Stump, 1999). Cognitive capital comprises shared goals and plans in not only the purchasing department but also engineering, quality, production, and accounting. The joint effort of multiple departments encourages the creation of a close social relationship. Thus, managers should realize that the welfare of the buyer–supplier relationship depends on joint efforts by multiple departments in the company, not just one purchasing officer or key account manager.

Structural capital offers several important benefits. It helps buyers access scarce and valuable resources, which entail not only unique buyer treatments but also unique insider information and privileged participation in events, such as internal managerial meetings. These preferential buyer benefits are especially important when firms try to capture resources in highly competitive mar-

kets and when the supplier does not value the (small) buyer as a trading partner (Ramsay and Wagner, 2009). For the welfare of their companies, managers need to recognize this process of social relationship formation and accessing preference. Especially since a buyer–supplier relationship built on social capital persists stronger and longer than a relationship based on power (Min et al., 2008).

Nevertheless, it is not only the buyer that benefits from investing in supplier development. A supplier can generate benefits from granting preferential buyer benefits, including increased economic performance and sales. Supplier economic performance includes benefits external to the relationship, such as profitability and attracting other customers. Therefore, managers must focus not just on investing in SD but also take into account the role of relational and cognitive capital in the formation of structural capital when making relationship management decisions.

2.8 Limitations and Further Research

Our findings should be considered with the acknowledgement of several limitations. First, the buyer practices SD programs, and we use only one buying company as a reference point for all suppliers, to gain insight into how different suppliers evaluate the same buyer. Therefore, it is difficult to generalize from this single case. However, other methods could also investigate preferential benefits and provide valuable insights. Further research might consider from diverse angles why suppliers prefer certain buyers. For example, we did not investigate the role of managers or company policy in the preferential treatment decision process.

Second, our examination of structural capital in the buyer–supplier relationship focused specifically on tie strength and a supply-side perspective. We did not investigate the role of structural capital with parties external to the relationship or from a dyadic perspective. Third parties, such as governments, competitors, customers, and other stakeholders, could have significant impacts in triads and networks. Research applying a multidomain approach thus might provide valuable insights into the influences of external relationship forces on

structural capital and preferential treatment between the buyer and the supplier.

Third, we cannot test the causality of the relationships because we used cross-sectional data; the collection and analysis of longitudinal data should be a goal of further research. Case studies also might provide richer data in diverse preferential resource allocation and structural capital evolution contexts (Lawson et al., 2008).

Another interesting evolution for structural capital research is the role of communication and information sharing factors. We look forward to research that investigates how interpersonal and impersonal communication channels influence the development of structural capital and collaboration.

Other research should determine the phenomena that might diminish structural capital and therefore produce negative effects on relationships and business operations (for more see Jap and Ganesan, 2000). If the strong facets of a relationship (e.g., trustworthiness) become instead its weakest link, problems emerge. Furthermore, building on the assumption of voluntariness embedded in social theory would have significant research implications. It would be interesting to determine how structural capital evolves in supply chains, networks, and diverse market conditions, such as protected markets, monopolistic industries (e.g., energy sectors in Gu et al., 2008), or markets under high uncertainty (e.g., high-tech).

2.9 Appendix 2

MEASUREMENTS INSTRUMENTS CHAPTER 2

Psychometric Properties for Null Model for First-Order Constructs

Construct	Item	Loading (α)	*CR*	*AVE*
Cognitive Capital (Mohr and Spekman, 1994)			*0.94*	*0.74*
	The following Buyer X departments (engineering, production, quality, purchasing and accounting) ask us for our advice.	0.9		
	The following Buyer X departments (engineering, production, quality, purchasing and accounting) ask us to participate in goal setting.	0.897		
	The following Buyer X departments (engineering, production, quality, purchasing and accounting) ask us to participate in planning activities.	0.868		
	The following Buyer X departments (engineering, production, quality, purchasing and accounting) encourage us to come with suggestions for improvements.	0.895		
	The following Buyer X departments (engineering, production, quality, purchasing and accounting) ask us to participate in forecast-ing activities.	0.748		
	The following Buyer X departments (engineering, production, quality, purchasing and accounting) are collaborative.	0.837		
Relational Capital			*0.92*	*0.51*
Trust (Kaufman et al., 2006)				
	We can count on Buyer X to follow through on their promises.	0.806	*0.87*	*0.63*
	When making decisions, Buyer X considers our business interest as well as its own.	0.751		
	We trust that Buyer X keeps our best interest in mind.	0.817		
	Buyer X is honest with us.	0.802		
Commitment (Kumar et al., 1994)				
	It is pleasant working with Buyer X that is why we continue the relationship.	0.824	*0.84*	*0.64*
	We want to remain a supplier to Buyer X.	0.835		
	Our decision to remain a supplier for Buyer X is based on our attrac-tion to the things that Buyer X represents as a company (e.g., image, brand, reference).	0.740		
Structural Capital (Rindfleisch and Moorman, 2001)			*0.77*	*0.53*
	Our employees share close social relations with the employees from Buyer X.	0.762		

	We feel indebted to Buyer X for what they have done for us.	0.688		
	We expect that we will be working with Buyer X far into the future.	0.725		
Supplier Development			*0.94*	*0.57*
(Wagner 2006a, 2006b; Krause et al., 2007; Sanchez-Rodriguez et al., 2005)				
Evaluation			*0.90*	*0.68*
	Buyer X sets clear improvement targets.	0.898		
	Buyer X uses a formal procedure to evaluate our performance (e.g. audits, quality and/ or delivery measurement).	0.893		
	We are recognized by Buyer X for the improvements we realize.	0.862		
	We have been certified to work with Buyer X.	0.626		
Operational			*0.91*	*0.68*
	Buyer X visits our site to assess our processes.	0.725		
	Buyer X standardizes product specifications together with us.	0.801		
	Buyer X collaborates with us to improve our manufacturing processes.	0.891		
	Buyer X gives us technological advice (e.g. on materials, software).	0.859		
	Buyer X gives us quality related advice (e.g., on the use of inspection equipment, quality assurance procedures).	0.828		
Strategic			*0.88*	*0.70*
	We receive training from Buyer X.	0.799		
	We are early involved in the new product development process of Buyer X.	0.839		
	Buyer X gives us product development advice (e.g., on processes, project management).	0.877		
Preferential Buyer Benefits (Palmatier et al., 2007)				
	Comparing to OTHER BUYERS:			
	Buyer X receives special treatment from us.	0.693	*0.84*	*0.63*
	Buyer X receives invitations to special internal events (internal managerial meetings, engineering day, customer day) organized by our company	0.808		
	Buyer X receives special information from us.	0.871		
Supplier Economic Performance (Geyskens and Steenkamp, 2000)			*0.84*	*0.63*
	The relationship with Buyer X has provided our firm with a profitable market position.	0.784		
	Through the relationship with Buyer X we were able to attract other customers.	0.823		
	The supplier improvement programs of Buyer X help us to perform better.	0.779		

Notes: α = coefficient alpha, CR = composite reliability, AVE = average variance extracted

CHAPTER 3

It Takes Two to Tango: A Dyadic View on Customization and Its Outcomes

This paper aims to expand existing models of customization by integrating network and social capital theories and investigating the roles of a close social relationship and information sharing in customization behavior of buyers and suppliers. In contrast with other customization studies by inspection of a conceptual model with data from both, buyers and suppliers, this research represents a dyadic study that includes interactions between 103 buyer and supplier matched pairs, providing deeper insights into dyadic dependencies among constructs. Close social relationships prove to be important antecedents to supplier and buyer information sharing and buyer customization. However, we also find that suppliers attach more value to information shared by their partners than do buyers. Additionally, satisfaction with feedback is an important factor that stimulates buyer and supplier affective commitment to a relationship.

3.1 Introduction

It is the dynamism of the environment that creates opportunities and poses threats to a company. A typical supply chain represents a network of buyer-supplier relationships that may connect multiple industries. As a result, supply chain management requires managers to consider a number of inter-related factors, at different levels and dimensions, to not only identify but also deal with threats and opportunities. To increase the chances of survival, managers encounter a constant need to learn and customize their company to the turbulent and ever-changing environment (Brown and Eisenhardt, 1998). Lack of customization will make an efficient company ineffective (Lee, 2004) and strain the development of the buyer-supplier relationship (Hagberg - Andersson, 2006). Customization refers to tailored resource investments that meet particular needs exclusive to one party, especially tailored structural adaptations in a manufacturing process of a firm, and includes preferential and/or special treatment (Gwinner et al., 1998) and may comprise organizational and behavioral adaptations (Schmidt, Tyler and Brennan, 2007). Customization can take the form of adaptations in human resources, products, manufacturing processes and logistics (Hagberg - Andersson, 2006; Hallen et al., 1991). Some specific examples of customization can be acquiring an additional assembly line and manufacturing machines to produce special components for one buying company or giving priority to a particular buyer under conditions of limited manufacturing capability (Schmidt et al., 2007).

Following the possible customizations, managers believe that customization can help them improve performance and effectiveness (Lee, 2004). Yet, managers rely on rich, detailed information and insights of those who are close to them (Kraatz, 1998; Rogers, 1995). As a consequence, close social relationships have a positive impact on resource commitments e.g., in customization (Burt, 2005; Mukherji and Francis, 2008). Regardless of managerial efforts focused on profitability and competitive advantage, managers tend to neglect innovative ideas and information about environmental changes that come from those with whom they do not share such close social relationships.

In this study we integrate two separate streams of literature. First, studies on adaptation have so far contributed by exploring the nature, antecedents and consequences of organizational adaptation and its types (Brennan et al., 2003; Hallen et al., 1991; Mukherji and Francis, 2008; Rogers et al., 2007). Yet, these studies have not integrated their views with that of customization, as a relational benefit, that includes preferential or special treatment (Gwinner et al., 1998). Additionally, the phenomenon of preferential or special treatment attracted relatively little attention in supply chain studies on exchange relationships (Håkansson, 1982) compared to extensive investigations in service settings (e.g., Colgate and Land, 2001; Lacey et al., 2007).

Nevertheless, since customization is perceived as an effective means of maintenance and/or development of a valued relationship (Brennan et al., 2003) we seek to enhance existing knowledge on this phenomena from a dyadic perspective and make following additional contributions to the literature. First, from a theoretical perspective, we aim to extend existing models of customization. By integrating insights coming from network and social capital theories into one conceptual model we investigate the roles of a close social relationship and cross-functional information sharing in customization behavior of buyers and suppliers. Second, to our knowledge, neither social capital nor network theory perspectives have ever received attention in studies on customization in a buyer-supplier relationship. Third, so far, studies have assumed similar behavior of buyers and suppliers who would be thinking and acting alike and in result, treated them alike (Jap and Anderson, 2003). Only very recently have indications been made that "alike thinking and acting" might not hold for both, buyers and suppliers, as their wants and needs might differ (Ross et al., 2009). This calls for inspection of models with data from both, buyers and suppliers. Thus, to fill in this theoretical and methodological gap, and in contrast to existing papers that study supplier and buyer customization only from a purchasing perspective (e.g., Cannon and Perreault Jr., 1999; Mukherji and Francis, 2008) we gather data from both sides of a buyer-supplier relationship.

This paper is structured as follows. We begin with a conceptual framework where we briefly discuss the literature review and develop our hypotheses (see Fig. 1). Then we describe our methodological approach, present and discuss the

results. Finally, we provide managerial implications and recommendations for future research as well as limitations of the study.

3.2 Conceptual Framework

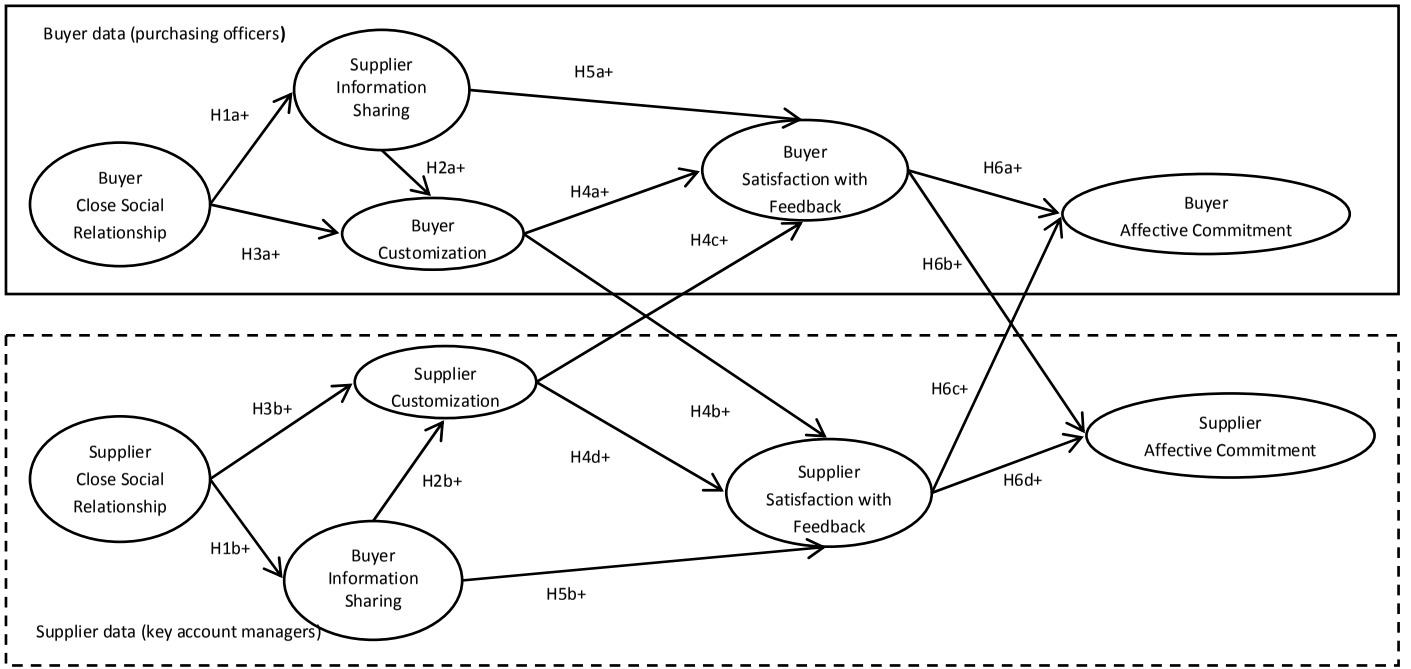
In this paper we integrate insights from network and social capital theories into one conceptual model (see Figure 3.1) to broaden an understanding of the roles of close social relationships between employees of a buyer and a supplier and their cross-functional information sharing in customization behavior and its outcomes. Therefore, below we briefly review the literature on three main constructs in this study, i.e., customization, close social relationships and information sharing.

