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David Beirau

Which Customers Pay?

Predicting Value Pre and Post Sales

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Which Customers Pay?

Predicting Value Pre and Post Sales

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Foreword

Customer Relationship Management is based on the key assumption that proposing and creating value to customers pays for the supplier. Delivering high quality in the attraction of new customers and the retention of existing customers is interpreted as an investment that will lead to an appropriate return. Communicating value to new leads should increase the sales effectiveness in customer acquisition and creating value in existing relationships is expected to help in the retention of profitable customers. Yet, the assumption that value proposition and value creation always lead to a proportionate reward for the supplier is to be questioned. Many activities to attract new customers fail and well-served customers do not necessarily "give back" by financial returns or loyalty. Consequently, supplier firms need to allocate their limited resources for building up and maintaining relationships with those customers that promise providing high value to them.

In his research, David Beirau examines conditions that determine to what extent investments into customer relationships lead to financial and non-monetary returns for the supplier. The work consists of two empirical studies in business-to-business markets.

In a first study, David Beirau focuses on the attraction of new customers. He uses a comprehensive CRM dataset to investigate the success of activities in lead generation. The findings show that the probability of closing a first deal with a new customer depends on the first person in the prospective customer organization that is contacted by the suppliers' salesforce. The analysis also reveals that the impact of the first contact person on the chance to win a new contract is moderated by the size of the customer firm.

The second study addresses the field of maintenance of customer relationships and reveals under which customers tend to pay back value that the suppliers create for them (e.g., high product and service quality) by financial returns (e.g., higher sales volume, loyalty) and other types of value (e.g., positive word-of-mouth, source of

market information, acting as innovation partner). This study is based on an original, international and comprehensive dataset involving a dyadic survey of both suppliers and customer firms. David Beirau finds that the relationship between the value that suppliers create for their customers and the value they receive in return from their customers is surprisingly weak. How strongly value breeds value appears to depend on characteristics of the customers organizations: Customers with a high reciprocity norm and a lack of alternative suppliers have the highest inclination to reciprocate value.

Both studies make very relevant contributions to marketing and sales research. David Beirau pushes the field by highlighting theoretically well-grounded factors determining the likelihood that suppliers will be rewarded for investments into customer relationships. Consequently, the results can be used by B2B suppliers to increase the effectiveness of their CRM activities. It is therefore to be hoped that this work will be broadly recognized in research and practice.

Prof. Dr. Christian Lüthje

Preface

Meine Doktorarbeit war wie eine lange Reise. Daher möchte ich meine Danksagung mit folgendem Zitat des Freiherrn von Knigge beginnen: „Zum Reisen gehört Geduld, Mut, guter Humor, Vergessenheit aller häuslichen Sorgen, und dass man sich durch widrige Zufälle, Schwierigkeiten, böses Wetter, schlechte Kost und dergleichen nicht niederschlagen lässt."

Ich bin froh, dass ich alle Herausforderungen dieser Reise annehmen konnte und mein Ziel erreicht habe. Auf meiner Reise hatte ich zum Glück besonders hilfsbereite Wegbegleiter, auf die ich mich verlassen konnte.

Zuerst möchte ich Herrn Prof. Dr. Lüthje für seine intensive Betreuung danken. Ich konnte immer kurzfristige Gesprächstermine bei ihm bekommen, zu denen er sich stets ausreichend Zeit einplante und mir somit die Möglichkeit gab mit ihm meine anstehenden Themen ausführlich zu behandeln. Sein umfangreiches Feedback zu meinen schriftlichen Ausarbeitungen haben mir sehr geholfen, die Qualität meiner wissenschaftlichen Arbeit weiter zu verbessern.

Weiterhin danke ich Herrn Prof. Dr. Ringle, meinem Zweitprüfer, für seine stets zielgerichtete Hilfe. Insbesondere bei methodischen Problemen konnte ich auf seine konkreten Lösungsansätze zählen.

Außerdem geht mein Dank an Herrn Prof. Dr. Meyer, der freundlicherweise den Vorsitz meines Prüfungsverfahrens übernommen hat.

Mein herzlichster Dank für das Gelingen der Reise gilt vor allem meiner Familie. Sie hat mich in dieser anstrengenden Zeit wunderbar begleitet und einen besonderen Einsatz für mich gezeigt. Ohne sie wäre diese Reise wohl nicht möglich und so erfolgreich gewesen.

Dank meiner Freunde und Kollegen gab es in dieser Zeit sehr viele besonders freudige Momente. Auch diese besonderen Menschen haben mir immer wieder neue Kraft für meine weiteren Etappen gegeben.

Besonders hervorheben möchte ich, dass mir Manuel Riesenbeck und Kai Mertens über die ganze Zeit eine geistreiche und emotionale Stütze waren.
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David Beirau

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List of Abbreviations

CLV	Customer lifetime value
CRM	Customer relationship management
CS	Customer company size
FCI	First contact interest
FCT	First contact type
H	Hypothesis
PPV	Potential project volume
PRD	Personal relationship duration
RA	Replaceability
RD	Relationship duration
RF	Reason for failure
RN	Reciprocity norm
SE	Sales effectiveness
V2C	Value to the customer
V2S	Value to the supplier

1. Introduction

1.1. Research Scope

Over the past decades, more and more organizations have refrained from product-centric marketing and have moved toward a customer-oriented management of relationships (Reinartz et al. 2004). Taking a broad and strategic perspective, customer relationship management (CRM) can be interpreted as a general approach reflecting a customer-oriented business culture, which tries to win and keep customers by proposing and creating high value (Buttle 2004; Payne and Frow 2005; Payne et al. 2017). However, the scope of CRM is greater than simply acting customer-orientated since it combines the analysis of value to the customer and value to the supplier (Boulding et al. 2005). A high value to the supplier should be the outcome of effective CRM strategies for gaining and developing relational exchanges (Grönroos 1997; Morgan and Hunt 1994; Payne and Frow 2005) and thus, value prediction plays a significant role in both customer acquisition and customer maintenance.

CRM aims to increase the effectiveness and efficiency of customer relationship efforts (Raman et al. 2006). CRM has already been crucially relevant in helping firms to maintain more profitable links to customers (Thomas and Sullivan 2005; Reinartz et al. 2004); however, creating an understanding of how to efficiently gain and identify profitable customer-supplier relationships is still a significant issue in industrial markets.

For customer acquisition, suppliers need to communicate and demonstrate value. For both new and established companies, acquiring new customers is highly relevant for the launch of innovations (new business model, product or service), for entering in new markets (new geographic or customer segment), and for gaining market share (improving competitive advantage) (Ang and Buttle 2006). When customers cannot be retained, new customers also have to be acquired or customers have to be won back (Thomas et al. 2004; Kumar et al. 2015; Pick et al. 2016). Customer acquisition is often a costly process because of relatively high marketing and sales costs (Bolton and Tarasi 2007). Therefore, predicting and improving the sales effectiveness of customer

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acquisition by utilizing early indicators of future sales is highly relevant for an efficient allocation of limited resources.

When predicting sales effectiveness in B2B markets, it is essential to be aware that multiple individuals are involved in the buying process of customer companies. Suppliers should allocate their resources target-oriented only for approaching contact persons of the prospective customers with the highest probability of sales success. There are some explorative studies which investigate the relative influence of members in the buying process (e.g., Lilien and Wong 1984, Bellizzi 1979, Jackson Jr et al. 1984), but the insights gained about members in the buying process have neither been based on hypotheses, nor applied to sales success research in the customer acquisition process.

Besides customer acquisition, investing in existing relationships with non-profitable customers can also be costly, especially when opportunity costs are taken into account since their efforts could have been invested in profitable customers. Even when there are no customers which could be declared as “non-profitable”, companies can be even more profitable, if they identify and prioritize the most valuable customers that show the highest value potential (Malthouse and Blattberg 2005). Studies give an indication for customer profitability heterogeneity (Niraj et al. 2001; Rust et al. 2004; Verhoef 2003). Treating customers as assets and identifying and maintaining relationships with the most profitable relationships are key components of relationship management (Buttle 2004; Lewis 2005). Organizations should adapt their value offering and communication strategies accordingly and regard relationships as investment decisions (Reinartz et al. 2004; Stahl et al. 2003).

Suppliers ought to wisely allocate their limited resources only for attracting new customers with high potential and invest in building strong relationships with valuable customers (Palmatier 2008). Successful CRM begins with acquisition of valuable customers (Cao and Gruca 2005). When existing customers are not profitable, they must be substituted by new profitable customers. Thus, besides acquisition and maintenance of customers, CRM also includes, when necessary, the termination of unprofitable customers (Grönroos 1997; Reinartz et al. 2004). However, ending relationships with customers is rarely required. Other severe means can be taken, e.g.,

prices could be raised to drive customers to pay more or lower service quality could be offered to provide lower costs (Bolton and Tarasi 2007).

Companies need criteria to predict future value potential of customers for prioritizing and customizing CRM offers to customers who are willing to pay for provided value (Lewis 2005; Cao and Gruca 2005). Here it is important to note that payment of customers must be measured more holistically than just by financial performance since customers additionally provide value through providing technological know-how, giving information about competitors, initiating contacts to prospective customers, etc. (Walter et al. 2001).

Many suppliers have no appropriate criteria to identify valuable customers and, consequentially, try to propose and create value to any prospective and current customer indiscriminately (Bolton and Tarasi 2007). A theoretical foundation is needed for understanding when and how value to the customer impacts customer behaviors to create value to the supplier.

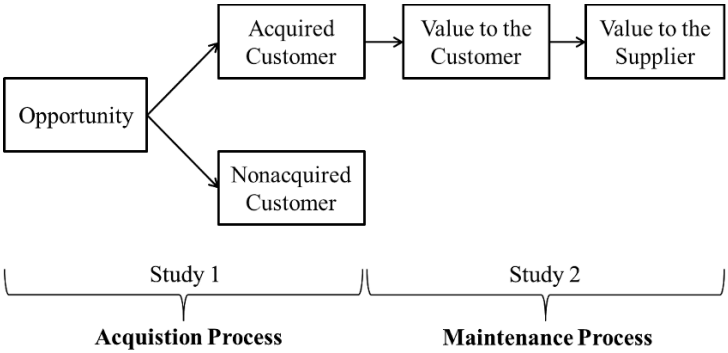
1.2. Research Goal

The overall goal of this thesis is to explain which customers create value for suppliers. In the center of analysis are customer characteristics that can be used to identify and target customer contact persons and companies who show higher potential to create future value and therefore, should be acquired and maintained.

The overall research goal is divided into two levels of objectives which will be analyzed in two studies. Both studies investigate factors which moderate the connection between supplier behavior and sales performance.

Figure 1 illustrates the overall sales process, which is separated into two processes: acquisition of new customers (study 1) and maintenance of existing customers (study 2). After winning new high potential customers, suppliers develop and intensify customer relationships by creating higher value to the customer and finally increasing value to the supplier (Becker et al. 2009).

Figure 1: Linking customer acquisition and maintenance



Source: Adapted from Reinartz et al. (2005, p. 64).

Beginning with the customer acquisition process, the first objective (study 1) is to identify the "most suitable" customer contact person to whom value should be proposed in order to receive value. Value will be received by acquiring new customers who pay for value offerings. For initiating new orders, the supplier has to understand customer firms' purchasing behavior (Johnson and Sohi 2001). Study 1 addresses the first objective by using role theory for categorizing different customer contact types who are involved in the purchasing process (buying center). According to contingency theory, customer's buying behavior depends on situational factors that impact purchasing decisions (Johnson and Sohi 2001). The study explains why the "most suitable" customer contact person differs relative to the size of the customer company. It analyses the influence (power and involvement) of the different buying center roles on the purchasing decision depending on customer company size. Identifying the most influential contact provides a better understanding of customer buying behavior and about who should be primarily approached when contacting a prospective customer for making a sale. The study aims at predicting the chance to win a new contract (sales effectiveness) by approaching a contact person of a prospective customer company (opportunity).

Regarding the customer maintenance process, the second objective (study 2) is to identify the "most suitable" customer company to which value should be created in

order to receive value. To achieve this objective, a better understanding is needed about when and how value to the customer leads to value to the supplier. Conventional theories like transaction-cost, social exchange and power-dependence theory assume that the customers' motivation to create value to the supplier depends on the calculated future value potential of a supplier; whereas, other theoretical perspectives assume a norm-based (reciprocity-, equity-, relational-norm) judgment of the value received in the past which lead to rewarding behavior of the customer. Both calculative future-oriented and normative past-oriented motivations of customers give a pluralistic explanation of how value to the customer impacts customer behavior to create value to the supplier. The study aims at predicting if value creation to a customer is worth its efforts. The emphasis lies on maintaining valuable customers and thus seeks to support decisions about relationship expansion or disinvestment for increasing sales efficiency.

In detail, all buying decisions are made by an individual or a group of people and therefore, decision making depends on a combination of individual and organizational objectives (Webster Jr and Wind 1972). Thus, before concentrating on the more abstract organizational level in the second study, it is beneficial to investigate in the first study how targeting individuals or groups on an interpersonal level impacts CRM effectiveness. Using an aggregated lens on customer relationships, the second study analyzes both customer and supplier perspectives on an inter-organizational level and correlates the relationship value to the customer with the relationship value to the supplier.

In conclusion, for explaining sales success, mechanisms that lead to value to the supplier in purchasing processes as well as in customer-supplier interactions have to be analyzed. A theoretical base must be developed, and hypotheses have to be built and empirically supported in order to facilitate a better understanding of what drives and inhibits value to the supplier. This will give important new insights for CRM research and will especially contribute to novel theoretical considerations in business exchanges.

Besides contributing to research, the identification of success factors will improve the analytical and operational part of CRM in companies and thereby provide relevant practical implications (Payne and Frow 2005). Identified indicators can enhance the analytical part of CRM that enables an analysis of the aggregated customer data to identify profitable customer segments (Raman et al. 2006). In turn, they will optimize the operational part of CRM that supports the CRM strategy of managing operational marketing processes (targeted communication to customers, campaign management, etc.) and sales processes (lead qualification, opportunity and contact management, etc.) (Buttle 2004; Payne and Frow 2017; Hendricks et al. 2007).

Customer selection criteria used in the customer acquisition process determine the value of future customer relationships. Hence, the criteria for evaluating existing customers should also be used for assessing the potential of prospective customers. Moreover, the indicators that guide who to contact in a prospective customer company to increase sales success probability does not apply exclusively to prospective customers. They also apply to existing customers to utilize cross- and up-selling opportunities.

Table 1 illustrates how both studies complement each other in developing broader insights about predicting CRM payoff.

Table 1: Comprehensive aspects of CRM investigated in study 1 and 2

Aspects	Study 1	Study 2
Sales activity	Customer acquisition	Customer maintenance
Customer base	Prospective customers	Existing customers
Value	Value proposition	Value creation
Perspective level	Inter-personal level	Inter-organizational level
Sales performance	Sales effectiveness	Sales efficiency

1.3. Research Structure

This thesis is structured into five chapters. After this introduction, chapter 2 establishes a theoretical foundation for the research in this thesis that contains two empirical studies.

The first empirical study in chapter 3 is about “opportunity management” and poses the question: who should primarily be approached in the prospective customer company to win a contract? After introducing buying center roles, different situational purchase factors are explicated, which change the roles’ influence on purchase decisions. A research model is designed to investigate the impact of the first personal contact selection on the selling effectiveness. It is hypothesized that the selling effectiveness of the approached roles depends on customer company size. Build hypotheses are tested by using logistic regression analysis of CRM data.

The second empirical study in chapter 4 investigates the “value management” of existing supplier-customer relationships and poses the question: for which customer does value breed value? For explaining the connection between value to the customer and value to the supplier, initially, both relationship values are defined. Subsequently, different theoretical perspectives are reviewed, and two opposing orientations are extracted: the future- and past-orientation of customers, which have been hypothesized to moderate the relationship between both values. By using structural equation modeling, hypotheses are tested with the help of dyadic questionnaire data from customer and supplier side.

Finally, chapter 5 synthesizes the results of the two studies, gives an outlook for future studies and concludes with practical implications.

2. Theoretical Foundation

This chapter contains the theoretical foundation of the work in this thesis. Chapter 2.1 introduces the topic of customer relationship management (CRM) in general. The overall aim of CRM is to have an effect on the customers' organizational buying behavior by proposing and creating value to the customer in order to derive value to the respective firm. Thus, chapter 2.2 begins with organizational buying behavior that depends primarily on the employees who are involved in the purchasing process (buying center). Their power and involvement depend, in turn, on situational factors. Subsequently, chapter 2.3 defines value in business relationships and gives a brief overview of different conceptualizations and drivers of value to the customer and value to the supplier. Chapter 2.4 provides a theoretical base for a connection between value to the customer and value to the supplier by different theoretical perspectives that assume customers to predict the future value and assess the past value of the business relationship.

Finally, chapter 2.5 closes with pointing out unresolved questions in CRM. In the subsequent chapters, two studies will provide answers to these questions.

2.1. Customer Relationship Management

This chapter provides a brief introduction to CRM. After giving an overview of the scope of CRM (chapter 2.1.1), the main processes in CRM are introduced: the customer acquisition process (2.1.2) and the customer maintenance process (2.1.3).

2.1.1. Definition

The basis for CRM is "relationship marketing", that focuses on relationships with all stakeholders; not only on relationships with customers (e.g., suppliers and influencers) (Payne and Frow 2017; Reinartz et al. 2004). The relationship marketing approach has a long-term perspective, whereas transaction marketing focuses more on reaching short-term goals (Grönroos 1995). Thus, CRM goes beyond aiming at getting customers (like transaction marketing) but also at keeping and developing customer

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relationships. Payne and Frow (2005) review various definitions of CRM and indicate that the perspectives range between two extremes:

On the one side, CRM can be understood narrowly and tactically as the implementation of a specific technology solution (erroneously it is often understood as the technology by itself) (Payne and Frow 2005). The technology supports the CRM strategy by sharing customer data in the whole company (primarily to marketing, selling and service functions) to manage customer relationships (Buttle 2004). Jayachandran et al. (2005) show that CRM technology (CRM systems) use has an important supportive role since it helps to increase relationship performance by improving the effectiveness of relational information processes. The information processes are in turn driven by relationship-orientated company culture and a customer-centered management system. Foss et al. (2008, p. 69) describe a CRM system as "a technology-based business management tool for developing and leveraging customer knowledge to nurture, maintain, and strengthen profitable relationships with customers." The usage of CRM systems targets decreasing costs of functional areas and increasing their creation of value to the customer (Foss et al. 2008).

CRM systems provide a centralized company database of customer information, which do not only protect companies against losing customer knowledge when sales representatives leave the organization (Hendricks et al. 2007). Over the years, a lot of information is gathered in the CRM-database of a company, and this information can be highly valuable for analytical purposes (Raman et al. 2006). The analytical part of CRM enables an analysis of the aggregated data for the purpose of improving managerial decisions and finally enhancing value (Raman et al. 2006). Furthermore, CRM technology helps to manage operational processes: customer acquisition and customer maintenance processes (Buttle 2004; Payne and Frow 2017), that are introduced in the next sub-chapters (2.1.2 and 2.1.3.).

On the other side, CRM can be understood broadly and strategically as a customer-oriented approach (Buttle 2004; Payne and Frow 2005). CRM links strategies and activities that generate value to the customer with deriving value for the respective

firm (Boulding et al. 2005). Since the prime goal of CRM is to maximize the value of the relationships for both sides, CRM is more than a customer-orientation (Kumar and Petersen 2012). Theorists in the CRM area emphasize the dual creation of value: value to the customer and value to the supplier (Payne and Frow 2005; Vargo and Lusch 2004a). The process of creating value for the customer is assumed to determine the process of creating value for the supplier (Boulding et al. 2005).

CRM includes strategies for gaining and developing relational exchanges which have to be valuable for the supplier (Morgan and Hunt 1994; Grönroos 1997, 1996). Payne and Frow (2005, p. 168) define CRM as "a strategic approach that is concerned with creating improved shareholder value through the development of appropriate relationships with key customers and customer segments."

The dominant attention of CRM in research lies on retention rather than on acquisition (Ang and Buttle 2006; Thomas et al. 2004; Bolton and Tarasi 2007). Customer retention strategies aim at increasing the probability of a customer to repeat buying from a supplier and thereby defending the current customer base (Gupta et al. 2006). Many studies investigate and support the impact of CRM activities on customer loyalty (e.g., Bell et al. 2005; Homburg and Fürst 2005; Yim et al. 2008). However, it is a strong over-simplification to claim that loyal customers are always more profitable (Dowling and Uncles 1997; Reinartz and Kumar 2000). For example, Reinartz and Kumar (2000) show in their study that long-life customers are not necessarily valuable (profitable) customers. The benefit of loyal customers is that customer acquisition is often a costly process (relatively high sales and marketing costs) (Bolton and Tarasi 2007). Notwithstanding, maintaining non-profitable relationships is an expensive process, too; and not all customers are economically attractive to the firm. Consequently, decisions must be made about which customers should be acquired and which customers should be maintained – in other words about customer prioritization. Thus, it necessary to measure their value and value potential. The limited resources of a supplier should be allocated according to it (Stahl et al. 2003).

For relationship investment decisions regarding both customer acquisition and maintenance, suppliers try to discover the most valuable customers. Vice versa, suppliers also profit from avoiding customers at the other end of the value spectrum

(Cao and Gruca 2005). However, such selection strategies assume that a supplier can accurately predict the future value potential of (prospective) customers (Malthouse and Blattberg 2005). This leads to the question: Which customers create value for suppliers?

2.1.2. Customer Acquisition Process

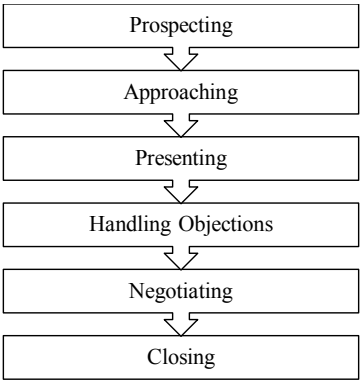
As a primary link between buying and selling firms, salespeople play a key role in the initiation of customer-supplier relationships (Weitz and Bradford 1999). In the first phase of the CRM acquisition process (see figure 2), sales representatives search and identify prospective customers (prospects) for the product offers. Before approaching these prospects, information is gathered about interests, goals, and needs of the companies and potential contacts in the companies (Homburg et al. 2011).

Subsequently, this information is used to qualify the prospects (identification of a potential need of the offered product or service) and for preparing practical approaches and presentations to the prospects. The prospective customers are qualified usually by sales calls. The sales representatives try to gain the customer's attention and interest sufficiently to elicit an invitation to a presentation. If the sales representative is successful, (s)he visits the prospect for presenting and demonstrating the product solution, features, and benefits to the potential customers. (Dwyer et al. 2000)

Sales representatives aim at stimulating customer objections and finding an integrative solution. When the prospect is interested in buying the product, customer, and supplier side begin to negotiate and try to find compromises between both parties' interests. Upon achieving an agreement, the sale is closed and a new customer is successfully won. (Homburg et al. 2011) The following question arises: how does proposing value to the customer lead to value to the supplier?

Qualified prospects are called "opportunities" (prospective customers who are interested in the offered product) and managing the process of making opportunities to new customers is called opportunity management. An understanding of the purchasing process and the involved stakeholders who are influencing the purchasing decision is critical for effectively selling and acquiring new customers in B2B markets (see chapter 2.2).

Figure 2: CRM – acquisition process



Source: Adapted from Hite and Bellizzi (1985)

2.1.3. Customer Maintenance Process

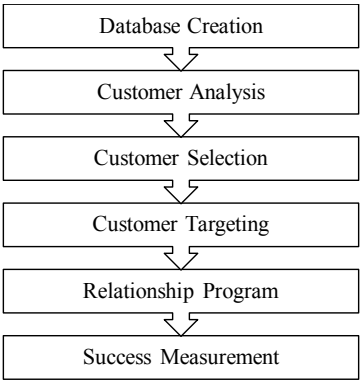
Winer (2001) illustrates a customer maintenance process in sequential steps (see figure 3). The first step is the construction of a customer database that is technologically supported usually by CRM systems. CRM systems help to gather, collect, analyze, utilize, and distribute customer information in the whole company. Various information can be gathered by suppliers: information about customers' purchasing behavior (e.g., purchased products and sales volume), customer contacts (e.g., names and positions), and descriptive information about the customers (e.g., location and customer satisfaction), as well as the sales activities of the supplier (e.g., mailings and telephone calls). Besides information about existing customers (e.g., industry and size of the company), also information about prospective customers (prospects or leads) can be collected and used for acquisition campaigns. Even though acquisition and maintenance processes are mutually dependent, CRM decisions are often based only on an analysis of won customers and not on potential customers, because of data limitations (Thomas 2001).

Sales and marketing managers analyze the CRM databases to define customer segments. Multivariate statistical methods (e.g., cluster analysis) are generally used to identify groups of (prospective) customers with similar characteristics, preferences,

behavioral patterns, and/or value levels. After analyzing and segmenting the customers, segments have to be selected for deciding whether and how to target customer groups in sales campaigns or marketing programs. The most valuable segments should be prioritized for relationship building efforts and sales promotions (cross- and upselling). However, determining the value of customers or customer segments is a challenging task (see chapter 2.3.3).

For targeting selected prospective or existing customers, direct marketing methods (e.g., direct mail) or direct sales (e.g., telephone calls) can be used to facilitate individual relationship initiation or building. Furthermore, relationship programs help to create a higher level of value to the customer. There is a large volume of research about how to drive relationship value to the customer (see chapter 2.3.2). Managers must develop communication programs, services, and products that increase the company's performance and in turn, value to the customer. CRM technology also supports service-related communication in the supplier company and thereby helps to improve value creation. Additionally, managers have to measure the success of their activities by evaluating the created value to the customer. Finally, managers should assess the resulting value improvement for the respective firm for tracking and improving the effectiveness of their relationship programs and the efficiency of their relationship investments. (Winer 2001)

Figure 3: CRM – maintenance process



Source: Adapted from Winer (2001, p. 91)

This directs to the following questions: how does creating value to the customer lead to value to the supplier and who should be targeted for value creation to receive value?

2.2. Organizational Buying

Organizational buying depends mainly on the employees who are involved in the purchasing process of the customer's organization (see chapter 2.2.1) and influence the decision to purchase a product from a specific supplier. Building on role theory, the various employees can take different roles in the purchasing process (see chapter 2.2.2). Building additionally on contingency theory, research indicates that the roles' involvement in the process and influence on the purchase decision depend in turn on situational factors (see chapter 2.2.3).

2.2.1. Purchasing Process

Industrial purchases differ substantially from buying behavior in B2C (business to consumer markets) (Grewal et al. 2015):

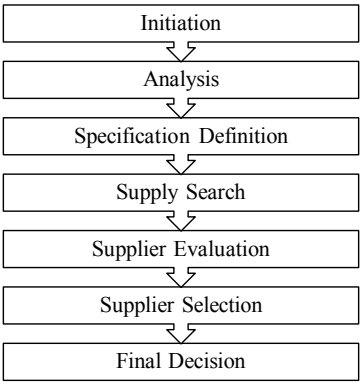
- The purchasing process is usually a time-consuming process (can take months or years) including extensive information procurement, bargaining and negotiation
- The offering is often complex including, e.g., training, technical support, financing, delivery terms, so it is difficult to determine the best offer for a single buyer
- Buying decisions are rarely independent of other stakeholders' influence and usually multiple departments are involved in the decision-making process.

Therefore, the environment in B2B purchases can be described as high involvement decision making (Reinartz et al. 2005), and the conceptualizations of buying behavior in organizations focus less on individual decisions but rather on joint decision making of multiple people (Silk and Kalwani 1982; Bellizzi 1979).

Lilien and Wong (1984) divide the purchasing process into different purchasing phases, which are listed in figure 4. It begins with the identification of a need and the initiation of the purchase. After determining the product type to be purchased

specifications for the needed product are made. A detailed specification of the desired product helps to search for the appropriate supply sources. Gathered product offers and suppliers have to be evaluated for selecting eventually one or more suppliers. Lastly, the final authorization for the purchase can be given after successful last negotiations with the chosen supplier(s).

Figure 4: Purchasing process



Source: Based on Lilien and Wong (1984, p. 3).

2.2.2. Buying Center

In literature, it is generally accepted that organizational purchasing decisions are mostly made by a "buying center" (which is also named as "decision making unit"). McQuiston and Dickson (1991, p. 159) define a buying center as a "collection of individuals whose input receives some consideration in the purchase decision." The buying center members are somehow involved in the purchasing process for a particular product (Vyas and Woodside 1984) and are the main point of interaction between the organization and a (potential) supplier who tries to sell a product (Wood 2005). Since making industrial buying decisions is a complex social and political process, a theory like the "role theory" helps categorize and understand the complex interactions of individuals during these processes (Tanner Jr 1999). Role theory assumes that social actors learn behaviors fitting to the positions they held in society (Solomon et al. 1985). Concerning organizational purchasing, this means that actors

who are involved in the corporate buying process learn behaviors fitting to their position and function in the company and hence play a specific role.

The term "role" originally was used as a theatrical/dramaturgical metaphor (Biddle 1986; Solomon et al. 1985). Also, in an organization, all employees are labeled by the functional role they "play". There are different role profiles based on the characteristics which are believed to vary across specific positions (Solomon et al. 1985). Commonly, buying center members are employees from different functional departments within the organization (Anderson and Chambers 1985). Hence, the roles of the buying center members are often linked with operational positions (Tanner Jr 1999), which are preplanned, task-oriented, and/or hierarchical (Biddle 1986).

Role holders' perception of their role tasks that should be performed to fulfill their role in the company determines the purchasing behavior (Anderson and Chambers 1985). Expectancy theory assumes that work-related behavior can be predicted by knowing that individuals choose the action with the most probable and valuable reward (Wabba and House 1974). Depending on the organization, the role holders in a buying center often have different reward and measurement systems, which guide them toward distinct purchasing goals (Anderson and Chambers 1985; Webster Jr and Wind 1972). Anderson and Chambers (1985) argue that buying center members are motivated to engage in buying behavior since they expect both intrinsic and extrinsic rewards.