The best supply chains are characterized by being agile and adaptable (Lee, 2004). Customization plays an important role in responding to the constant environmental changes that a supply chain' members are confronted with (Hallen et al., 1991). Customization is also perceived as an effective means for maintaining and/or developing effective buyer-supplier relationships. According to (Brennan et al., 2003), at least one of the parties in every buyer-supplier relationship customizes to comfort the specific needs of the other. Customization refers to an adaptation in the exchanged product or the process of exchange itself (Håkansson, 1982; Sweeney and Webb, 2002). Most researchers define adaptation as a process in which firms adjust their standard business practices exclusively for the other party in the relationship (Cannon and Homburg, 2001; Cannon and Perreault Jr., 1999) in a response to the needs of the other party or discovered opportunities (Hagberg - Andersson, 2006). It can imply relational investments in specific assets (Brennan et al., 2003), and can occur, for example, as an alteration of a product, manufacturing process, information exchange and organizational restructuring (Brennan et al., 2003; Cannon and Homburg, 2001; Hallen, Johanson and Seyed-Mohamed, 1993). One of the most cited studies on adaptation is the one by Hallen et al. (1991). Later in the 1990s, at the same time when Kraatz (1998) discussed adaptation as the result of the intercourse of close relationships and information sharing, Gwinner et al. (1998) introduced a concept of relational benefits comprising three categories, one of which was customization. In their customization con-

struct, Gwinner et al. (1998) went beyond adaptation as structural modifications in a manufacturing process of a firm and included as well preferential and/or special treatment benefits in the construct. Because in this paper we integrate two separate streams of literature on adaptation and customization as a relational benefit, we build on the definition provided by Gwinner et al. (1998) and Sweeney and Webb (2002) that customization refers to adaptive behavior in the form of investments like tailored benefits that meet particular needs exclusive to one party, especially tailored structural adaptations in a manufacturing process of a firm, and includes special and/or preferential treatment. Kraatz (1998) pointed to the roles of close relationships and information sharing in customization. To fully understand the role of close social relationships in customization we build on social capital theory. Social capital theory has so far attracted a number of scholars to study socially related phenomena (e.g., Ahuja, 2000; Tsai, 2000; Tsai and Ghoshal, 1998) also in supply chain management (e.g., Krause et al., 2007; Lawson et al., 2008; Min et al., 2008). Studies on social capital originate from network theory and Granovetter's (1985) study of social embeddedness in economic exchange. Benefits that social capital may bring are widely recognized among academia regardless of various conceptualizations and operationalizations of the construct (e.g., in Adler and Kwon, 2002; Krause et al., 2007; Lawson et al., 2008). Even though social capital offers access to preferential benefits, Granovetter (1992) points to the exclusive role of *social relationships within social capital.* A social relationship between actors is a phenomena from social network (Seibert et al., 2001). In this paper we focus on a close social relationship based on studies in network closure theory that claim that a close social relationship is more beneficial than a distant one (Ahuja, 2000; Cohen, 1988). A close social relationship encompasses a higher level of closeness, reciprocity and indebtedness compared to a 'distant' relationship (e.g., Granovetter, 1973; Rindfleisch and Moorman, 2001). Dense, close social relationships tend to be more beneficial than loose ones (Ahuja, 2000; Cohen, 1988; Lin et al., 2001; Uzzi, 1997) by offering access to sensitive information (e.g., Granovetter, 1973), privileged information and/or even privileged economic resources such as subsidized loans or protected markets (Coleman, 1988; Portes, 1998). Thus, in this paper we adopt the view that privileged access to customized resources results from a close social relationship (Cook and Emerson, 1978).

Furthermore, studies on network theory associate close social relationships with specific, relevant and fine-tuned information (Larson, 1992; Uzzi, 1997) that is of high quality (Rowley et al., 2000). In general information sharing refers to the extent that a party in a relationship reveals information that may affect the other party's operations (Heide and Miner, 1992). According to Kraatz (1998) managers evaluate information coming from their close network differently than that from sparse connections. Information received from a close social relationship meets all their conditions to be trusted while information coming from a weak social relationship often seems not specific or relevant enough and as a consequence it will not be trusted. Frazier and Huddleston (2009) suggest a close relationship promotes customization by increasing information sharing. Because information from close social relationships embodies details that give it meaning and usefulness (Uzzi, 1997), managers see it as more applicable to their operations and solving problems they face (McEvily and Marcus, 2005).

Figure 3.1 Conceptual Model



3.3 Hypotheses

Automotive manufacturers like Toyota and Honda pioneered not only in cutting their supplier bases but most importantly with building close relationships with their suppliers, close collaborative partnerships (Liker and Choi, 2004). Close relationships among supply chain parties represent a business strategy that can be used to increase benefits (Anderson and Jap, 2005). As a consequence, a lot of formal and informal exchange of meaningful information takes place in close relationships (Mohr and Nevin, 1990). Even though majority of studies in supply chain focus on close buyer-supplier partnerships, we consider the importance of close social relationships among employees of a buyer and a supplier, which have been so far neglected (Wu, Steward and Hartley, 2010), by integrating insights from social capital and network theories. Additionally, because of our dyadic approach, we distinguish buyer and supplier information sharing. Buyer information sharing refers to the information sharing behavior of a buyer towards a supplier and supplier information sharing refers to information sharing behavior of a supplier towards a buyer. Because a close social relationship is associated with closeness, reciprocity and indebtedness (Rindfleisch and Moorman, 2001), it encourages the exchange of rich, sensitive and far more frequent and detailed information than distant weak relationships (Kraatz, 1998; McEvily and Marcus, 2005; Uzzi, 1999). Prior studies found that more information is shared with those with whom a close social relationship is established (Friedkin, 1982; Jack, 2005; Portes and Sensenbrenner, 1993; Zaccaro and Lowe, 1988). This could imply that a supplier would be sharing more information with a buyer who developed a close relationship with the supplier (a buyer close social relationship). On the other side of the dyad, a buyer would be sharing more information with a supplier who developed a close social relationship with the buyer (a supplier close social relationship). Thus, we suggest:

H1a: A buyer close social relationship has a positive impact on supplier information sharing.

H1b: A supplier close social relationship has a positive impact on buyer information sharing.

In this paper an extended definition of customization entails not only tailored benefits but also special and/or preferential treatment. A company can increase the chances to get preferential treatment with the use of communication behavior (Hald, Cordon and Vollman, 2009). A fundamental element of communication behavior that we are focusing on in this paper is information sharing (Mohr et al., 1996; Mohr and Spekman, 1994). As mentioned above we focus on both, buyer and supplier information sharing. Information sharing contributes to making parties of a buyer-supplier relationship aware of the specific needs and wants of a buyer/supplier , and thus, presents an opportunity for customization (McEvily and Marcus, 2005). In this paper we examine both, buyer and supplier customization. Buyer customization refers to the buyer's adaptive behavior in the form of tailored resource investments that meet particular needs exclusive to one supplier (e.g. tailored structural adaptations in a manufacturing process of a firm, and includes special and/or preferential treatment). Supplier customization refers to supplier adaptive behavior in the form of tailored resource investments that meet particular needs exclusive to a buyer and includes special and/or preferential treatment. Before buyers and suppliers decide to invest in relationship-specific customization, they need to have access to information about the needs and wants of the other party (Nesheim, 2001), therefore, we suggest:

H2a: Supplier information sharing has a positive impact on buyer customization.
H2b: Buyer information sharing has a positive impact on supplier customization.

Apart from information sharing, another strategy a company can use to get their supplier or buyer to customize, is to strengthen the social relationships between the employees of the two companies (Ellegard, 2006; Jap, 1999). A close social relationship is characterized by closeness, reciprocity and indebtedness (Rindfleisch and Moorman, 2001). Because employees of both a buyer and a supplier share close social relations with each other, the likelihood that they exchange privileged information or enable privileged access to resources such as subsidized loans, exclusive access to protected markets is very high (Coleman, 1988; Cook and Emerson, 1978; Portes, 1998). Jack (2005) shows that close social relationships are not only fundamental for company activity but also instrumental for maintenance, extension and expansion of the busi-

ness. The existence of close social relationships makes the relationship parties' actions significant and influential for each other (Kraatz, 1998). Having a close social relationship means that both buyers and suppliers are indebted to one another for what they have done for each other so far and are expecting to continue the relationship (Rindfleisch and Moorman, 2001). Indebtedness and continuance expectation should enhance the fulfillment of the other party's need for customization because a close social relationship governs behaviors in a relationship (Rowley et al., 2000, p. 371). Therefore, we suggest:

H3a: A buyer close social relationship has a positive impact on buyer customization.

H3b: A supplier close social relationship has a positive impact on supplier customization.

In a buyer-supplier relationship, supplier manufacturing performance refers to the buyer's evaluation of satisfaction with the supplier's record in terms of meeting the buyer's expectations of supplier performance. These expectations are measured with the use of a range of performance metrics (Cannon and Perreault Jr., 1999). In other words, a buyer evaluates a supplier on a number of manufacturing expectations and informs the supplier about the evaluation results that represent its satisfaction with the supplier's performance, via feedback. Feedback may as well include a range of manufacturing performance metrics (Kim, 1984). However, satisfaction with feedback was found to be a more significant indicator of reactions to performance evaluation feedback (Giles and Mossholder, 1990) than feedback's utility or accuracy (Keeping and Levy, 2000). Satisfaction with feedback entails not only the acceptance of performance metrics ratings but also the feedback itself (Jawahar, 2006). Therefore, in our study we refer to supplier satisfaction with feedback as to a supplier's satisfaction with feedback from a buyer on not only cost reductions, quality and delivery improvement (e.g., Fynes, Voss and de Burca, 2005; Möller and Törrönen, 2003) but also improvements in new product and new process development. Buyer satisfaction with feedback refers to a buyer's satisfaction with feedback from a supplier about a supplier's ability to meet various buyer requirements with regards to supplier performance in the areas like cost reductions, quality, delivery and new product and new process development. Based

on earlier studies that found customization to have a significant role in performance improvement (Hagberg - Andersson, 2006; Mukherji and Francis, 2008; Rogers et al., 2007) we hypothesize:

H4a: Buyer customization has a positive impact on a buyer's satisfaction with feedback from a supplier about its ability to meet buyer requirements.

H4b: Buyer customization has a positive impact on a supplier's satisfaction with feedback from a buyer on supplier performance.

H4c: Supplier customization has a positive impact on a buyer's satisfaction with feedback from a supplier about its ability to meet buyer requirements.

H4d: Supplier customization has a positive impact on a supplier's satisfaction with feedback from a buyer on supplier performance.

Improvement is continuous if a supplier shows an upward trend in meeting the performance metrics over time (Cannon and Perreault Jr., 1999; Fynes et al., 2005). Buyers often impose strict improvement requirements on their suppliers (e.g., Toyota and Honda). Suppliers know that they have to improve continuously in order to survive and gain benefits. However, this manufacturing performance improvement is driven by supplier knowledge about what buyer desires (Joshi, 2009).This operations-related real-time demand information is fundamental for supply chain activities like forecasting, planning and execution (Wang and Wei, 2007). Sharing of operations-related information such as on forecasting or planning increases information balance in a relationship and thus, decreases potential opportunistic behavior (Dyer, 1997). More visibility in operations of relationship parties helps managers in their decision-making process, as well as enhances performance in a supply chain (Mabert and Venkataramanan, 1998). Prior studies found that information sharing among various functional departments in a buyer-supplier relationship enhances manufacturing performance more than if information occurs only between purchasing and sales functions (Carter and Miller, 1989). This has implications for our study and the measure of satisfaction with feedback on performance. If not only a purchasing officer but also various departments and/or functions of a buyer share information with a supplier (buyer information sharing), they enhance the supplier's satisfaction with feedback on performance, because

then the supplier has more visibility in processes as well as more understanding of operations of the buyer. On the other side of the dyad, if a supplier shares information with a buyer (supplier information sharing), the supplier makes the buyer more satisfied with the supplier's abilities to meet the buyer's performance requirements, because then the buyer is more aware of supplier processes and operations. This implies that the better buyer and supplier companies understand the specific supplier/buyer context (operationally, strategically, etc) the better they understand the performance feedback. Hence, we suggest:

H5a: Supplier information sharing has a positive impact on a buyer's satisfaction with feedback from a supplier about its ability to meet buyer requirements.

H5b: Buyer information sharing has a positive impact on a supplier's satisfaction with feedback from a buyer on supplier performance.