Extrinsic rewards are, e.g., salary, fringe benefits, and promotions, which are determined by the performance measurement system of the organization. The purchasing department may receive a bonus when reducing the price of purchases to a minimum, thus reducing company costs; the engineering department has the target to increase production efficiency by a certain amount; etc. Intrinsic rewards satisfy higher order needs of the role holder, and thus, they are not only rewarded by the organization (Anderson and Chambers 1985). For example, winning a negotiation with a supplier can boost the self-confidence of a purchasing agent or an engineer feels satisfaction when designing a new mechanical component with a supplier (Anderson and Chambers 1985). Thus, extrinsic and intrinsic motivations of the buying center members may differ according to their role.

In turn, the role's preferences and interests can also differ. As a result, conflicts of objectives may arise. For example, the purchasing agent prioritizes a particular supplier because of low risks and costs, whereas the engineering department may want to develop the product independently rather than buying it. Furthermore, the engineer may prefer a specific supplier because of a unique design and functionality or high reliability and quality; however, the top management may reject this supplier because of political issues. These goal conflicts could lead to disagreement about product or supplier choices. In these cases, the buying decision depends on the most influential buying center member(s).

Webster Jr and Wind (1972) define five roles that are usually fulfilled by the members of a buying center: deciders, buyers, users, gatekeepers, and influencers (see table 2). In this concept, one individual may occupy several roles (e.g., both buyer and gatekeeper role are often occupied by the purchasing agent) and more than one individual may hold the same role (specifically there is often more than one influencer).

The "decider" is an individual who finally makes the purchasing decision and has the power to command other buying center members because of her/his hierarchical position in the organization (Webster Jr and Wind 1972). When conflicts (divergent opinions) arise, they can be handled authoritatively (Anderson and Chambers 1985). By having the authority over resources and hierarchical power be used to shield to overcome resistance by opponents (Chakrabarti and Hauschildt 1989).

If the top management wants to be involved in the buying process, they have the highest hierarchical authority and thus, may potentially have the role of the final decider. If not, the buyer is mostly responsible for the final stage of the process, and therefore, the purchasing agent is often the final decision maker (Webster Jr and Wind 1972).

The role of the "buyer" is generally occupied by the purchasing agent since they have the formal responsibility and authority for negotiating and contracting with potential suppliers (Webster Jr and Wind 1972). The purchasing agents control the orders (Erickson and Gross 1980). For this reason, they are the target of influence attempts by

the other functions in the organization that try to represent their own individual interests and hence, can be viewed as “constrained decision makers” (Webster Jr and Wind 1972). Even when they have the primary responsibility for negotiations with the potential suppliers, top management, and engineering also take part in the interactions and influence the decision maker (Perdue 1989; Bellizzi 1979).

Kelly (1974) states that purchasing agents, relatively, seldom initiate purchases. More often, “users” are the initiators of the buying decision by pointing out the need for a certain product and by defining its specifications (Dadzie et al. 1999). Users can initiate the purchasing processes by identifying the need for a product and informing the members of the buying center as an expert about purchasing problems, evaluation criteria, alternative suppliers and technologies (Webster Jr and Wind 1972; Dadzie et al. 1999). They can act as an educator or technologist because of their technical know-how (Hauschildt and Kirchmann 2001). Users are primarily the engineering and production personnel (Lilien and Wong 1984).

The “gatekeeper” controls the flow of information into the buying center and has a coordinating function in the buying center, which is one of the primary roles of the purchasing manager (Webster Jr and Wind 1972). Roles may have different information sources, and not all information (e.g., about the market, supplier, product, etc.) is available for making the “best” purchasing decision. Thus, incomplete information may lead to different opinions, even when buying center members are pursuing the objective (McNally 2002). Gatekeepers are capable of controlling the information flow.

Finally, all buying center members who do not hold any of the before mentioned roles, are simply named as “influencers” who influence the decision-making process by giving information about purchase alternatives or evaluation criteria (Webster Jr and Wind 1972).

Table 2: Buying center roles

Role	Description
Decider	Those with the highest authority to choose among alternative buying actions.
Buyer	Those with formal responsibility and authority for contracting with suppliers.
Users	Those who use the purchased products and services.
Gatekeeper	Those who control the flow of information (and materials) into the buying center.
Influencer	Those who influence the decision process directly or indirectly by providing information and criteria for evaluating alternative buying actions.

Source: Based on Webster Jr and Wind (1972).

The status of the buying center members is often not equal (McNally 2002). The structure of authority (hierarchal) in an organization which determines the power of organizational actors to set goals, evaluate suppliers and command others is the most critical factor in understanding the organizational buying process (Webster Jr and Wind 1972).

For selling products which are new to the customer (no rebuys), sales representatives have to convince a buying center member who has the power to overcome resistance in its company ("promotors" – see Chakrabarti and Hauschildt (1989)), since there is always resistance to change and something new (such as innovations) (Hauschildt and Kirchmann 2001).

Purchasing influence can be divided between formal (vertical) and informal (lateral) power to affect others or outcomes in purchasing processes (Robey and Johnston 1977; Bellizzi 1981). On a formal basis, a member can have social influence because of its authority and relative position, whereas on an informal basis there is the credibility and expertise which help to influence other members with information technology

(Thomas 1982). The type of power to convince other buying center members about a product and a supplier depends on the hierarchical rank (decider), the formal authority (buyer), the expert knowledge about, e.g., the technology (user) and the control over information flows (gatekeeper). Thus, deciders and buyers can use the formal base more frequently because of their legal authority concerning purchasing decisions, whereas gatekeepers, users, and influencers predominantly use informal power.

In conclusion, the influence (power) of a buying center member and thus the effectiveness of approaching a contact person depends strongly on the role which the buying center member plays. This leads to the questions: Who should primarily be approached to win a contract?

2.2.3. Sales Situations

In accordance with contingency theory, customer's buying behavior depends on situational factors that directly or indirectly influence purchasing decisions (Johnson and Sohi 2001). Various situational factors are proposed to change the purchasing decision process (Akinci et al. 2007). Most of the studies about buying center member influence are explorative and descriptive in nature (e.g., Bellizzi 1979; Bellizzi and Walter 1980; Lilien and Wong 1984). Thus, in these studies, no hypotheses are built or tested.

Rather than investigating the overall influence of a buying center member on the buying decision, existing studies analyze the influence of the buying center members in different purchasing phases (see chapter 2.2.1). They indicate that the organizational purchasing behavior and influence of the buying center members vary with these purchasing phases.

Studies show that the influence of different organizational functions in these purchasing phases depends on the following sales situational factors: industry, product category and buying task.

Buying center members differ between industries; specifically, different functions are integrated into the buying center (health care: e.g., physicians; education: e.g., teachers). They are investigated in various industries (health care – Polley and Shanklin (1993); education – Lewin and Bello (1997), etc.). This study focuses on the

technical manufacturing industry, and thus, in contrast to other industries, technical engineers are relevant buying center members.

Lilien and Wong (1984) investigated the purchasing decision involvement by decision phase and used a survey of purchase influencers in the metalworking industry. They observed that users (engineers) are more involved and influential in the early phase of the purchasing decision process (e.g., determining product type and specifications), while top management and purchasing agents are more active in the later phases (selection decisions).
In contrast, Bellizzi (1979) surveyed different employees of various construction companies to estimate the perceived buying influence for each buying stage and did not find significant differences. Instead, he showed that top management is highly influential over all stages (only minimal variation). Purchasing agents and engineers have a constant medium influence in each stage (also only minimal variation).
Thus, studies do not show clear results about either the influence of roles or their influential variations in-between the purchasing phases. Reasons may be the measurement of the buying center members' "influence" by a survey (only perceptions) and different comprehension concerning "influence" (actual involvement in the purchasing decision versus potential power to make the decision of e.g., upper management).

Organizational purchases can be divided into three basic product categories (Saxena 2009): capital goods (e.g., plant, machinery, office products), spare parts and components; and consumables (e.g., raw material, lubricants, packaging material, etc.). In contrast to capital goods, which involve the highest costs and risks, spare parts are often repeating purchases. Consumables are purchases on a regular basis, whereas components are generally bought less frequently (Saxena 2009). Therefore, their product category is often related to the buying task.
Three buying tasks can be distinguished (Jackson Jr et al. 1984): new buy, modified rebuy, and straight rebuy. A new buy situation occurs when there has been no need for the product type before, and hence, there is no past buying experience for the

purchasing company with this product type. When the requirement for the product is continuing, and the buying alternatives are known but have changed (e.g., price changes, a new product introduction, a need for cost reductions, or engineering modifications) a modified rebuy situation occurs. Finally, a straight rebuy situation occurs when the product has been purchased before, and no requirements changed, and no new suppliers have to be considered.

Jackson Jr et al. (1984) invited purchasing agents across 25 large industrial manufacturing firms to a scenario study (vignette). The purchasing agents were asked to estimate the relative influence of the buying center members in each given treatment condition (purchasing a specific product type in a particular buying task situation). They perceive that the relative influence on the product decision differs across product categories. Purchasing agents dominate especially for low capital investments and supplier selection, whereas engineering dominates for high capital investments, materials, and component parts.

Erickson and Gross (1980) examined the influence of the purchasing and engineering department for the purchase of component parts and compared their results with a survey conducted by Scientific American, Inc. (Scientific American, Research Department. How Industry Buys, 1970. Scientific American, New York, 1969). Both conclude the same: purchasing department dominates the influence concerning identification and evaluation of buying alternatives and also in the final supplier selection stage. Nonetheless, also engineering groups were influential, especially when the component parts are related to new product developments or when new specifications are introduced (new buys). Also the results of Doyle et al. (1979); Naumann et al. (1984); and Erickson and Gross (1980) show that the relative purchasing influence of organizational function varies across buying tasks. In contrast, Jackson Jr et al. (1984) indicate that buying center members influence stay constant across buying tasks.

Besides the product selection decision, findings of Cooley et al. (1978); Erickson and Gross (1980); Naumann et al. (1984); and Jackson Jr et al. (1984) indicate that purchasing agents are perceived as the most influential buying center members on the

supplier selection decision (indifferent from the product category or buying task). Nevertheless, engineering was perceived to be relevant for supplier selection, also.

The effect of customer size is another situational factor, which differs depending on the sales situation. So far, there is only one research study by Bellizzi (1981) investigating in his explorative study the influence of buying center members relative to customer size. With the help of a survey, he finds out that the influence of presidents is rated lower in larger companies than in smaller companies. In contrast, the influence of other functions, such as the user and purchasing agent, increases with firm size.
Nevertheless, even when Bellizzi (1981) indicate that customer size seems to be an important factor in predicting industrial buyer behavior, it has not received further attention in research so far to make reliable statements about its impact on purchasing decision influence of buying center members. Thus, further research is needed to answer the question: how does the size of the customer company alter the chance to acquire a customer when approaching a specific buying center role?

2.3. Relationship Value

"The essential purpose for a supplier and customer firm engaging in a relationship is to work together in a way that creates value for them" (Walter et al. 2001, p. 365). This chapter defines relationship value and gives an overview of the shared conceptualizations and different drivers of value to the customer and value to the supplier. "Value to the customer" expresses the relationship value the customer receives and "value to the supplier" represents the relationship value the supplier receives.

2.3.1. Definition of Relationship Value

Until now, there is no consistent definition of value, and there are many conceptual differences in literature. Value definitions differ significantly with central terminologies such as benefits, utility, quality, worth, performance or sacrifices, costs, effort, and price.

The concept of relationship value has been determined as an aggregate measure of relationship consequences (Lefaix-Durand et al. 2009). Consequences that seem to help achieve goals are preferred (Woodruff 1997). If the goals associated with a relationship are fulfilled, the relationship delivers high value (Geiger et al. 2012).

It is widely accepted that relationship value contains a “get” and a ”give” component. One party “gets” benefits from its business partner and “gives” benefits back (Parasuraman and Grewal 2000). Value as a trade-off between benefits and sacrifices is widely accepted (e.g., Walter et al. 2001; Ulaga 2003; Ulaga and Eggert 2005; Ritter and Walter 2012; Woodruff 1997).

Performance evaluations measure the trade-off between benefits and costs (sacrifices) incurred in an exchange relationship (Ulaga and Eggert 2006). Performance expresses the degree to which a supplier's relationship with a customer contributed to the fulfillment of the supplier's objectives (Gaski and Nevin 1985). Therefore, customer value can be characterized as a performance-based construct (Ulaga and Eggert 2006). Similarly, Woodruff (1997) distinguishes between desired and received value. Thus, this study follows the definition of Woodruff (1997) and defines value as exchange party’s perceived preferences for and overall evaluation of relationship performances and consequences that facilitate or block achieving its goals and purposes.

Adding value can be done by increasing benefits or reducing perceived sacrifices by minimizing the relationship costs for business partners (Ravald and Grönroos 1996). These benefits received or given (sacrifices, costs) can be monetary and nonmonetary (Parasuraman and Grewal 2000).

Value creation is an ongoing process that depends on the partner’s ability to extract value from the relationship (products and other resources) (Vargo and Lusch 2004a, 2004b; Grönroos and Voima 2013). Thus, value creation depends not only on the “value giver” but also on the “value receiver”.

Value has to be treated as actor specific and is always individually and uniquely determined by each partner (Corsaro and Snehota 2010; Grönroos and Voima 2013). Relationship value is subjective and thus dependent on the perception of each partner (perceived value) (Ravald and Grönroos 1996; Zeithaml 1988; Lapierre 2000; Walter

et al. 2001; Ritter and Walter 2012). When measuring value, it has to be determined from the perspective of the value receiver (Simpson et al. 2001).

If one follows the idea that value is a perceptual construct, the question arises who perceive the value in supplier-customer-exchanges. In consumer markets it is obvious who evaluates the value to the customer, however, in B2B markets there is the buying center and selling center model which describes that there are many people who influence the buying and selling decision in a company. Walter et al. (2001) suggest that relationship value is primarily perceived by the key decision makers in the exchange party's organization.

Despite the similar definition of value for customers and suppliers, the drivers for both values differ because of their differing roles and objectives in a business relationship. Ravald and Grönroos (1996) describe the specific offerings of a firm as a "value carrier"; other use the term dimensions or functions (Ritter and Walter 2012), but in the following, the term "value driver" is used to avoid ambiguities.

Literature indicates a large number of different drivers of relationship value. These drivers can have a positive or a negative effect on value creation and will be described in the next subchapters.

2.3.2. Drivers of Value to the Customer

Value to the customer has been conceptualized in diverse ways in academic literature (DeSarbo, Jedidi and Sinha 2001). This literature differs strongly regarding driver categories and quantity of value drivers. Anderson and Narus (1998, 1999) and Anderson et al. (2000) separate the value and price of an offering. They claim that price only changes the customer's incentive to purchase an offering. But many others like Grönroos (1997), Lapierre (2000), Ulaga and Eggert (2005), Zeithaml (1988), Grewal et al. (1998) and Ulaga and Chacour (2001) include price as a cost dimension of value. They argue that the price a customer has to pay decreases the net benefits, which include all costs, including time, effort and especially price.

Results demonstrate that, indeed, a trade-off between perceived quality and perceived price leads to perceived value, which in turn influences purchase intention (Chang and Wildt 1994; Grewal et al. 1998). Quality has a positive effect, whereas price has a

negative effect on value. Also, price is defined as a subjective perception and not as an objective measure.

Some scholars, such as Zeithaml (1988), only concentrate on the perceived quality of a product. Even when a product is provided, service is most common in the center of an exchange-relationship in B2B markets and not (only) the product (see service-dominant logic: Vargo and Lusch 2008a, 2008b). Thus, services should not be excluded.

Other concepts of value to the customer are richer and more differential because they include tangible (e.g., quality and price) and intangible outcomes (e.g., innovation and information) (Lefaix-Durand et al. 2009). Services can be provided pre-sales (e.g., informing, consulting) or post-sales (e.g., delivery, installation, training, maintenance). These services increase the benefits received (e.g., effectiveness) or decrease the costs (e.g., time, effort, price) (Parasuraman and Grewal 2000). Therefore, the value created for the customer in a business relationship exceeds the value of a simple transaction of products for money (Day 2000).

Anderson and Narus (1999, p. 5) define value as the "worth in monetary terms of the economic, technical, service, and social benefits a customer receives in exchange for the price it pays for a market offering". Unfortunately, it is very difficult or even impossible to specify the actual monetary worth for all benefits in a relationship especially for soft factors, e.g., social benefits, know-how, time-to-market (Ulaga and Eggert 2005) or reputation and innovativeness (Lindgreen and Wynstra 2005). Thus, the subjective measure has to be used to determine the overall value of a customer. Additionally, as described in the chapter before, value is subjective and cannot be measured by objective measures only. Liu (2006) for example differentiates between the assessment of the core value (supplier's core service), support value (supplier's support service) and the perceived economic value (value for the paid price).

The selected value categories for this study build on the work of Ulaga (2003) since they are derived from a grounded theory exploration. It indicates product, delivery, service, and price as the main drivers of relationship value. In line with the value definition (see chapter 2.3.1), this study uses performance-based measures and integrates product, delivery, service performance, and price as the main drivers of

value to the customer. Performance-based measures include relationship benefits (Ulaga and Eggert 2006), but also costs which block achieving goals or purposes (Woodruff 1997). An elementary cost driver is the price and hence, has to be included separately, similarly to Liu (2006).

For the sake of completeness, it has to be mentioned that there are other models, which structure value in even more categories. Lapierre (2000) includes five value driver categories: product-related benefits (e.g., product quality), service-related benefits (e.g., technical competence), relationship-related benefits (e.g., trust), product- and service-related sacrifices (e.g., price), and relationship-related sacrifices (e.g., effort). The value model Ritter and Walter (2012) use actually eight diver categories. They differentiate between operation-related drivers and change-related drivers which contain each four value driver categories: Payment (price, payment method), volume (share of wallet and long-term contracts), quality (value and reliability of a product), safeguard (flexibility and security) and innovation (ideas and know-how), information (market and technical information), access (contacts to new customers, suppliers etc.) and motivation (social support and benefits).

It is reasonable to assume that the weight of the impact of these drivers on relationship value varies (Ritter and Walter 2012). This is included with the term “preferences” in the author’s used value definition (see chapter 2.3.1). Suppliers should undertake a value assessment to quantify the relative importance that customers place on the various attributes of a product and service (Payne and Frow 2005).

In summary, suppliers can create value in two different ways:

- Increasing the benefits for the customer by adding something important, beneficial and of unique value to the (core) product or service.
- Decreasing the supplier's costs by preventing problems before, during or after delivery (Narver and Slater 1990; Ravald and Grönroos 1996).

Nevertheless, drivers of value to the customer are divers and vary in literature. Until now, no generally accepted driver model exists.

2.3.3. Drivers of Value to the Supplier

Value to the supplier is a customer's economic contribution to a particular supplier which depends on the customer's behavior (Eisenbeiss et al. 2014). Several metrics can estimate the customer's behavior. These can be segregated into activity-based metrics (average inter-purchase time, retention and defection rate, survival rate, lifetime duration) and basic value metrics (size of wallet, share of wallet, share of category requirement) and strategic value metrics (CLV, RFM method, past value to the supplier) (Kumar and Petersen 2012). Activity-based metrics simply track individual customer behavior (e.g., retention behavior) whereas value metrics estimate the worth of an individual customer to a supplier (Eisenbeiss et al. 2014).

Value to the supplier in marketing literature is often referred to as "customer lifetime value" (CLV) (Woodall 2003), which contains the behavioral component of loyalty. CLV is commonly defined as the "present value of all future profits obtained from a customer over his or her life of relationship with a firm" (Gupta et al. 2006, p. 141).

Generally, CLV is calculated as a function of the propensity for a customer to continue in a relationship (= customer loyalty) multiplied by the predicted contribution margin (= future contribution margin) and less allocated marketing resources to the customer (= future cost).

$$CLV_i = \sum_{t=1}^{n} \frac{(Future\ contribution\ margin_{it} - Future\ cost_{it})}{(1+r)^t}$$

Note: i = customer index, t = time index, n = forecast horizon, and r = discount rate.

Source: Venkatesan and Kumar (2004, p. 108).

The measurement of CLV picks up the logic of the discounted cash flow method that is used in finance to evaluate investment opportunities. The CLV approach is often used on the aggregated level as a proxy of firm value and is named as "customer equity" (Gupta et al. 2004). Here, we are more interested in the use of the CLV method to assess the value of individual customers. On this level, it can be applied to prioritize customers who show a higher CLV. However, no matter whether the CLV approach is used to assess the value of the entire customer base or the value of

individual customers, the challenge is in predicting the future monetary contributions of customers.

Determining the future contribution is quite difficult, but as it can be seen in the formula above, it is essential for measuring CLV. In non-contractual settings, managers are interested in predicting future customer activity (chance of future purchases) based on customer's previous purchases, whereas in contractual settings predicting the retention or the defection of a customer is in focus of manager's interest (Venkatesan and Kumar 2004). Non-contractual settings are more important for B2C, while contractual settings are particularly relevant for B2B. However, in both settings, customer's behavior in the past is used as a key predictor of behavior in the future (Fader et al. 2005).

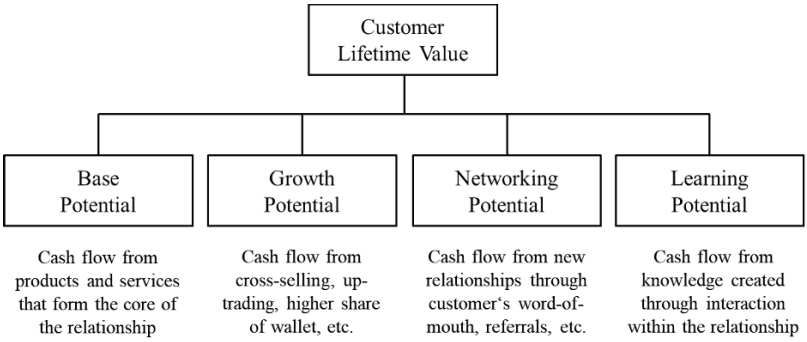
In direct marketing literature, where the emphasis is on transactional relationships and especially on B2C markets, often the RFM method is used which characteristics summarize customers' prior behavior (Fader et al. 2005):

- Recency: Time of most recent purchase
- Frequency: Number of previous purchases
- Monetary value: Average purchase amount per transaction

RFM consolidates individual customer's purchasing history and thus captures the sales value in the past. Additionally, it is used as a "simple" predictor for future behavior, assuming that past behavior resembles future behavior.

When compared to B2C relationships, a higher level of collaboration characterizes B2B relationships. Therefore, the level of interaction and the relationship complexity is generally higher. This also implements the value creation process and especially the created value diversity. Thus, in B2B context customer value is commonly underestimated if only monetary revenues are included and Stahl et al. (2003) configured a broader concept of CLV with four value components (see figure 5). They argue that it is a fundamental requirement that, besides monetary benefits (base and growth potential), nonmonetary benefits (networking and learning potential) have to be taken into account to measure CLV accurately.

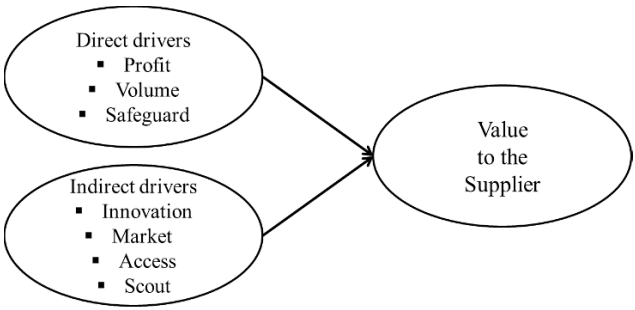
Figure 5: CLV with its value components



Source: Stahl et al. (2003).

This study is interested in reciprocity during business exchanges and therefore on the value primarily, which is created by the customer to the supplier. Walter et al. (2001) conceptualized the most comprehensive and also most cited relationship value driver model of past value to the supplier. They conceptualized value creation as a set of different value drivers from the supplier's perspective. Seven value drivers were split into direct and indirect value driver categories (see figure 6). The value drivers were categorized concerning customer firm's activities and invested resources that drive value to the supplier.

Figure 6: Direct and indirect drivers of value to the supplier



Source: Walter et al. (2001).

Direct drivers incorporate the activities and resources of the customer and supplier company which create value independent of other relationships. Thus, this value driver category has a direct impact on the supplier firm (Walter et al. 2001):

- Profit driver: This is the most important value driver and certainly the most obvious because a supplier has to earn money by selling products or services. The money generated by customer relationships that fulfill the profit function can subsidize other relationships that are not as profitable but provide other important value functions.
- Volume driver: By surpassing a certain threshold of production quantity, economies of scale can be achieved, which reduce overall production costs. As a result, the margin in other relationships can increase too. Thus, loyal customers with a high sales volume have an important direct impact on value to the customer.
- Safeguard driver: Besides the volume function, the safeguard function also improves the cost-efficiency. Customers who fulfill this function decrease uncertainties in "bad times". These customer relationships can be understood as insurance against difficulties and crisis in other customer relationships and thus decrease dependencies.

Indirect value drivers create value indirectly to the supplier via its relationship network or only in the future and thus not directly (Walter et al. 2001):

- Innovation function: Customers who are technologically advanced or have specialized expertise can help the supplier to innovate new products or services. Developed innovations could be sold to other customers too.
- Market function: References and recommendation from customers are very helpful to attract new customers and reduce acquisition costs. Therefore, this function includes "word of mouth".
- Scout function: Suppliers need information from outside of their organization; for example, relevant market developments which are vital for supplier's strategic decisions making.
- Access function: Customer's experience in dealing with official authorities, chambers, trade associations, etc. can help suppliers to save time and money.

Their study's results indicate that the direction of both predicted relationships (direct and indirect drivers on value to the supplier) are positive. Since a high percentage of the variance of the value to the supplier construct (49%) can be explained by the drivers of Walter et al. (2001), they argue that they indicate the main drivers of value to the supplier. The direct functions have the lion's share of the explained variance (γ=0.51, t-value=4.99), but the influence of the indirect drivers should not be underestimated (γ=0.28, t-value=3.04).

In conclusion, it is not enough to measure value to the supplier only by sales volume or profit. The created value to the supplier has to be measured in a broader range, which also integrates non-monetary (indirect) value drivers.

2.4. Reasoning of Customers to Provide Value

The following provides a theoretical base for a connection between value to the customer and value to the supplier.

2.4.1. Predicting the Future Value of the Business Relationship

Conventional theories assume rational and self-interested who attempts to maximize future utility (value) with their behavior. The theoretical perspectives presented in the following sections have in common that they assume that the customers' motivation to create value to the supplier depends on the predicted future value potential of the business relationship with the focal supplier:

- Transaction costs
- Rewards and costs
- Power and dependence

Transaction-Cost Economics Perspective

Since its introduction by Williamson (1973), the transaction-cost analysis received a high amount of attention in the last decades. As its name indicates, transaction costs are in the center of this approach to explain relationship performance (relationship value).

The transaction-cost theory assumes that firms are motivated to build efficient exchange relationships (Heide and John 1990) and emphasize on lowering transaction costs to increase the relationship value (Noordewier et al. 1990). Using the word "cost" is troublesome since it commonly has more meanings. On the one hand, it is used as the explicit costs that are directly paid for rewarding a supplier reducing the threat of future expenses. On the other hand, it is used as opportunity costs (alternative costs) that depict lost value because of neglecting alternative opportunities (e.g., rewarding another supplier who has a higher priority).

Transaction cost economics makes two behavioral assumptions about human behavior and characterizes it with bounded rationality and opportunism (Williamson 1973). Bounded rationality means that economic actors intend to decide and behave rationally even when human's cognitive competence is limited. Opportunism can be classified as the highest level of self-interest. Transaction-cost theory assumes that all economic actors are self-interested. A fundamental aim of transaction cost analysis is to protect against opportunism. (Rindfleisch and Heide 1997)

Transaction-cost theory explains why transactions are organized in different ways by referring to rational economic reasons. Transaction-cost-theory-literature concentrates on two key factors for predicting these differences (Williamson 1973; Rindfleisch and Heide 1997; Geyskens et al. 2006):

- Asset specificity: Transaction-specific investments comprise both tangible (e.g., fixed investments like special-purpose machines which cannot be maintained by other suppliers) and intangible (e.g., knowing how to operate special-purpose machines) assets which are needed to maintain a relationship. The value of these assets is not transferable to other relationships and therefore, lost or even reduced when switching to an alternative relationship (Heide and John 1990). Thus, incentives to change the supplier are reduced by switching costs that occur when building up new business relationships.

- Uncertainty: For decision makers, it is more problematic to act rationally when there is a high level of uncertainty. Uncertainty can be distinguished between environmental uncertainty (e.g., threat that current technology comes obsolete and the flexibility to switch to a supplier with other technological capabilities is not

given) and behavioral uncertainty (e.g., opportunism of a supplier) (Heide and John 1990; Rindfleisch and Heide 1997; Geyskens et al. 2006). Investing in relationships with its suppliers help customers to reduce uncertainty.

Companies try to control relationship-specific investments, environmental uncertainties and behavioral uncertainty (esp. opportunistic behaviors in exchange) in order to increase future relationship value. Since transaction-cost theory assumes that economic actors are self-interested, customers are only interested in increasing the value to the supplier when it indirectly increases their own future relationship value (value to the customer).

However, there are some important points of criticism concerning the transaction-cost theory. It can be criticized that transaction-cost theory is a cost-minimization calculus overemphasizing costs and the risk of exploitation by the exchange partner and neglecting the interdependence between exchange partners concerning value creating and claiming processes (Zajac and Olsen 1993). Because of these reasons, Zajac and Olsen (1993) support the notion to go a step further and develop the transaction cost analysis to a transaction value analysis. They argue that costs have to be compared with benefits/gains to get an overall calculation of the value of an inter-organizational strategy. This leads to the social exchange theory in the following chapter.