When a buyer's performance expectations are met, the relationship becomes valuable and turns into an asset that helps the company achieve its objectives (Cambra-Fierro and Polo-Redondo, 2008). This is because the evaluation of supplier manufacturing performance by a buyer serves as a verification of real capabilities of a supplier, which in turn helps the buyer and supplier attach value to the relationship benefits (Rao, Philips and Johnson, 2006). Satisfaction with feedback entails not only the acceptance of performance metrics ratings but also the feedback itself (Jawahar, 2006). Additionally, satisfaction with feedback signifies appreciation of the supplier's contribution to the relationship with the buyer and the buying company. This appreciation implies better possibilities for future cooperation. Furthermore satisfaction with feedback enhances not only appreciation of the contribution but also an emotional attachment between buyers and suppliers (Meyer, Stanley, Herscovitch and Topolynytsky, 2002). Therefore, we expect that satisfaction with feedback has a positive impact on affective commitment. Commitment plays a critical role in buyer–supplier relationships because it reflects the desire to continue a relationship (Moorman et al., 1993). Buyers and suppliers stay in a relationship because they like it, are satisfied with it and identify with it (Kumar et al., 1994). Affective commitment stands for a cognitive-based attachment to the

other partner (Geyskens et al., 1996). Commitment can be regarded as the next phase of relationship development after the phase of expansion which refers to benefits such as customization (Fynes et al., 2005). This commitment phase implies a strong promise to continue the relationship resulting from the appreciation of relationship benefits and its feedback on this matter. Thus:

H6a: A buyer's satisfaction with feedback from a supplier about its ability to meet buyer requirements has a positive impact on buyer affective commitment.

H6b: A buyer's satisfaction with feedback from a supplier about its ability to meet buyer requirements has a positive impact on supplier affective commitment.

H6c: A supplier's satisfaction with feedback from a buyer on supplier performance has a positive impact on buyer affective commitment.

H6d: A supplier's satisfaction with feedback from a buyer on supplier performance has a positive impact on supplier affective commitment.

3.4 Methodology

Prior studies emphasize the need for dyadic research designs to investigate buyer-supplier relationships (e.g., Anderson, Håkansson and Johanson, 1994; Chen and Paulraj, 2004b). However, difficulties in collecting dyadic data often result in studies with monadic data. Furthermore, difficulties associated with dyadic research design and analysis often led to the use of the reciprocal part of the data only for the sake of measurement quality check (e.g., Heide and Stump, 1995; Subramani and Venkatraman, 2003). Others approached these dilemma of research design and analysis by conducting separate analysis of buyer-side and supplier-side data (e.g., Jap, 1999; Rokkan et al., 2003). Yet, some constructed measurement scales from two indicators, one representing an average of buyer data and the other representing an average of the supplier data (e.g., Selnes and Sallis, 2003). These approaches were not consistent with rules and requirements for dyadic data analysis applied in social science and psychology studies (Kenny, Kashy and Cook, 2006).

3.4.1 Study Context

To examine our conceptual model we set our research in the context of a second level of a vertical supply chain (Hagberg - Andersson, 2006; Wathne and Heide, 2004). Specifically, we study the relationships between the buyer (a large buying manufacturing company) and its most important product-related suppliers on one side of the dyad. On the other side of the dyad we take the reciprocal part of the dyadic viewpoint that consists of matched purchasing officers' evaluations of the relationship their buying company has with these suppliers. This results in a dyadic set up of our conceptual model, research design and data analysis. As described in chapter 1 to test our hypotheses in this study, we rely on a database of 103 data points of matched pairs of purchasing officers from a buying company and key account managers from supplying companies.

3.4.2 Dyadic Research Setting

Even though our conceptual model builds on network theory we use an online survey to collect data and structural equation modeling to conduct dyadic analysis on dyadic reciprocal data. In the reciprocal design data is collected from both, the focal party and its partners (Kenny et al., 2006). Using questionnaires to gather data based conceptually on network theory is not new (Friedkin, 1980; Gargiulo and Benassi, 2000; McEvily and Zaheer, 1999; Wathne and Heide, 2004). It is also quite common to regard a dyad as a network phenomenon (Borgatti et al., 2009). Studies on social network analysis (SNA) report three fundamental units of analysis, dyadic (tie-level), monadic (actor-level), and network (group-level; Hatala, 2006). SNA papers refer to dyadic data as one data point for every dyad, that is a pair of actors (e.g., Hatala, 2006). Therefore, extant literature that investigates dyads, based on network theory, has to a great extent disregarded the issue of duality of dyadic data (Medlin, 2003). Treating measurement as if only one side of the relationship caused it (Kenny et al., 2006). On the contrary, both parties of a buyer-supplier relationship make up the dyadic measurement, even though those contributions can be reflected as different functions (Bond and Kenny, 2002). For instance, the trust of Supplier X in Buyer X is caused partially by how Buyer X acts, as well as

by the unique relationship that Supplier X and Buyer X have created (Kenny et al., 2006). Even though as Kenny et al. (2006) suggest many factors contributed to a dominance of individualistic studies over a higher level studies, dyadic studies can explain far more complex and interrelated phenomenon. The authors claim that many constructs have intrinsically dyadic nature that means that they are related to other constructs in the study. Mizruchi and Marquis (2006) found that dyadic data and analysis are especially appropriate when a dependent variable is quantitative and/or involves measures of behavior, because dyadic data perform better than network data when studying similarities in behavior. Therefore, attributes of dyadic data make dyadic studies potentially more interesting in terms of prospective theoretical and empirical contributions.

3.4.3 Dyadic Research Design

This study has a reciprocal dyadic research design, because the data is collected from both, the focal party (the buying company) and its partners (suppliers). Such reciprocal dyadic designs have several characteristics that distinguish them from monadic data, namely nonindependence and distinguishability (Kenny et al., 2006). Since dyadic data comes from members of the same relationship, the measures are allowed to violate the condition of independence. In other words, buyer scores can be related to supplier scores, and a dyad score can be related to scores of other dyads, because they would come from the same supply chain or the same network. As suggested by Kenny et al. (2006) we used canonical correlation analysis as a multivariate test for independence. Within the PLS path modeling framework canonical correlation analysis can be emulated setting up two latent variables, one for the buyers and one for the suppliers, with a formative measurement model containing the relevant variables and using a centroid scheme (cf. Guinot, Latreille and Tenenhaus, 2001). Our analysis revealed that the hypothesis of nonindependence could be rejected using a bootstrapping approach with 1000 resamples ($r=0.80$, $p<0.001$). Dyadic members are considered distinguishable if there is a meaningful factor that can be used ordering them. In our case, the dyads are clearly distinguishable as buyers and suppliers perform different roles in the relationship (cf. Kenny et al., 2006).

3.4.4 Measurement Instruments

The measure for close relationship included items introduced by Rindfleisch and Moorman (2001) where a close social relationship characterizes with closeness, reciprocity and indebtedness. The items were measured on a seven-point Likert-type scale of agreement ranging from 1 = “completely disagree” to 7 = “completely agree”. Appendix 3 provides an overview of the measures used in this study.

The information sharing measure was adapted from Mohr and Spekman (1994). The items were measured with a seven-point Likert-type scales ranging from 1 = “never” to 7 = “always”. In this paper information sharing comprises operational information that refers to changing needs, events and other relevant changes that may affect the other party in the relationship, and thus the relationship itself. Buyer information sharing was evaluated by suppliers as coming from five departments of the buying company, i.e., purchasing, production, engineering, quality and accounting. We assessed scores for each indicator for five departments, and then calculated a mean score for the analysis. Supplier information sharing was evaluated by purchasing officers as coming from a buying company in general, the scale did not involve evaluation of information sharing coming from various departments.

The buyer and supplier customization scales were based on Palmatier et al. (2007) and their items were measured with a seven-point Likert-type scales ranging from 1 = “never” to 7 = “always”. To construct this scale we followed the definition of customization provided by Gwinner et al. (1998) that customization not only refers to tailored benefits that meet particular needs exclusive to one party, but also includes special or preferential treatment.

The exploratory phase of our data collection included semi-structured interviews which served as the basis for the development of a five-item scale of manufacturing performance including feedback. Feedback not only serves as a motivational technique, but the content of feedback may include manufacturing performance metrics (Kim, 1984). Thus, in our study, we collected data on supplier’s satisfaction with feedback from a buyer on not only cost reductions, quality and delivery terms but also improvements in new product and new process development. Suppliers evaluated their satisfaction with feedback that they receive from five departments of the buying company, i.e., purchasing,

production, engineering, quality and accounting. We assessed scores for each indicator for five departments (engineering, production, quality, purchasing and accounting), and then calculated a mean score for the analysis. Yet, on the other side of the dyad, we collected data from purchasing officers on a buyer's satisfaction with feedback from a supplier about a supplier's ability to meet various buyer requirements like cost reductions, quality, delivery and new product and new process development. This scale did not involve various departments. The items were measured with a seven-point Likert-type scales ranging from 1 = "never" to 7 = "always".

Affective commitment scale comprised three items, measured on a seven-point Likert-type scale of agreement ranging from 1 = "completely disagree" to 7 = "completely agree", investigated by Kumar et al. (1994). Affective commitment refers to a one party's cognitive-based attachment to the other party (Geyskens et al., 1996).

For the control variables, we measured the power of the buyer and the power of the supplier with a three-item construct we adapted from Mohr et al. (1996). Relationship length comprised a measure provided by Jap and Ganesan (2000). We adapted a measure of the supplier's dependence and the buyer's dependence from scales used by Kumar et al. (1994).

3.5 Findings

3.5.1 Analysis approach

Due to the fact that we have distinguishable dyads in our data we can use PLS path modeling to test the hypothesis in our conceptual model (Kenny et al. 2006). The PLS algorithm implemented in Smart PLS (Chin, 1998; Ringle, 2006b) uses (ordinary) least squares estimation to obtain the parameters estimates in the structural, or inner, model (Chin and Newsted, 1999; Tenenhaus et al., 2005; Wold, 1988). A major assumption of OLS estimation is that the disturbance terms (Chin and Newsted, 1999) of the endogenous latent variables are uncorrelated. However, in structural equation models we need to correlate the disturbance terms of the endogenous latent variables (LVs) to allow for nonindependence using dyadic data (Kenny et al., 2006). Therefore, we used seem-

ingly unrelated regression (SUR; Zellner, 1962) to obtain the parameter estimates in the structural, or inner, model. More in particular, we obtained the LV scores from Smart PLS and used STATA 10 (command sureg) to obtain seemingly unrelated regression parameter estimates. To obtain the standard errors and test statistics we employed a bootstrapping procedure with 1000 resamples.

3.5.2 Psychomteric Properties

We used SmartPLS to assess the psychometric properties of the measurement instruments, such as reliability, convergent validity, and discriminant validity (Tenenhaus et al., 2005). The internal consistency and reliability of reflective constructs can be evaluated with composite reliability (CR) (Fornell and Larcker, 1981; Wetzels et al., 2009), average variance extracted (AVE), and factor loadings (Nunnally and Bernstein, 1994). Similar rules apply to assesments of content, convergent, and discriminant validity (Diamantopoulos and Siguaw, 2006). All CRs exceeded the cut-off value of .7, and the AVEs exceeded .5 except for supplier customization which was 0.46 (see Appendix 3). Convergent validity found support with every item's standardized loading on its respective construct greater than .5 (Hulland, 1999). Discriminant validity was satisfactory when constructs shared more variance with their own measures than with other constructs in the model (Fornell and Larcker, 1981), so that the value of the square root of the AVE exceeded the construct's intercorrelations (see Table 3.1).

As we collected our data using a survey questionnaire, we sought to safeguard from common method variance (CMV) by applying Harman's one-factor test (Podsakoff and Organ, 1986). Specifically, the procedure requires entering all the items together into a factor analysis (principal components analysis [PCA] with an unrotated solution). We repeated this procedure for each side of the dyad, buyer and suppliers. In case that a single factor solution emerged or one general factor accounted for most of the variance, CMV would pose a threat (Podsakoff and Organ, 1986). In our study, we included 22 items from the buyer and 23 items from the suppliers. The first factor explained 33.25% of the variance for the buyer data and 37.37% of the variance for the supplier

data. The unrotated solution did not reveal one general factor. Therefore, CMV is not a concern.

Table 3.1 Intercorrelations of the Latent Variables [a]

Construct	M	SD	1	2	3	4	5	6	7	8	9	10
1. Buyer Affective Commitment	4.56	1.26	***0.81***									
2. Buyer Close Social Relationship	3.79	1.12	0.72	***0.74***								
3. Buyer Customization	3.20	1.17	0.17	0.47	***0.75***							
4. Buyer Satisfaction with Feedback	4.88	1.14	0.61	0.43	-0.21	***0.83***						
5. Buyer Information Sharing	4.96	1.25	0.16	0.02	-0.14	0.07	***0.88***					
6. Supplier Affective Commitment	6.13	0.76	0.32	0.05	-0.24	0.26	0.49	***0.82***				
7. Supplier Close Social Relationship	4.91	1.04	0.11	-0.01	0.04	0.00	0.52	0.60	***0.73***			
8. Supplier Customization	5.24	1.10	0.03	0.12	-0.05	0.11	0.32	0.03	0.13	***0.68***		
9. Supplier Information Sharing	4.94	0.99	0.58	0.39	0.00	0.66	0.07	0.37	0.10	-0.10	***0.86***	
10. Supplier Satisfaction with Feedback	5.11	1.27	0.10	-0.08	-0.16	0.01	0.76	0.47	0.56	0.12	0.08	***0.91***

a Square root of AVE on the diagonal

3.5.3 Hypotheses Testing

We found support for ten of our sixteen hypotheses (Table 3.2). In line with our expectations, our empirical results support most of our hypotheses with a few exceptions. Supplier close relationship to a buyer does not influence a supplier to customize to a buyer (H3b). Contrary to our expectations, supplier information sharing to a buyer has a negative effect on a buyer's customization to a supplier (H2a). Further, buyer customization to a supplier does not directly influence positively a buyer's satisfaction with feedback from a supplier about its ability to meet buyer requirements (H4a) or a supplier's satisfaction with feedback from a buyer on supplier performance (H4b). Supplier customization, on the other hand has no effect on a supplier's satisfaction with feedback from a buyer on supplier performance (H4d). Additionally, a supplier's satisfaction with feedback from a buyer on supplier performance has no effect on buyer affective commitment to a supplier (H6c).