Social Exchange Perspective

Social exchange theory assumes that the actors operate voluntarily and under uncertainty. Therefore, it fits well within the context of reciprocity in buyer-supplier relationships (Hald et al. 2009). Social exchange theory has a broader view on relationships than transaction cost theory. The latter theory generally restricts economic exchange to tangible benefits only (exchange of product for money). Since business relationships typically contain social exchanges too, the scope has to be broadened with social aspects and intangible benefits (technological advices, market information, etc.) (Pervan and Johnson 2002a; Tanskanen and Aminoff 2015).

Homans (1974) propose that the value resulting from an actor's action determines the likelihood to perform an action. Thus, actors are assumed to contribute to exchange

relationships in order to achieve their own goals, which cannot be reached alone (Lawler and Thye 1999).

Social exchange theory concentrates in marketing on recurring exchanges and enduring relationships of partners (Tanskanen and Aminoff 2015). This study focuses on social exchange theory to explain reciprocal exchange because of several reasons:

Social exchange theory has the capability to integrate many different theoretical perspectives, e.g., the dependence perspective (Hald et al. 2009) and the norm of reciprocity (Gouldner 1960). This provides a broad frame of references that allows the integration of various complementary theoretical elements (Emerson 1976).

Also, social exchange theory assumes that rewards (benefits) and costs (sacrifices) (i.e., value) drive the decision of actors in social exchange. It considers benefits and costs as subjective rather than objective evaluations, which fit the understanding of this study (see chapter 2.3.1). Value to the customer and value to the supplier are subjective values perceived by both partners. In social exchange theory, the general motivational assumption is gaining benefits and avoiding losses (Molm 2010).

Social exchange theory provides one of the first definitions of reciprocity (see Gouldner 1960; Blau 1964; Thibaut and Kelley 1966), since reciprocity is a key attribute of social exchange (Molm et al. 2007b). Blau (1964, p. 6) defines social exchanges as “actions that are contingent on rewarding reactions from others…". Thus, social exchange theory has a focus on reciprocation of value and the factors that influence it (Pervan and Johnson 2002a).

Social exchanges are based on trust that the partner will show rewarding behavior at some point in the future (Settoon et al. 1996). Thus, an actor would choose out of multiple different alternatives, the one which has the highest product of perceived value and probability of actually receiving the predicted result.

Proponents of the social exchange theory argue that there are some potential future benefits and costs depend on the receiver’s behavior which motivates givers to give, even when they cannot expect immediate benefits from the receiver. Givers help others to uphold a reputation that may help in future cooperation and lead to prospective benefits (Panchanathan and Boyd 2004; Rockenbach and Milinski 2006; Blau 1964).

In conclusion, the success of reciprocity strategies is assumed to depend on future returns (Heide and Miner 1992). By helping another actor, the chances are higher that (s)he will help oneself in return. An actor rewards its partner for getting its partner to behave like the actor wants him to behave (Thibaut and Kelley 1966). Thus, helping the exchange partner can be seen as an investment in the future. Nowak et al. (2000) describe it as a score, which is an abstract benefit that can be increased by helping and which can be transformed into a specific benefit by taking help later on. Additionally, the threat of social sanctions discourages individuals from forgetting their obligations. It encourages them to repay those who have done them favors (Blau 1964) since reciprocation is generally expected in social exchange.

Rewarding a supplier is mostly connected to costs. For sure, there is always a price to pay when receiving a product or a service, but the price level and other benefits that could be given (see chapter 2.3.1) can vary. The reward and costs do not need to be equal in value. For example, recommending a supplier may have minimal time costs for a customer but may create massive value to the supplier.

Power-Dependence Perspective

Social exchange theory was advanced by the power-dependence theory that focuses on social threats of power and dependency and thus, could be interpreted as a bridge between social exchange theory and the non-social transaction-cost theory. As the name indicates, this theory highlights the impact of power and dependence in social relation (Emerson 1962).

Emerson (1962, p. 32) states that the "dependence of actor A upon actor B is (1) directly proportional to A's motivational investment in goals mediated by B, and (2) inversely proportional to the availability of those goals to A outside of the A-B relation." Power can be seen as a function of dependence (Molm et al. 2001). Emerson (1962, p. 32) defines power as actor A's "amount of resistance on the part of B, which can be potentially overcome by A". Resistance can occur when A makes some demand that runs counter to B's interests.

Since exchange partners are motivated to maintain their relationship and avoid destructive behavior when the exchanges depend on each other, interdependence

usually has a positive influence on exchange performance (Palmatier et al. 2007). Neither complete independence of customers (value creation depends entirely on customer's own effort and not at all on supplier's efforts) nor total dependence of customers (value creation depends ultimately on supplier's efforts and not at all on customer's efforts) exists in business exchanges. Value to the customer always depends on a combination of both partner's efforts (Cropanzano and Mitchell 2005).
Gundlach and Cadotte (1994) distinguish between non-coercive and coercive strategies to influence the business exchange partner to reach their own goals. When both partners value each other and are symmetrically dependent on each other, customers could use non-coercive strategies to influence the supplier (see table 3).

Table 3: Non-coercive strategies

Variable	Definition
Reward	A positive inducement granted by A to B to gain compliance on some issue.
Promise	A's communication to B that it would receive future positive inducements in return for its compliance on some issue.
Information Persuasion	A's communication of information and/or opinions in the form of a logical or persuasive argument to gain B's compliance.
Recommendation	A's communication to B that compliance on an issue would be very desirable.
Request	A's communication to B of its wish for B's compliance.
Positive Normative	A's communication to B that compliance on some issue would be in conformity with established norms and/or enhance the relationship.

Source: Adapted from Gundlach and Cadotte (1994, p. 522).

However, when the exchange partners are asymmetrically dependent on each other, coercive power can be used (Palmatier et al. 2007). The less dependent partner could easily use coercive strategies and put pressure on the less powerful partner to reach her/his goals. Thus the less dependent partner dominates the exchange in asymmetric

relationships, so that (s)he could receive more compared to the higher dependent partner (Buchanan 1992), e.g., by using coercive strategies which are listed in table 4.

Table 4: Coercive strategies

Variable	Definition
Punishment	A negative sanction applied by A against B to gain compliance on some issue.
Threat	A's communication to B that future negative sanctions would be applied if B did not comply on some issue.
Demands	A's communication to B of its requirement or insistence that B comply on some issue.
Negative Normative	A's communication to B that failure to comply on some issue would be in violation of established norms and/or would disrupt their relationship.

Source: Adapted from Gundlach and Cadotte (1994, p. 522).

Differences in power can cause inequalities within relationships. Thus, power and dependence inequalities create, on the one side, an advantaged actor and, on the other side, a disadvantaged actor (Molm et al. 2001). This imbalance could lead to tensions in a relationship (Emerson 1962). In general, coercive strategies are more competitive than noncoercive strategies, and their use increases the risk of conflicts and opportunism (see transaction cost analysis).

Since social behavior is believed to be determined by calculated expected returns, rationality is an integral part of social exchange theory and power-dependence theory (Emerson 1976). Transaction-cost theory, social exchange theory, and power-dependence theory are all rational and future-oriented. Transaction-cost theory focuses on the minimization of transaction costs, whereas social exchange theory and power-dependence theory suggests that actors align their behavior to future-oriented social incentives that include both gains and costs.

2.4.2. Assessing the Past Value of the Business Relationship

Contrary to the latter theoretical perspectives, experimental games (e.g., dictator game, power to take game, gift exchange game, and trust game) made significant contributions in weakening the argument that decisions in exchanges are solely based on self-interested motives (Fehr and Schmidt 2006). Experimental studies indicate that actors care about the well-being of others and not only about their own well-being (Rabin 1993). Accordingly, the prosocial motivation in terms of universal egoism has to be given way to a pluralistic explanation (Batson and Shaw 1991).

Notably, in anonymous exchanges and interactions among unknown people, there is often neither material reward nor social approval. Still, many people and organizations engage in this form of social exchange. Experimental studies show that there are actors who have got a predisposition to reward exchange partners for cooperative behavior even it does not promise any future economic benefits (Fehr and Fischbacher 2003). These actors (at least partly) neglect future calculations and behave based on the past. The key drivers behind this reactive form of behavior in exchange relationships are norms. The following three norms will be presented as an explanation for customers' reaction to prior action of the suppliers:

- Reciprocity norms
- Fairness norms
- Relational norms

Reciprocity Norm Perspective

The word reciprocity originally comes from the Latin word "reciprocus" which means receiving and giving (Bruni et al. 2008). There are different definitions of reciprocity. They all have in common that they are about getting and giving in return. Some scholars define reciprocity as "the act of giving benefits to another in return for benefits received" (Molm et al. 2007b, p. 200; Molm 2010, p. 119) and thus restricted the reciprocal act to benefits only. Other scholars, like Houston and Gassenheimer (1987, p. 11) define reciprocity a broader as "a social interaction in which the movement of one party evokes a compensation movement of the other party" and thus

include harmful actions. The term “Tit-for-tat” is often used to describe reciprocity. Therefore, reciprocity, in general, can be described as “an in-kind response to beneficial or harmful acts” (Fehr and Gächter 2000, p. 160).

Gouldner (1960, p. 170) defines reciprocity beyond a pattern of exchange as a generalized moral norm: "You should give benefits to those who give you benefits." A norm is, in general, a standard that guides actors how they “should” behave (Cropanzano and Mitchell 2005). Sugden (1984) states that actors may follow a morality of cooperation and describes the principle of reciprocity as a morally binding constraint or in other words, a moral rule that should be followed.

Reciprocity, as an ethical rule or social norm can be interpreted as an alternative to the conventional principle of rational decision making through calculation (Bruni et al. 2008). In contrast to social exchange theory (see chapter 2.4.1; Blau 1964), the norm of reciprocity is not motivated by expected returns (Emerson 1976).

Actors who behave cooperatively in the sense of social exchange theory expect future material benefits from their actions (Fehr and Gächter 2000). In the case of reciprocity, the receiving actor is responding to actions even if no benefits can be expected (Fehr and Gächter 2000). Accordingly, reciprocal behavior can be seen somehow contradictory to the egotistical selfish homo economicus, where self-interest is assumed to predominate over moral concerns (Uehara 1995). Thus, the norm of reciprocity is rather other-regarding than self-interested (Hahn 2015). Gallucci and Perugini (2000) define the norm of reciprocity as a fundamental internal motivation. An individual who holds an internalized social norm acts according to the rule even when there is no observer or any external sanction (Perugini et al. 2003).

Even if reciprocating for the benefits received seems to be selfless on the first view, reciprocity is fundamentally different from altruism. The reason is that reciprocity is conditional upon obtaining a valuable gift before (Heide and Miner 1992). An actor has to receive first before he gives (back). Altruism also has no future expectations, but instead of reciprocity it is unconditional, and therefore the kindness of an altruistic actor does not depend on the behavior of other actors (Fehr and Gächter 2000; Fehr et al. 2002).

Normative explanations use cognitive processing and decision making rather than emotional reasons (Schwartz 1977). Nevertheless, there are also emotional reasons for behaving reciprocally. Actors in an exchange relationship assume that when they receive benefits from their partner, the partner expects benefits in return (Clark and Mills 1979). Thus, they know that they owe the partner benefits and feel indebted. Actors who follow the norm of reciprocity feel obligated to behave reciprocally toward other actors on the basis of their past behavior (Gouldner 1960; Cropanzano and Mitchell 2005). Greenberg (1980) name the state of obligation to repay another as indebtedness. It is an uncomfortable state of tension that results in a compulsion to reduce this discomfort by reciprocation (Greenberg 1980). In contrast to the negative feeling of indebtedness, there is also a more positive emotion of gratitude. Bartlett and DeSteno (2006) demonstrated in their studies that gratitude increases effort to support a benefactor regardless of costs, which decrease gains.

The norm of reciprocity guides individuals to return benefits even when power advantages might seduce them to exploit the exchange partner (Gouldner 1960). Thus, the norm of reciprocity fits well as a complement to the power-dependence perspective (see chapter 2.4.1) and gives an explanation why actors do not exploit their partners even when they have the power and the economic incentive to do so. In pure reciprocal exchanges, actors give help or advice to another, without negotiation and without knowing whether or when the other will reciprocate (Molm et al. 2007a).

Gallucci and Perugini (2000) and Perugini and Gallucci (2001) clearly distinguish following a norm of reciprocity from the motivation to achieve equal distributions or avoiding disadvantageous inequality. Pro-sociality seeks to achieve equitable allocations of resources, while the internalized reciprocity norm leads to reciprocal behavior even when an equal outcome cannot be reached by the actions. Therefore, reciprocity is also a goal on itself and is not limited to the purpose of restoring equity, even when equity will be approached. Thus returns do not have to be equivalent in kind, though it is important that they contribute to the value of the recipient (Pervan and Johnson 2002b).

The occurrence, nature, and timing of reciprocity depend all on the discretion of the beneficiary. Therefore, reciprocity contains always a kind of uncertainty. This

uncertainty can be mainly reduced with the knowledge about the probability and predictability of reciprocal acts (Molm et al. 2007b), which will be investigated in this study.

Equity Perspective

Equity theory was first introduced by Adams (1963). The underlying assumption is that actors compare their input-output-ratio of their social exchange relationship with the input-output-ratio of their exchange partner (Oliver and DeSarbo 1988; Huppertz et al. 1978). Thus, actors make a comparison of created and received value (benefits minus costs), which leads to a perception of distributional un-/fairness. Therefore, value can be interpreted as the focal construct of equity theory.

Reciprocity and fairness are strongly connected since reciprocal actors reward other's conduct that they perceive as fair and legitimate (Hahn 2015). Actors who understand themselves as either under- or over-rewarded experience distress, which motivates them to recreate equity (Huppertz et al. 1978; Huseman et al. 1987).

In addition to the before mentioned distributional fairness, equity theory also includes a norm for intentional fairness which considers the perceived motivation of an actor (e.g., friendliness or fairness intention) and the procedural fairness norm, which additionally regards the decision process of the partner (Hahn 2015). Gouldner (1960, p. 164) exemplifies the intentional fairness norm in the reciprocity theory by mentioning the aphorism: "It's not the gift but the sentiment that counts". However, it is not explicitly part of the reciprocity norm, and procedural fairness is not at all considered by reciprocity theory.

Experiments from, e.g., Fehr et al. (1993) (gift exchange games) provided support to the fair wage-effort hypothesis: When an employer pays higher wages, then the employee invests (on average) more effort. Fehr and Gintis (2007) interpret these results as an indication that reciprocal behavior is enforced by the people's internalized social values and leads to reciprocally fair exchange patterns.

Equity or inequity seems to be an essential part of exchange satisfaction (Oliver and Swan 1989; Oliver and DeSarbo 1988). Many scholars consider value to the customer as an antecedent of customer satisfaction (e.g., Eggert and Ulaga 2002; Lam et al.

2004), which, in turn, increases the willingness-to-pay of the customer (Eisenbeiss et al. 2014; Homburg et al. 2005). Liu et al. (2012) show that mutually perceived fairness by both parties drives mutual knowledge sharing, continuous commitment, and investments in the relationship. Consequently, the supplier-distributor relationship performance increases.

Relational Norm Perspective

In contrast to moral or social norms like reciprocity or fairness norms, relational norms can be described as behavioral rules, behavioral regularities or established standards which are specific to an individual relationship (Ivens 2006; Emerson 1962). Past behavior of an exchange partner will be judged on the bases of behavior-related expectations, which are formulated as relational norms and serve as points of reference (Ivens 2006). It is a particular form of a group norm which determines the expected behavior from all group members (Emerson 1962) and can, therefore, serve as a basis for conflict resolution (Ivens 2006).

Based on the work of Macneil (1978, 1981, 1980, 1983), Kaufmann and Dant (1992) operationalize seven relationship norms: Relational focus, solidarity, flexibility, role integrity, restraint, conflict resolution, and mutuality. The last relational norm is similar to an expected generalized reciprocity norm of both exchange partners. Further studies refine this original set of norms. Lusch and Brown (1996) indicate that established norms influence relational behavior (solidarity, flexibility, and information exchange) of distributors, but contracts do not. In turn, the relational behavior impacts wholesale-distributor performance positively. Siguaw et al. (1998) support their results by showing a positive relationship between relational norms and financial performance of the distributor. Cannon et al. (2000) find out that relational norms (flexibility, solidarity, mutuality, harmonization of conflict, and restraint in the use of power) also increase the overall relationship performance in customer-supplier relationships.

Pervan et al. (2009) developed and validated a relational norm of reciprocity scale and declared it as a key-stabilizing norm of interpersonal marketing relationships:

- Overall, we provide each other with equal benefits.
- There is a balance in our dealings.
- There is equity in our dealings.
- The benefits we provide and receive even out over time.

They empirically confirm that the relational norm of reciprocity correlates positively with trust, commitment, and satisfaction and reduces conflicts in interpersonal business relationships.

Hoppner and Griffith (2011) combine in their study relational norms and internalized reciprocity norms in industrial buyer-supplier relationships. They show in a longitudinal study that the positive relationship between relational norms (solidarity, flexibility, information exchange) and financial performance of the supplier is moderated by two specific types of an internalized reciprocity norm: Equivalence (comparability of what was received and what will be returned) and immediacy (time horizon of return) reciprocity. They reported that when a company follows a norm which says that the return does not have to be comparable or the time horizon of return can be long-term, relational behavior has a positive influence on performance. In contrast, directly comparable or short-term returns have a negative impact.

2.4.3. Theoretical Contribution

As worked out in chapter 2.4.1 and 2.4.2, there are two fundamentally different motivations for customers to behave reciprocally in business relationships, which are based on different economic exchange perspectives. Two orientations can describe the motivations:

- The future orientation is motivated by future gains or the threat of future losses of benefits. Thus, it is a utilitarian orientation, which provides a future perspective on returning value for value. Customers can be dependent on their supplier for valued outcomes. In this case, they are motivated to obtain these outcomes from their supplier as well in the future and behave in a calculated

manner. Customers participate in recurring exchanges, in which value received is contingent on value provided (Molm et al. 2007a).

- The past orientation is motivated by rewarding or punishing the past behavior of a partner. It is a norm-based orientation, which provides a past perspective on rewarding value with value. The decision of rewarding or not rewarding a behavior depends on a norm-based judgment of the value received in the past.

The defining aspects of both orientations are summarized in table 5.

Table 5: Defining aspects of future- and past-oriented value creation motivation

Aspect	Future-Orientation	Past-Orientation
Aim	Payoff-maximization	Following normative reciprocity or fairness rules
Interest	Self-seeking	Self- and other-regarding
Decision Process	Calculation of future value potential	Norm-based judgment of past value
Emotions	Desire of gain (chances) and Fear of loss (threats, risks)	Moral scruples, Gratitude, and Indebtedness
Behavior	Investment	Reward or Punishment
Theoretical perspectives	Transaction cost, Social exchange, Power-dependence	Equity, Reciprocity norm, Relational norm

Even when the past-orientation can be characterized as other-regarding since no future expected return is needed for behaving norm-based reciprocal; it can be assumed that the reciprocal behavior of the supplier is, at least, partly expected in return (see relational norms – chapter 2.4.2). Thus, it is important to note it would be misleading to assume that a reciprocal actor is an altruist who is not "self-regarding" at all. A reciprocal actor can also be named as a "conditional cooperator" (Fehr, Gintis 2007), that clarifies that the giving depends on receiving value and not purely on other-regarding motives. Hence, they combine other-regarding elements and self-regarding motives (Hahn, Albert 2015). Researchers like Fehr and Fischbacher (2003) and other

experimental researchers also assume that a combination of self-seeking and other-regarding concerns motivates individuals to reciprocate. Their assumptions were supported by observations made in experiments with anonymous one-shot and repeated interactions.

In conclusion, creation of value to the supplier can be considered as a strategy or an instrument to achieve a future goal, but it can as well be regarded as a goal itself by just following a normative rule, regardless of strategic thinking. Thus, similar to the social utility approach (Loewenstein et al. 1989; Messick and Sentis 1985) this work proposes that a combination of two differing utility sources encompasses the evaluation of the outcomes: the utility (value) of the payoff and the utility coming from the compliance with norms.

2.5. Conclusion

The previous theoretical points of consideration raise the following question that needs further studies for providing empirically based answers: Which customers create value for suppliers?

For comprehensively answering the question, the topic is divided into two parts that are investigated in two studies:

The first study answers the following sub-questions in the context of customer acquisition: How does proposing value to the customer lead to value to the supplier? - Who should primarily be approached to win a contract?

This study concentrates on “opportunity management” and emphasizes gaining new customers. In detail, this study also answers the following question that is based on the theoretical considerations regarding the impact of situational factors on the buying center in chapter 2.2: How does size of the customer company alter the chance to acquire a customer when approaching a specific buying center role?

The second study answers the following sub-questions in the context of customer maintenance: How does creating value to the customer lead to value to the supplier? – Who should be targeted for value creation to receive value?

This study emphasizes “value management” and focus on retaining and developing customers. Based on the theoretical considerations about the reasoning of customers to create value to the supplier in chapter 2.4, this study also answers the question: How do a future- and a past-orientation of customers alter customers’ behavior in favor of creating value to the supplier?

3. Study 1: Opportunity Management

3.1. Research Objective

The effectiveness of salespeople in customer interactions is critical to the success of customer relationship management (CRM). Salespeople play a key role in retaining existing customers (Weitz and Bradford 1999) but are even more critical in personal selling to acquire new customers. Even when winning customers is a sufficient condition for retaining customers and therefore not less relevant, customer retention dominates strongly in CRM literature (Thomas et al. 2004; Ang and Buttle 2006; Bolton and Tarasi 2007). Thus, more research is needed concerning the effectiveness of selling in the process of customer acquisition.

Sales success depends on the salesperson's selling behavior. Weitz (1981) defines personal selling as "the process by which a salesperson attempts to influence a customer to purchase his/her product…". Research studies about personal selling approaches show that practicing customer-oriented (Stock and Hoyer 2005; Franke and Park 2006), value-based (Terho et al. 2015) and adaptive selling (Giacobbe et al. 2006; Porter et al. 2003) increases sales performance. However, further studies indicate that the sales effectiveness of sales behavior is contingent on situational factors. The contingency theory assumes that the sales approach has to be matched with the specific sales situations a sales representative encounters (Weitz 1981). For example, Porter et al. (2003) indicate that the buying task moderates the relationship between adaptive selling behavior and sales performance. Adaptive selling is more effective for modified rebuying or new buying situations than it is for straight rebuying tasks. Or, Panagopoulos et al. (2017) show that supplier firm characteristics and customer-supplier relationship characteristics moderate the relationship between the salesperson's involvement in customer solutions and sales performance.

As the mentioned sales approaches imply, sales activities have to be aligned to customer's preferences and needs, which determine customer's buying behavior. Compared to B2C-markets, B2B-buying (purchasing) behavior is even more complex precisely due to the higher number of individuals involved in the buying process and

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their heterogeneity in terms of preferences, needs, perspectives, responsibilities, power, and involvement (Lilien 2016; Reinartz et al. 2005). Thus, it is not only relevant "how" salespeople should sell to a customer but also to "whom" in the company.

Palmatier (2008) show in their study that sales to a customer by a sales representative increases by knowing the key decision makers and gatekeepers in the customer's company. Hence, it can be reasonably assumed, that adapting the value proposition to the needs of the individuals who are most influential on the purchasing decision in the customer's organization will increase revenue.

The contact person who invites the sales rep is the first person with whom the sales rep builds a personal relationship; therefore, this contact often becomes a primary contact to the customer company. The sales rep has the opportunity to inform and convince this buying center member to present his product and finally buy it. Thus, persuading the contact means selling the product benefits, which are essential to the contact's purchasing objectives. When selling to a purchasing agent who is focused on low costs, there can be goal conflicts when also persuading the same offer to the engineer whose emphasis is on product functionality and quality. Because of these conflicting goals, it is imminently important to form the most influential first contact to decide how to customize the product offer to transition into the negotiation stage and finally succeed in the closing stage.

The people involved in a purchasing process can be described with distinct organizational roles serving different functions in the buying process and thus influence purchasing decisions in different ways (Robey and Johnston 1977). Role theory assumes that individuals behave predictably to some extent, depending on their role (Biddle 1986). Therefore, a role model like the buying center model (Webster Jr and Wind 1972) may help to predict the most promising primary contact person for a sales representative.

Until now, there are mainly explorative studies (without built hypotheses) investigating the influence of buying center members (e.g., Lilien and Wong 1984, Bellizzi 1979, Jackson Jr et al. 1984). Nevertheless, these studies give some support for the contingency theory, since they indicate that the influence of the organizational

functions differs with several situational factors like product type (Jackson Jr et al. 1984), buying task (Moon and Tikoo 2002) and customer company size (Bellizzi 1981). Most of these studies build on the function's self-reported perceptions of the relative influence of the buying center members in different purchasing phases. Their concept of influence has some ambiguity since asking buying center members about the influence of a specific function depends on their personal perspective and is therefore biased (Jackson Jr et al. 1984). Thus, further empirical research is needed about the impact of situational factors on industrial buyer behavior.

As a company-specific (situational) factor, customer company size will be investigated in this study, since it can be seen as a proxy of other diverse organizational characteristics such as the degree of buying center size (Wood 2005), purchase decision making autonomy (Patton Iii et al. 1986), purchasing process formalization (Berkowitz 1986), organizational centralization (Lal 1991), functional specialization (Hickson et al. 1974) and functional information need (Akinci et al. 2007). These attributes are suggested to determine the buying center roles' influence on the purchasing decision.

Industrial marketers typically already segment customers on the basis of company size (Bellizzi 1981). For this reason, customer company size has, besides its scientific relevance, also a high practical relevance. Sales managers could additionally use it to increase their customer acquisition rate (the percentage of customers targeted by a sales campaign who actually become customers).

Until now, no study investigates how customer company size impacts the sales effectiveness of contacting specific buying center members. This study compliments role theory with contingency theory makes two main contributions and is aimed at answering the following questions:

I. It allows a better characterization and prediction of the buying center member's influence on the sales decision. How does proposing value to the customer lead to value to the supplier? Which role in the buying center is more influential than other roles? Who should primarily be approached to win a contract?

II. This work developed the notion that the effectiveness of approaching a customer contact type depends on customer specific characteristics which can

be segmented by customer company size. How does the size of the customer company alter the chance to acquire a customer when approaching a particular buying center member role?

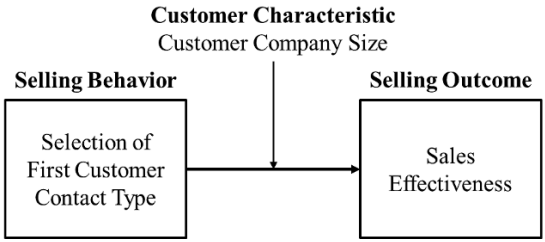
3.2. Research Approach

The central premise of this study is that the first customer contact, and more precisely its influence on the purchasing decision, has a critical role for sales effectiveness (see chapter 3.1). Effectiveness in sales interactions is defined here by winning or losing the opportunity. Hence, making a sale is defined as an effective sales interaction, whereas no final signed contract is an ineffective sales interaction. Interaction encompasses telephone calls, face-to-face encounter, and emailing.

After searching and identifying potentially interested companies (prospects), the sales interaction begins when a salesperson calls a customer contact for the first time to make a sale (Weitz 1981). The “first contact person” to a prospective customer is the first member of the buying center with whom the supplier interacts in a meaningful way. Typically, the supplier’s objective when approaching a new customer for the first time is to make a favorable impression and to create interest that is high enough to elicit an invitation. This qualification of the prospective customer is primarily done by a telephone call. The "core" of the sales process is the customer visit and the presentation of customer solutions, product features, and benefits. After presenting the product, the sales representative seeks to overcome resistance and reluctance of the customer and tries to negotiate an agreement. Finally, the sales process ends when a contract is signed (or rejected). (Dwyer et al. 2000; Homburg et al. 2011)

Figure 7 shows the conceptual framework for this study and illustrates the moderated relationship between the selling behavior and selling outcome. As a customer characteristic customer company size is proposed to moderate the sales effectiveness of approaching specific customer contact types.

Figure 7: Conceptual framework



As summarized in chapter 2.2.3, there are mixed results about the relative influence of buying center members (roles/ functions) in the purchasing process. Situational factors are crucial for predicting buying center role's (organizational function's) influence on purchasing decisions. Since no overall influence (over all situations) can be determined, this study has to specify its research area concerning buying task, product category, and industry. It investigates customer acquisition; thus, new buys are in the center of analysis. Furthermore, this study concentrates on the initiation of relationships (CRM) and not just on simple transactions with customers.

Thus, solutions for products (product components) which need interaction, expertise, and consulting from the sales representatives, are researched. Finally, this study focuses on the technical-mechanical industry, where top management, buyers, and technical engineers are the most relevant contact person of a sales representative.

3.3. Development of Hypotheses

This study is based on role theory and the contingency theory. Buying center members hold different roles with a weaker and stronger influence on the purchasing process. When speaking about "influence", it is not the "potential" influence which a buying center member could have only based on her/his power or authority, but the "actual" influence on the purchasing decision based on her/his involvement, interest, power, and authority in the purchase.

Sales representatives with access to buying center members with higher influence in the purchasing process will have better chances to win a prospective customer. The

study of Palmatier (2008) indicates that direct contact with key decision makers and gatekeepers increases sales success of sales representatives. The influence of the sales representative's contact person increases the supplier's ability to induce changes in the customer organization (e.g., supplier switch, new product handling, change of production process), which are necessary for utilizing new purchased product solutions. Furthermore, access to the most influential buying center member enables a sales representative to counter competitors' offers more effectively by getting a better understanding about the key decision criteria and thus help to adapt the offering accordingly (Palmatier 2008).