Of the control variables relationship length, buyer dependence and supplier dependence have no effects either on buyer customization or supplier customization. Supplier power however, impacts buyer customization as well as buyer power influences supplier customization.

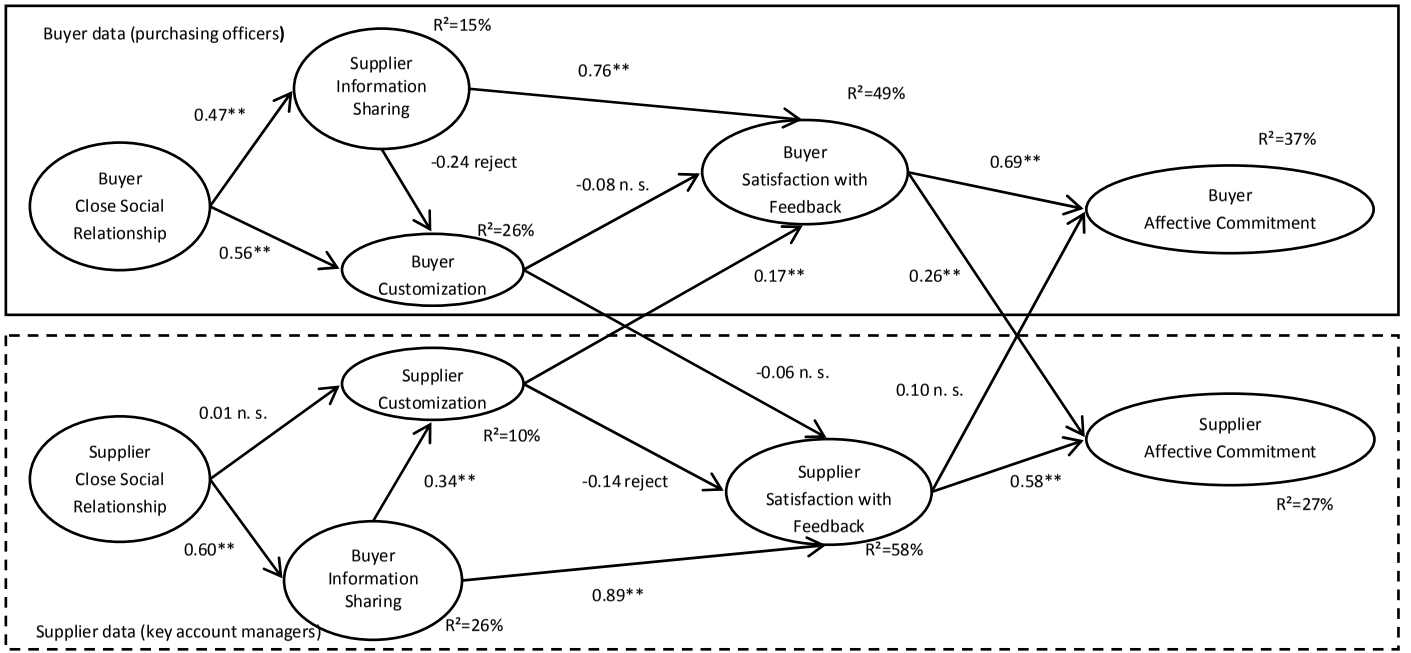
To assess the fit of our data to the model in SmartPLS, we used the R^2 values of the endogenous constructs (Tenenhaus et al., 2005). According to Cohen (1988), values of R^2 of .02, .13, and .26 indicate small, medium and large effect sizes, respectively, of the treatment independent of sample sizes. The individual values for R^2 indicated that the model explained 15% of the variance in supplier information sharing, 26% of buyer information sharing, 26% of buyer customization, 10% of supplier customization, 49% of a buyer's satisfaction with feedback from a supplier about its ability to meet buyer requirements, 58% of a supplier's satisfaction with feedback from a buyer on supplier performance, 37% of buyer affective commitment, 27% of supplier affective commitment, (see Figure 3.2). As a global fit measure, we used a formula developed by Tenenhaus et al. (2005). Relative to the mostly medium-sized effects in our model, the evaluated fit of .46 indicated a good fit of the data to the model (Wetzels et al., 2009).

Table 3.2 Hypotheses Testing

Hypotheses	Path Coefficient	z-Value	Result
Buyer close social relationship -> supplier information sharing (H1a)	0.47	3.61**	Supported
Supplier close social relationship -> buyer information sharing (H1b)	0.60	6.31**	Supported
Supplier information sharing -> buyer customization (H2a)	-0.24	-2.50*	Rejected
Buyer information sharing -> supplier customization (H2b)	0.34	3.69**	Supported
Buyer close social relationship -> buyer customization (H3a)	0.56	5.28**	Supported
Supplier close social relationship -> supplier customization (H3b)	0.01	0.04 n.s.	Rejected
Buyer customization -> buyer satisfaction with feedback (H4a)	-0.08	-0.96 n.s.	Rejected
Buyer customization -> supplier satisfaction with feedback (H4b)	-0.06	-0.74 n.s.	Rejected
Supplier customization -> buyer satisfaction with feedback (H4c)	0.17	2.45*	Supported
Supplier customization -> supplier satisfaction with feedback (H4d)	-0.14	-1.83**	Rejected
Supplier information sharing -> buyer satisfaction with feedback (H5a)	0.76	9.92**	Supported
Buyer information sharing -> supplier satisfaction with feedback (H5b)	0.89	12.15**	Supported
Buyer satisfaction with feedback -> buyer affective commitment (H6a)	0.69	6.15**	Supported
Buyer satisfaction with feedback -> supplier affective commitment (H6b)	0.26	3.01**	Supported
Supplier satisfaction with feedback -> buyer affective commitment (H6c)	0.10	1.14 n.s.	Rejected
Supplier satisfaction with feedback -> supplier affective commitment (H6d)	0.58	5.06**	Supported

*p < .05, **p < .01, one-tailed tests. n.s. = not significant.

Figure 3.2 Empirical Findings



*p < .05, **p < .01, one-tailed tests, n.s. – not significant

3.6 Discussion

The goal of this study has been to broaden existing knowledge on customization from a dyadic perspective of both buyers and suppliers. Based on our review of adaptation and relational benefits literature we developed an understanding of customization as a construct comprising not only resource commitments in adjustment but also preferential treatment. In the context of a buyer-supplier relationship we have proposed to integrate insights from network and social capital theories in one conceptual model to show the roles of close social relationships and information sharing in customization behavior of buyers and suppliers. Further, we investigated their influence on satisfaction with feedback on performance evaluations and performance requirements, resulting in relationship affective commitment. Our dyadic approach has been motivated by the fact that we found a number of studies that have dyadic data in supply chain (Jap, 1999; Perrone et al., 2003; Rokkan et al., 2003; Selnes and Sallis, 2003). However most of these studies either assumed the same behaviors of buyers and suppliers, who would be thinking and acting alike, and in result, treated them alike (Jap and Anderson, 2003) due to a lack of theoretical support for differences on either side of the dyad, or would run two separate analysis for buyers and for suppliers. Such procedure did not take into account insights on the actor-partner effects. That is the effects that buyer data have on supplier data and vice versa. Only very recently have indications been made the "alike thinking and acting" might not hold for both, buyers and suppliers, as their wants and needs might differ (Ross et al., 2009) similarly to their perceptions (Hald et al., 2009). Therefore, we designed a study in which both, buyers and suppliers data are analyzed together, thus, providing insights into interdependencies among partners in the dyad.

So far, most of extant literature studying the strength of a relationship associated a close social relationship with richer and far more detailed information than a distant weak relationship (Kraatz, 1998; McEvily and Marcus, 2005; Uzzi, 1999). In line with our suggestions (H1a & H1b) and earlier studies (e.g., Friedkin, 1982) close social relationships encourage information sharing about activities in organizational settings. We also argued in our conceptual assumptions that a close relationship has a positive impact on customization in case of both, buyers (H3a) and suppliers (H3b). Our results support this argument only

on the side of the buyer. For suppliers a close relationship does not lead directly to customization in the presence of information sharing. Buyer information sharing plays a significant role for suppliers before they customize (H2b). This could be an indication that suppliers are more careful than buyers when making their customization decision opposite to buyers for whom supplier information sharing has a negative effect on buyer customization (H2a). In conclusion, suppliers need rich, sensitive and detailed information that is useful and meaningful before they take any actions. As our results indicate, the impact of information sharing on customization varies with being a buyer and a supplier. Nevertheless, Kenny et al. (2006, p. 149) provide further explanation of the pattern of the effects having similar magnitude but opposite signs as in a case of the influence of information sharing on customization. According to them, the phenomenon occurs when one party of the buyer-supplier relationship is relationship oriented and the other is transactional oriented. The buyer's orientation could further explain the supplier's need for information in close relationships compared to buyers. Our results may indicate that a supplier that is relationship oriented has a positive association with information sharing. On the other hand, a buyer that is transactional oriented might feel less satisfied the more the supplier shares information.

We have also argued that both buyer and supplier customization have positive impacts on both, supplier's satisfaction with buyer's feedback on supplier manufacturing performance and buyer's satisfaction with supplier's feedback on the ability to meet manufacturing performance (as requested by the buyer). This argument holds only partially. Data from buyers provide evidence that buyer customization does not influence buyer satisfaction with feedback from a supplier about its ability to meet buyer requirements (H4a) or supplier satisfaction with the performance feedback from a buyer (H4b). On the other side of the dyad, data from suppliers prove that supplier customization has a positive impact on the buyer's satisfaction with the feedback from the supplier about its ability to meet buyer requirements (H4c) and no effect on the supplier's satisfaction with performance feedback from a buyer (H4d). This implies that the buyer feels more satisfied with the supplier's feedback about its ability to meet buyer requirements when the supplier has customized to the buyer. Yet, supplier customization has no effect on supplier satisfaction with performance feedback coming from the buyer.

One possible explanation to this could be managerial propensity to base decisions on information available from close relationships because they trust it is more trustworthy and accurate (Kraatz, 1998; McEvily and Marcus, 2005; Rogers, 1995). Hence, their decisions concerning customization could be biased and their outcome would not be satisfaction with feedback on performance improvement. Lack of supplier satisfaction with feedback may also be an indication that a supplier had to reallocate resources from other relationships with other buyers to customize to the exclusive buyer (Anderson et al., 1994).

One of our next arguments that were fully supported by our empirical results was a claimed positive impact of information sharing on customization (H5a & H5b). Therefore, information sharing confirms to play a significant role in buyer-supplier relationships by directly influencing the level of satisfaction with feedback on performance requirements and the ability to meet these requirements (Joshi, 2009; Krause et al., 2000). As our findings indicate, cross-functional information sharing takes a significant place in accepting evaluation feedback in a buyer-supplier relationship.

Furthermore, we have also suggested that a buyer's satisfaction with feedback from a supplier and a supplier's satisfaction with feedback from a buyer, both, have positive impacts on buyer and supplier affective commitment. Our results support this argument fully for a buyer's satisfaction with feedback from a supplier, but only partially for a supplier's satisfaction with feedback from a buyer. When the supplier is satisfied with feedback from the buyer it increases the supplier's affective commitment to the buyer and the will to further collaborate with that buyer (H6d) but it does not enhance directly the buyer's affective commitment towards the supplier or the will to further collaborate with the supplier (H6c). However, when the buyer is satisfied with feedback from the supplier this relates positively to the buyer's affective commitment towards the supplier and the will to further collaborate with the supplier (H6a) as well as the supplier's affective commitment towards the buyer (H6b). The difference here could be due to the fact that the supplier reports its satisfaction with feedback from a buyer on its performance whereas the buyer has the information about the supplier's ability to meet requirements, which is not the actual performance data. Therefore, future research could investigate the influence of objective performance data on affective commitment.

3.7 Managerial Implications

The strength of the relations among dyadic constructs poses a number of attractive research questions that are remarkably appealing to managers (Mizruchi and Marquis, 2006). Given the dyadic character of this study and the strength of the relations among the dyadic constructs, the results of our study have managerial implications for both buyers and suppliers. The major managerial implication that applies to both, buyers and suppliers, is the role of information sharing in the satisfaction with feedback on performance. If both buyers and suppliers share information with each other, this has a significant and positive effect on their acceptance of feedback on the evaluation of performance requirement. Cross-functional information sharing among partner companies and satisfaction with feedback are thus important factors in buyer-supplier relationships. Buyers should be aware that the quality of feedback that buyers give to suppliers about supplier performance and receive from suppliers about their ability to meet performance requirements both act as relationship glue. Giving and receiving proper feedback not only makes the buyer more attracted and committed to conduct business with the supplier in the long-run, but it also triggers the reciprocal effect from suppliers, and makes them committed to the relationship with the buyer. Feedback is an essential contributor to supplier satisfaction (Maunu, 2003) and in our study it proves to be a significant tool for gluing the buyer-supplier relationship in terms of affective commitment. Thus, satisfaction with feedback will make the relationship parties to collaborate with one another because of cognitive-based feelings of attachment such as because they like each other. Also the more companies customize the more they can (and should) give specific feedback. Supplier feedback to buyers about their capabilities strongly impacts the affective commitment of buyers, marketing professionals of suppliers can (and should) use this knowledge to improve their working relationships with buying companies. Implications of feedback specifically for buyers are that they should provide more feedback to those suppliers that they are seriously interested in working more closely with, and they can organize regular and formal feedback sessions to facilitate this.

Further findings offer separate guidance for buyers and suppliers. In particular, results indicate that buyers, when they are really interested in stimulat-

ing supplier customization, must stop acting in a transactional way and stop disregarding the information coming from suppliers. In the qualitative interviews that we conducted while developing our survey questionnaire, suppliers repeatedly reported that the buyers were not really willing to listen to them and that they suffer from a *not invented here syndrome* (Katz and Allen, 1982). At the same time, our results clearly indicate that having a close social relationship alone is not sufficient to drive suppliers to customization. It's the quality and quantity of the information that is exchanged between buyer and supplier that is important. Suppliers need to know the wants and needs of the buyer before they can decide on where and how to customize.

In the interviews suppliers indicated that they were ready to extend their collaboration with the buyer, however, the buyer was not yet so open for it. Suppliers wanted to be involved earlier in the buyer's operational processes. They were eager to take part in innovation projects as well as in setting a shared strategy. However, suppliers experienced the buyer to act as an expert not only at its shop floor but also at the suppliers'. In a model to build deeper relationships with suppliers, Liker and Choi (2004) indicate that buyers should learn about how their suppliers work by devoting time and effort in not only learning how the supplier works but also in respecting the supplier's capabilities. Suppliers are more open for collaboration with buyers at different levels, i.e., tactical, operational and strategic than buyers are. This supports our suggestion that buyers need to enhance their pro-relationship behavior in terms of listening to the voice of suppliers and develop better strategies for managing buyer-supplier relationships.

Another insight that buyers might find interesting is that their customization to suppliers does not seem to have a direct impact on either supplier satisfaction with feedback from a buyer or buyer satisfaction with feedback from a supplier, as regarded by both, buyers and suppliers. It could be an indication that buyer customization is regarded as a natural consequence in their relationship with suppliers, and therefore, does not play an important role in supplier performance. That is, a major role here is performed by supplier customization.

3.8 Limitations and Future Research

Our findings should be considered with the acknowledgement of several limitations. First, we gain insight into how different suppliers evaluate organizational buying behavior of one buying company, as a reference point for all suppliers. Therefore, it is difficult to generalize from this single case. Next, similarly to other dyadic studies, our informants from the buying company select suppliers for evaluation of the relationship their company has with the suppliers. Other dyadic studies could develop methods that enhance dyadic data collection in terms of improved methods of selection of respondents. Further research might also consider from diverse angles why suppliers customize to buyers. For example, our study does not provide any insights into the role of managers or company policy in the decision making process on customization. Other questions that could be asked refer to the extent of customization and a number of partners that focal companies customize to. It could be that suppliers as well as buyers practice mass customization.

Second, our examination of close social relationship between buyers and suppliers focused specifically on tie strength. This study did not investigate the role of close social relationships with parties external to the dyad or from a triadic or a network perspective. External parties to the dyad such as governments, competitors, customers, and other stakeholders, could reveal important implications for close relationships, information sharing, customization and manufacturing performance in buyer-supplier relationships. Therefore, researchers should investigate data from multiple sources. Additionally, although our sample constitutes 103 matched pairs, that meets an average dyadic study dataset (Kenny et al., 2006), this might pose a limitation to our study. Despite the inherent difficulties in dyadic data collection, research design and analysis, researchers should strive for larger sample sizes.

Third, testing the causality of the relationships in our dyadic model was not possible because we used cross-sectional data; thus, conducting experimental studies and the collection and analysis of longitudinal data should be the goals of further research. However, it could be extremely difficult since there are already a number of practical difficulties with collecting cross-sectional dyadic data. Furthermore, case studies as well could be used to pro-

vide richer data in dyadic research settings (Lawson et al., 2008), not only cross-sectional, but also longitudinal.

Another interesting path of evolution for studies on close social relationships and information sharing is the role of web-based communication portals. We look forward to studies on how not only impersonal web-based communication channels, in addition to the existing interpersonal channels, enhance the quality of information sharing and providing feedback as well as other benefits in a buyer-supplier collaboration.

3.9 Appendix 3

MEASUREMENTS INSTRUMENTS CHAPTER 3

Psychometric Properties for Null Model for First-Order Constructs

Construct	Item	Loading (α)	*CR*	*AVE*
Buyer close relationship (Rindfleisch and Moorman, 2001)			*0,80*	*0.54*
	Our employees share close social relations with the employees from this supplier.	0.772		
	We feel indebted to this supplier for what they have done for us.	0.803		
	We expect that we will be working with this supplier far into the future.	0.626		
Supplier close relationship (Rindfleisch and Moorman, 2001)			*0.78*	*0.54*
	Our employees share close social relations with the employees from Buyer X.	0.665		
	We feel indebted to Buyer X for what they have done for us.	0.759		
	We expect that we will be working with Buyer X far into the future.	0.771		
Supplier information sharing (Mohr and Spekman, 1994)			*0.93*	*0.74*
	This supplier informs us in advance about their changing needs.	0.786		
	This supplier is providing us with all the information we need to serve them best.	0.887		
	This supplier keeps us informed about events that may affect our company.	0.851		
	This supplier keeps us informed about changes that may affect our company.	0.913		
	The information provided by this supplier is reliable.	0.859		
Buyer information sharing (Mohr and Spekman, 1994)			*0.94*	*0.77*
	The following Buyer X departments inform us in advance about their changing needs.	0.898		
	The following Buyer X departments are providing us with all the information we need to serve them best.	0.878		
	Buyer X keeps us informed about events that may affect our company.	0.866		
	Buyer X keeps us informed about changes that may affect our company.	0.911		
	The information provided by the different Buyer X departments is reliable.	0.825		
Buyer customization (Palmatier et al., 2007)				
	Comparing to other suppliers:		*0.88*	*0.56*

This supplier receives special treatment from us.	0.805		
This supplier receives special information from us.	0.820		
This supplier receives special value-added benefits from us (e.g., inventory control, expediting, training).	0.743		
We have made specific investments for this supplier (e.g. EDI, packaging, delivery, KANBAN).	0.722		
We adapt our procedures to this supplier's requirements.	0.791		
We assigned additional dedicated personnel to this supplier.	0.581		
Supplier customization (Palmatier et al., 2007)			
Comparing to other buyers:		*0.86*	*0.46*
Buyer X receives special treatment from us.	0.681		
Buyer X receives invitations to special internal events (internal managerial meetings, engineering day, customer day) organized by our company.	0.669		
Buyer X receives special information from us.	0.663		
Buyer X receives special value-added benefits from us (e.g., inventory control, expediting, training).	0.617		
We have made specific investments for Buyer X (e.g. EDI, packaging, delivery, KANBAN).	0.690		
We adapt our procedures to Buyer X requirements.	0.706		
We assigned additional dedicated personnel to Buyer X.	0.699		
Buyer satisfaction with feedback (exploratory phase of the study)		*0.92*	*0.69*
We are satisfied with the feedback we receive from this supplier about their ability to meet our quality requirements.	0.788		
We are satisfied with the feedback we receive from this supplier about their ability to meet our delivery times.	0.810		
We are satisfied with the feedback we receive from this supplier about their ability to meet our product development requirements.	0.904		
We are satisfied with the feedback we receive from this supplier about their ability to meet our process development requirements.	0.930		
We are satisfied with the feedback we receive from this supplier about their ability to meet our total cost reduction requirements.	0.701		
Supplier satisfaction with feedback (exploratory phase of the study)		*0.96*	*0.82*
We are satisfied with the feedback we receive from the following Buyer X departments about our quality performance.	0.907		
We are satisfied with the feedback we receive from the following Buyer X departments about our delivery performance.	0.899		
We are satisfied with the feedback we receive from the following Buyer X departments about our product development performance.	0.918		
We are satisfied with the feedback we receive from the following Buyer X departments about our process development performance.	0.949		

	We are satisfied with the feedback we receive from the following Buyer X departments about our total cost reduction performance.	0.851		
Buyer affective commitment (Kumar et al., 1994)			*0.85*	*0.66*
	It is pleasant working with this supplier that is why we continue the relationship.	0.863		
	We want to remain a customer to this supplier.	0.862		
	Our decision to remain a customer of this supplier is based on our attraction to the things that this supplier represents as a company (e.g., image, brand, reference).	0.692		
Supplier affective commitment (Kumar et al., 1994)			*0.86*	*0.67*
	It is pleasant working with Buyer X that is why we continue the relationship.	0.786		
	We want to remain a supplier to Buyer X.	0.861		
	Our decision to remain a supplier for Buyer X is based on our attraction to the things that Buyer X represents as a company (e.g., image, brand, reference).	0.805		

Notes: α = coefficient alpha, CR = composite reliability, AVE = average variance extracted

CHAPTER 4

Man vs Machine: The Roles of Close Social Relationships with Employees and an Enterprise Information Portal (EIP) in Information Sharing Behavior and Its Outcomes

This study extends existing information sharing research by demonstrating the moderating effect of EIP between close social relationships and information sharing behavior. In contrast with other information sharing studies, this research investigates the influence of EIP on three components of information sharing behavior, i.e., the extent of information shared, the evaluation of that extent (communication quality) and joint efforts of buyers and suppliers to adjust that extent (participation). Our results indicate that according to suppliers, EIP intensifies the effect of close social relationships on cross-functional information sharing behavior. Additionally, cross-functional information sharing behavior prompts supplier satisfaction with feedback. A number of suggestions for managing such a situation are offered.

4.1 Introduction

Over the last decade a number of communication technology solutions have entered buyer-supplier collaboration. These solutions represent not only data warehousing or customer relationship management but also enterprise resource planning, vendor managed inventory and enterprise information portals (EIP). This recent technological development in supply chain is characterized by a massive growth in worldwide communication methods and opportunities (Fernandes, Raja and Austin, 2005). Existing communication systems such as electronic data interchange and enterprise resource planning are frequently combined with the internet to form a new type of communications that are broadly labeled 'portals' (Gerst and Bunduchi, 2005; Puschmann and Alt, 2005). Such portals are supportive means for information sharing to spread and acquire knowledge from their business partners.

Companies share information by using information portals, extranets, computer-to-computer information exchange or electronic data interchange (Emmelhainz, 1990). Each of these types of portals has its own specific characteristics, but the general idea, that information – and simultaneously knowledge – is spread via an electronic system, remains. In this paper we refer to enterprise information portals (EIPs). An EIP is broadly defined as "*a knowledge portal whose main function it is to assist members in obtaining specialized knowledge through various learning processes*" (Ryu, Kim, Chaudhury and Rao, 2005, p.246). An EIP thus stresses the importance of knowledge sharing. A common characteristic among EIPs is the integration of existing business processes in order to reduce costs and to create effective communication channels with external parties (Yang, Cai, Zhou and Zhou, 2005). The term portal was defined for the first time in a Merrill Lynch report, by Shilakes and Tylman (1998) as: "an applications that enables companies to unlock internally and externally stored information, and provide users a single gateway to personalized information needed to make informed business decisions" (Shilakes and Tylman, 1998, p.1). In subsequent years, many definitions have been suggested with respect to portals (Aneja, Brooksby and Rowan, 2000; Kendler, 2000). Starting from the Gartner Group definition, a supplier portal is therefore a technological solution providing a unified application access, information management, and knowledge management both within enterprises and between

enterprises and their suppliers, trading partners, and channel partners. Supplier portals are first of all designed to improve efficiency in transactions with the supplier base and to improve coordination of the logistics flows between buyer and suppliers (Balgieri, Secchi and Croom, 2007). In 1999, 3 car manufacturers (GM, Ford and DaimlerChrysler) founded a company "NewCo" as an independent automotive exchange that was later renamed Covisint (Arbin and Essler, 2005) and became a part of Compuware Corporation. The aim of this company was to independently exchange online automotive information and creating the world's largest online marketplace for OEMs and their suppliers.

Buyers and suppliers continue to invest in communication technology solutions, alike, to enhance the use of these solutions, with an ultimate goal of boosting their company' businesses and relationships (Sambamurthy, Bhardawaj and Grover, 2003). Suppliers implement customer relationship management programs to foster close social relationships with important buyers in their customer portfolio to increase supplier performance and competitive advantage (Ryals and Rogers, 2007). Buyers, on the other hand, implement enterprise information portals to share necessary operational information with their suppliers. Currently, enterprise information portals are believed to be the most suitable technological solutions for answering the need of cooperation and strategic relationships between buyers and suppliers (Baglieri and Secchi, 2007). As communication technology develops, it turns into a useful tool for shaping strategies and enhancing competitive advantage (Bharadwaj, 2000; Johnston and Vitale, 1988; Nevo and Wade, 2010). However, even though prior research has demonstrated communication technology to improve performance (Baglieri and Secchi, 2007), important questions about how and why these technological solutions increase performance, remain unanswered (Sambamurthy et al., 2003). Furthermore, while enterprise information portals (EIPs) ought to offer a gateway to a customized and personalized approach (Scheepers, 2006), little attention has been paid to internet-enhanced supply chain relationships (Liu, Boër, Sacco and Fornasiero, 2006). Outcomes of such relationships are vague, with hardly any evidence on how the use of portals could increase intrinsic company behavior, such as information sharing. Despite widespread research on buyer–supplier relationships, we lack any evidence on whether close social relationships contribute to information sharing behavior. Moreover, even though communication technology does not replace direct

personal contact between buyers and suppliers, so far, we lack sufficient understanding of how the use of portals may enhance the impact of close social relationships on information sharing behavior.

The purpose of this paper is therefore to broaden understanding of the role of EIP and close social relationships in cross-functional information sharing behavior. We aim to explore how personal contact and communication technology can support or constrain communication behavior in buyer-supplier relationships. In particular, as illustrated in Figure 4.1, we argue that EIP enhances the impact of close social relationships on information sharing behavior. We also propose that information sharing behavior, in turn, improves supplier's satisfaction with feedback from a buyer on supplier performance.