In the first instance, the sales representative has to convince a buying center member to invite her/him to present the product offer. This is the first buying center member with which the sales representative builds a personal relationship and hence often becomes a primary contact person for the customer company. For improving the chances of success, the value proposition will be adapted to the preferences and needs of this first contact. Adapting to the needs of the other buying center members afterward can only be possible to a limited extent, since buying center members may have conflicting preferences and needs (see chapter 2.2.2). Additionally, having an influential contact early in the sales process should lead to more valuable information for the salesman's decision making, including how to present the product offer and how to overcome barriers by interpersonal persuasion (e.g., due to opposing opinions of other buying center members) (Palmatier 2008). Therefore, it is crucial to contact the most influential buying center member at the very beginning of the sales encounter to achieve the desired outcome.

Approaching buying center roles with a stronger influence should lead to higher sales effectiveness. However, Weitz (1981) proposes that instead of a universal most-effective sales behavior, effectiveness varies across sales situations. Sales situations, in turn, vary with the company size of prospective customers. Important purchasing factors are identified to be impacted by customer size; which, in turn, are proposed to affect the influence of buying center roles on buying decisions: decision-making centralization and autonomy plus the functional specialization of the buying center members. Their respective impact is discussed in the following:

Webster Jr and Wind (1972) claim that the influence of top management is dependent on the degree of decentralization and thus "the extent to which buying authority has been delegated to operating levels in the organization" (Webster Jr and Wind 1972, p. 16). Lal (1991) shows a positive correlation between organizational size and the degree of decentralization. Small companies typically have only a few employees in top management positions (usually only the owner), and they are involved in nearly every decision – including purchasing decisions (Grashof 1979; Kavak et al. 2015). Top managers in large companies tend to delegate authority/decision-making power, whereas, in small companies, they control most of the decisions on their own (Lynn 1987; Lund 1989). Hence, in small organizations, top management is likely to make actual purchasing decisions (Robey and Johnston 1977), whereas in larger companies top management has more strategic tasks (e.g., budget management) and has less time for operative tasks (e.g., acting as a decider in the purchasing process). Often the buying decision is delegated to the purchasing agent or a technical engineer (Sheth 1973). Lilien and Wong (1984) observe in their explorative study, based on a survey of buying center members, that the purchasing centralization in larger firms strongly decreases the decision involvement of the top management.

Pearson and Ellram (1995) show that the purchasing agent is involved in almost every purchasing decision. This is not surprising since the purchasing agent holds the buyer role and has formal responsibility in the purchasing process. The purchasing agent keeps his responsibility for the buying task independent from the degree of centralization; therefore, it can be assumed that his influence will neither decrease nor increase by centralization. Johnston and Bonoma (1981) conducted interviews about purchases regarding capital equipment and industrial services. They indicate a non-significant effect of the size of a company on the purchasing agent's centrality in the buying communication network, which has been used as a proxy for leadership, status, and influence. This is an indication that a purchasing agent's influence does not change.

Crow and Lindquist (1985), Dholakia et al. (1993) and Wood (2005) show a positive relationship between organizational size and the size of the buying center. Larger companies, on average, involve more participants in the purchasing decision process.

Kohli (1989) supposes that in larger groups, the action of members is visible to more people, and thus, individuals engage more in a socially desirable behavior. The social desirability of behavior in a buying center is hypothesized to depend on the opinion of knowledgeable individuals (technical experts) and individuals with legitimate power in purchase committees who therefore assume a leadership position. The findings of Kohli (1989) support a significantly higher influence of individuals with expert power (users/ technical engineers) in large companies but do not support the higher influence of individuals with legitimate power (decider/ top management). Since the use of coercive power (e.g., threats and legalistic pleas – see chapter 2.4.1) is not socially desirable, coercive power is used less in the buying center (Kohli 1989; Venkatesh et al. 1995), and thus it can be assumed that the coercive power use of top management decreases.

In line with decreased centralization and larger buying center size, Sheth (1973) reasons that the decision process of large companies tends to be joint instead of being autonomous. Grønhaug (1975); Grashof (1979); Crow and Lindquist (1985); Berkowitz (1986); and Patton Iii et al. (1986) support Sheth's thesis and show that purchase decisions are indeed more often made autonomous in small firms, and purchase decisions are more often made jointly in large organizations. Furthermore, the study of Berkowitz (1986) shows that an increase in organizational size, decrease the ability of an individual (or department/function) to operate independently. Therefore, purchasing decisions in small companies are most likely done autonomously (by the decider) and thus by the function which has the highest authority – the top management or which is formally responsible for supplier selection – the purchasing agent. In other words, the fewer people are involved in the purchasing decision, the less likely is a strong influence of the user since they have neither the functional nor the formal authority. Hence, in autonomous decision making, relatively to the influence of decider and buyer, the users may only exert little influence on the purchase decision (Bellizzi 1981). Contrary, in joint decisions the influences of technical engineers increase since they are more involved in the purchasing process and thus have a higher chance to use their power as an expert about technical aspects (Hauschildt and Kirchmann 2001). In the study of Pearson and Ellram (1995), the

participation of engineering and production/operations was indeed significantly higher in the evaluation process of product purchases for large than for small electronic companies.

This means that the influence of users increases by decentralization and joint decision making and thereby with company size, whereas the used power of the top management shrinks. Even when purchasing agent's authority increases, the decisions are made more jointly with other buying center members. Thus, they share their decision power with the users in smaller firms instead with the top management in larger companies. Hence, it can be assumed that the purchasing agent's influence stays stable independent from customer size.

A variety of studies indicate a strong effect of company size on functional specialization in manufacturing firms (Child 1973; Hickson et al. 1974; Hinings and Lee 1971). Therefore, it can be assumed that also functions in the buying center in large firms tend to have more specialized role positions which are more restricted concerning the scope of subjects, tasks, and responsibilities. In large firms, engineers have even more in-depth knowledge about the specific product which could be purchased, whereas the purchasing manager is more restricted to her/his main tasks, e.g., negotiating. Hence, in large companies, engineers should be more involved and more influential in purchasing decisions because of their relatively higher specialized technical expert knowledge (Hauschildt and Kirchmann 2001).

One could say that also top managers are more specialized since they have to focus on strategic instead of operative tasks, and for this reason, they have no time for getting involved in specialized purchasing decisions. Therefore, top management involvement decreases, whereas the other functions compensate its influence. However, even when top management is involved in the purchasing process in large organizations, it gets informed about the product and supplier by especially purchasing agents (as a gatekeeper) and technical engineers (as a technical expert) who composed the information (Moschuris 2008; Robey and Johnston 1977). Therefore, purchasing agents and technical engineers gain an indirect influence on the decision-making process by manipulating the information flow to their interests. In turn, purchasing agents are dependent on the expert knowledge of the users.

However, decisions can be made by the company owner (in the role of the decider) often autonomously, since owners in small companies commonly still have the technical expertise to evaluate technical product purchases and hence do not depend on the opinion of a technical expert (user). In contrast, top management in large companies cannot substitute the expertise of the technical engineers with their own know-how, because of a product and technology portfolio that is too large. For this reason, it is (almost) impossible for the top management to keep up with the various technical experts since larger companies are generally characterized by a higher degree of functional specialization compared to smaller companies (Lynn 1987). Thus, especially privately-owned companies with technology or production orientation, which are more often smaller companies (Kavak et al. 2015), will tend toward autonomous decision making by top management (Sheth 1973).

To summarize, top management is proposed to be more involved and influential in the role of the decider in small companies than in larger companies because of more centralized and autonomous decision making, combined with less dependency on the (e.g., technical) expertise of other buying center members.

In larger companies, less involvement and influence of top management is proposed to be compensated by technical engineers in the role of the user. This is because of more decentralized and joint decision making, and higher functional specialization accompanied by increased expert power of the user.

Therefore, the influence of top management is hypothesized to decreases, whereas the influence of technical engineer decreases with customer company size.

In contrast, purchasing agents are generally assumed to be involved in and influential to purchasing decisions in the role of the buyer independent from customer size.

Thus, it is hypothesized that purchasing agents are generally suitable first contact, whereas top management is only an adequate alternative for small companies and technical engineers are suitable for large companies:

H1: Having purchasing agents as first contacts has a stronger positive relationship to sales effectiveness than having technical engineers as first contacts.

H2: Having purchasing agents as first contacts has a stronger positive relationship to sales effectiveness than having top managers as first contacts.
H3: Having top managers as first contacts has a stronger positive relationship to sales effectiveness for smaller companies than for larger companies.
H4: Having technical engineers as first contacts has a stronger positive relationship to sales effectiveness for larger companies than for smaller companies.

3.4. Methods

3.4.1. Data Collection

To test the proposed hypotheses, a German medium-sized OEM in machinery granted access to their CRM-data. The company received an award for operating with their CRM-system and thus provided a high-quality CRM-dataset. The company offers mechanical and electrical product solutions for industrial markets. It employs ca. 200 employees and serves customers who operate in many different industries such as automotive, medical, paper, food, and textile.
The data was extracted out of the company's CRM-system for a duration of eight years from 2007-2014. In focus of the analysis was the CRM-data about acquisition campaigns. CRM-data was used for planning and evaluating marketing and sales campaigns (Foss et al. 2008). The aim of these campaigns primarily was selling new products or selling existing product solutions into new markets. Sales representatives recorded information about their contact persons (name, position, interest), about their product offer (product name, project volume) and the customer company (size of the customer company, address). Additionally, they tracked steps taken in the selling process (from sales calls to signed contracts), which were used by sales management for controlling sales initiatives and successes during the campaign execution.
Many companies implemented a CRM-system to gather customer information, which should help to manage customer relationships better. Since sales representatives are often the primary contact person of a customer, they are also the central data collector who records all important information disclosed by the customer. Therefore, they have an essential role in data maintenance. In return, CRM-data may help salespersons

organizing and remembering sales calls or customer visits by providing customer-related information.

The sales representatives began recording customer information once initial contact has been established with a buying center member and when the customer has been invited for the first sales visit. The data set contains all potential customers with an opportunity to win a contract. Companies only identified as potential customers but not yet contacted or companies that have not yet agreed to receive a visit by the sales representative can be named as "prospects"; whereas potential customers can be named as "opportunities" when they are willing to receive a visit from a sales rep and thereby show interest in the product offering.

In total, 847 opportunities have been recorded in the system. 46 opportunities with no or too little data have been deleted. Additionally, 10 opportunities that were established to sell only service contracts have been excluded, as these selling processes may differ significantly from the sales processes involving asset sales. The two cases with first contact interest (FCI) values of 1 (1=definitely do not want the product solution) have been deleted since these have been identified as extreme-cases (see appendix). Additionally, it is relatively unrealistic that a customer contact extends an invitation to the sales rep when (s)he is so strongly disinterested in the product offered. As a result, in total, 789 opportunities were suitable for statistical analysis using IBM SPSS (IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp.).

3.4.2. Operationalization

The dependent variable, sales effectiveness is a binary (categorical) variable and thus, is analyzed by logistic regression analysis. Two final results are crucial for measuring sales effectiveness: lost sales attempts (rejected by the customer) and newly signed contracts (closing success).

The sales representatives entered their first contacts and the relative department (contact type) in each opportunity. The predictor variables, first contact type (FCT), is a categorical variable, which contains the purchasing agent, the top management, and the technical engineer.

The customer company size is the moderating variable and has been measured by the revenue of the company in € (not the revenue with the supplier). In the first instance, an insufficient quantity of values measuring the size of the customer company exists in the gathered CRM-dataset. For this reason, the author and a sales manager of the cooperating company have first checked the existing values concerning their plausibility. Afterward, missing values have been tried to be complemented by values from an external company database when available.

There are two control variables: The potential project volume (measured in €) has been estimated and entered by the sales representatives for each new sales opportunity. Additionally, the sales representatives estimated the degree of interest in the product solution for each contact person (contact interest). Finally, the reason of failure has been used for descriptive purposes and for getting deeper insights into the reasons for being or not being effective in selling a product solution.

All variables that have been used in this study are listed in the following table:

Table 6: Model constructs

Construct	Abbreviation	Variable type	Measure
Dependent variable			
Sales effectiveness	SE	categorical	Indicator variable that takes on the value 0 when the project is lost and 1 if the project is won.
Predictor variable			
First contact type	FCT	categorical	First contacts are divided into purchasing agent, top manager, and technical engineer.
Moderating variable			
Customer company size	CS	continuous	Size of the customer company is measured by revenue (€) of the company.
Control variables			
Potential project value	PPV	continuous	The potential project value (€) was estimated by the sales representatives.
First contact interest	FCI	discrete	The first contact interest was estimated by the sales representatives on a scale from 1-7 (1=definitely do not want the product solution; 4=neutral/undecided; 7=definitely wants the product solution).
Variable for descriptive purposes			
Reason for failure	RF	categorical	Reasons for losing the project contract are stated: competition, technical, external factors, other.

3.4.3. Distribution Analysis

The distribution of three continuous variables has to be examined before running the analysis. Logistic regression is not problematic in dealing with non-normal data distributions; nevertheless, extreme outliers can distort the results.

590 opportunities have been lost, and 199 have been won. Thus, on average every fourth opportunity led to a signed contract (25.2%)

Table 7 summarizes descriptive statistics of the variables in the model. The size of the customer company (company revenue in euro) (CS) and the potential project value (measured in million euro) (PPV) have too high kurtosis values and are strongly right-screwed (Hair et al. 2014a). Without transforming this data, these values would bias the results. A log-transformation is suggested for coping with high kurtosis values and right-screwed distributions (Tabachnick and Fidell 2013). Table 7 shows that it has been successfully used to reduce skewness and kurtosis values.

Table 7: Descriptive variable statistics

Variable	Minimum	Maximum	Mean	SD	Skewness	Kurtosis
FCI	2.000	7.000	5.241	0.935	-0.033	-0.532
CS	0.100	90000	2087.490	11221.368	6.292	39.107
PPV	2000.000	3000000	169860.507	298749.470	3.893	21.412
logCS	-1.000	4.954	1.659	1.040	0.592	0.965
logPPV	3.301	6.477	4.822	0.585	0.283	-0.310

The distribution of the first contact interest variable (FCI) is much less skewed and similar to the other two variables and hence, do not require transformation.

Additionally, outliers were analyzed with the help of logistic regression option of IBM SPSS, which allows for detecting bivariate outliers. No outliers were detected for SD +/-3, and thus no values have to be deleted.

3.4.4. Missing Data Analysis

Following Hair et al. (2005), a process with four steps is used to analyze missing data. The missing data in this data set is due to lacking CRM-data maintenance of the sales representatives and marketing employees and therefore, is neither ignorable nor unknown (Hair et al. 2005). For this reason, further analysis of missing data is needed.

The dependent variable, sales effectiveness, has no missing values. The same applies to the variable for descriptive purposes: reason for failure. However, the data of the other variables is incomplete. In total, 40% of all cases have missing data. Thus, when using only complete cases, a high amount of data would be excluded (n = 315). All in all, 92% of all values are present.

FCI (3.30%) and logPPV (2.53%) have only a few missing values. However, the total extent of missing data is high enough to have an impact on the results, since the variables logCS (29.78%) and FCT (12.17%) have many missing values (see table 8).

In conclusion, the extent of missing data is substantial enough to affect the results. Therefore, the randomness of missing data has to be analyzed. The MCAR-test of Little (1988) is widely acknowledged and provided by the IBM SPSS MVA (Missing Value Analysis). Testing the MCAR (Missing Completely at Random) assumption indicates that the Null-Hypothesis of the data being MCAR could not be rejected, so that MCAR may be inferred (Chi-square=13.904, DF=8, p=0.084). In addition, a separate variance t-test shows that there is no significant systematic relationship between missing values and any other variable since all p-values of the variables are above a p-value of 0.05. As a result, the missing data in the CRM-data set can be assumed to be MCAR, and therefore, any imputation method can be used.

As described, using only complete cases would result in deleting a high amount of data, and thus, an imputation method would be the preferred method. Since the extent of missing data is greater than 5% per variable, the use of mean replacement would highly bias the results and therefore is not preferred for handling the missing data (Hair et al. 2005). Hair et al. (2005) recommend using the regression method when the level of missing data is over 20%, which is the case for the CS variable. Thus, this method has been chosen to impute the missing values of the continuous variables. Cases with a missing categorical variable (FCT) have been excluded, and thus 693 cases (opportunities) remain.

Table 8: Missing data statistics per indicator variable

Variable	Valid	Missing	
		Count	Percent
logCS	554	235	29.78%
FCT	693	96	12.17%
FCI	763	26	3.30%
logPPV	769	20	2.53%
SE	789	0	0.0%

3.5. Results

3.5.1. Logistic Regression Assumptions

Since the outcome in the model of this study is lost (0) or won (1), the dependent variable is binary and is measured on a dichotomous scale. In contrast to linear regression, logistic regression is being specifically designed to predict the probability of an observation or event (Hair et al. 2005), or for being more specific to this study: the probability of winning a contract. The relationship between the dependent and independent variables are represented by a logistic curve.

Logistic regression predicts the logit of the dependent variable from the independent variable(s). The logit is the natural logarithm (ln) of odds of the dependent variable. In turn, the odds are ratios of probabilities of happening (here: winning the contract) to probabilities of not happening (here: losing the contract) (probability/[1- probability]). (Peng et al. 2002)

The following equation describes a simple logistic model (Peng et al. 2002):

$$logit\ (Y) = \ln(odds) = ln\left[\frac{\pi}{1-\pi}\right] = \alpha + \beta X$$

When the antilog of this equation is taken on both sides, an equation to predict the probability of the occurrence of the outcome is received (Peng et al. 2002):

$$\pi = P(Y) = \frac{e^{\alpha+\beta x}}{1 + e^{\alpha+\beta x}}$$

Note: π = probability of the outcome; α = Y intercept; β = regression coefficient. β determines the direction of the relationship between the logit of Y and X. A negative β-value is associated with a smaller logit of Y and vice versa. Y is always categorical, whereas X can be a categorical or continuous variable.

When multiple predictors (here two predictors) are used the logistic regression can be constructed as follows:

$$logit\ (Y) = \ln(odds) = ln\left[\frac{\pi}{1-\pi}\right] = \alpha + \beta_1 x_1 + \beta_2 x_2$$

$$\pi = P(Y) = \frac{e^{\alpha+\beta_1 x_1+\beta_2 x_2}}{1 + e^{\alpha+\beta_1 x_1+\beta_2 x_2}}$$

The maximum likelihood method is used for estimating α and β, which seeks to maximize the likelihood of reproducing the parameter estimates of the given data (Peng et al. 2002). For assessing the model, the likelihood is used that add up the probabilities related to the predicted and actual outcomes (Tabachnick and Fidell 2013; Backhaus et al. 2008):

$$L = likelihood = \sum_{i=1}^{N} \left(P(Y_i)\right)^{Y_i} * \left(1 - P(Y_i)\right)^{1-Y_i} \rightarrow max!$$

There are assumptions when applying logistic regression, that are tested in the following for the CRM-data analyzed in this study:

Linearity: Logistic regression assumes a linear relationship between the continuous predictor variables and the logit of the outcome variable (Hosmer and Lemeshow 2000). When the term between the continuous variable and its log-transformation is significant, the relationship is non-linear (Field 2009). Results show linear-relationships for all continuous variables, except for FCI (see appendix). After a further data analysis of FCI, it was concluded that this issue is due to the few values smaller than a value of 4. After deleting those four cases, FCI shows a linear relationship, too.

Multicollinearity: Table 9 shows the correlation matrix for the variable set. Correlations exceeding values of 0.7 may pose a problem. A significant relationship

between logCS and logPPV is discovered that has a value of 0.171. The positive relationship between both variables makes sense since, on average, a larger company has a higher demand than a smaller company. However, the link is too weak for causing collinearity issues.

Table 9: Correlations

Variable	logCS	logPPV	FCI
logCS	1	0.171***	-0.020
logPPV	0.171***	1	-0.014
FCI	-0.020	-0.014	1

Note: Imputed data set is used.*** Correlation is significant at the 0.01 level (2-tailed).

Collinearity statistics show no significant complications or inconsistencies. All VIF measures are smaller than a value of 3 and therefore show evidence of discrimination (see appendix).

Lastly, when looking at the variance proportions, it can be clearly seen that no high proportions on the same eigenvalue exist (see appendix). This indicates that the variances of their regression coefficients are not dependent (Field 2009).

In summary, the collinearity analysis results show no collinearity issues between the three independent variables, and therefore, multicollinearity will not bias the results.

3.5.2. Logistic Regression Results

The estimation results for the logistic regression models are shown in the following tables. First contact type (FCT) is a categorical variable with three values (purchasing agent, top manager, or technical engineer). The “technical engineer” as an initial contact has been chosen as the reference category and is thus compared with the other two first contact type -types in the analysis. The category “other” (first contact type that is not a purchasing agent, top manager or a technical engineer) has been generally excluded from the result tables since their number of observations is too minimal for acquiring reliable results.

The results indicate that an opportunity with a purchasing agent as a primary contact is significantly more effective than a technical engineer (p=0.005).

Table 10 shows with a negative B value (or a exp(B)-value lower than 1) that contacting a purchasing agent as a first contact results in a higher probability to win a contract compared to a technical engineer as a first contact (B=-0.625) (Peng et al. 2002). Hence, hypothesis 1 is supported by these results. The results show a negative B value for the top manager (B=-0.510), but the sales effectiveness of purchasing agents and top managers is only different on a 10% significance level (p=0.093). Nevertheless, the results also provide support for hypothesis 2 – albeit to a weaker extent.

Table 10: Logistic regression results – first contact type (FCT)

							95% C.I.for EXP(B)	
Variable	B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
logPPV	-0.325*	0.167	3.807	1	0.051	0.722	0.521	1.001
FCI	0.803***	0.113	50.742	1	0.000	2.232	1.789	2.783
FCT			7.879	2	0.019			
Top manager	-0.510*	0.304	2.821	1	0.093	0.600	0.331	1.089
Technical engineer	-0.625***	0.224	7.767	1	0.005	0.535	0.345	0.831
Constant	-3.395***	0.998	11.580	1	0.001	0.034		

Note: logPPV= potential project volume (log-transformed), FCI= first contact interest, FCT= first contact type. R^2=0.100 (Cox & Snell); 0.148 (Nagelkerke). $\chi^2(8)=14.449$; p=0.071 (Hosmer & Lemeshow). $\chi^2(4)=67.35$; p=0.000 (Omnibus test). Significances: *p <0.1; **p <0.05; ***p <0 .01.

First contact interest (FCI) and potential project volume (logPPV) have been used as control variables. As expected, the first contact type interest has a positive effect on sales effectiveness (contacts who are more interested in the offered product are more likely to buy); whereas, the logPPV has a negative effect (it is easier to win a small order than a big order).

Hypotheses 3 and 4 propose that sales effectiveness decreases for top managers yet increases for technical engineers. Thus, at minimum, a significant difference between the interaction effects of top managers by logCS and technical engineers by logCS is expected. For comparing the interaction effects of the top manager and technical engineer, the reference category has been changed to “top manager” in the following analysis step (see table 11). The results confirm a significant difference between both interaction terms (B=1.127; p=0.001). Additionally, there is a significant difference

compared with the interaction effect of purchasing agent by logCS (B=0.815; p=0.035).

A comparison of the models with and without control variables (see appendix) shows that the control variables cause only small changes when adding FCI and logPPV, and hence, the results seem to be stable.

Table 11: Logistic regression results – overall model

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
logPPV	-0.407**	0.173	5.528	1	0.019	0.665	0.474	0.934
FCI	0.806***	0.114	50.021	1	0.000	2.238	1.790	2.798
FCT			13.159	2	0.001			
Purchasing agent	-0.275	0.546	0.254	1	0.614	0.760	0.261	2.213
Technical engineer	-1.466***	0.461	10.094	1	0.001	0.231	0.093	0.570
logCS	-0.814**	0.334	5.947	1	0.015	0.443	0.230	0.852
FCT x logCS			11.009	2	0.004			
Purchasing agent x logCS	0.815**	0.387	4.438	1	0.035	2.259	1.058	4.822
Technical engineer x logCS	1.127***	0.353	10.211	1	0.001	3.087	1.546	6.162
Constant	-2.745***	1.068	6.603	1	0.010	0.064		

Note: logPPV= potential project volume (log-transformed), FCI= first contact interest, FCT= first contact type, logCS= customer size (log-transformed). R^2=0.121 (Cox & Snell); 0.178 (Nagelkerke). $\chi^2(8)$=9.851; p=0.276 (Hosmer & Lemeshow). $\chi^2(7)$=81.918; p=0.000 (Omnibus test). Significances: *p <0.1; **p <0.05; ***p <0.01.

Goodness-of-fit statistics evaluate the fit of a logistic model against actual outcomes in the data set (Peng et al. 2002). R^2 is a descriptive measure of the goodness-of-fit of a model that indicates the model's predictive accuracy (relative to the baseline model with constant only) (Hair et al. 2014a; Backhaus et al. 2008):

$$\text{Cox \&Snell } R^2 = 1 - [\frac{L_0}{L_C}]^{\frac{2}{n}}$$

Note: L_0=likelihood of baseline model; Lc=likelihood of the complete model; n=sample size.

$$\text{Nagelkerke } R^2 = \frac{Cox\&Snell\ R^2}{R^2_{max}}$$

Note: R^2_{max}=1-(L_0)$^{2/n}$.

Since customer behavior research considers R^2-values of 0.20 as high (Hair et al. 2014a), the values of 0.121 (Cox & Snell) and 0.178 (Nagelkerke) can be interpreted as moderate R^2-values.

An inferential goodness-of-fit test is the Hosmer and Lemeshow test that is insignificant (p>0.05) in every listed model (table 10-12), indicating that the models fit the data well (Peng et al. 2002). Additionally, the omnibus test of model coefficients shows that all listed models are significant improvements (p>0.01) of the baseline model (model with constant only) (see table 10-12).

For analyzing the impact of customer company size on sales effectiveness when approaching a specific first contact type, the specific first contact types have been analyzed separately in a binary logistic regression model (see table 12).

Analysis results point out that the sales effectiveness is independent of logCS for a purchasing agent as a first contact (B=-0.050, p=0.800). However, the likelihood to close a deal after having contacted a top manager as the first contact is lower in larger companies than in smaller companies (B=-0.815, p=0.015). The opposite is true if suppliers contact technical engineers first. This type of the first contact seems to be more promising in larger companies (B=0.333, p=0.004). Therefore, hypothesis 3 and 4 are supported.

Table 12: Logistic regression results – separated by first contact type (FCT)

FCT	Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Purchasing agent	logPPV	-0.021	0.310	0.005	1	0.945	0.979	0.534	1.796
	FCI	0.857***	0.196	19.094	1	0.000	2.356	1.604	3.459
	logCS	-0.050	0.199	0.064	1	0.800	0.951	0.644	1.404
	Constant	-5.053***	1.868	7.322	1	0.007	0.006		
Top manager	logPPV	-0.642	0.482	1.773	1	0.183	0.526	0.204	1.354
	FCI	0.834***	0.289	8.305	1	0.004	2.303	1.306	4.062
	logCS	-0.815**	0.336	5.869	1	0.015	0.443	0.229	0.856
	Constant	-1.836	2.451	0.561	1	0.454	0.159		
Technical engineer	logPPV	-0.567**	0.237	5.739	1	0.017	0.567	0.357	0.902
	FCI	0.783***	0.162	23.485	1	0.000	2.188	1.594	3.003
	logCS	0.333***	0.116	8.220	1	0.004	1.396	1.111	1.753
	Constant	-3.359***	1.387	5.867	1	0.015	0.035		

Note: logPPV= potential project volume (log-transformed), FCI= first contact interest, logCS= customer company size (log-transformed). R^2=0.127, 0.170, 0.096 (Cox & Snell); 0.179, 0.243, 0.147 (Nagelkerke). $\chi^2(8)$=14.414, 13.379, 7.623; p=0.072, 0.099, 0.471 (Hosmer & Lemeshow). $\chi^2(3)$=22.177, 17.923, 38.148; p=0.000, 0.000 , 0.000 (Omnibus test). Significances: *p <0.1; **p <0.05; ***p <0.01.

The control variables do not cause a relevant change in the results (see appendix). FCI generally has a significant positive effect on the probability to win a contract. Regarding logPPV, only the technical engineer shows a significant negative effect on sales effectiveness. Perdue (1989) indicates that the monetary value of the purchase contract tends to interact positively to the total number of involved buying center members. Hence, it can be assumed that especially technical engineers have to share their influence in larger purchasing teams and consequently, their influence on the purchase decision decreases with the project volume.

For a better visual illustration and discussion of all logistic regression results, the general logistic model with the interaction of first contact type by customer company size (FCT x logCS) is used to create graphs of the sales effectiveness contingent on the customer company size for each first contact type. Figure 8 was created by the help of the work of Dawson (2014), who developed a simple slope analysis for moderation effects with binary outcomes (binary logistic regression) and provides a template for illustrating 2-way interactions (http://www.jeremydawson.co.uk/slopes.htm).

It is reasonable to apply the log-transformed customer company size variable since the customer company size is measured by revenue of the customer company (in euro). An increase of 100-million-euro sales volume would mean an increase by 10,000 % for a 1-million-euro company, whereas the same amount would only be a 10% increase for a 1-billion-euro concern. The purchasing process structure would likely differ strongly between a 1 million and a 101-million-euro company. In contrast, there is most likely no difference regarding the degree of decision-making centralization and autonomy, and the functional specialization of the buying center members between a 1 billion and a 1.1-billion-euro concern. For this reason, the revenue of the customer company in figure 8 increases from left to right in a logarithmic way.

Figure 8 indicates when it is better for a sales representative to be invited by a purchasing agent, top management, or technical engineer. The probability of success (sales effectiveness) of a purchasing agent as a first contact stays stable on a relatively high level independent from customer company size. The probability of success of the top management decreases, whereas the probability of success of the technical engineer increases with customer company size.

Figure 8: Illustration of the probability of success (sales effectiveness) contingent on customer company size for each first contact type.