The paper proceeds as follows. First, we explain our conceptual framework and the development of our hypotheses. Next, we describe our methodological approach. This is followed by the presentation and discussion of the results. We conclude with managerial implications and recommendations for future research.

4.2 Conceptual Framework

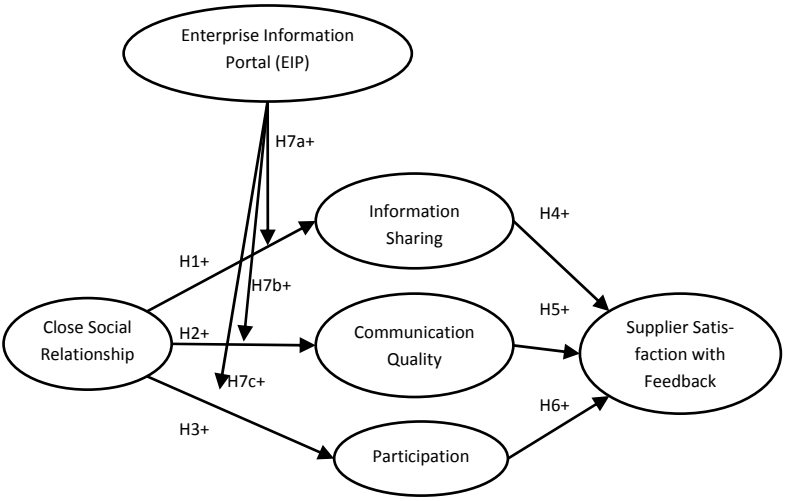
In this section, we present our model that builds on the premise that close social relationships contribute to information sharing behavior that leads to an improved relationship. The model consists of three main building blocks: close social relationships, outcomes of these close social relationships (information sharing, communication quality and participation), outcomes of information sharing behavior (supplier satisfaction with feedback from a buyer on supplier performance) and a moderating effect of an enterprise information portal.

4.2.1 Close Social Relationships

In social network theory a social relationship, regardless of its strength and closeness, refers to a tie (Seibert et al., 2001). In this study we focus on a close social relationship because in network closure theory it provides more benefits than a distant one (Ahuja, 2000; Cohen, 1988). In contrast to a 'distant' relationship a close social relationship is characterized by a higher level of intimacy,

reciprocity and indebtedness (e.g., Granovetter, 1973; Rindfleisch and Moorman, 2001) and refers to a personal contact between a buyer's and a supplier's employees (Tsai and Ghoshal, 1998).

Figure 4.1 Conceptual Model



Dense, close social relationships tend to be more beneficial than distant, loose ones in network theory as well as in social capital theory (Ahuja, 2000; Cohen, 1988; Lin et al., 2001; Uzzi, 1997). The superiority of close social relationships originates from their association with access to sensitive information (e.g., Granovetter, 1973), privileged information, or even privileged economic resources such as subsidized loans or protected markets (Coleman, 1988; Portes, 1998).

In general, information sharing refers to the extent that a party in a relationship reveals information that may affect the other party's operations (Heide and Miner, 1992). In close relationships such information sharing encompasses formal and informal exchange of meaningful and timely information (Mohr and Nevin, 1990). Information sharing is one of the three components of communication behavior that is the extent of information shared, the assessment of the extent and joint efforts to adjust it (Mohr and Spekman, 1994).

Thereafter, we will refer to information sharing behavior instead of communication behavior. The extent refers to sharing information about planning, forecasting and events and changes that may affect the other party. The assessment of this extent relates to the essential characteristics of shared information such as the timeliness, accuracy, completeness, satisfaction and reliability of information and we refer to it as to communication quality. Another information sharing component, the joint effort to adjust information refers to co-creation of a shared vision in developing forecasts, setting goals, planning and forecasting activities as well as joining efforts in improvement. Joint effort to adjust information considers the scope to which buyers and suppliers engage jointly in planning and goals setting and we refer to it as to participation (Simsek, Lubatkin and Floyd, 2003).

Close social relationships, because of their abovementioned characteristics, encourage the exchange of rich, sensitive and far more frequent and detailed information than distant loose relationships (Kraatz, 1998; McEvily and Marcus, 2005; Uzzi, 1999). Prior studies found that more information is shared with those with whom a close relationship is established (Friedkin, 1982; Jack, 2005; Portes and Sensenbrenner, 1993; Zaccaro and Lowe, 1988). Studies on socially related phenomena in social capital argue that those who have close social relationships receive information faster than those with distant, loose relationships (Coleman, 1988; Portes, 1998). Furthermore, a social relationship serves as a channel for information flow (Tsai and Ghoshal, 1998) and anticipates the development of a shared vision in a buyer-supplier relationship (Krackhardt, 1990). Thus, we suggest:

H1: A close social relationship has a positive impact on information sharing.
H2: A close social relationship has a positive impact on communication quality.
H3: A close social relationship has a positive impact on participation.

4.2.2 Cross-Functional Information Sharing Behavior and Its Outcomes

Prior studies found that cross-functional information sharing in a buyer-supplier relationship contributes to increased manufacturing performance better than if information takes place only between purchasing and sales functions (Carter and Miller, 1989). Manufacturing performance improvement re-

fers to improvement of cost reductions, quality, flexibility and delivery (e.g., Fynes et al., 2005; Möller and Törrönen, 2003). Supplier manufacturing performance represents the buyer's evaluation of satisfaction with the supplier's record in terms of meeting the buyer's manufacturing expectations. A Buyer evaluates the expectations on a range of performance metrics (Cannon and Perreault Jr., 1999). A buyer informs the supplier about the result of the evaluation that represents the buyer's satisfaction with supplier performance, via feedback. Satisfaction with feedback entails not only the acceptance of performance metrics ratings but also the feedback itself (Jawahar, 2006). As a result, it is a more significant indicator of supplier reactions to evaluation feedback from a buyer (Giles and Mossholder, 1990) than its usefulness or precision (Keeping and Levy, 2000). Because information sharing in general enhances performance in a supply chain (Mabert and Venkataramanan, 1998) in our study we extend the investigation to the influence of cross-functional information sharing behavior on a supplier's satisfaction with feedback from a buyer. If various departments and/or functions of a buyer share information with a supplier as well as join their efforts to adjust information, they enhance the supplier's satisfaction with feedback on performance. This happens because then the supplier has more visibility in processes as well as more understanding of operations of the buyer (Mabert and Venkataramanan, 1998). Furthermore, since timeliness, accuracy, completeness, satisfaction and reliability, referred as communication quality, are characteristics of the assessment of the extent of information (Wang and Wei, 2007), they would improve performance as well.

H4: Information sharing has a positive impact on a supplier's satisfaction with feedback from a buyer on supplier performance.

H5: Communication quality has a positive impact on a supplier's satisfaction with feedback from a buyer on supplier performance.

H6: Participation has a positive impact on a supplier's satisfaction with feedback from a buyer on supplier performance.

4.2.3 The Moderating Role of EIP Use

Organizations are investing in EIPs to promote and facilitate the sharing of information (Davenport and Prusak, 1998). Enterprise information portals (EIPs)

deliver information to its users who together form an online knowledge community (Chan and Chung, 2002). Communication technology solutions such as EIPs integrate rules for communications, i.e., reuse of knowledge, and create a connection between various organizational functions and the location of knowledge to ascertain that information is directly tied to realization (Ryu et al., 2005). Because of a scale of EIPs implementations with thousands of users (Scheepers, 2006), they can alter the company's internal and external relationships by boosting the capabilities of a company's information management (Balgieri et al., 2007). EIPs have therefore become important tools to facilitate information exchange and thereby co-operation and collaboration in supply chains (Klein, 2007; Laukkanen, Sarpola and Kemppainen, 2007; Malhotra, Gosain and El Sawy, 2005). Information and communication technologies (ICTs) like EIPs have in this respect a positive impact on the transactional and physical side of the buyer-supplier relationship' processes (Balgieri et al., 2007). Multiple studies argued a significant impact of ICTs on supply chains integration (Gunasekaran and Ngai, 2004; Johnson and Whang, 2002; Lancioni, Schau and Smith, 2003; Rai, Patnayakuni and Seth, 2006). Current research in this area focused mainly on the effects of ICT on the efficiency of exchange-related process in a buyer-supplier relationship (Balgieri et al., 2007). Spekman and Carraway (2006) argue that using an EIP to collaborate with partners can enhance processes between companies. Hence:

H7a: The use of an EIP has a positive moderating effect on the relationship between a close social relationship and information sharing.

H7b: The use of an EIP has a positive moderating effect on the relationship between a close social relationship and communication quality.

H7c: The use of an EIP has a positive moderating effect on the relationship between a close social relationship and participation.

4.3 Methodology

4.3.1 Research Setting

To empirically validate our hypotheses the data was collected through an online survey (Deutskens et al., 2004) of users of an advanced EIP. We approached suppliers of a single, core buying company as potential participants in the empirical study, to exclude contextual effects and allow for a single frame of reference as they were all using the same portal. The buying company selected for this study was a large multinational manufacturer with total annual turnover of close to 3 billion euro that was a part of a global industrial group with headquarters located in Europe. As we describe in chapter 1, for this study we used a sample of 185 data points from suppliers.

4.3.2 Measurement Instruments

This study adopted extant validated scales where possible, and elsewhere, new scales were adopted based on literature. The scale for a close relationship included items introduced by Rindfleisch and Moorman (2001) where a strong close social relationship characterizes with closeness, reciprocity and indebtedness. The items were measured on seven-point Likert-type scales of agreement ranging from 1 = “completely disagree” to 7 = “completely agree”. Appendix 4 presents an overview of all measures used in this study.

The remaining constructs (information sharing, communication quality, participation, satisfaction with feedback) were measured on a seven-point Likert-type scales ranging from 1 = “never” to 7 = “always”. We adapted the measurement items for information sharing behavior from Mohr and Spekman (1994). In this paper information sharing behavior consists of three components, i.e., the extent of information shared (information sharing), the assessment of the extent (communication quality) and the joint efforts to adjust it as a shared vision (participation). Information sharing behavior was evaluated by suppliers as coming from five departments of the buying company, i.e., purchasing, production, engineering, quality and accounting. For the analysis the scores of each indicator were taken to calculate a mean score for each indicator of every component of information sharing behavior.

We used semi-structured interviews of the exploratory phase of our data collection as the basis for the development of a five-item scale of satisfaction with feedback. Feedback not only serves as a motivational technique, but the content of feedback may include manufacturing performance metrics (Kim, 1984). Thus, in our study, we collected data on supplier's satisfaction with feedback from a buyer on not only cost reductions, quality and delivery terms but also improvements in new product and new process development. Suppliers evaluated their satisfaction with feedback that they receive from five departments of the buying company, i.e., purchasing, production, engineering, quality and accounting. We calculated a mean score for each indicator for further analysis.

Furthermore, the exploratory phase of our data collection contributed to the development of the measures of EIP. The EIP was measured with ten items, but those ten items comprised five pairs comprised of two items each. The two items referred to the clearness and reliability of forecasts, specifications, drawings, pricelists and quality rejection data.

For the control variables, we measured the power of the buyer with a four-item construct we adapted from Mohr et al. (1996), dependence with a four-item construct based on (Geyskens et al., 1996; Kumar et al., 1994) and relationship length using the measure provided by Jap and Ganesan (2000).

4.4 Findings

4.4.1 Analysis Approach

We chose partial least square (PLS) path modeling with latent variables, as implemented in SmartPLS, to obtain the parameter estimates in the measurement and structural models (Chin, 1998; Ringle, 2006a; Ringle et al., 2005, 2007). Our choice of PLS path modeling, or component-based structural equation modeling (SEM), over covariance-based SEM was due to its robustness with regard to multivariate normality and its limited constraints on the measurement levels of the manifest variables or sample size (Chin, 1998; Tenenhaus et al., 2005). A component-based SEM approach also allows for the application of complex models that include many constructs and indicators and/or relationships (Chin, 1998).

4.4.2 Psychometric Properties

The assessed psychometric properties of the measurement instruments, with the use of SmartPLS, included reliability, convergent validity, and discriminant validity (Tenenhaus et al., 2005). For empirical tests, the assessment of composite reliability (CR) assures for the internal consistency and reliability of reflective constructs (Fornell and Larcker, 1981; Wetzels et al., 2009), average variance extracted (AVE), and factor loadings (Nunnally and Bernstein, 1994). Similar guidelines apply to investigations of content, convergent, and discriminant validity (Diamantopoulos and Siguaw, 2006). For our constructs all CRs exceeded the cut-off value of .7, and the AVEs exceeded .5 (see Appendix 4). In support of convergent validity, every item's standardized loading on its respective construct was greater than .5 (Hulland, 1999). Discriminant validity was satisfactory when constructs shared more variance with their own measures than with other constructs in the model (Fornell and Larcker, 1981), that is the value of the square root of the AVE exceeded the construct's intercorrelations (see Table 4.1).

Because we collected our data using a questionnaire, we checked for common method variance (CMV), which may influence the modeled relationships, using Harman's one-factor test (Podsakoff and Organ, 1986). Specifically, we entered all the items together into a factor analysis (principal components analysis [PCA] with an unrotated solution). In case that a single factor solution emerged or one general factor accounted for most of the variance, CMV would pose a threat (Podsakoff and Organ, 1986). In our study, we included 43 items, and the PCA analysis produced a nine-factor solution. The first factor explained 40.46% of the variance. The unrotated solution did not reveal one general factor. Therefore, CMV is not a concern.

Table 4.1 Intercorrelations of the Latent Variables [a]

Construct	M	SD	1	2	4	5	6	7
1. Close Social Relationship	4.74	1.06	***0.73***					
2. Communication Quality	5.45	1.12	0.47	***0.95***				
4. EIP	4.88	1.38	0.36	0.49	***0.82***			
5. Information sharing	4.65	1.32	0.44	0.75	0.58	***0.89***		
6. Participation	4.39	1.44	0.46	0.66	0.47	0.78	***0.86***	
7. Satisfaction with Feedback	5.04	1.36	0.43	0.77	0.46	0.76	0.71	***0.93***

a Square root of AVE on the diagonal

4.4.3 Hypotheses Testing

In line with our expectations, our empirical results support all of our 7 hypotheses (Table 4.2).

To assess the fit of our data to the model in SmartPLS, we used the R^2 values of the endogenous constructs (Tenenhaus et al., 2005). According to Cohen (1988), values of R^2 of .02, .13, and .26 indicate small, medium and large effect sizes, respectively, of the treatment independent of sample sizes.

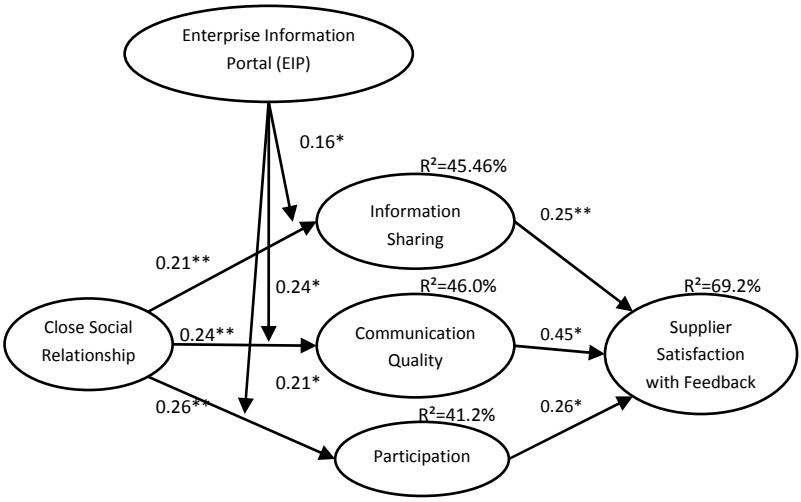
Table 4.2 Hypotheses Testing

Hypotheses	Path Coefficient	T-Value	Result
Close social relationship -> information sharing (H1)	0.21	3.65**	Supported
Close social relationship -> communication quality (H2)	0.24	3.90**	Supported
Close social relationship -> participation (H3)	0.26	3.79**	Supported
Information sharing -> satisfaction with feedback (H4)	0.25	3.65**	Supported
Communication quality -> satisfaction with feedback (H5)	0.45	5.81**	Supported
Participation -> satisfaction with feedback (H6)	0.26	3.60**	Supported
EIP -> close social relationship -information sharing (H7a)	0.16	2.31*	Supported
EIP -> close social relationship-communication quality (H7b)	0.24	2.99**	Supported
EIP -> close social relationship-participation (H7c)	0.21	3.32**	Supported

*p < .05, **p < .01, one-tailed tests. n.s. = not significant.

The individual values for R^2 indicated that the model explained 45.46% of the variance in information sharing, 46.0% of communication quality, 41.17% of participation, and 69.24% of satisfaction with feedback (see Figure 4.2). As a global fit measure, we used a formula developed by Tenenhaus et al. (2005). Relative to the medium-sized effects in our model, the evaluated fit of .55 indicated a good fit of the data to the model (Wetzels et al., 2009).

Figure 4.2 Empirical Findings



*p < .05, **p < .01, one-tailed tests

4.5 Discussion

This study has several significant findings. So far, most of extant literature studying close social relationships associated them with rich and detailed information (Kraatz, 1998; McEvily and Marcus, 2005; Uzzi, 1999). In line with our suggestions (H1, H2 & H3) and earlier studies (e.g., Friedkin, 1982) close social relationships have positive impact on cross-functional information sharing behavior in a buyer-supplier relationship. We also stated that an EIP enhances the linkage between relationship closeness and information sharing behavior (H7a, H7b & H7c). Our empirical results fully support this. Further, the study also found that consistent with our arguments, cross-functional information sharing behavior has a positive impact on supplier satisfaction with feedback from a buyer on supplier performance (H4, H5 & H6). This result extends previous findings that information sharing increases performance (Joshi, 2009; Krause et al., 2000; Shin, 2006).

4.6 Managerial Implications

Even though communication technology has become very popular in buyer-supplier relationships it does not replace close social relationships between employees of a buyer and a supplier. Our empirical results provide evidence on the intensifying effects of the EIP on the linkage between close social relationships and cross-functional information sharing behavior. Therefore, this research offers several suggestions to managers about how information should be shared with suppliers to prevent from problems to occur in cross-functional information sharing process. We propose some measures that managers may apply in case that close social relationships exist between buyer' and supplier' employees so that these close social relationships do not disturb the information sharing process via an EIP. We suggest that managers could take several actions to prepare buyer and supplier employees to the usage of an EIP to fully enjoy the benefits that it may bring to cross-functional information sharing behavior. For example, one of the actions could be enhancing the use of the portal by the employees of the buying company before they share any opinions with the employees of the supplying company. Further, managers could incorporate special procedures of sharing information related to information available on the portal, so that employees who are not contributing to the information input on the portal are not interfering with it. The exploratory stage of our data collection, the semi-structured interviews indicated that the users of the portal received limited training and were left alone for learning the new functions in case of updates. This could imply some negative effects of the use of EIP on how cross-functional information sharing behavior is evaluated by suppliers. Management may attempt to fix this situation by encouraging portal users' (supplier' and buyer' employees) self-efficacy (skills and confidence) for change and favorable opinions toward the new way of sharing information (Kim and Kankanhalli, 2009). Management would have to establish a campaign stressing the benefits of the use of the portal. To develop positive attitudes among portal users managers would need to strive for persuading opinion leaders within buyer and supplier companies to not only accept the change but also its necessity (Massey, Montoya-Weiss and Brown, 2001). The persuaded leaders can then become promotors of the online portal (Kim and Kankanhalli, 2009) and the information available through it. Therefore, managers need to

increase the perceived value of the portal and the subsequent change in the information sharing process in a buyer-supplier relationship. To achieve that they need to decrease users' resistance to information on the portal by increasing organizational support for change, this would encourage the creation of trust in information on that portal. Organizational support for change would need to take the form of training of the portal users and additional resources to which users could apply for guidance (Kim and Kankanhalli, 2009). Only in that way could users attach more value to the information available via the portal. This would also prevent from any possible negative effects of automated information sharing on the linkage between close social relationships and cross-functional information sharing behavior.

Another implication from our study concerns the influence of cross-functional information sharing behavior on supplier satisfaction with feedback from a buyer on supplier performance. For suppliers it is very important to receive feedback on their performance. However, suppliers need to accept this feedback, because without acceptance they will not change. Satisfaction with feedback represents a measure of supplier acceptance of performance measurements. Therefore, managers could use cross-functional information sharing as a significant factor in making suppliers accept their performance evaluations.

4.7 Limitations and Future Research

Our results should be interpreted with the acknowledgement of its limitations. First, the data was collected from suppliers of a single buying company with a specific online portal. Therefore, it is difficult to generalize from this single case. Other studies could replicate this study across other online B2B portals and industries. Further research might also consider from diverse perspectives why suppliers look for direct contact and how such behavior influences the performance outcomes (e.g., Dyer, 1996) provided the use of information portals. For example, our study does not provide any insights into the role of managers or providers of information as an input to the portals in the information sharing process. Future research could examine the influence of portals and the roles of direct contact in information sharing and close collaboration once an implementation of the portal has ended and all its functionality has been in usage for collaboration in a buyer-supplier relationship. Our exploratory part of

data collection reveals that suppliers do not trust the information on the portal and therefore engage in direct contact with employees to confirm information, which might have negative effects on close collaboration and information sharing. We enhance researchers to test this postulation. Furthermore, future research could examine the influence of different information referents as opinion makers on the performance of information portals in a buyer-supplier relationship. Other studies could refer to the extent of the use of a portal for sharing information at different levels with suppliers from various categories from Kraljic matrix (Kraljic, 1983). It could be that various supplier categories require different information sharing policy via an online portal. This could mean less attention from a buyer to a routine supplier's training on the portal usage than to a strategic supplier. Implications of such policies on performance of a buyer-supplier relationship remain unknown. Furthermore, it could also be interesting to measure the content and frequency of interaction in direct contact with employees to confirm information on a portal, which might prove valuable for investigations of information sharing in close collaboration. Supply chain management research on information sharing could extend our study by taking into account the coping model of user adaptation (Beaudry and Pinsonneault, 2005). In the coping model users assess the threats and opportunities of an online portal and choose a strategy to adapt to it. Because, obtaining information about the same is costly and redundant (Hansen, 1999), user adaptation strategies could have tremendous effects on performance in a buyer-supplier relationship. While this study focuses only on the different influences of an information portal on close relationships and information sharing, future studies might find it interesting to examine how portal users evaluate information on the portal and what effects it has on their information-search actions.

Finally, testing the causality of the relationships in our model was not possible because we used cross-sectional data; which creates opportunities for conducting experimental studies and the collection and analysis of longitudinal data. Furthermore, case studies as well could be used to provide richer data and in dyadic research settings (Lawson et al., 2008), not only cross-sectional, but also longitudinal.

4.8 Appendix 4

MEASUREMENTS INSTRUMENTS CHAPTER 4

Psychometric Properties for Null Model for First-Order Constructs

Construct	Item	Loading (α)	*CR*	*AVE*
Supplier close social relationship (Rindfleisch and Moorman, 2001)			*0.77*	*0.53*
	Our employees share close social relations with the employees from Buyer X.	0.742		
	We feel indebted to Buyer X for what they have done for us.	0.706		
	We expect that we will be working with Buyer X far into the future.	0.730		
Buyer information sharing (Mohr and Spekman, 1994)				
	departments included: engineering, production, quality, purchasing and accounting			
Information sharing			*0.95*	*0.79*
	The following Buyer X departments inform us in advance about their changing needs.	0.900		
	The following Buyer X departments are providing us with all the information we need to serve them best.	0.914		
	Buyer X keeps us informed about events that may affect our company.	0.888		
	Buyer X keeps us informed about changes that may affect our company.	0.917		
	The information provided by the different Buyer X departments is reliable.	0.832		
Communication quality			*0.98*	*0.90*
	The communication of the following Buyer X departments with our company is on time.	0.932		
	The communication of the following Buyer X departments with our company is accurate.	0.961		
	The communication of the following Buyer X departments with our company is complete.	0.964		
	The communication of the following Buyer X departments with our company is satisfactory.	0.946		
	The communication of the following Buyer X departments with our company is reliable.	0.946		
Participation			*0.95*	*0.75*
	The following Buyer X departments ask us for our advice.	0.897		

Construct	Item	Loading (α)	*CR*	*AVE*
	The following Buyer X departments ask us to participate in goal setting.	0.899		
	The following Buyer X departments ask us to participate in planning activities.	0.867		
	The following Buyer X departments encourage us to come with suggestions for improvements.	0.904		
	The following Buyer X departments ask us to participate in forecasting activities.	0.777		
	The following Buyer X departments are collaborative.	0.831		
Enterprise Information Portal (EIP; exploratory phase of the study)			*0.95*	*0.67*
	All forecasts that can be found on EIP are clear.	0.770		
	All forecasts that can be found on EIP are reliable.	0.675		
	All specifications that can be found on EIP are clear.	0.874		
	All specifications that can be found on EIP are reliable	0.859		
	All drawings that can be found on EIP are clear.	0.821		
	All drawings that can be found on EIP are reliable.	0.835		
	All pricelists that can be found on EIP are clear.	0.811		
	All pricelists that can be found on EIP are reliable.	0.840		
	All quality rejection data that can be found on EIP are clear.	0.848		
	All quality rejection data that can be found on EIP are reliable.	0.827		
Supplier satisfaction with feedback (exploratory phase of the study)			*0.97*	*0.86*
	We are satisfied with the feedback we receive from the following Buyer X departments about our quality performance.	0.921		
	We are satisfied with the feedback we receive from the following Buyer X departments about our delivery performance.	0.907		
	We are satisfied with the feedback we receive from the following Buyer X departments about our product development performance.	0.940		
	We are satisfied with the feedback we receive from the following Buyer X departments about our process development performance.	0.956		
	We are satisfied with the feedback we receive from the following Buyer X departments about our total cost reduction performance.	0.908		

Notes: α = coefficient alpha, CR = composite reliability, AVE = average variance extracted

CHAPTER 5

CONCLUSIONS

5.1 Introduction

The aim of this dissertation is to explore the impact of one of the human factors, namely close social relationships between employees of a buyer' and a supplier' company, on resource exchanges (i.e., preferential benefits, customization, information) in a buyer-supplier relationship. We emphasize the importance of close social relationships and ascertain several benefits they may bring both to buyers and suppliers. This chapter presents a brief summary of the empirical findings of the three studies carried out in our research followed by the implications section. The dissertation concludes by providing directions for future research.

5.2 Synopsis

Today, many supply markets have evolved into seller's markets in which buyers have to compete with each other to attract the resources (i.e., preferential benefits, customization, and information) from suppliers that are needed to create value in a buyer-supplier relationship. This dissertation investigates how close social relationships help both buying and supplying companies increase the benefits they get from exchanging resources in a buyer-supplier relationship. In particular, we focus on three main concerns of buying companies.