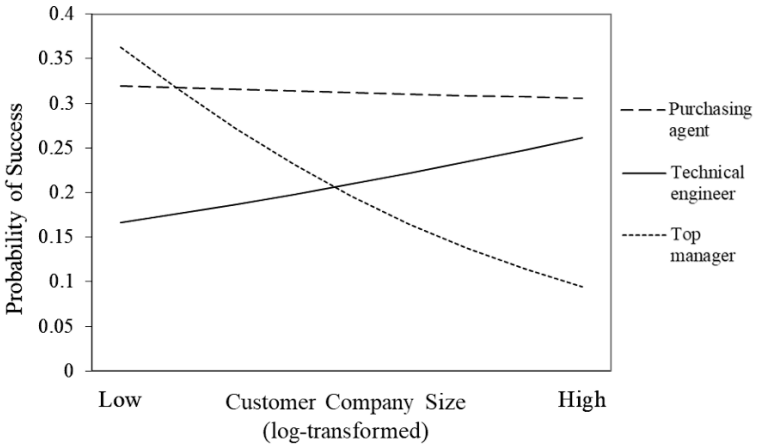


Table 13 gives an overview of the results. Analyzed results support all hypotheses.

Table 13: Summary of hypotheses results

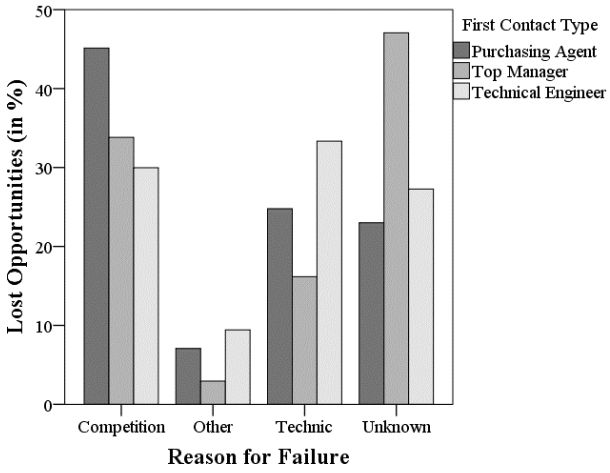
Number	Description	Result
H1	Having purchasing agents as first contacts has a stronger positive relationship to sales effectiveness than having technical engineers as first contacts.	supported
H2	Having purchasing agents as first contacts has a stronger positive relationship to sales effectiveness than having top managers as first contacts.	supported
H3	Having top managers as first contacts has a stronger positive relationship to sales effectiveness for smaller companies than for larger companies.	supported
H4	Having technical engineers as first contacts has a stronger positive relationship to sales effectiveness for larger companies than for smaller companies.	supported

3.5.3. Descriptive Results

Technical engineers are the most common first contact (n=381), followed by purchasing agents (n=164), top managers (n=96) and other (n=52). The higher degree of technical first contacts may have different reasons. First, technical engineers have been contacted more often by the sales representatives, since this was the preferred strategy of the sales representatives. Next, technical engineers more often respond positively to a sales representative's offer to present a product innovation, since they are more interested in learning about new technologies and technical aspects than purchasing agents and top managers. Furthermore, there is a higher barrier to reach the most important employees (top managers) in a company who are specifically responsible for strategic decisions and formally less responsible for purchasing decisions.

Some contacts could not be assigned to purchasing agents, top managers or technical engineers (e.g., distribution, logistics, and consultants), which are declared with "other". Due to their low number, no reliable results could be reached through further analysis. For this reason, "other" first contacts were left out when presenting results.
The sales representatives noted the reasons for losing an opportunity. These are compared and graded according to first contact type in figure 9.

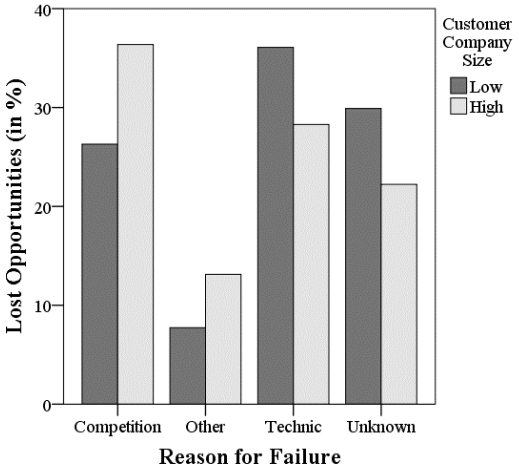
Figure 9: Reason for failure graded according to first contact type



Technical reasons are the main reason for technical engineers losing an opportunity. The main reason for losing an opportunity is mostly too intense competition for purchasing agents and is mostly unknown for top managers. It seems to be harder to determine the cause for failure when approaching a top manager. The reason could be less open communication and feedback of the top management.
Fortunately, the CRM-data base of the first contact with technical engineers is large enough to go deeper into the reasons for losing the opportunity (data set for purchasing agents and top managers are too small for further analysis). Figure 10 illustrates the differences between smaller and larger companies regarding the reasons why an opportunity was lost. It shows that losing an opportunity in smaller companies often has more technical reasons or unknown reasons compared to larger firms. This could

indicate that a technical engineer in smaller companies is more often interested in learning about the technical innovation of a product when inviting a salesperson than in buying the offered product.

Figure 10: Reason for failure divided into small and large firms (technical engineers only)



Note: Separation in smaller and larger companies is made by median-split.

3.6. Conclusion

3.6.1. Discussion

This study is aimed at investigating the decision-making process in industrial firms for predicting industrial buying behavior. The buying behavior is focused on approaching different buying center roles and their influence on purchasing decisions. To the best of the author's knowledge, it is the first study which used data of a CRM-system to research sales effectiveness in the B2B context. Primarily logistic regression analysis has been used to investigate nearly 700 sales opportunities over a period of 8 years, from first sales visits until closing.

In the current study, the role theory has been combined with the contingency theory. The role concepts of the buying center model of Webster Jr and Wind (1972) have been assigned to three organizational functions (purchasing agent, top manager, and technical engineer) for predicting sales effectiveness. It has been proposed that the assignment and the influence of the roles vary with customer company size. Customer company size as a proxy for decision-making centralization and autonomy; and the functional specialization of the buying center members, has been hypothesized to impact the influence of the organizational roles and respectively the three organizational functions.

The results of the analysis support all four hypotheses. Having purchasing agents as first contacts has a stronger positive relationship to sales effectiveness than having technical engineers as a first contact. Results show only a weakly significant higher sales effectiveness ($p<0.1$) when having a purchasing agent as a first contact compared to a top manager as a first contact. Latter could be explained by the much smaller sample size of the top managers ($n=96$) in the analysis compared to the technical engineer group ($n=381$). Larger sample size may result in higher significant results.

In general, one could say that a purchasing agent is a good choice as a first contact independent from customer company size (see figure 8). Webster Jr and Wind (1972) note that often the purchasing department becomes the sales representative's main contact point with the organization. However, it has to be mentioned that a certain interest in the purchasing agent for the product solution is a precondition. When the purchasing agent is not yet aware of a need for the offered product solution, (s)he might not be the right person to initiate a purchase since purchases are more often initiated by other organizational functions (Kelly 1974). Pointing out the need for a certain product is more often made by a user, respectively, a technical engineer (Dadzie et al. 1999).

Hence, even when the results show that the technical engineers are not the favorite contact to be invited to in smaller companies; they are maybe the best chance for sales representatives to manipulate the initiation of future projects when the purchasing agents or top managers do not yet perceive the need for the product solution. Whereas technical engineers are more explorative and interested in finding new technologies

and products, purchasing agents are primarily responsible for searching for supply alternatives and inviting potential suppliers to present their offer when a need is often already identified and specified. Thus, it is not surprising that competition was the main reason of failure when approaching a purchasing agent, whereas technical issues were the main reason why technical engineers did not support the offer (see figure 9). In conclusion, there is a higher chance to win a contract when being invited by the decider or buyer of a small company. However, it does not mean that the contact to the users should be avoided in small companies.

Further analyses confirm the hypothesis that there is a higher probability that top management actively plays the decider role in smaller companies. In contrary, in large companies, top managers are less involved in the purchasing process, and therefore, the technical engineers gain influence and compensate the decrease of top management's influence. The increase of sales effectiveness with customer company size and the capability to specify new needs may make the user in large companies as attractive as a buyer (see figure 8).

When approaching a user, the reason for losing an opportunity in smaller companies is more often due to technical reasons and for the sales representative unknown reasons (see figure 10). This gives an indication that the informational need of technical engineers differs between smaller and larger companies. Larger firms generally have more financial, human, and technological resources to gain relevant information. Technical engineers in smaller companies have more limited information sources and networks (e.g., no technology scouts) and thus are more contingent on external information sources from suppliers who showcase and explain technological novelties (Akinci et al. 2007). Hence, technical engineers may use sales visits, additionally as an instrument for getting information and not only for purchasing purposes. Consequently, sales representatives' customer visits lose their potential to make a sale and concentrating primarily on users in small companies is more often a waste of valuable resources for sales representatives.

This study helps to get new insights about the influence of buying center members on purchase decisions and verifies some findings of the predominantly explorative studies in this field. The study's results are mainly in accordance with the findings of Bellizzi

(1981), who discovers that the influence of top managers in the purchasing process is lower rated in larger companies.
Complementarily, the influence of other functions like the user and purchasing agent, are expected to increase with customer company size. However, the increase of influence and the relatively low average influence of the purchasing agent (compared to the perceived influence of the other) stay in conflict with the finding in this study. It could be argued that the difference appears because the study of Bellizzi (1981) does not focus on new buys only but also include rebuys for which purchasing agents are primarily responsible (Naumann et al. 1984). Another explanation would be that there is a discrepancy between the opinion of the surveyed employees and the real influence of purchasing agents.

In summary, this study gives support to the relevance of role theory for prediction purposes. Nevertheless, it also shows in an impressive way that role theory has to be used in consideration of situational factors, which determine the effective strength of sales behavior. Sales behavior should be adapted to the most influential contacts in the customer's company. Top managers, as deciders, and purchasing agents, as buyers are the most influential contacts in small companies; whereas technical engineers, as users, and purchasing agents, as buyers, should be favored in larger companies. In middle-sized companies, the buyer is the best choice.

3.6.2. Limitations and Research Implications

This study had to specify its research area concerning buying task, industry, and product category because the influence of the buying center members varies over different purchasing situations (see chapter 2.2.3). It concentrates on the initiation of relationships and not just on simple transactions with customers. For this reason, selling product solutions (product components) which need interaction, expertise, and consulting from the sales representatives, were investigated. Furthermore, the study focuses on customer acquisition; thus, new buys are in the center of analysis, and the findings are not (or only very restricted) transferable to straight or modified rebuy situations.

Another restriction of this study is that the study concentrates on the technical-mechanical industry, where buyers, top management, and technical engineers are the most relevant contact persons of a sales representative. The involved functions may differ in other industries (e.g., physicians in hospitals, teachers in schools). Future studies should investigate selling effectiveness in other industries, notably because not only the function but also the power and involvement of the buying center members may differ.

Furthermore, since the focus of investigation lies on new technical-mechanical product solutions, the findings about selling other product types, e.g., services or commodities may differ strongly. Additional product characteristics could be interesting since it is, for example, arguably that top management is more involved in a buying process when the product has some strategic significance (Dadzie et al. 1999). Moreover, industries may also have different conditions and could diversify the influence of first contact types.

The results of this study show that, on average, it is more effective to approach an economic decider (purchasing agent or top manager) for small customer companies. Nevertheless, it could be more efficient to call a technical engineer, since it may be more time consuming to identify and convince a purchasing agent or a top manager. For that reason, future studies could also analyze the sales efficiency beginning with the first sales call. Additionally, the price may be lower when a purchasing manager has been contacting initially, since (s)he is more focused on price targets than a technical engineer who is more interested in functionalities and quality of the product. Thus, a plausible candidate for future investigation is the extent of investments (time and money) into the sales acquisition process, dependent on the first customer contact type.

The results of this study show that the sales effectiveness of sales behavior depends on customer size. There could be other moderating customer characteristics besides customer company size (e.g., company's strategy, history, and culture). Furthermore, situational factors could be considered in future studies, e.g., purchase importance, complexity, and uncertainty, which are examined by the meta-analysis of Lewin and Donthu (2005) to influence the buying center structure (size, formalization,

centralization) and buying center involvement (relative influence, lateral and vertical involvement).

3.6.3. Managerial Implications

The results of this study provide practical implications for sales managers and representatives regarding the relative effectiveness of approaching a specific first contact type. Identification of the buying center members and calling the right people is a critical issue for personal selling and campaign management (Jackson Jr et al. 1984). This study provides a scheme to classify purchase situations and helps practitioners to predict how influential each contact person will be and under what circumstances.

Results show that the contact persons who should be targeted at marketing and sales efforts (i.e., the most influential buying center member) depend on customer company size. With knowledge about the company size of the potential customer, sales managers and salespeople have the opportunity to plan their behavior strategically before approaching the potential customer. Customer company size is a criterion, which is relatively easily accessible for suppliers since data about the companies' sales volume is often publicly available and can be roughly estimated or can be received from external providers.

"Impact versus activity" is often an issue that is discussed by sales managers with their salespeople (Raman et al. 2006). The analysis results suggest that sales campaigns should be planned as follows: When selling to a small firm, sales efforts should be directed toward purchasing departments and/or the top management, whereas in large companies it should be targeted to engineering and/or purchasing departments, and in middle-sized companies purchasing agents are the most ideal contacts.

However, even when findings suggest that the purchasing agent could be approached regardless of the company size; there are more factors which have to be considered in addition to sales effectiveness. Sales effectiveness also depends on the probability that the purchasing agent is currently instructed to buy a product that is offered by the seller. Thus, sales representatives should try to get this information as early as possible.

On the one hand, sales representatives should seek to engage invitations from the suggested contact types (depending on customer company size). On the other hand, when multiple contact persons of potential customers ask for sales visits, they should prioritize making sales visits accordingly. Hence, it helps sales managers and sales representatives to optimize their allocation of limited resources.

Furthermore, sales, and marketing managers should consider the targeted buying center member when developing communication strategies. This includes the segmentation of customers and the choice on the best way to formulate the value proposition. When segmenting customers by company size, small companies should be assigned to sales representatives who are educated to convince economic deciders specifically, and primarily sell the economic value of the product solution (e.g., cost savings, total cost of ownership), rather than explaining technological novelties or technical subtleties. However, approaching large companies need sales representatives who are additionally technical specialists. They should also be able to explain every technical detail of the product and customize the product to the user needs. Hence, sales team members can be divided into these two sales groups for effectively communicating with the most promising customer contacts.

Besides implications for sales management, there are also implications for the purchasing processes of companies. The study results show that the influences of users seem to be underrepresented in the purchasing process of small companies. The top management and purchasing department in small firms should emphasize more the opinion of users and their expert knowledge when buying new product solutions. This can improve the purchasing decision making quality.

4. Study 2: Value Management

4.1. Research Objective

To stay competitive, suppliers must know how to create and derive value. Since building and maintaining relationships with customers are investments for the future, suppliers must ensure to derive benefits for themselves when creating value to the customer. Customers and suppliers manage a separate profit stream; however, both partners need each other to reach their goals (Williamson 1988). In other words, there is, on the one hand, a goal clash and, on the other hand, both partners are contingent on each other to receive value.

Being customer-oriented is a fundamental maxim in marketing literature. Customer-orientation is based on obtaining information about customer needs and preferences (Kohli and Jaworski 1990) to understand how to create superior value for the customers (Narver and Slater 1990). It has been defined as "the set of beliefs that puts the customer's interest first, while not excluding those of all other stakeholders […], in order to develop a long-term profitable enterprise" (Deshpandé et al. 1993, p. 27). Blocker et al. (2011) show in their study that customer orientation is an (if not the) primary driver of value to the customer.

Obvious, customer-orientation is not an altruistic approach. Solely creating value to the customer without an appropriate return would be "a one-way track to economic losses" (Walter et al. 2001, p. 373). Companies also need to appropriate value for themselves to survive. In customer oriented firms, marketing has the task to communicate and create value to the customer, which is commonly assumed to be paid by loyalty and profitability of customers (Kumar and Reinartz 2016). Studies show market-orientation, where customer-orientation is the central element (besides competitor orientation and inter-functional coordination) (Slater and Narver 1994), generally has a positive impact on firm's profitability (Narver and Slater 1990; Jaworski and Kohli 1993). These studies support the shared belief that superior value to the supplier will be indirectly received by the firm that has a customer-oriented organizational culture. This may lead suppliers to believe that creating more value to

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the customer will automatically lead to a higher value to their own firm. But is this the truth? Does value breed value?

It can be reasonably assumed that a higher value does not always breed a higher value since, obviously, not all relationships yield mutually beneficial outcomes (Narayandas and Rangan 2004). This may have diverse reasons and can depend on various factors: relationship type – e.g., when the supplier strive for a closer cooperation whereas the customer only wants a transactional relationship without any extensive entanglements (Cannon and Perreault Jr 1999); customer characteristics – e.g., when the supplier feels entitled to receive a high value and overestimates the value it is giving (Wetzel et al. 2014); environment – e.g., when market needs or preferences are stable, a higher customer-orientation may not be needed (Jaworski and Kohli 1993); etc.

Surprisingly, the connection between both values (value to the customer and value to the supplier) has only been fragmentarily investigated so far. Past studies only concentrate on the impact of value to the customer on specific parts of value but not on the overall perceived value of the relationship. On the one hand, some studies only measure the intention to purchase, or only measure the intention to stay loyal, etc. but do not measure the actual value. The dilemma of these studies is that the intention may not lead to actual behavior (Yang and Peterson 2004). The empirical studies indicate that perceived value to the customer increases purchase intention (e.g., Chang and Wildt 1994; Grewal et al. 1998), is a primary determinant of customer loyalty (e.g., Ulaga and Eggert 2006; Sirdeshmukh et al. 2002; Hansen et al. 2008; Lam et al. 2004), affects customer's intention to allocate business to a supplier (e.g., Liu et al. 2005), impacts customer's willingness to pay a premium price (e.g., Pihlström and Brush 2008), decreases customer's tendency to seek alternatives and increases the probability of recommending the supplier (e.g., Hansen et al. 2008).

CRM studies especially investigate the impact of relationship investments, which could be interpreted as an antecedent of value to the customer, on seller performance outcome (share of wallet, sales revenue, sales growth) (Palmatier et al. 2009). These studies almost solely use financial performance outcome measures. However, customers can also provide value through giving market information, initiating innovations, recommending the supplier to potential new customers, etc. (Walter et al.

2001). Therefore, these studies provide an incomplete picture of the relationship outcome payoffs (Hoppner and Griffith 2011); therefore, a more holistic outcome measure, like the relationship value (see chapter 2.3), is needed.

To the best of author's knowledge, there is, until now, no empirical dyadic study that investigates the impact of value to the customer on value to the supplier in business-to-business markets. Noting the gap, firstly this work seeks to contribute to CRM literature by providing a detailed examination of various economic perspectives that provide a theoretical foundation for understanding how value to the customer affects customer behaviors to create value to the supplier. Most of all, exchange theories from classical to contemporary presume that actors are self-interested, striving to increase outcomes they highly value (Molm 2010). But these calculative future-oriented theoretical perspectives (e.g., transaction cost, social exchange, power-dependence) need to be complemented by normative past-oriented theoretical perspectives (e.g., reciprocity norm, equity, relational norm), to get a complete picture about reciprocal value exchanges. Secondly, this research study is designed to fill this gap empirically and investigates customer's predictability to reciprocate benefits with an analysis of dyadic data (customer and supplier data) in the B2B context.

Agreeing with Kumar and Reinartz (2016) this work based on the assumption that "First, to be successful, firms (and the marketing function) have to create perceived value for customers... Second, customers in return give value through multiple forms of engagement..." (Kumar and Reinartz 2016, p. 36). Anyhow, both value to the customer and value to the supplier are only enduring beneficial when they are aligned (Kumar and Reinartz 2016). Thus, this study also contributes to customer relationship management literature by combining two value-oriented approaches – the value-driven approach and the deriving-value approach – to secure that the value provided to the customer will translate into value for the supplier firm. On the one hand, value-driven relationship marketing (which also can be named as customer-oriented marketing) requires that a company offers resources and activities to satisfy the long-term needs of its customers and thereby creates value to the customer (Grönroos 1997). The deriving-value approach, on the other hand, implies the process of deriving value from

customers, ways to measure this value and strategies for maximizing value to the supplier (Kumar and Reinartz 2016).

Lastly, this study contributes to reciprocity research by conceptualizing a cultural dimension of a company that determines the internalized tendency of a customer to reciprocate value – the company's "internalized norm of reciprocity". Recent work from Li et al. (2017) investigate the predictive ability of internalized reciprocity norm for repaying reciprocal behaviors in an experimental study. Li et al. (2017, p. 202) claim "there is still an insufficient amount of appropriate empirical evidence" to support the assumption that an internalized norm of reciprocity can account for individual differences in reciprocity. This study verifies individual differences between customer companies.

As a result, this study addresses the following questions that have not been investigated by extant research:

1. To what extent does value to the customer lead to value to the supplier? Answering this question allows the examination of whether it is worthwhile to provide value to customers in order to derive value to the supplier.
2. How does creating value to the customer lead to value to the supplier? This study contributes to a better characterization and distinction of the kinds of motivations that drive customers to pay value for value, by also answering the following two sub-questions:
    a. Do calculative thoughts change the propensities to pay suppliers?
    b. Do customer's moral norms change the propensities to reciprocate value?

4.2. Research Approach

The objective of this study is identifying the "most suitable" customer company, which should be prioritized for value creation to receive high value. To bridge the gap between value to the customer and value to the supplier, different economic perspectives are reviewed. Building on the theoretical perspectives in chapter 2.4, this work develops a framework for understanding and predicting motivational differences

across customers. Two theory-based orientations that explain why value to the customer should breed value to the supplier are introduced: the future- and the past-orientated motivation (see chapter 2.4.1 and 2.4.2).

Derived from resultant conceptualization two general categories of moderating factors are suggested which reflect the future and past perspective:

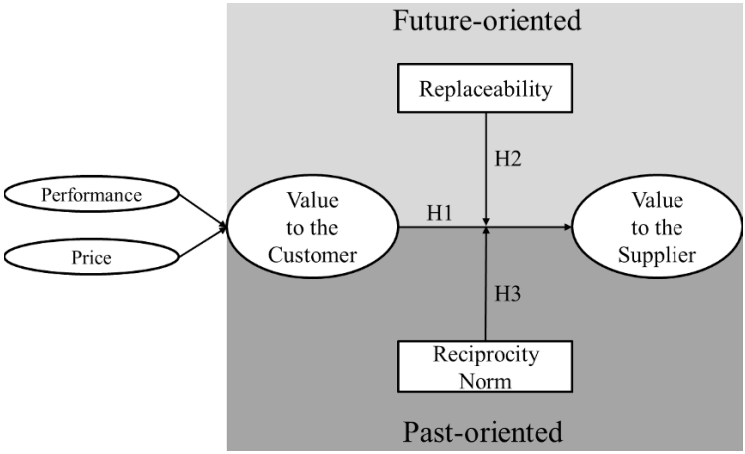
I. Future-oriented moderators, which induce motivational changes by influencing the incentive to invest in the supplier to avoid future losses or maintain future gains. Perceived "replaceability" of a supplier by the customer is used as a future-oriented moderator.

II. Past-oriented moderators, which guide customers to reward received value in the past. The internalized "reciprocity norm" is used as a past-oriented moderator.

Figure 11 shows both orientations with the concerning variables and hypotheses of this study.

By using structural equation modeling, build hypotheses are tested with the help of dyadic questionnaire data from customer and supplier side.

Figure 11: Conceptual framework and hypotheses



4.3. Development of Hypotheses

4.3.1. Value Breeding Value

Almost all contemporary theories assume that actors' goal is to maximize their own benefits or profits (Molm 2010). In the concrete sense of relationships, the customer's goal is the value creation for its own. However, this is only possible with another actor. Customers and suppliers are in fact financially independent companies; however, they are functionally dependent on each other (Jap 1999). On the one hand, customers maintain business relationships with valuable suppliers to benefit from value creation and thereby reach their own goals, which are independent or even in conflict with the supplier's goals. On the other hand, customer-supplier relationships share goals which contain seeking some analogous benefits and costs like reducing uncertainty, increasing communication effectiveness, exchange efficiency, and social satisfaction, which lead into individual payoffs as the outcome of collaboration (Dwyer et al. 1987). Thus, in the context of customer-supplier relationships, the exchange is motivated by the goal-seeking behavior of both parties (Houston and Gassenheimer 1987). The business relationship is the vehicle to achieve these goals (Bagozzi 1995). The more a relationship to a supplier contributes to achieving customer's goals, the more the customer will perceive a high relationship value (see chapter 2.3.2) and ultimately desire to extend the relationship to receive even more value in the future (Geiger et al. 2012).

In line with social exchange theory (see chapter 2.4.1), Lee et al. (2008) argue that customers are calculative investors and conduct a cost-benefit analysis. When benefits outweigh the costs of a relationship to a supplier, customers show calculative commitment in their relationship to a supplier. Customers are willing to contribute resources to the exchange partner to gain access to the supplier's resources, which are needed by the customer (Buchanan 1992). Hence customers commit themselves to establish, develop, and maintain relationships to suppliers which they highly value (Morgan and Hunt 1994).

There are many reasons why customers should respond to received value with value creation to the supplier because of a future orientation: When customers perceive a high relationship value, they…

- consider relationship investments (e.g., in a vendor-managed inventory) which are beneficial to retain and maintain the relationship and are motivated to take chances to create value to the supplier.
- are more willing to take risks to cooperate with the supplier (e.g., in innovation development projects, which could create additional value to the supplier).
- try to avoid damaging the relationship or even losing the supplier, because they count on the provided value by the supplier for staying productive (e.g., consulting to increase production process efficiency)
- resist other alternatives which provide less or equal value because taking higher risks (uncertainty) would be unbeneficial (see e.g., Lam et al. 2004)

Accordingly, customers try to influence its suppliers with the aim of value maximizing for their own.

Besides the before mentioned future-oriented calculation (creation of value to the supplier to achieve company goals), there is also a past perspective that leads customers to react to received value (see also chapter 2.4.2). It is a normative commitment of customers that considers the obligations to the exchange partner and explains organizational bonds which are not purely motivated by immediate future gains (Gilliland and Bello 2002). Researchers like Gale et al. (1995) question the pure rationality of stimulus-response behavior and interpret the existence of reciprocal behavior as the result of a social norm. Reciprocal actions are not necessarily performed to obtain specific and immediate benefits. However, this does not mean that the execution of reciprocity norms is irrational. Rather, reciprocal behavior can be oriented to pursue more indirect, long-term values rather than obtaining immediate rewards (Blau 1964). Actors simply learn that certain behaviors are effective (with the help of a stimulus-response mechanism). As a result of this evolutionary learning process, a social norm has developed that guides our behavior (Gale et al. 1995).

Laboratory experiments, e.g., from Morales (2005) show that when firms expend extra effort, consumers reward it by increasing their willingness to pay. The norm of

reciprocity evokes obligations based on received benefits in the past and coerces repayment of the debt (Gouldner 1960). In turn, the obligations of repayment depend on the perceived value of the benefit received. Thus, besides a utilitarian value of an equitable exchange, there is also a "moral" purpose.

Actors have the opinion that the partner deserves to be rewarded for her/his previous behavior (Perugini et al. 2003). Lane and Anderson (1976) show in their experiment that the value of the outcome of the action to a recipient has a positive effect on moral judgment and thereby on the extent to which people feel gratitude (for more detailed information how gratitude helps to build and maintain business relationships see Raggio et al. 2014). Palmatier et al. (2009) investigate the emotional appreciation for received benefits – named as feelings of gratitude as a missing mediator between relationship investments (which could be interpreted as an antecedent of value to the customer) and seller performance outcome (share of wallet, sales revenue, sales growth). They show that gratitude-based reciprocal behaviors and customer commitment mediates this relationship. Huang (2015) also reports a mediating effect of customer gratitude between relationship marketing investments and loyalty in retail.

In summary, on the one hand, customers are motivated because of future consequences that could occur when customers invest in suppliers based on their value to the customer. On the other hand, customers could appreciate suppliers' past value creation behavior with rewarding behavior. Relationship value represents a bonding factor making customers "want to" stay in a relationship (Geiger et al. 2012) and thus value to the customer motivates customer patronage (Yang and Peterson 2004), enhances the customer's long-term orientation to the business relationship (Narayandas and Rangan 2004) and thereby builds growth, profit, and more value (Reichheld and Teal 1996). This leads to the following hypothesis:

H1: Value to the customer is positively related to value to the supplier.

4.3.2. Future-Orientation: Replaceability

According to theories emphasizing the self-interest of actors in business relationships (see chapter 2.4.1), customers behave actively, calculatedly, and in a future-oriented manner. Rational actor approaches expect customers to cognitively weigh benefits and costs (or in other words the value) of alternatives, on the basis of information available, to make a choice that maximizes the future outcome for the customer (Molm 2010). Customers will hold up the relationship with those suppliers that provide the highest relative value to them (Buchanan 1992). Scheer et al. (2010) show that benefits and costs (value) of its supplier relative to available alternatives increase their loyalty intention (intention to expand the purchase volume). However, this assumes that customers can easily replace suppliers, not offering high value. The replaceability of a customer is mainly dependent on the "availability" of alternative suppliers and "switching costs":

Emerson (1962, p. 32) states that the dependence of an actor A upon another actor B is contingent on the "availability" of its desired goals outside of the A-B relationship. When the customer's supplier follows a value-creating strategy which is not simultaneously implemented by large numbers of other companies, the availability of alternatives that satisfy customer's needs may be low (Hald et al. 2009; Cannon and Perreault Jr 1999; Walter et al. 2003; Barney 1991). Based on social exchange theory and particular power-dependence theory (Emerson 1962) (see chapter 2.4.1), Molm et al. (2007b, p. 207) add that "actors are dependent on one another for valued outcomes, that they are motivated to obtain more of the outcomes that they value and others control, and that they engage in recurring exchanges, in which benefits received are contingent on benefits provided, to obtain those outcomes." Thus, it can be argued that the dependency on a supplier increases with provided value to the customer, so that customers try to ensure the loyalty of valuable suppliers. This is also termed in literature as calculative commitment which is defined as "a firm's motivation to continue the relationship, because it cannot easily replace its current partner and because it cannot obtain the same resources and outcomes outside its current relationship" (Ruyter et al. 2001, pp. 272–273).

Costs associated with switching to alternative suppliers are termed as "switching costs" (Emerson 1962). Switching costs depend on investments in relation-specific assets (Hald et al. 2009), termination costs, and search costs (Bendapudi and Berry 1997). Moreover, Nielson (1996) distinguishes between hard and soft relation-specific assets. Hard assets are customer specific investments that are comparatively tangible (e.g., adaption of own product design or production modifications). Soft assets represent comparatively intangible assets that consist of psychological and social investments (e.g., quality of working relationships). Thus, the net value that could be achieved by cooperation with alternative suppliers decreases when the costs to replace the current supplier rise. Customers who seem to be loyal may see a low relationship value and seek alternatives but do not defect due to too high switching costs (Lee et al. 2001). Yang and Peterson (2004) investigated how switching costs moderate the relationship between value to the customer and loyalty with the help of a survey of online service users. Their results show significant negative moderating effects of switching costs on the association, but only above a perceived value level that exceeds the average value of the customer's relationships.

Customer's motivational state for supporting the supplier can be to gain rewards, but the customer may also perceive a threat of opportunism by the supplier when the customer does not create appropriate value to the supplier. The fear of opportunism is in center of transaction-cost theory (see chapter 2.4.1). Transaction-cost theory's emphasis is on the minimization of costs when explaining why customers chose a supplier as an exchange partner (Geiger et al. 2012). Conflicts are assumed to cause excessive costs (Thibaut and Kelley 1966). Suppliers can punish customers by withholding its product or service and by decreasing the product or service quality or changing the attached conditions to continuous supply (Hahn 2015; Frooman 1999). The credibility of the threat of opportunism increases with the customer's dependence on its supplier for valued resources (Frooman 1999; Pfeffer and Leong 1977) (see also power-dependence theory in chapter 2.4.1). When the customer wants to stay in a valuable relationship in the future, the threat leads to a motivation to avoid punishment for not supporting the supplier (Batson and Shaw 1991). Thus, safeguarding against

opportunism should drive customers to reciprocate value, especially in high valued relationships.

When the relationship value is high, the threat of future losses matter to a customer in the present and hence deter the customer from defection and motivates to invest into the relationship (Heide and Miner 1992). A continuing relation of recurring exchanges between the same partners leads to customer beliefs that the supplier will not act opportunistically or even exploit the customer and accept some short-term costs in return for long-term gains (Molm 2010). Customer reward suppliers to build credibility for future cooperation (Perugini et al. 2003) and to get its supplier to produce behavior that the customer perceives as rewarding (Thibaut and Kelley 1966). The exchange of benefits, or in other words, the reciprocal exchange may be valued as a symbol of a high-quality relationship (Settoon et al. 1996).

Molm's experimental research on reciprocal exchange (e.g., study of coercive power - Molm 1997) shows that risk avoidance dominates behavior in reciprocal exchange. Actors behave reciprocally even when it does not result in a maximization of their outcomes. Molm (1997) indicated in a laboratory experiment that highly dependent actors rarely used coercion (see coercive strategies – chapter 2.4.1) against their partner because of fear of loss. It shows that loss aversion is getting more critical when risk increases in an exchange (Molm 2010). In extreme cases, missing alternative suppliers and high switching costs can cause customers to perceive themselves as being "locked in" to a supplier relationship (Hald et al. 2009). Customers are forced to create value to the supplier, especially when they risk losing an irreplaceable relationship with a high value. Therefore, it can be proposed that the motivation to hinder losses has an even stronger motivation for the customer to reciprocate value than the potential to earn gains that could be reached by exploiting the supplier. Because of the works of Tversky and Kahneman (1991) about loss aversion, it is well-known in economics that losses loom larger than equivalent gains when making decisions.

For these reasons, it seems plausible that the risk of losses increases proportionally to the value provided by the supplier combined with the replaceability of the supplier.

Hence, an interaction effect between value to the customer and supplier's replaceability on value to the supplier should exist:

H2: The positive association between value to the customer and value to the supplier is greater as replaceability decreases.

4.3.3. Past-Orientation: Internalized Reciprocity Norm

As proposed by the paradigm of the homo economicus, economic actors are shellfish (Fehr and Gächter 1998). Actors behave outcome-oriented, caring about social interactions just insofar as they have an impact on the actors' future wealth (Gintis 2000). But the view of rational utility maximization (argued to build up hypothesis 2) does not cover customer motives that go beyond their mere self-interests and guide them to reward value received in the past without expecting a future payoff. Berg et al. (1995) confirm in their investment game that self-interest alone does not explain the reciprocal behavior of participants. Further experiments had shown that reciprocity is observable even when no repetition was possible, and selfish strategies would outperform reciprocal strategies (Perugini and Gallucci 2001).

Prisoner's dilemma experiments and ultimatum bargaining games routinely show that many participants cooperate, but some others defect. Approximately half of the participants behave reciprocally, whereas about one quarter behaved completely selfish, and the rest showed other behavioral patterns (in one-shot situations) (Fehr and Gächter 1998; Fehr and Gintis 2007). Characteristic differences of the individual should be the reason for the differing (non)reciprocal behaviors since external circumstances do not differ in these experiments (e.g., the replaceability of the supplier – see hypothesis 2).

In their seminal work, Fehr et al. (1993) report positive reciprocity in gift-exchange games. Their study shows that selfish behavior and reciprocal behavior coexist. Transferred to the context of supplier-customer-relationship, one could assume there are at least two distinct types of customers who behave in a different manner: The self-regarding actors who are driven by the maximization of their own utility and the

reciprocal actors who are motivated by the desire to reciprocate, even if doing so leads to a decrease of their own utility.

Reciprocal fairness (Rabin 1993; Falk et al. 2008) and inequity aversion (Fehr and Schmidt 1999) are two of the most prominent forces behind reciprocity (Fehr and Gintis 2007) (see also chapter 2.4.2). According to Huseman et al. (1987, p. 222), actor's behavior in response to inequity is "a function of an individual's preferences for different outcome/input ratios". Thus, they propose that actors react differently to inequity when they differ in their equity sensitivity. Equity sensitive (or inequity averse) individuals who are guided by a norm of equity, compare their output/input rations with others, and feel distress or guilt when they were under- or over-rewarded. Whereas a reciprocally fair actor is motivated by the desire to react to kind acts with kindness, an inequity averse subject tries to avoid inequity and to create equitable outcomes (Fehr and Gintis 2007).

The experimental results of Gallucci and Perugini (2000) indicate that individuals do not seem to seek equal outcomes; however, they appear to react to the value of the partner's actions. Van Lange and Semin-Goossens (1998) show that individual social value orientation is strongly related to reciprocity. Compared with individualists and competitors, these actors are more willing to cooperate at the same level as the partner is cooperative to them. Thus, researchers like Fehr and Gintis (2007) speak about an internalized cooperative social value.

According to Gouldner and other researchers (e.g., Hahn 2015) reciprocal behavior depends on following a social norm – the reciprocity norm (see chapter 2.4.2). Gouldner (1960) declares the norm of reciprocity as a universal principle and propose that it can be found in all value systems and is present in moral codes. Nevertheless, this does not mean that reciprocity is equally valued by all individuals in a social system (Cropanzano and Mitchell 2005). For example, Gallucci and Perugini (2000) suppose that the relevance of the norm-related utility differs between individuals and thus presume a heterogeneous distribution of sensitivity to the norm of reciprocity.

When actors vary in their willingness to follow this norm, then it is reasonable that the norm of reciprocity can be regarded as an internalized norm (Li et al. 2017; Perugini and Gallucci 2001). Usually, an internalized norm emerges when individuals fully

accept a social norm resulting in an independent self-motivational drive (Perugini and Gallucci, 2001). Thus, internalized norms are anchored in the self (Kerr et al. 1997; Schwartz 1977).

Internalized reciprocity can be seen as a goal per se and therefore represents an individual preference or tendency to behave reciprocally without any strategic calculations (Perugini and Gallucci 2001; Perugini et al. 2003; Li et al. 2017). Perugini and Gallucci (2001) indicate that the internalized reciprocity norm leads the actor to reciprocate a behavior, notwithstanding a pure self-interested decision on subjective benefits and costs that would lead to another choice.

Recent work from Li et al. (2017) investigate the predictive ability of internalized reciprocity norms for repaying reciprocal behaviors. In a dictator game, the participants played in one-shot interactions with strangers so that the participants could not expect any long-term benefits for reciprocation. The payoff allocation in the dictator game was significantly predicted by the internalized reciprocity norm of the participants and showed that a higher positive reciprocity disposition led to greater repayment than a lower one.

Since organizations differ in their culture and core values (e.g., about how to treat suppliers) which are directly linked with norms (Barney 1986), it is likely that not only individuals but also organizations differ regarding their norm of reciprocity. Hoppner and Griffith (2011) provide an indication for differences of customer firms concerning the guidance by a reciprocity norm. Their types contain the “how” and “when” aspects of reciprocity (comparability of received and given good; and time horizon of return). In contrast to their study, this hypothesis concentrates on the more fundamental, and therefore, the more critical aspect of the guidance by an internalized reciprocity: whether to reciprocate or not.

In conclusion, it can be assumed that the reciprocal behavior of customer companies depends on following an internalized company norm. It is proposed that the degree to which customers apply reciprocity principles varies from customer to customer. When the customer is not guided by an internalized reciprocal norm, it should lead to an unproportional exchange of value in the business relationship. In this case, even when the supplier creates value to the customer, the supplier would not reward it (except

future consequences argue against it – see hypothesis 2). Thus, the internalized reciprocity norm of customers should have crucial importance in predicting customer's individual differences in returning value to the supplier:

H3: The positive association between value to the customer and value to the supplier is greater as the customer is guided by an internalized reciprocity norm.

4.4. Methods

4.4.1. Selection of an Analytical Technique and Method

Since there are multiple variables in the model, the analytical techniques are limited to multivariate techniques (univariate and bivariate techniques can be excluded). Value to the customer is analyzed both as a dependent variable, which is influenced by perceived performance and price, and as a variable that has an impact on value to the supplier. Thus, this model (see figure 11 and 13) contains multiple relationships between independent and dependent variables. Structural equation modeling (SEM) is the appropriate technique to analyze this complex model and therefore, is selected for this study (Hair et al. 2009).

Researchers can decide between two structural equation modeling methods: covariance-based SEM (CB-SEM) and variance-based partial least squares path modeling (PLS-SEM) (Hair et al. 2012a). The covariance-based analysis uses the maximum-likelihood estimation, and the PLS-method applies the ordinary least squares (OLS) regression. CB-SEM seeks to estimate model parameters with which the divergence from the sample and estimated covariance matrices can be minimized; whereas PLS-SEM estimates partial model relationships in an iterative sequence of OLS regressions with the objective of maximizing the explained variance of the endogenous latent variables (Hair et al. 2011; Hair et al. 2012b).

An often-cited advantage of PLS-SEM is that it is easily applicable with small sample sizes. Nevertheless, there are minimum requirements regarding the sample size, which are determined by the number of constructs and structural paths (Hair et al. 2014a). The sample size should be 10 times greater than a) the maximum number of formative

indicators of a construct in the model and b) the maximum number of structural paths to a construct in the model.

Hair et al. (2014a, p. 20) summarize this rule of thumb: "the minimum sample size should be 10 times the maximum number of arrowheads pointing at a latent variable anywhere in the PLS path model." The most complex latent variable in the PLS path model of this study counts 18 arrowheads (higher order construct of performance). Since our sample size exceeds 180 observations, it is large enough to be used for estimating the PLS path model.

Another general advantage of PLS-SEM is that it is not restricted to any distributional assumptions. This comes at the price that researchers can only use prediction-oriented, non-parametric evaluation criteria and resampling procedures to evaluate the partial model structures' adequacy, instead of relying on the classic inferential framework (Hair et al. 2012b). There is not yet a global optimization criterion to measure the overall model fit, and thus, it is less useful concerning the comparison of alternative model structures (Hair et al. 2012b).

Despite that, PLS-SEM has been chosen for this study mainly because of the following two reasons:

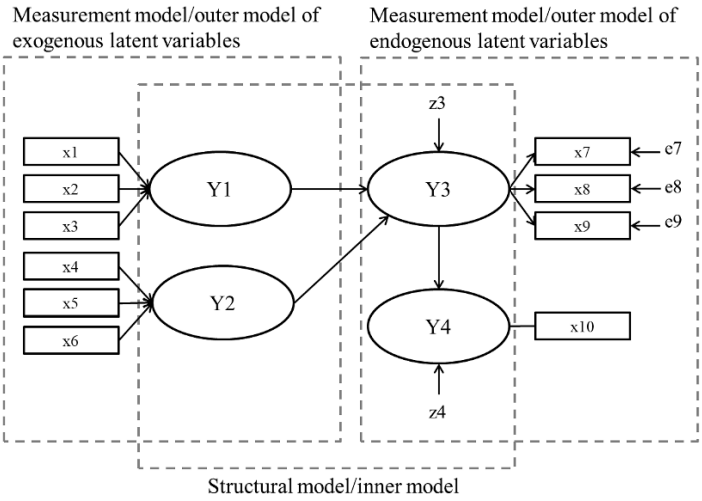
- Predictive abilities: The goal of this study is to identify created value to the customer as a key driver of value to the supplier and to analyze the relationship between value to the customer and value to the supplier moderated by future- and past-oriented moderation factors. Since the objective of this study is prediction and CB-SEM approaches mainly ignore the prediction objective, the PLS-SEM is the preferred method (Hair et al. 2011; Hair et al. 2014a).
- Usage of formative measures: Even when CB-SEM can use formative measures, it requires relatively limiting and complex specification rules (Hair et al. 2011). Thus, another reason why this study uses PLS-SEM is the usage of formative measures in the structural model.

4.4.2. Specification of the Structural and Measurement Model

Two basic models characterize SEM: The "structural model" (also named as the inner model) and the "measurement model" (outer model) (Hair et al. 2009) (Hair et al.

2011; Hair et al. 2017). Both components are here illustrated in a basic path model (see figure 12).

Figure 12: Example of basic path model



Source: Hair et al. (2017)

The theory determines which variables are independent (exogenous) and dependent (endogenous) variables and therefore, defines the path or in other words, the structural model (Hair et al. 2009). The theoretical basis of the path model in this study has been developed in chapter 4.3.

The measurement model can be further divided into two parts: the measurement model for the exogenous variables which explains the other constructs; and the endogenous variables (Y3 and Y4), which are explained by the exogenous variables in the model (Hair et al. 2017).

Each construct has to be attributed to one of two broad types of measurement specifications: formative and reflective measurement models. Formative measurement models propose that the indicators cause or form the construct. Indicators cannot be removed because otherwise, a part of the construct would be missing. In contrast, the reflective measurement models assume that all indicator items are caused by the same

constructs, and therefore, the items should highly correlate with each other and be removable. (Hair et al. 2014a)

Reflective and formative constructs have different approaches to measure a construct that cannot be measured or observed directly. The approach for reflective constructs is maximizing the overlap between indicators, which measures something related to the scope of the content actually intended to be measured. Whereas the approach of a formative construct is minimizing indicators' overlap but entirely covering the construct scope. (Hair et al. 2014a)

Figure 13 displays the research hypotheses and illustrates the variable relationships that will be investigated with arrows.

Value to the supplier is the endogenous latent variable (at the very right side of the model), which is in focus of prediction. Value to the customer is modeled as the main predictor of value to the supplier and therefore indicates a direct relationship to it, which is illustrated by an arrow directed from value to the customer to value to the supplier. This relationship is in the study's center of interest and therefore, also in the center of its research model.

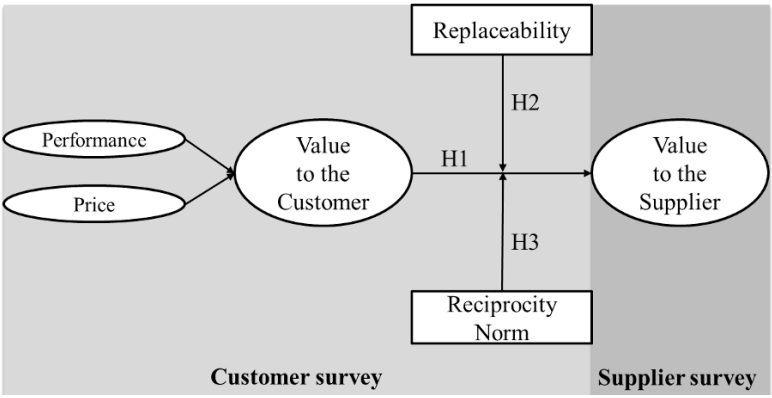
Performance and price are proposed to be the main drivers of value to the customer. Performance is a second-order construct that contains three dimensions: product, delivery, and service performance. Although these constructs are first-order constructs, the performance construct is not subdivided in the model illustration for reasons of simplification.

Value to the customer is proposed to be the mediator between perceived performance and value to the supplier; and additionally, between price and value to the supplier. A mediator is an intervening variable that acts as a receiver of "input" from an endogenous variable and transmits it into an "output" which is an endogenous variable (Hair et al. 2014a). The objective is to better understand the relationship between input (of the supplier: performance; and the customer: price) and the output (value to the customer and value to the supplier).

Additionally, there are two moderating variables: replaceability (RA) and reciprocity norm (RN). The arrow on the direct path between two variables acts as a moderation effect (here, the relationship between value to the customer and value to the supplier).

A moderator alters the relationship strength or even invert the relationship between these variables (Hair et al. 2014a). Even though both variables may also have a direct effect on value to the supplier, only the moderating effect is indicated and relevant, since the relationship between value to the customer and value to the supplier is in focus of this research study.

Figure 13: Structural model with hypotheses



For item generation, pre-existing measures were identified where possible. The measures were further refined and adapted on the basis of an intensive pretest. Four sales managers, six sales representatives, and six customers were interviewed. The interviews had durations of 25 to 60 minutes. The interviews were made to gather a comprehensive picture of the performance aspects of the supplier, views from customer and supplier side on relationship value, replaceability and reciprocity norms; and to test the comprehension about the questions in the questionnaire.

The customers rated the questions related to the items on a 7-point Likert scale. A value of 7 always represents the highest possible evaluation or agreement to a statement, whereas a value of 1 represents the lowest.

Relationship Value

The following two points are relevant issues concerning value to the supplier measurement. In CRM-literature, value to the supplier is often measured with…

- Financial performance outcomes: Research shows that sales volume and share (e.g., share of wallet) are not adequate measures of return on marketing investments (Gupta et al. 2006). Financial performance outcome measures do not measure value comprehensively since it does not include value aspects like market information, innovation initiation, attraction of new customers, etc. (Walter et al. 2001). Consequently, value to the supplier should by no means be only measured as sales or profit.
- Customer's intention to create value: willingness-to-pay, word-of-mouth, loyalty, etc. that are used by CRM-studies to measure value to the supplier, are often measured as intentions. But intentions do not always lead to the actual value-creating behavior, e.g., because of external reasons that inhibit specific actions. Even when customers show value creation behavior, it does not necessarily create value to the supplier since their behavior may not be efficient or effective. Additionally, it is not the perception of the customer that matters, but rather the perception of the supplier about the value received.

In conclusion, the overall relationship value from the supplier perspective has to be measured and not only value aspects like sales volume, etc. or intentions to create value.

According to Kumar and Reinartz (2016), measuring relationship value includes three tasks:

1. Measuring the overall perceived relationship value
2. Measuring the associated value drivers (attributes/performances/benefits/costs)
3. Calculating the relative weights of the value drivers linked to the overall value.

This study will follow this process to measure value to the customer. Value drivers are relevant for CRM, since they show suppliers how to create value to the customer, and thus, they are integrated into the model. Regarding value to the supplier, only the overall perceived value has to be measured for this study. Since "when" and "why" (see chapter 4.1) and not "how" customers create value to the supplier is in center of the research goal, value drivers of value to the supplier are not part of the analysis.

By using the scale of Geiger et al. (2012), value to the customer and value to the supplier can be operationalized almost identically, which helps to compare relationship value from both perspectives. Little adaptions are made for a better comprehension of the item wordings (as a result of the interviews).

Table 14: Item wordings of (overall perceived) relationship value

Relationship value (V2C/ V2S) – reflective Our relationship to [supplier name] / [customer name] …	
v2c1/ v2s1	has matched our conception of an optimal relationship.
v2c2/ v2s2	has met our requirements in all important aspects.
v2c3/ v2s3	has made a significant contribution to the achievement of our goals.
v2c4/ v2s4	has made a crucial contribution to our success.
v2c5/ v2s5	has had an outstanding value to our firm.

Note: All items are seven-point Likert-type scales, ranging from (1) strongly disagree to (7) strongly agree.

Experimental results of Homburg et al. (2005) indicate that approaches to measure and enhance customer satisfaction should focus on long-term rather than on transaction-specific satisfaction since it is a stronger driver of customer behavior (in the case of the particular study: willingness-to-pay). Hence, the employees who were responsible for the relationship were asked to evaluate the relationship value for the last two years.

Value Drivers to the Customer

In line with the value definition of Woodruff (1997), performance-based measures were used. They comprise product, delivery, and service performance as the main drivers of value to the customer. The perceived overall performance variable is as an aggregate multidimensional construct (formative first-order, formative second-order). Performance-based measures include relationship benefits (Ulaga and Eggert 2006) but also costs that block achieving goals (Woodruff 1997). The price, which has to be paid by the customer for products and services of the supplier, is an elementary cost driver. Consequently, the price of products and services is a supplementary value driver.

In addition to theoretical work of Ulaga (2003) who made a grounded theory exploration, this study uses the following empirical studies for further refinement and adapts the indicators for each component of the formative measurement model. Furthermore, both customers and sales representatives were asked to adjust and supplement the indicators in interviews to further improve the measures.

- Product: Adapted from Shin et al. (2000) and Homburg and Rudolph (2001).
- Delivery: Adapted from Ulaga and Eggert (2006) and Shin et al. (2000).
- Service: Structure adapted from Homburg and Rudolph (2001).
- Price: Developed for this study.

Table 15: Item wordings of performance

Product performance (Product) – formative	
prod1	Product performance (e.g., speed and precision of application)
prod2	Product reliability (e.g., short down times, constant output quality)
prod3	Product durability
prod4	System customization (e.g., adaptation to our specific requirements and specifications)
prod5	Cost efficiency (e.g., process costs, spare part storage)
Service performance (Service) – formative	
serv1	Order service
serv2	Sales service of the sales representative
serv3	Internal sales service by phone
serv4	Installation service
serv5	Remote technical support (local technical service hotline)
serv6	Repair and maintenance service
Delivery performance (Delivery) – formative	
deli1	On-time delivery of standard products and systems
deli2	Lead time of customized systems and engineered parts
deli3	Delivery speed of spare and wearing parts
deli4	Delivery accuracy (no missing or wrong parts)

Note: Seven-point Likert-type scales, ranging from (1) very low performance to (7) very high performance.

The customers were asked to evaluate different aspects of the performance that their supplier has provided to their company during the last two years (see table 15).
The customers were asked to evaluate the price-performance ratio of the supplier's products and services while referring to the average price that they pay during the past two years. For sure, price perceptions of customers depend on the perceived performance of the purchased product or service of a supplier. Thus, this construct is not independent of the performance construct.

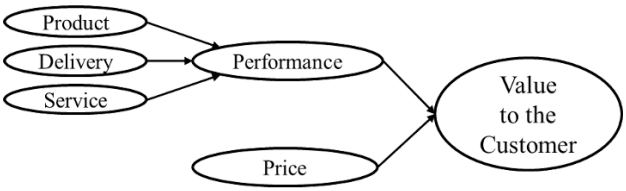
Table 16: Item wordings of price-performance ratio

Price-performance ratio (Price) – formative	
price1	Systems
price2	Spare and wearing parts
price3	Installation service
price4	Repair and maintenance service

Note: All items are seven-point Likert-type scales ranging from (1) very unfavorable to (7) very favorable.

In line with the measurement of the lower-order constructs, also the higher order construct was conceived as a formative construct since they all together build or form the overall performance of the supplier perceive by its customers.
The perceived performance variable has been measured as an aggregate multidimensional construct (formative first-order, formative second-order) (see figure 14).

Figure 14: Drivers of value to the customer (V2C)



Replaceability

Many existing studies used the construct of Heide (1994); thus, his construct is also adapted in this study to measure the perceived replaceability of a supplier from the perspective of a customer. The perceived replaceability can also be named as the perceived (in-)dependency of a customer on a specific supplier. It contains mainly two aspects: The availability of alternative suppliers and switching costs. Low availability of alternatives suppliers and high switching costs decrease the motivation of a customer to switch to another supplier.

The respondents should indicate how strongly they agree to the following statements and refer to the average over the last two years.

Table 17: Item wordings of replaceability (RA)

Replaceability (RA) – reflective	
ra1	We could easily replace [supplier name] by other suppliers.
ra2	There are many comparable suppliers for [supplier name]'s products and services.
ra3	Our production system can be easily adapted to integrate the systems and parts from a different supplier.
ra4	Starting to work with a new supplier would only require a limited effort on our part.

Note: All items are seven-point Likert-type scales ranging from (1) strongly disagree to (7) strongly agree.

Internalized Norm of Reciprocity

Several studies have developed scales for measuring the strength of internalized reciprocity norms. However, they could not be used for this study. In marketing literature, reciprocity norm constructs relate to the reciprocal behavior in a specific business relationship (see relational norm perspective – chapter 2.4.2) (e.g., Johnson and Sohi 2001; Pervan et al. 2009). In contrast, the internalized reciprocity norm of a customer company determines how the customer generally behaves with its suppliers.

Perugini et al. (2003) and Eisenberger et al. (2004) worked out personal norms of reciprocity as personality constructs. Nevertheless, these constructs cannot be used for

business relationships between organizations. However, in so much that so far, no internalized reciprocity norm for customers in business-to-business relationships yet exists; items have to be adapted from various sources. Items for the used construct were combined and adapted from Johnson and Sohi (2001) and Sin et al. (2005).
Respondents have been told that they have to pay attention to the fact that this question is not about the specific relationship with the particular supplier, but their company's general attitude towards suppliers. They should indicate how strongly the statements in table 18 reflect the attitude and expectations of their company.

Table 18: Item wordings of internalized reciprocity norm (RN)

Internalized reciprocity norm (RN) – reflective	
rn1	When our suppliers support us, we always support them in return.
rn2	We act according to the motto "One good turn deserves another".
rn3	We feel obliged to do our part extremely well when our suppliers have done their part so well.
rn4	Our suppliers know that it will be returned if they do us a favor.
rn5	If our suppliers give us assistance when we have difficulties, then we will repay their assistance somehow.

Note: All items are seven-point Likert-type scales ranging from (1) not at all true to (7) very true.

4.4.3. Data Collection

The research approach of this study is a dyadic analysis of value. Two perspectives, value to the customer, and value to the supplier should be connected. A big advantage of this approach mitigates the risk of a common method bias since independent and dependent variables are gathered from different sources. The constructs: performance, price, value to the customer (V2C), replaceability (RA) and reciprocity norm (RN), are measured by a customer survey, and the construct value to the supplier (V2S) is measured separately by a supplier survey (see figure 13). Most of the CRM-studies measure only the perceptions from the value provider (e.g., the intention of the customer), but do not measure the perceived value separately from the perspective of the value receiving partner who can actually evaluate the value created for its firm. As

collecting data from customer and supplier side and matching both data sets is difficult, considerable cooperation from a supplier was required.

When selecting an appropriate supplier, several criteria had to be met. First, the supplier had to be a manufacturer who offers both products and product-related services, since the relationship value with the customers should show more potential than in basic transaction relationships where only an exchange of products for money takes place. Therefore, the interaction should be high enough for creating value by exchanging market information, joint developments of product solutions, etc. This implies that the supplier interacts directly with its customer. Thus, a direct sales organization is another criterion. Additionally, the supplier should have many and diverse companies as customers since the sample size must be adequate for quantitative analysis. Finally, many customer industries shall be covered, which is essential to improve the generalizability of the results.

A supplier operating in business-to-business markets by offering products (production machines) and services (delivery, installation, repair, and maintenance) to industrial customers was selected. The company is globally active and a market leader with its high-quality products generating sales of more than 1 billion euros. Its customers are active in various industries (food, cosmetics, paper, woodworking, automotive industry, etc.). This study concentrates on its customer base in the European market.

Customer Data Collection

Appropriate customers from the supplier's entire customer base have to be selected to build the customer sample. The following selection criteria were applied:

- Customer for more than two years (because the customers should evaluate the value of the relationship with the supplier for the last two years)
- ABC and no D-Customers (the sales volume to the supplier has to be large enough to speak about a real business relationship).

The cooperating supplier was asked to provide a list of customers in four countries meeting these requirements.

Next, the supplier was asked to name specific employees in the customers' organization who act as key contact persons in the customer-supplier-relationship. It

was possible that multiple customer contacts were named per customer-company. The contact persons worked in various departments, predominately engineering, purchasing, and top management. All customer firms whose contact person was in charge of managing the relationship with the supplier for less than two years were excluded. Thus, this study was limited to those informants in the customer firms who are experienced enough to evaluate the product/service performance and the value to the supplier.

The selected supplier provided 5933 customer informant addresses. The customer-survey was conducted online in October and November 2016. The customers were motivated by the message that the survey was aimed at helping the supplier in further improving its product and service performance. The invitations with a link to the survey were sent out via email of the responsible sales representative of the supplier to reduce the risk that the emails will be ignored or considered as spam.