First, we demonstrate that, from a supplier's point of view, buyer investments in supplier development indeed do not assure buyers of direct access to preferential resources (preferential benefits) from suppliers. However, buyer investments in supplier development increase supplier's trust and commitment to a buyer (relational capital) as well as a supplier's participation in creating a joint future with the buyer (cognitive capital). The close social relationship plays a mediating role between relational and cognitive capitals and preferential resources from suppliers. Additionally, suppliers also increase their outcomes when granting preferential resources to a buyer. More specifically, they increase their sales and economic performance in a relationship with a buyer.

Second, we find that, from a dyadic perspective, a close social relationship plays a different role for buyers than for suppliers when it comes to buyer and supplier customization. For buyers close social relationships have a direct and

positive effect on buyer customization, but for suppliers not. Suppliers require specific cross-functional information about buyer operations from a buyer before they start to customize to the buyer. Referring to customization, buyer customization proves not to be relevant for either supplier satisfaction with buyer feedback on supplier performance or buyer satisfaction with supplier ability to meet buyer requirements. In contrast, supplier customization is important for a buying company as it provides information on whether the supplier is willing and able to meet the growing buyer requirements. This supplier ability to meet buyer requirements as well as supplier satisfaction with buyer feedback on supplier performance both contribute to the supplier's affective commitment to the relationship with the buyer. Additionally, if the buyer is satisfied with the supplier's ability to meet buyer' requirements then the buyer as well develops affective commitment to the relationship with the performing supplier. Satisfaction with feedback, thus, seems to be an important antecedent for gluing the relationship between a buyer and a supplier. In conclusion, differentiating between two sides of a buyer-supplier relationship, our dyadic data analysis reveals that buyers and suppliers behave differently.

Third, we show that from a supplier's perspective a close social relationship between employees of a buyer and a supplier increases cross-functional information sharing behavior of a buyer. When a buyer uses an enterprise information portal to share specific operational information with its suppliers (e.g., forecasts, specifications, drawings, pricelists, quality rejection data), it amplifies the effect of a close social relationship on a buyer's cross-functional information sharing behavior as viewed by suppliers. Results also indicate that a positive attitude towards information sharing leads to an increase in the supplier's satisfaction with feedback from a buyer on supplier performance.

In summary, the three studies show how a close social relationship contributes in the exchange of resources in a buyer supplier relationship in terms of access to preferential benefits (chapter 2), customization (chapter 3) and information (chapter 4).

5.3 Implications

The empirical results of our three studies in this research demonstrate the importance of close social relationships. We do not consider close relationships in terms of partnerships, but as a cross-functional social relationship between employees from different departments (e.g. purchasing, production, quality, engineering, accounting, sales) of a buyer and a supplier. The main problem statement posed in the first chapter of this introduction is as follows:

What is the impact of close social relationships on the exchange of resources in a buyer-supplier relationship?

To answer the main problem statement and present several theoretical and managerial implications we draw on a large body of research on buyer-supplier relationships. Using a theoretical logic developed based on insights from social capital, network and information systems research in the area of purchasing and supply chain management each study results in a number of theoretical and managerial implications.

Many studies investigate a buyer-supplier relationship at a firm-level (e.g., Wagner, 2006b). Purchasing officers act as boundary spanners between a buyer's and a supplier's company (Perrone et al., 2003). A purchasing officer is responsible for building a strong relationship with a supplier's key account manager (KAM; Wu et al., 2010) as well as a supplier's KAM is in charge of developing a strong relationship with a purchasing officer. However, the close interpersonal social relationships between the two have so far attracted very little academic attention (Wu et al., 2010). Additionally, to our knowledge there is no study that would focus on cross-functional social relationships between employees of a buyer and a supplier. Nowadays, as our exploratory interviews indicate, KAMs and purchasing officers are the most knowledgeable relationship representatives, however, the employees of a buyer and a supplier have also direct contact and thus, build close social relationships with engineering, production, quality, accounting and purchasing. Because not only the maintenance and support of a buyer-supplier relationship depends heavily on individuals (Tanner Jr., 1999) but also the exclusive exchange of resources, as our

studies indicate, an employee-to-employee close social relationship should become of more interest to academia and practitioners.

As shown in chapter 2, close social relationships, if cultivated with trust, commitment and joint efforts to build a shared future, will attract supplier' preferential resources to a buyer. But in order to win the trust and commitment of suppliers as well as their will to participate in creating a shared future with the buyer, the buyer has to commit its resources to not only evaluate the supplier's performance against pre-defined targets but most of all to directly help the supplier to develop their capabilities at operational and strategic levels (i.e. supplier development). Similarly, chapter 3 shows that close social relationships between buyers and suppliers make the buyer allocate preferential treatment and adaptation to a supplier company.

Second, companies need to consider the impact of close social relationships on the information sharing behaviors of their partner companies. As shown in chapter 3, both buyers and suppliers have different needs with regard to receiving information from their partner companies. When suppliers consider allocating preferential resources exclusively to a specific buyers they require extended and reliable information from that buyer. However, our case shows that sometimes buyers are not so collaborative and reluctant to share this kind of information with their suppliers. In our view, buyers need to learn to understand the reasons why suppliers have this information need and start to adapt to that, otherwise they will not achieve to get preferential resources from their suppliers. Also, network theory suggests that developing close social relationships can help buyers to learn how to respond more adaptively to their partner companies (Kraatz, 1998). Moreover, chapter 4 shows how important close social relationships are for suppliers in not only receiving information from a buyer company, but also for improving the quality of the different aspects of information sharing behavior, i.e. extent of information shared, assessment of the information and joint efforts to adjust the information (Mohr and Spekman, 1994). If employees of a supplier develop close social relationships with employees of a buyer, this helps the supplier company to access updated information that may affect the operations of the supplier (e.g. planning and/or forecasting quality). Additionally, through close social relationships a supplier can get access to information from a buyer in a timely manner, allowing for more accurate, complete, satisfactory and reliable information. Fur-

thermore, a close social relationship opens the opportunity for the supplier to engage in a co-creation of planning, goals setting as well as joining efforts in improvement (Simsek et al., 2003). These effects of close social relationships are even further amplified by the use of an enterprise information web-based portal. Therefore, a tool like an enterprise information portal should be carefully designed and incorporated in a buyer-supplier relationship in order to optimize the impacts that it may bring to both parties.

Third, chapter 3 and chapter 4 show that cross-functional information sharing enhances the performance of both parties in a buyer-supplier relationship (Mabert and Venkataramanan, 1998). However, for this to happen, buyers need to consider monitoring not the supplier performance metrics itself but rather the satisfaction of the supplier with the performance feedback as provided by the buyer. Because satisfaction with feedback entails not only the acceptance of the utilized performance metrics ratings but also the feedback itself (Jawahar, 2006). Therefore, we support earlier studies in their statement that satisfaction with feedback is a more significant indicator of supplier reactions to evaluation feedback from a buyer (e.g., Giles and Mossholder, 1990) than its usefulness or precision (Keeping and Levy, 2000). Our empirical findings of chapter 3 and chapter 4 sustain our statement on the role of cross-functional information sharing behavior on the acceptance of performance metrics and requirements as well as the feedback itself. This indicates that companies should consider the role of satisfaction with feedback in their buyer-supplier relationships. There is a need to not only give feedback to supplier companies about their performance but also to be interested in whether they *accept* that feedback. On the other side, suppliers should provide honest and clear feedback to the buyers about their ability to meet the performance requirements as set by the buying company. Also here, there is a need to not only give the feedback to the buyer, but also check to what extent they accept this feedback. From that both companies could not only develop actions to improve day-to-day collaboration but also increases the closeness of the buyer-supplier relationship. Because, as chapter 3 shows, satisfaction with feedback contributes directly to affective commitment of buyer and supplier companies.

This dissertation attempts to contribute to the knowledge of the role of close social relationships in exclusive resource exchanges between buyers and

suppliers, another step in the sea of needs for deepening our understanding of the investments and returns in buyer-supplier relationships.

5.4 Directions for Future Research

Each empirical study (see chapters 2, 3 and 4) includes specific recommendations for future research. However, we would like to point out several general suggestions for future research on buyer-supplier collaboration.

Throughout this dissertation, we have elaborated on the benefits of close social relationships in resource exchange between buyers and suppliers. Yet, close social relationships have also some dark sides (Anderson and Jap, 2005), similarly to close collaboration (Olsen and Ellram, 1997), which implies they might have a dual function in resource exchange in a buyer-supplier relationship. It has yet not been explored what is the impact of the dark side of close social relationships on relational and organizational outcomes. Therefore, future research should advance our knowledge and understanding of these negative effects of close social relationships by investigating whether there are any antecedents, i.e., relationship-related circumstances that enhance the emergence of any of these dark side effects.

Close social relationships prove to have a highly positive impact on gaining preferential benefits, customization and on enhancing information sharing behavior in a buyer-supplier relationship. However, the influence of a close social relationship between a buyer and a supplier on relational benefits might be diminished by the quality (or the lack of it) of specific social relationships between some individual employees. For example, the employee's social relationship with a manager or a relationship strategy of a company could play a role. Researchers therefore should investigate the effects of close social relationships as boundary spanners inside and outside of an organization. Such investigations would provide insights into yet unexplored mechanisms of resource allocation in buyer-supplier relationships.

Information sharing behavior consists of three components, its extent, evaluation of the extent and joint efforts to adjust it (Mohr and Spekman, 1994). Yet, business environments evolved in their use of modern communication technologies. Therefore, research should also examine relational outcomes

of collaboration enhanced with different forms of information and communication technology (e.g. web portals, social media, etc.) compared to interpersonal information sharing. This would provide companies with insights on benefits of alternative or complementary information sources as used in buyer-supplier relationships.

Finally, in two of our three studies we investigate the effects of information sharing on satisfaction with feedback as an indication of the acceptance of performance evaluation. Even though feedback is indicated as one of the important facets of supplier satisfaction (Maunu, 2003) and as an important component of performance because it implies a reaction to appraisal feedback (Giles and Mossholder, 1990), satisfaction with feedback seems unexplored in purchasing and supply chain literature. A number of questions arise to the role of feedback in a buyer-supplier relationship. What, for example, are the effects of feedback on a company ongoing relationship policy? What impact does feedback have on buyer-supplier collaboration and its outcomes? What is the role of feedback in enhancing and damaging relationship quality (trust, commitment, satisfaction)? Are interpersonal relationships useful in managing feedback and its outcomes?

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CURRICULUM VITAE

Agnieszka Blonska was born on the 8th of March 1980 in Poznan, Poland. She attended XXI High School in Poznan and graduated in 1999. In September 1999 she started studying Management and Marketing at Faculty of Computing Science and Management at Poznan University of Technology in Poland. After specializing in Interpersonal Communication Engineering, she received her Master of Science Engineer degree in 2004. During her last year of studies she was a Socrates-Erasmus exchange student at Tampere University of Technology in Finland. After graduation she joined a software implementing company as a sales coordinator and a key account manager until September 2006. In September 2006 she started studying Master of Philosophy in Business Research at Maastricht University, The Netherlands. After specializing in Organization and Strategy, she received her diploma in January 2008. During her last months as a master student she worked as a salesperson for Eastern European market at ACI Adam, Maastricht, The Netherlands. In September 2007 she joined the Department of Marketing and Supply Chain Management at Maastricht University to carry out a 3-year PhD study. She has presented her work at several international conferences. Currently she works at the Department of Operational Methods for Production & Logistics (OMPL) at University of Twente in Enschede, The Netherlands. Her research interests lie in the area of buyer-supplier collaboration.

Errata behorende bij het proefschrift

To Buy or Not To Buy: Empirical Studies on Buyer-Supplier Collaboration

van Agnieszka Blonska

1. On page 12, the second paragraph starts with a reference to Table 1.2 and it should be a reference to Table 1.1.
2. On page 27, in Figure 2.1 in H11+ the concept Supplier Economic Benefits should be Supplier Economic Performance.
3. On page 33, in H11, below the first paragraph, which reads:
   H11: Preferential buyer benefits relate positively to supplier economic benefits.

   Should be:
   H11: Preferential buyer benefits relate positively to supplier economic performance.
4. On page 36, in Table 2.1, point 2. Supplier Economic Benefits should be 2. Supplier Economic Performance.
5. On page 36, in the paragraph on the test for mediation effect, in line 6, a reference to Table 2.1 should be a reference to Table 2.2.
6. On page 39, in Figure 2.2 the concept Supplier Economic Benefits should be Supplier Economic Performance.
7. On page 67, in section 3.5.3 in the first paragraph in lines 9-11 with regards to (H4d) which reads:
   Supplier customization, on the other hand has no effect on a supplier's satisfaction with feedback from a buyer on supplier performance (H4d).

   Should be:
   Supplier customization, on the other hand has a negative effect on a supplier's satisfaction with feedback from a buyer on supplier performance (H4d).
8. On page 71, in the second paragraph in paragraph lines 11-16 with regards to (H4d) which reads:
   …and no effect on the supplier's satisfaction with performance feedback from a buyer (H4d). This implies that the buyer feels more satisfied with the supplier's feedback about its ability to meet buyer requirements when the supplier has customized to the buyer. Yet, supplier customization has no effect on supplier satisfaction with performance feedback coming from the buyer.

   Should be:
   …and a negative effect on the supplier's satisfaction with performance feedback from a buyer (H4d). This implies that the buyer feels more satisfied with the supplier's feedback about its ability to meet buyer requirements when the supplier has customized to the buyer. Yet, supplier customization has a negative effect on supplier satisfaction with performance feedback coming from the buyer.
9. On page 72, in the first paragraph in paragraph lines 6-8 which reads:
   Lack of supplier satisfaction with feedback may also be an indication that a supplier had to reallocate resources from other relationships with other buyers to customize to the exclusive buyer *(Anderson et al., 1994).*

   Should be:
   Declining supplier satisfaction with feedback may also be an indication that a supplier had to reallocate resources from other relationships with other buyers to customize to the exclusive buyer *(Anderson et al., 1994).*