We guaranteed responsible handling of the data and promised to provide results to the supplier on an aggregated level only to ensure anonymity. This was made to ensure that customers do not have any incentive to answer strategically.

Since the supplier is an international company, it was possible to conduct the survey in different European countries. Germany is the market with the majority of customers, and therefore, half of the customer contacts were asked in Germany. In addition to German, the survey had to be translated into English, Swedish, and Polish. This was performed by a highly professional translation service provider (how it is suggested by Harkness et al. 2004) with whom the supplier worked for many years. For ensuring quality, the back translation was used, which is a procedure where the translated questionnaire is translated back into the original questionnaire language (Harkness et al. 2004). Afterward, both versions in the original language were compared.

In total, 589 completed surveys were obtained. 1,198 customer contact addresses were no longer correct or up-to-date. This yields an adjusted return rate of 12.4 % (see table 19).

Table 19: Return rate statistics of different countries

Country	Send-out	Completed	Not valid	Adjusted	Response rate
UK	1363	87	-326	1037	8.4%
Germany	3235	367	-603	2632	13.9%
Poland	375	40	-38	337	11.9%
Sweden	960	95	-231	729	13.0%
Total	5933	589	-1198	4735	12.4%

Supplier Data Collection

We selected the sales representatives in charge of managing the relationship with the customers in the sample as the informants on the supplier side since they are usually the key contact persons in a supplier-customer-relationship (Walter et al. 2001). Sales representatives are in the best position to evaluate the overall relationship value of the customer because of their direct interaction with the customers and their access to customer-related operational and sales data. The evaluation took place in December 2016 and January 2017.

There are no reasons to assume that sales representatives have any incentive to systematically over- or underrate the value that the customers in the sample provided to the supplier. Nevertheless, the measurement of relationship value is based on the evaluation of respondents, which gives rise to potential response biases. To reduce this potential, we have taken two measures: First, the questionnaire was either directly explained by the author to the sales representatives or the responsible sales manager was trained to teach it to its sales representatives. This procedure ensured that every informant understood the questions in the same manner, and it helped to underline the relevance of the survey. Second, each sales representative was asked to evaluate not more than 15 customers to minimize the informant bias. Additionally, it was assumed that the motivation of the sales representatives decreases when they have to spend too much time evaluating customers, which could reduce the assessment quality. This is, of course, a trade-off since this restriction does not allow all answered customers to be evaluated. The customers were selected randomly; only customers who involved multiple customer informants were given priority since it is assumed that various customer perspectives provide a more valid evaluation.

Not all sales representatives could assess 15 customers because in many cases, less than 15 customers of a responsible sales representative answered the questionnaire. In total, 373 customer companies could be chosen to be assessed by the sales representatives. In total, 339 customers were rated by 36 sales representatives. This yields in a return rate of 90.9%.

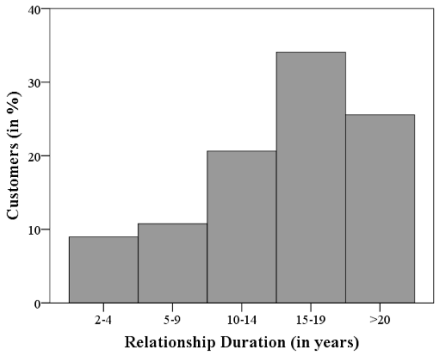
For this study, dyads that do not fulfill the following requirements were excluded:

- Distributors: Only customer companies who directly used the products and did not operate as distributors of the supplier's products were used. The distributors have not been excluded before since the cooperating supplier demanded the survey answers. Nevertheless, the distributors are not comparable with the manufacturing companies and therefore are not a focus of interest for this study.
- Time duration: The minimum answering time for the customer and supplier survey has been tested. As a result, customer contacts who needed less than 7.5 minutes and sales representative evaluations, which required less than 100 seconds has been judged to be too quick to consider their answers accurately. Thus, they were excluded to ensure that respondents did not click on answers at random to rush through the answers.
- Missing values of central variables: A customer contact that cannot assess the service performance and the performance-price ratio of the services is not able to evaluate the overall relationship to the customer and therefore has to be deleted.
- Central tendency error: Cases with response behavior that showed a very high regularity of the same answer categories (e.g., number 4 in almost all categories) were excluded because a straight answer was very unlikely.
- Personal contact: Contacts that were less than two years personally responsible for the relationship were excluded. Without enough experience, these contacts could not evaluate the value of the relationship properly over the last two years.

223 dyads remained. 49 dyads involved multiple customer informants, where the average of the customer informants' replies was used to measure the variables (Anderson and Weitz 1992).

The supplier maintains long-term relationships. The average relationship duration with the customer is 14.6 years. Figure 15 shows the distribution of the relationship duration between the customers and the supplier.

Figure 15: Distribution of relationship duration between supplier and customers



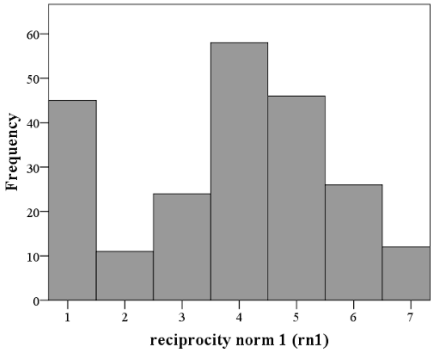
4.4.4. Distribution Analysis

Distributions which differ considerably from a normal distribution can skew the results of multivariate analysis (Hair et al. 2014a). Even when PLS-SEM has the advantage of greater flexibility and thus does not require a "perfect" normal distribution in contrast to CB-SEM, there are also some limits. The statistical power of analysis can be reduced by highly skewed data (Hair et al. 2014b). Hair et al. (2014a) declare skew and kurtosis values higher than 1 or lower than -1 to be indicative of highly non-normal data distribution.

The analysis shows that the performance items of product, delivery, and service, indicate many kurtosis values over 1 and skewness values under -1 (see appendix). A reverse score log transformation was used to resolve the problem. The transformed indicator values show that the transformation helps significantly with adjusting kurtosis and skewness values to become closer to 0 (see appendix). All other variables have indicators that symbolize values within the range of -1 and +1 and are therefore acceptable. One exception is reci2 that shows a kurtosis very slightly under a value of -1 (-1,007). Since this is only one single indicator, it is not a critical issue.

The distributions of all variables have been examined and graphically illustrated by bar charts (see appendix). Astonishingly, the reciprocity norm shows an unusual non-normal distribution pattern – a bimodal distribution. Exemplary, figure 16 shows the distribution of the first item of the reciprocity norm construct. The other items reveal a similar pattern (see appendix).

Figure 16: Bar chart with distribution of reciprocity norm variable 1 (rn1)



The reciprocity construct was re-tested in an additional survey (using as sample of n=130 customers of a supplier producing laboratory devices). The same scale was used, and a similar bimodal distribution was found. One can, therefore, assume that the distribution is not the result of an unsystematic error.

All items of the reciprocity scale show a distribution with the highest peak at scale point 4 (= neutral) and another, although smaller peak at scale point 1 (= not at all true). Distributions with two peaks (bimodal distributions) have the problem that statistical values, like means, can be misleading (Rettie et al. 2012). This has, of course, a critical impact on the results of a variance-based analysis.

When distributions show two peaks, the sample is commonly split into two groups. This is done in various marketing studies (e.g., Cardozo et al. 1993; Desai and Trivedi 2014; Kumar et al. 2010). The distributions split based on a median split of the scores and thereby the scale is transformed from a seven-point scale into a binary (0/1) scale. The values below the median are declared to have a low moderator value (0), and values above the median have a high moderator value (1) (Henseler and Fassott 2010).

Median split is a popular method when transforming a metrically scaled variable into a grouping variable (Henseler and Fassott 2010), but a drawback of this procedure is, of course, that information is lost through transformation (by going from a ratio to an ordinal scale). Even some studies harshly criticize median splits (e.g., MacCallum et al. 2002; Irwin and McClelland 2003; Fitzsimons 2008), the studies of Iacobucci et al. (2015a) and Iacobucci et al. (2015b) demonstrate with simulation studies that the results when using median splits are not misleading. In contrast, they reassure researchers that they achieve excellent results when using median splits. Only in the presence of multicollinearity, Type I errors could occur, but even these effects were often negligible.

Generally, PLS-SEM needs metric data. Nevertheless, it also works well with binary coded data (Hair et al. 2014a). Only for endogenous constructs, binary variables could be problematic (Hair et al. 2012b), but here it is used as an exogenous variable and is therefore appropriate.

4.4.5. Missing Data Analysis

Hair et al. (2005) assume that missing data fewer than 10% in an individual case can be commonly ignored. Thus, as a rule of thumb, missing data of over 10% in an individual case is too much. Only one single case showed more than 10% of missing data (15.7%). Especially because a high proportion of items is missing in this observation for a single variable (reciprocity norm), this observation has to be deleted (Hair et al. 2014a). After the deletion of this single case, the missing data per variable is very low (under 5%) (see table 20). In conclusion, it can be assumed that the extent of missing data is not substantial enough to affect the results even in cases where the variables are not missing at random.

Table 20: Missing data statistics per indicator variable

Variable	N	Missing	
		Count	Percent
product2	222	1	0.4%
product4	221	2	0.9%
delivery4	221	2	0.9%
service1	216	7	3.1%
service3	221	2	0.9%
service4	220	3	1.3%
service6	221	2	0.9%
price4	222	1	0.4%
v2s3	222	1	0.4%
v2s4	222	1	0.4%
v2s5	222	1	0.4%

Note: 20 variables with no missing data are not listed

Hair et al. (2014a) suggest using mean replacement when the extent of missing data is very low (under 5%) per indicator. The maximum of all indicators in this data set lies only by 3.1%. Therefore, mean replacement will be chosen in this study for handling missing data.

When using the mean replacement approach all missing values are substituted by the mean of indicator's valid values. Parwoll and Wagner (2012) conclude from simulation experiments using PLS that mean replacement shows more reliable results than casewise deletion. Nevertheless, mean replacement reduces the variance artificially and therefore, tends to underestimate the variance (Parwoll and Wagner 2012). This must be considered when interpreting the results.

4.5. Results

This study applies variance-based structural equation modeling via partial least squares (PLS) using SmartPLS v. 3.2.7 (Ringle, C. M., Wende, S., and Becker, J.-M. 2015. "SmartPLS 3." Boenningstedt: SmartPLS GmbH, http://www.smartpls.com) to sample 223 customer-supplier dyads. The assessment of the model results, based on nonparametric evaluation criteria and utilize bootstrapping and blindfolding procedures, is divided in a two-step process: evaluation of the measurement and

evaluation of the structural model (Hair et al. 2014a). Measuring and establishing the reliability and validity of a construct is a prerequisite to estimate the structural model.

4.5.1. Evaluation of the Measurement Model

In the first step, the outer model, i.e., the measurement model, has to be assessed. This is done by evaluating the reliability and validity of the reflective constructs (chapter 4.5.1.1) and the validity of formative constructs (chapter 4.5.1.2).

4.5.1.1. Evaluation of the Reflective Measurement Model

Value to the customer (V2C), replaceability (RA), reciprocity norm (RN) and value to the supplier (V2S) are reflective measured constructs that were measured by a multi-item scale (multivariate measurement). The following reliability and validity tests help to assess the level of random and systematic measurement errors:

Internal Consistency Reliability

Even though Cronbach's α is a commonly used criterion for internal consistency reliability, its measurement depends on the number of items in the scale. This criterion tends to underestimate the internal consistency reliability (Hair et al. 2014a). Thus, Hair et al. (2014a) recommend using composite reliability (ρc) as the main measure of internal consistency reliability. Its interpretation is similar to Cronbach's α, and the measures also range from values of 0 to 1.

$$\rho_c = (\Sigma\lambda_i^2)/[(\Sigma\lambda_i)^2 + \Sigma Var(\varepsilon_i)]$$

λ_i= outer component loading to an indicator; $\mathrm{Var}(\varepsilon_i) = 1 - \lambda_i^2$ in case of standardized indicator (Henseler et al. 2009).

In exploratory research, composite reliabilities p_c-values ≥ 0.6 are acceptable, whereas they should be ≥ 0.7 (Bagozzi and Yi 1988; Hair et al. 2011). All constructs of this study exhibit internal consistency reliability well above the recommended threshold of 0.70 (see table 21). Nevertheless, value to the customer and value to the supplier show values higher than 0.90, which are also not desirable. These high composite reliability values could occur when the very same questions were slightly rephrased and, as a consequence, semantically redundant items may be created (Hair et al. 2014a). When reviewing the items of the two scales capturing value to the customer and value to the

supplier (see chapter 4.4.2), there is no doubt that each item indicates clear differences to the other items concerning the content (relationship conception, fulfillment of requirements, achievement of goals, contribution to success, value to the firm).

Convergent Validity

As described in chapter 4.4.2, the indicators of a reflective construct should share a high proportion of variance (Hair et al. 2014a). Convergent validity is the degree to which an indicator correlates positively with other indicators of the same construct, and this can be tested by measuring the outer loading of each indicator (indicator reliability) and the average variance extracted (AVE) on the construct level (Hair et al. 2014a).

$$AVE = (\Sigma\lambda_i^2)/[\Sigma\lambda_i^2 + \Sigma Var(\varepsilon_i)]$$

λ_i= outer component loading to an indicator; $Var(\varepsilon_i) = 1 - \lambda_i^2$ in case of the standardized indicator (Henseler et al. 2009).

Commonly, values of the outer loading higher than 0.7 are considered as satisfactory (Hair et al. 2011) and the AVE of each reflective construct should be equal to or higher than 0.5 (Bagozzi and Yi 1988; Henseler et al. 2009). Table 21 shows that these minimum requirements are fulfilled by all indicators and all constructs in this study.

Table 21: Indicator and construct reliability of the reflective measurement models

		Convergent validity		Internal consistency reliability	
Construct	Indicator	Loading (≥0.7)	AVE (≥0.5)	Cronbach's α (≥0.7)	Composite Reliability p_c (≥0.7)
V2C	v2c1	0.919	0.862	0.960	0.969
	v2c2	0.910			
	v2c3	0.949			
	v2c4	0.942			
	v2c5	0.922			
RA	ra1	0.882	0.686	0.852	0.897
	ral2	0.846			
	ra3	0.721			
	ra4	0.855			
V2S	v2s1	0.906	0.793	0.937	0.950
	v2s2	0.889			
	v2s3	0.905			
	v2s4	0.905			
	v2s5	0.846			

Discriminant Validity

As a complementary concept of convergent validity, discriminant validity corresponds to the degree to which constructs are discrete and do not converge with other constructs in the model (Hair et al. 2014a).

Cross loadings of indicators can symbolize discriminant validity problems when they are higher than the indicator's outer loadings, which could mean that the model may not be appropriate (Henseler et al. 2009). Thus, it has to be checked if indicators' loadings are higher than all of its cross loadings (Hair et al. 2011).

Table 22 shows the indicators' loadings (highlighted with grey background) and cross loadings of all reflective constructs of the model. No cross loadings exceed the indicators' outer loadings.

Table 22: Rotated component matrix of reflective constructs

Indicators	1	2	3
v2c1	0.905	0.076	-0.113
v2c2	0.889	0.121	-0.118
v2c3	0.939	0.101	-0.111
v2c4	0.932	0.092	-0.130
v2c5	0.918	0.061	-0.130
v2s1	0.173	0.830	-0.183
v2s2	0.102	0.851	-0.085
v2s3	0.068	0.944	0.001
v2s4	0.035	0.947	-0.006
v2s5	0.065	0.868	-0.104
ra1	-0.216	-0.096	0.838
ra2	-0.179	-0.061	0.832
ra3	-0.027	0.010	0.804
ra4	-0.081	-0.165	0.804

Note: Extraction method= Principal Component Analysis. Rotation Method= Varimax with Kaiser Normalization. Rotation converged in 4 iterations. Calculated with IBM SPSS 23.0.0.0.

Another method to check discriminant validity is the Fornell-Larcker criterion (Fornell and Larcker 1981). Each construct should share more variance with its own associated indicators than with the indicators of other constructs (Henseler et al. 2009). Table 23 shows that all variables met the test since the square roots of the AVE-values are higher than each correlation with any other construct.

Table 23: Fornell-Larcker criterion test

	Constructs	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1.	Delivery	N.A.										
2.	Performance	0.702	N.A.									
3.	RN x V2C	-0.017	0.033	SI								
4.	RA x V2C	-0.115	-0.013	0.216	SI							
5.	Price	0.421	0.669	0.131	0.004	N.A.						
6.	Product	0.629	0.804	0.106	0.003	0.582	N.A.					
7.	RN	-0.022	-0.013	-0.002	-0.028	-0.006	-0.069	SI				
8.	RA	-0.055	-0.151	-0.037	-0.268	-0.212	-0.124	0.124	0.828			
9.	Service	0.672	0.974	0.005	-0.04	0.623	0.668	0.014	-0.131	N.A.		
10.	V2C	0.499	0.722	0.053	0.148	0.700	0.571	0.012	-0.290	0.692	0.929	
11.	V2S	0.062	0.155	0.133	-0.002	0.185	0.062	0.015	-0.225	0.173	0.218	0.890

Note: N.A. = not applicable because the construct is measured formative; SI= Single Item.

Even when both before mentioned approaches are dominantly used in research, the simulation study of Henseler et al. (2015) show that these approaches do not allow for reliable discriminant validity issues. As an alternative approach, they recommend the Hetrotrait-Monotrait Ratio (HTMT) approach and demonstrate its superior performance (see Henseler et al. 2015 for more detailed information). Table 24 shows that all HTMT values of each variable are lower than the most conservative threshold of 0.85, which clearly speaks in favor of the discriminate validity of the constructs in the model.

Table 24: HTMT values

	Constructs	1.	2.	3.	4.	5.	6.
1.	RN x V2C						
2.	RA x V2C	0.216					
3.	RN	0.002	0.028				
4.	RA	0.095	0.293	0.150			
5.	V2C	0.053	0.151	0.024	0.309		
6.	V2C	0.136	0.053	0.039	0.212	0.214	

Additionally, the bootstrapping confidence intervals were calculated to test whether the HTMT values are significantly different from 1 (Hair et al. 2017). As expected, no confidence interval includes the value 1 (see appendix), again confirming the discriminant validity of the constructs.

4.5.1.2. Evaluation of the Formative Measurement Models

The higher-order-construct of performance (product, delivery, and service) and price are formatively measured constructs in the model. As described in chapter 4.4.2, in contrast to reflective measurement models, formative measurement models do not require high item correlations because the indicators cause the construct rather than being caused by the construct. Thus the statistical evaluation criteria for reflective measurements, like internal consistency reliability as well as convergent and discriminant validity cannot be directly adopted to formative measurement models (Hair et al. 2014a). Instead, Hair et al. (2014a) suggest confirming content and convergent validity in the first step, assessing the presence of collinearity among indicators in the next step and finally evaluating the significance and relevance of the formative indicators.

Content and Convergent Validity

Content validity is high if (nearly) all aspects of the construct are captured by the formative indicators (Hair et al. 2014a). To ensure that all relevant formative indicators are integrated into the measurement of the construct, a detailed literature review has been conducted and experts (four sales managers, six sales representatives, and six customer contacts) have been interviewed and asked to complement essential aspects.

Collinearity Assessment

If two or more indicators have a large conceptual overlap, their ratings should highly correlate with each other (Hair et al. 2014a). To test for any collinearity issues, the variance inflation factor (VIF) values for each indicator were calculated. The VIF value captures the variance degree of an independent variable, explained by other independent variables in the model (Hair et al. 2005). Thus, low VIF values indicate a low level of multicollinearity. Since all VIF values are under the threshold of 5 (see tables 25 and 26) (Hair et al. 2011), collinearity does not constitute an issue in this data set.

Table 25: Collinearity assessment statistics (lower order constructs of performance)

Construct	Indicator	Weights	p (≥0.05)	Confidence Interval	Loading (≥0.5)	VIF (≤5)
Price	price1	0.248**	0.049	[-0.023; 0.562]	0.901***	2.908
	price2	0.312**	0.014	[0.091; 0.562]	0.901***	2.279
	price3	0.156	0.174	[-0.139; 0.416]	0.902***	2.355
	price4	0.382***	0.005	[0.164; 0.635]	0.929***	1.959
Product	product1	0.187*	0.081	[-0.037; 0.406]	0.718***	2.583
	product2	-0.046	0.372	[-0.286; 0.173]	0.678***	3.110
	product3	0.196**	0.048	[-0.002; 0.384]	0.666***	2.026
	product4	0.560**	0.000	[0.381; 0.747]	0.898***	1.711
	product5	0.356**	0.000	[0.196; 0.513]	0.739***	1.331
Delivery	delivery1	0.341***	0.002	[0.153; 0.535]	0.908***	2.056
	delivery2	0.375***	0.003	[0.155; 0.586]	0.886***	2.430
	delivery3	0.180*	0.073	[-0.032; 0.373]	0.824***	3.760
	delivery4	0.259***	0.005	[0.087; 0.411]	0.811***	2.968
Service	service1	0.130	0.131	[-0.052; 0.320]	0.694***	3.440
	service2	0.287***	0.002	[0.126; 0.458]	0.804***	3.148
	service3	0.074	0.281	[-0.126; 0.285]	0.827***	3.526
	service4	0.142*	0.091	[-0.028; 0.320]	0.839***	3.175
	service5	0.186*	0.092	[-0.041; 0.046]	0.873***	4.725
	service6	0.373***	0.001	[0.187; 0.577]	0.901***	4.609

Significances: *p<0.1; **p<0.05; ***p<0.01.

Table 26: Collinearity assessment statistics (higher order construct of performance)

Construct	Indicator	Weights	p (≥0.05)	Confidence Interval	Loading (≥0.5)	VIF (≤5)
Performance Higher Order	product1	0.005	0.471	[-0.096; 0.126]	0.577***	3.346
	product2	-0.012	0.425	[-0.127; 0.087]	0.546***	2.681
	product3	0.058	0.147	[-0.025; 0.159]	0.536***	2.522
	product4	0.162***	0.006	[0.068; 0.287]	0.722***	2.169
	product5	0.134***	0.006	[0.055; 0.233]	0.595***	2.757
	delivery1	-0.051	0.171	[-0.140; 0.038]	0.637***	3.274
	delivery2	0.006	0.463	[-0.086; 0.118]	0.622***	2.164
	delivery3	-0.028	0.264	[-0.098; 0.054]	0.578***	2.093
	delivery4	0.098***	0.005	[0.039; 0.161]	0.569***	1.539
	service1	0.068	0.218	[-0.067; 0.215]	0.676***	2.504
	service2	0.245***	0.005	[0.105; 0.425]	0.783***	2.585
	service3	0.009	0.468	[-0.169; 0.186]	0.806***	4.212
	service4	0.105	0.120	[-0.028; 0.269]	0.818***	3.083
	service5	0.220**	0.034	[0.044; 0.431]	0.851***	3.565
	service6	0.283***	0.003	[0.130; 0.481]	0.878***	3.372

Significances: *p<0.1; **p<0.05; ***p<0.01.

Assessment of the Significance and Relevance of the Formative Indicators

To check whether each indicator contributes to the corresponding construct, the significance of the outer weights and loadings has to be analyzed (see tables 25 and 26) (Hair et al. 2014a). The indicator's weight measures the relative contribution of an indicator to its construct, whereas the loading shows its absolute importance (Hair et al. 2011). Bootstrapping is used for assessing the significance of the indicator's weights and loadings. As recommended by Hair et al. (2011), a minimum number of 5,000 bootstrap samples have been chosen.

Only indicators with significant weights and loadings provide empirical support to keep these indicators; otherwise, they may be deleted (Hair et al. 2011). There are many non-significant weights in tables 25 and 26. However, the loadings of all variables are above 0.5 and significant. As a result, no indicators have to be deleted (Hair et al. 2014a).

Performance has been measured as a hierarchical component model (or higher-order model) and was operationalized by applying a repeated indicator approach. It is a second-order construct with two layers. Both layers, the lower-order constructs, and the higher-order construct are measured formative (formative-formative higher-order model).

Table 27 shows the relative contribution of each lower-order constructs (product, delivery, and service) in explaining the higher-order construct (performance). Service has the highest importance in the higher-order construct, the product is less essential, and the delivery has no significance. It cannot be assumed that the delivery performance has no relevance at all for the customer, but product and service performance seems to be much more critical to the customer.

Table 27: Relative importance of lower-order constructs in the higher-order construct

High order construct	Lower order construct	Path coefficients	P Values	SD	Confidence intervals	VIF
Performance	Product	0.279***	0.003	0.281	[0.109; 0.444]	2.021
	Delivery	-0.005	0.478	0.010	[-0.127; 0.138]	2.040
	Service	0.791***	0.000	0.769	[0.622; 0.931]	2.227

Significances: *p<0.1; **p<0.05; ***p<0.01.

In summary, the results of the evaluation of the measurement models indicate that reliability and validity are established. Finally, the structural model will be analyzed in the next chapter.

4.5.2. Results of the Structural Model

Once the measurement and the constructs are confirmed to be reliable and valid, the structural model can finally be assessed. This part aims to test the proposed hypotheses (see 4.3) and to examine the predictive capabilities of the model.

4.5.2.1. Assessment of Direct and Moderating Effects

As a result of running the PLS-SEM algorithm, the path coefficient (β) is calculated that represents the strength of the proposed relationships between the constructs. The significance has been measured by empirical t-values, which are computed by bootstrapping standard errors (Hair et al. 2014a). One-tailed t-test performed as the model hypotheses proposes a directional link between the independent and dependent variables. The path coefficients (β) and significance levels of the t-test (p-values) are displayed in table 28.

The higher order constructs of performance and the price have both very high and significant path coefficients (0.459; $p<0.01$ and 0.393; $p<0.01$) and are therefore strongly related with value to the customer (V2C), i.e., the value that customers attribute to the business relationship with the focal supplier.

H1 proposes that the value a given customer receives from its supplier is positively related to the value that the supplier receives from this customer. The path between value to the customer (V2C) and value to the supplier (V2S) is significant at $p<0.01$, and there is a positive relationship ($\beta=0.167$). Thus, H1 is supported.

H2 and H3 predict that the relationship between value to the customer and value to the supplier is moderated by the perceived replaceability (RA) of the supplier (H2) and reciprocity norm (RN) (H3). The moderation effect of replaceability is significant ($p=0.037$) with a negative moderation effect ($\beta=-0.084$), and therefore, H2 is supported. The moderation effect of reciprocity norm is also significant ($p=0.012$) and

thus supports H3. The positive moderation effect of reciprocity norm (β=0.142) is even stronger as the negative moderation effect of replaceability.

The results for all hypotheses (1–3) are listed in table 28.

Table 28: Summary of structural model results

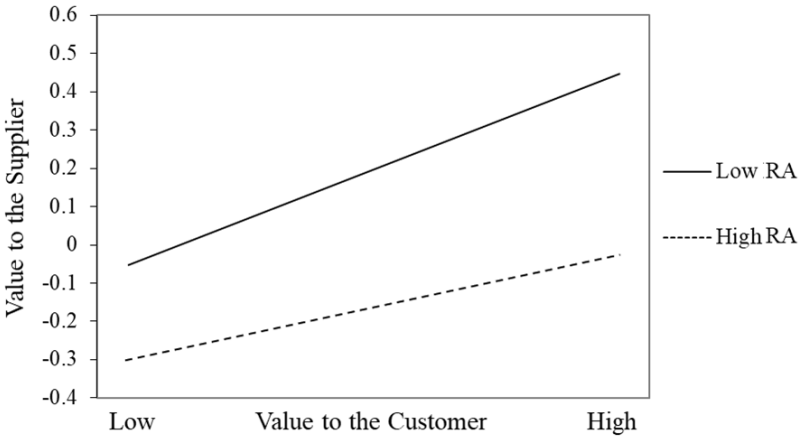
Endogenous construct	Exogenous construct	Path coefficients	P Values	H	R^2	VIF	f^2	Q^2	q^2
V2C	Performance	0.459***	0.000		0.606	1.811	0.295	0.464	0.136
	Price	0.393***	0.000			1.811	0.216		0.205
V2S	RN	0.036	0.306		0.103	1.018	0.001	0.065	0.000
	RA	-0.206***	0.000			1.178	0.040		0.017
	V2C	0.167***	0.004	H1 (√)		1.102	0.028		0.013
	RN x V2C	0.142**	0.012	H2 (√)		1.050	0.021		0.015
	RA x V2C	-0.084**	0.037	H3 (√)		1.135	0.012		0.007

Note: RN= reciprocity norm; RA= replaceability; V2C= value to the customer, V2S= value to the supplier. Significances: *p<0.1; **p<0.05; ***p<0.01.

Collinearity among the exogenous constructs could bias the estimations and therefore has to be explored. Similar to the evaluation of the formative measurement constructs, VIF-values above a value of 5 can indicate a collinearity issue between the constructs (Hair et al. 2014a). In table 28 all key criteria for assessing the structural model are listed. As expected, all VIF-values lie under the value of 5 (even under 2), and therefore collinearity will not bias the results of the structural model analysis.

Moderator analysis of customer perceptions and characteristics indicate that created value to the customer indeed benefits suppliers less when customers perceive the supplier as easily replaceable. Figure 17 shows a graphical illustration of the moderating effect.

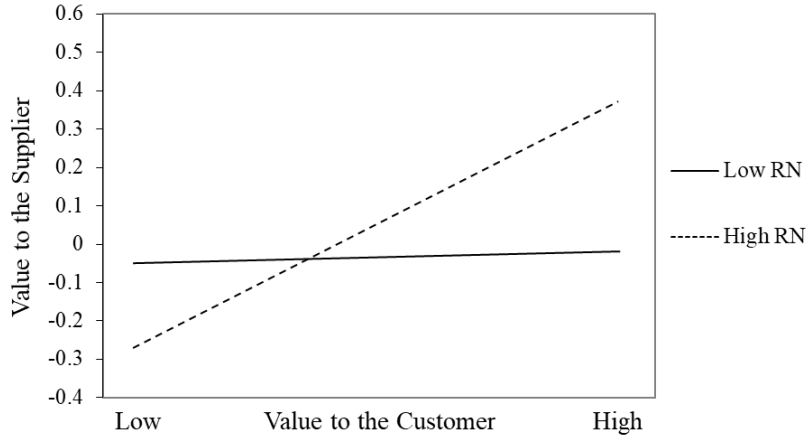
Figure 17: Plot of interaction effect of replaceability and value to the customer on value to the supplier



Note: Standardized data are used. RA= replaceability.

Figure 18 shows an illustration of the reciprocity norm's moderating effect. It indicates that suppliers will only get repaid for value they create for their customers if the customers follow a value-based rewarding corporate norm.

Figure 18: Plot of interaction effect of reciprocity norm and value to the supplier on value to the supplier



Note: Standardized data are used. RN= reciprocity norm.

It is interesting that the graphs of high and low reciprocity norm cross each other near the mean of value to the customer. Low value to the customer leads to an even lower value to the supplier when the reciprocity norm is high instead of low. This may indicate that the high reciprocal type even punishes a low value to the customer, whereas a low reciprocal type just creates its standard value to its supplier.

The technique for testing the model assumes linearity of the relationship between value to the customer and value to the supplier. It was tested for a quadratic effect; however, this effect was clearly insignificant.
Since heterogeneity in data is often present Sarstedt and Ringle (2010) and Hair et al. (2014a) recommend using the finite mixture partial least squares (FIMIX-PLS) in order to search for unobserved heterogeneity. FIMIX-PLS was conducted with two to seven segments. The segments were predominantly too small for further analysis ($n \leq 50$). The only interpretable results were found in two large enough segments that weight performance and price attributes to different degrees; however, this is not relevant for the study's objectives.

R^2 is the most frequently used measure to evaluate the model's predictive accuracy and is computed as the squared correlation between the actual and predicted values of a specific endogenous construct (Hair et al. 2014a). Both the higher order construct and the price construct together explain a great part of the variance of the value to the customer construct (R^2=0.605) and thus represent the primary value drivers of value to the supplier.
The assessment of acceptable R^2 values differs between research disciplines. Customer behavior research that investigates success drivers (like customer satisfaction or loyalty) considers R^2 values of 0.20 as high (Hair et al. 2014a). Since the main success factor of this study (value to the supplier) has a R^2 of 0.103 it may be interpreted as a moderate value. Other research disciplines expect higher values. However, it has to be mentioned that most extant research studies analyzed data that had been collected from one source (e.g., attitude as the independent variable and purchase intention as the dependent variable) while value to the supplier and the variables affecting value to the

supplier have been gathered from two different sources. Value to the supplier has been evaluated by sales representatives of the supplier, whereas the data to measure value to the customer, replaceability, and reciprocity norm were reported by customer representatives.

While R^2 indicates how accurately the independent constructs explain the variations of the dependent variable, the effect size f^2 measures the change in the R^2 when a specific independent variable is excluded from the model (Hair et al. 2016). It can be calculated with the following formula (Chin 1998):

$$f^2 = \frac{R^2_{included} - R^2_{excluded}}{1 - R^2_{included}}$$

Cohen (1992) interprets the effect sizes of 0.02, 0.15, 0.35 as weak, moderate, and strong effects of an exogenous construct. When using this categorization, value to the customer indicates with f^2=0.028 a weak effect size

Stone-Geisser 's Q^2 represents a measure of the predictive relevance of the analyzed model. The measure can only be applied to the two reflective endogenous constructs value to the customer and value to the supplier in the model (Chin 1998; Hair et al. 2014a).

There are two different approaches to calculate Q^2: The cross-validated redundancy approach uses both path model estimates – of the structural and the measurement model, whereas the cross-validated communality approach only applies the measurement model to predict omitted data points (Hair et al. 2014a). Following the recommendation of Chin (1998) and Hair et al. (2014a) the cross-validated redundancy approach is used. The following formula shows how it was measured manually (Chin 1998):

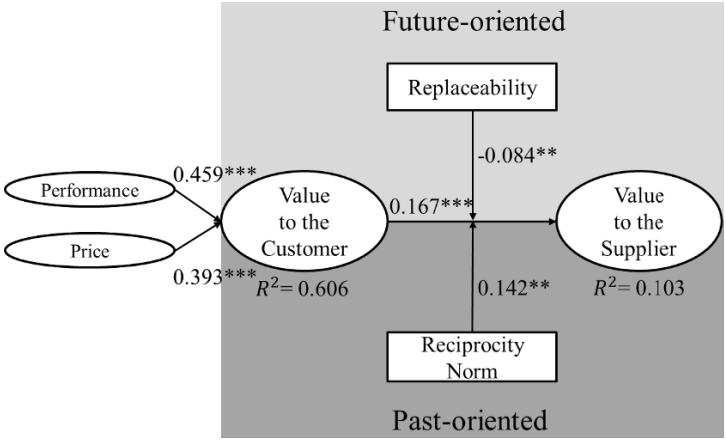
$$q^2 = \frac{Q^2_{included} - Q^2_{excluded}}{1 - Q^2_{included}}$$

Following the recommendation of Chin (1998) an omission distance between 5 to 10 has been shown to be feasible and therefore, a value in its middle (7) has been chosen.

As a rule of thumb, $Q^2>0$ indicates that the model has a predictive relevance, whereas $Q^2<0$ implies that a predictive relevance of the model is missing (Chin 1998; Hair et al. 2011). The results show that all Q^2-values are positive and illustrate the model's sufficient predictive ability (see table 28). The values are only small and thus have to be interpreted as weak (Hair et al. 2014a). Consequently, also, the q^2-values are only small. Replaceability has the highest q^2-value (q^2=0.017), followed by the moderation factor RN x V2C (q^2=0.015) and the direct effect of V2C (q^2=0.013), and finally, the moderation factor RA x V2C (q^2=0.007) has the lowest value. However, Q^2 and q^2 have to be classified as ad hoc metrics with results that are not highly interpretable in terms of prediction error magnitude.

Figure 19 illustrates the model with all results.

Figure 19: Model with path coefficients and significances



Significances: *p<0.1; **p<0.05; ***p<0.01.

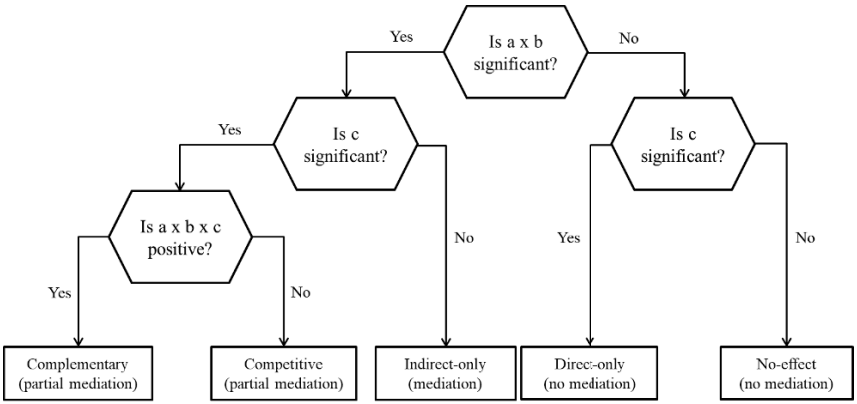
4.5.2.2. Assessment of Indirect and Mediating Effects

Indirect effects of performance and price on value to the supplier can be calculated by multiplying the respective path coefficient of value to the customer with the path coefficients of value to the customer to value to the supplier: performance (0.459 x 0.167=0.077) has a higher effect on value to the supplier than the price (0.393 x 0.167=0.066). Analyzing the effect of performance in more detail, the service

performance has a much higher indirect effect (β=0.061; p=0.010) on value to the supplier than the product performance (β=0.023; p=0.049), whereas the delivery performance has no effect at all (β=0.000; p=0.480).

The mediating effect test of Zhao et al. (2010) was used to examine if value to the customer mediates the relationship between performance and value to the supplier and also examines the same concept between price and value to the supplier. Following the procedure that is illustrated in figure 20, the first step is to analyze if there is a significant indirect effect between the independent variable (performance/ price) and value to the supplier interceded by a mediator (value to the customer).

Figure 20: Testing for mediating effect

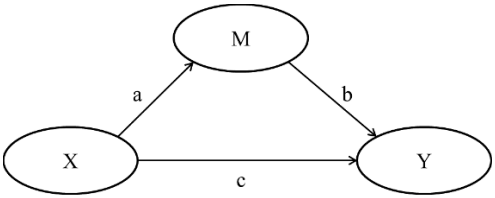


Source: Zhao et al. (2010, p. 201).

As illustrated in figure 21, the indirect path a x b is analyzed, which is automatically calculated by SmartPLS when the bootstrapping procedure is used.

Both performance (β=0.077; p=0.008) and price (β=0.066; p=0.009) show significant indirect effects mediated by value to the customer (path a x b). Thus, in the next step, the significance of direct relationships have to be checked. Both performance (β=0.017; p=0.444) and price (β=0.017; p=0.435) show no significant direct effects.

Figure 21: Illustrative example of a mediating effect



Note: M = Moderator (V2C); X = Independent variable (Performance and Price); Y = Dependent variable (V2S).

The Variance Accounted For (VAF) determines which amount of the direct effect of the independent variable (performance and price) on the dependent variable (value to the supplier) is absorbed by the mediating variable and is calculated by the following formula (Hair et al. 2014a):

$$\text{VAF} = \frac{(a * b)}{(a * b + c)}$$

A stronger partial mediation is revealed by a higher VAF-value (Klarner et al. 2013). VAF-values between 0.2 and 0.8 indicate partial mediation, whereas values under 0.2 show no mediating effect and values above 0.8 show full mediation (Hair et al. 2014a). Performance shows full mediation since VIF-value is 0.819. The VAF-value of the price is 0.702 and hence indicates a partial moderation even when it gets close to full mediation.

In conclusion, the identified mediating effect of value to the customer is consistent with the proposed research framework. Since performance is fully mediated by value to the customer, an omitted mediator (besides value to the customer) is unlikely. Price is only partially mediated, and therefore, an omitted mediator may exist; nevertheless, the unexplained amount of variance is minor and thus only has little relevance.

4.5.2.3. Assessment of Control Variables

Several control variables were added to the model. The modified model is analyzed and compared to the former model.

The following control variables complement the model:

- Relationship duration (RD) of the business relationship between the companies
- Personal relationship duration (PRD supplier) of the supplier contact
- Personal relationship duration (PRD customer) of the customer contact
- Company size of the customer (CS) measure by revenue of the company
- 2-way interaction effect of replaceability (RA) x reciprocity norm (RN)
- 3-way interaction effect of replaceability (RA) x reciprocity norm (RN) x value to the customer (V2C)

Long-standing customers should be assessed as more valuable relationships because of their higher loyalty. Besides, long personal relationships could bias the value evaluation by the customer contact persons and the sales representatives. Personal experiences and opinions could slip into the assessment. For these reasons, the model has been controlled for organizational and personal relationship duration.

As shown in study 1, company size has an impact on the purchasing process of a customer. Additionally, larger customers have a higher purchasing volume potential. Thus, customer size should be integrated into the model as a control variable.

Even when interactional effects have not been proposed in the model, they could have a high impact on the results of the model. Thus, for validating the model, these omitted interaction effects must be checked.

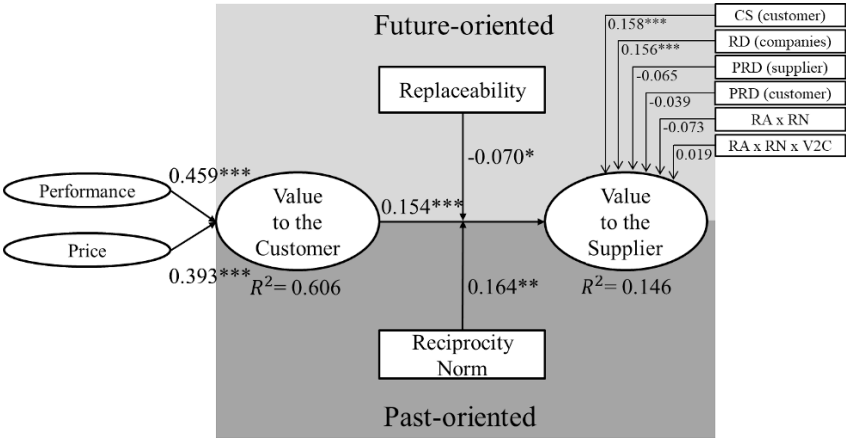
As expected, customer size and the relationship duration of both companies have significant effects on value to the supplier. Fortunately, personal relationship duration has no significant impact.

Both omitted interaction effects, the two-way interaction of RA x RN and the three-way interaction of RA x RN x V2S, do not show significant effects on value to the supplier and thus can be neglected with a clear conscience.

Now the model with control variables has to be compared with the model without control variables. The only significant change is the degraded significance of the moderation effect of Replaceability which changed from β=-0.84; p=0.34 to β=-.070; p=0.70. The direct effect of value to the customer has been reduced slightly from β=0.167; p=0.004 to β=0.154; p=0.009. Only the moderation effect size of the

reciprocity norm increases slightly from β=0.142; p=0.012 to β=0.164; p=0.020. Figure 22 shows the model with all control variables and their path coefficients and significances.

Figure 22: Model with control variables



Note: CS= customer company size, RD= relationship duration; PRD= personal relationship duration; RA x RN x V2S= 3-way interaction; RA x RN= 2-way-interaction.
Significances: *p<0.1; **p<0.05; ***p<0.01.

All in all, the model is robust and does not show critical changes with effect sizes or significances. Thus, all hypotheses are still supported. Table 29 summarizes the results of hypotheses 1 to 3.

Table 29: Summary of the hypothesis results

Number	Description	Result
H1	Value to customer is positively related to value to the supplier.	supported
H2	The positive association between value to the customer and value to the supplier is greater as replaceability decreases.	supported
H3	The positive association between value to the customer and value to the supplier is greater as the customer is guided by an internalized reciprocity norm.	supported

4.6. Conclusion

4.6.1. Discussion

This CRM study connects customer-orientation with customer-valuation research. The test of the hypothesized model using a structural equation model empirically indicates that created value to the customer is positively related to value to the supplier in interfirm relationships.

Value to the supplier can indeed be seen as the reward for a customer-orientation (Deshpandé et al. 1993) or, to be more precise, a compensation of the created value to the customer, which should be the result of an effective customer-orientation (Blocker et al. 2011).

However, even when the proposed "value breeding value" model shows predictive relevance, value creation to the customer has an astonishingly weak impact on value to the supplier. Results indicate that predicting value to the supplier is only partly possible by knowing how much value to the customer is created. Creating more value to the customer or, in other words, being more customer-oriented, will not automatically lead to a higher value to the supplier's firm.

Consequently, even though studies show that customer-oriented companies are on average more profitable (Narver and Slater 1990; Jaworski and Kohli 1993), it does not mean that it pays off providing value to every customer to the same extent. Suppliers need to understand which (potential) customers offer value in return for behaving in a customer-oriented way. This understanding will guide suppliers to efficient use of value creation efforts and hinder them from following a pure altruistic customer-orientation (Walter et al. 2001). Thus, customer-orientation has to be aligned with customer valuation and prioritization.

For sure, focusing value creation on the most valuable customers is common sense (Homburg et al. 2008). Nevertheless, the priority level of a customer should not solely depend on the classical customer valuation attributes like customer size, past or future expected sales volume, etc., but also on the customer's behavior. The study results show that value only breeds value when customers are motivated to create value to the supplier. Thus, for improving the effectiveness of customer prioritization, a

characterization and distinction of the kinds of motivations that lead customers to pay value for value are needed.

The findings of the analysis show that there are reliable individual differences of customers in their motivation to reciprocate. Different economic perspectives were reviewed, and two distinct orientations were identified, which motivate reciprocal behavior in different ways.

On the one hand, this study shows a future-oriented motivation to reciprocate value. Calculative thoughts influence the customer's behavior. These calculative thoughts change the likelihood to pay suppliers for created value, which is in line with transaction cost, social exchange, and power-dependence theory, On the other hand, customer's moral norms change the propensities to reciprocate value, which confirms theoretical assumptions of the reciprocity, equity, and relational norm perspective. By consideration of differences regarding customer's perceived replaceability (future-oriented motivation) of its supplier and its internalized reciprocity norm (past-oriented motivation), the effect size of value to the customer is more than doubled, and thereby the "value breeding value" model substantially improves. This underlines the importance of both motivational aspects of CRM practice and research. Relaxing the assumption of self-interested customer motives broadens the explanatory power of value theory and provides novel insights into the understanding of customer-supplier-relationships.

The study's results allow analyzation of perceptual characteristics that are important or even essential for reciprocal behaviors to be elicited. In situations when reciprocal action can be instrumentally used for self-serving purposes, the chance to observe reciprocal behavior is higher (Perugini and Gallucci 2001). This is the case when actors can foresee the threat of future losses or higher opportunity costs.

Customers try to reach a maximization of their future payoff, which includes the exploitation of opportunities and prevention of risks. Thus, future-orientated customers act in their self-interest, which is in line with conservative economic assumptions (e.g., transaction-cost theory). Following social exchange theory, results confirm that customers calculate future value potential of their reciprocal behavior and compare it to alternatives. The importance of a supplier for the customer's future increases when

there are fewer alternative suppliers accessible with a comparable value proposition or when switching to these alternatives is very expansive (power-dependence perspective). Consequently, the risk of an opportunistic supplier increases since it is more difficult to replace the supplier, and in response, customer's motivation rises to create value to the supplier in order to maintain the relationship. Accordingly, the provision of value by customers does not solely depend on the value received but also on the possibilities and costs for receiving the product or service from alternative sources – in other words, on the replaceability of the supplier.

Nevertheless, it can be criticized that theoretical perspectives like transaction-cost theory only focus on exogenous attributes of exchange instead of firm-specific attributes and distinctions (Ghosh and John 1999). In contrast, the norm of reciprocity provides customer-specific differences regarding the company's internalized norm (Hoppner and Griffith 2011). The study extends reciprocity research by conceptualizing and testing a company's cultural dimension that determines the tendency of a customer to reciprocate value. It suggests that although the norm of reciprocity may be a universally accepted principle (Gouldner 1960), the degree to which people (Li et al. 2017), cultures (Cropanzano and Mitchell 2005), and even organizations apply reciprocity principles varies.

The findings of this study grant help in understanding the role of reciprocity for CRM in industrial markets. For customers who are guided by an internalized reciprocity norm, reciprocal behavior can be regarded as a goal itself by just following a normative rule (Perugini and Gallucci 2001). Therefore, future value expectations are not a sufficient condition. This aligns with findings of researchers like Palmatier et al. (2009) who investigate the emotional appreciation for received benefits – named as feelings of gratitude – like a missing mediator between relationship investments and seller performance outcome.

Molm (2010) assumes that rational actor assumptions are more applicable with negotiated transactions, where actors calculate and compare values of alternative offers (future-orientation); whereas learning principles are more compatible with reciprocal exchanges, where actors sequentially react to other's actions over time (past-orientation). Supplier-customer relationships in B2B-markets always contain a

mix of negotiations and reciprocal exchanges. This study indicates that industrial customers are indeed guided by a combination of considerations about the future as well as the past.

4.6.2. Limitations and Research Implications

In distinction from many other CRM studies, this study measures the total relationship value to the customer and the overall relationship value to the supplier instead of just measuring the intention to stay loyal, to repurchase, or to recommend the supplier, etc. It connects value to the customer to value to the supplier within dyads and matches both data sets. Variables from the customer side (e.g., value to the customer) and the dependent variable from the supplier side (value to the supplier) were measured independently and not only from one source. Thus, the risk of results being distorted by a common method bias is comparatively low.

These advantages go along with some disadvantages. Although the customer data was drawn from companies across multiple industries and geographies, this study is based on customers of one single manufacturer in the technical-chemical sector. Even though there is no clear indication of why the results should be heavily dependent on the characteristics of the focal supplier, it is not clear to what extent the results are representative and can be generalized. Subsequent research should try to replicate the results across different industries.

Only supplier-customer relationships have been investigated in this study. It would be interesting to know, if there are distinctions to supplier-distributor relationships or if, e.g., an internalized reciprocity norm is also an important cultural characteristic when choosing a distributor for sales support. Pelser et al. (2015) indicate that reciprocity plays a key role in channel partner programs which incentivize product selling and training, leading to higher commitment and sales efforts.

Even when customer and supplier contacts should evaluate the relationship value of the last two years, the study does not have a longitudinal design and thus might sophisticate variables that refer to lengthy effects and processes. Using a longitudinal design, future studies can focus more on causality than on prediction.

Finally, customer and supplier contacts should evaluate the received value of the company, but personal experiences and opinions could be slipped into the evaluations. The model has been controlled for personal relationship duration, which allows the assumption that personal relationships have fortunately not been significantly biased since no effects were indicated. Nevertheless, it is still the question (especially for large companies) if the whole company is actually guided by a norm to the same degree, or if there are big differences between company sects or departments.

The findings of this study help with forming a deeper understanding and new insights about reciprocal behavior between B2B-companies. This supports the developed assumption that a future- and a past-orientation motivate reciprocal behavior, which could be further investigated by considering the following topics:

The future-orientation is proposed to depend on customer perceptions. To further substantiate this assumption, other factors (besides replaceability) should be tested, which could change the perception about future value gains or risks. For example, examining a risk-averse corporate culture of the customer, a structured alignment on future issues by established strategic procurement management, a public limited company who is forced by stakeholders to decrease risks or increase short-term profits, etc. could change the perception about future value gains or risks.

However, the past-orientations have been assumed to depend on customer characteristics – e.g., the internalized reciprocity norm. There may be even more norms which should be considered, such as fairness or equity norms. Even when equity and reciprocity are closely related, there is still a difference.

As described in chapter 2.4.2, the result of following a reciprocity norm leads to reciprocal behavior which can lead to an equal distribution of two exchange partners but does not have to be the result (Gallucci and Perugini 2000; Perugini and Gallucci 2001). Thus, there may be customers who are equity-sensitive (Huseman et al. 1987) and try to restore equity in response to a higher perceived value to the customer compared to the perceived value to the supplier. In this case, the customer's perception of its value to the supplier is highly important.

Further research should seek more future- and past-oriented moderating factors. Other internalized customer norms or rules open up a promising avenue to better understand how and under which conditions customers reward value. Virtue theory could make an interesting contribution since companies' ethics have a prominent role in developing their organizational culture, adopting corporate credos that focus on particular rules (Arjoon 2000).

For example, Hewett et al. (2002) show that buyer's corporate culture (based on the study of Deshpandé et al. 1993) moderates the impact of buyer's perception about relationship-quality (higher-order construct of commitment and trust) on repurchase intention. The significant impact is stronger for the internally focused (integration and smoothing activities) than for the externally focused (competition and differentiation) corporate cultures, because these companies are more reluctant to seek sellers outside of the known circle and therefore stay more loyal to sellers when they have become part of the inner circle. These cultural differences may also moderate the relationship between value to the supplier and value to the customer.

4.6.3. Managerial Implications

The results of this study have important implications for marketing and sales managers in B2B-markets. This study shows that there are customers who react more positively to supplier value creation efforts and thus warrant more considerable attention on the part of suppliers. It gives managers the chance to identify customers who reward created value to the customer to a greater extent.

While changing the customer corporate reciprocity norm is not possible (or even very hard), only manipulating the perceived replaceability (dependency) of customers could be a fruitful strategy. On the one hand, this could be executed by influencing perceptions about future gains relative to alternatives (e.g., clear communication of the unique selling points of the company's products or services, an impressive demonstration of the higher value of the firm's products and services compared to competitors, etc.).

On the other hand, perceptions about future costs could be shaped by the creation and communication of switching barriers (e.g., facilitation of personal relationships,

provision of trainings for operating products that are not transferable to competitor products).

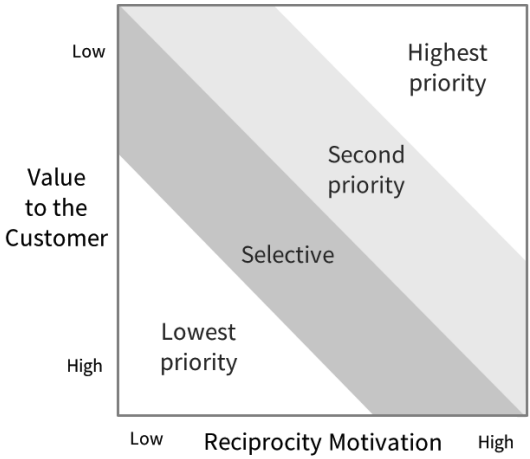
The awareness of the determinants of customer's rewarding behavior enables suppliers to strategically (i.e., intentionally) utilize the value creation in relationships to increase one's own value. Since resources are scarce customers have to be prioritized. According to relationship marketing theory, the selection of a customer is a crucial part of the competitive strategy of a firm (Morgan and Hunt 1994). It should be in focus of managerial interest to prioritize investments in certain customers who are highly important for the firm but evaluated inferior supplier performance. Performance can be measured by evaluating the overall perceived value to the customer and to know the critical points that must be improved. Importance of a customer can be measured by, e.g., CLV (see chapter 2.3.3) of a customer but also by technological, market development, and strategic criteria. The new aspect of this study is that these measurement criteria should be complemented with criteria capturing customer's motivation to behave reciprocally: replaceability (dependency) and reciprocity norm.

The findings of this study help suppliers to be selective about the type of customer relationships they decide to nurture and to make additional investments. This is important regarding both customer acquisition of prospective customers and maintaining existing customers. The following matrix will help managers visualize customers with higher potential for improving the return on investment and thus has practical implications for customer portfolio management (see figure 23). As suggested before, value to the supplier, CLV, technological, market development, and strategic criteria should be additionally considered, even when they are not covered in this 2x2-Matrix. This would be another evaluation step before or an additional dimension in this matrix (3-D matrix).

High reciprocity motivation represents a high reciprocity norm and a low replaceability, whereas low motivation constitutes a low reciprocity norm and a high replaceability. Customers with a low value to the customer show high potential and also a high urgency to increase value to the customer to a better level in order to retain the customers. Customers with a low value to the customer and in addition to it, a high reciprocity motivation show the highest potential to improve value to the supplier.

These customers should receive the most top priority for CRM improvement efforts. In contrast, customers who already perceive a high value to the customer and indicate low reciprocity motivation would have a lower potential to increase value to the supplier by attempts to further improve value to the customer. Therefore, these customers are given lowest priority. Especially for determining the priority of customers in the field "selective" (see figure 23) additional assessment criteria are essential for making good decisions. For prospective customers, the value to the customer potential (how much value could be created for this customer) must be estimated, which could also be an alternative dimension for prioritizing existing customers.

Figure 23: Value creation prioritization matrix



It is important to note that the matrix does not give implications to reject customers but rather to emphasize value creation efforts for the prioritized customers. And again, the (potential) value of a customer to the supplier and other criteria (e.g., technology, market, strategy, etc.) should not be neglected when making decisions about customer-specific relationship investments (especially in the "selective" area). This matrix is only a supplement but not a substitution of these critical criteria.

In addition to customer maintenance and customer acquisition, the implications also have crucial importance for customer win-back efforts. In contrast to the acquisition of

new customers, lost customers are already known, and therefore, information about these customers should still exist. Customers with identical retention behavior may have different reciprocity motivations to create value to the supplier (Eisenbeiss et al. 2014). Thus, information about their reciprocity behavior made by past-experiences or past questionnaire data may give guidance concerning the calculation of the CLV of lost customers.

5. Synthesis

5.1. Summary of the Results

Value proposition and creation are both fundamental aspects for gaining new customers and managing existing customer relations in industrial markets. The main goal of this thesis was explaining which customers create value for suppliers and thereby realize a better understanding of how suppliers can improve their revenue for value proposition (focus: customer acquisition) and value creation (focus: customer maintenance). Factors have been identified which help to determine customer contact persons and companies who show a higher potential to create future value and thus should be approached and maintained.

The main goal was divided into two research objectives: the first objective focuses on customer acquisition strategies and the second on customer maintenance strategies, which were analyzed in two distinct empirical studies. Both studies examined factors which moderate the relationship between supplier behavior and sales performance and provide important insights for CRM research and practice.

The first research objective was to identify the "most suitable" customer contact person who should be primarily addressed for value proposition to make a sale. The first study (chapter 3) addressed this objective by combining role theory with contingency theory and explained why the attractiveness of customer contact persons differs with the size of the customer company.

Following insights were yielded:

1. Findings show that the probability of success depends on the buying center role initially contacted. Having purchasing agents (buyers) as first contacts has a stronger positive relationship to sales effectiveness than having top managers (deciders) or technical engineers (users) as a first contact.
   Empirical evidence supports the explanatory power of role theory (Kahn et al. 1964) for customer initiation. The role concept of the buying center model (Webster Jr and Wind 1972) helps to explain differences that influence

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purchasing decisions between customer contact persons. Thus, the results give support to the relevance of role theory for predicting sales performance.

2. The success rate in contacting different buying center role actors varies with the size of the customer company, except for the buyer (purchasing agent). Top managers (deciders) and purchasing agents should be prioritized for small companies. However, in larger customer companies, the effectiveness of approaching top managers gets lower, while the sales success rate when approaching a technical engineer (user) gets higher. The success rate when contacting a purchasing agent stays stable independent from customer company size. Therefore, customer company size has been identified as an appropriate segmentation criterion for deciding who to approach primarily in a prospective customer company to make a sale. These findings are highly relevant for effectively winning new customers and therefore, give a high potential for saving acquisition costs.
3. The findings improve understanding of the customer firms' purchasing behavior, which helps suppliers to initiate new orders. Customer company size has a significant moderating effect on the relationship between sales behavior and sales effectiveness. Customer company size is used as a proxy for relevant attributes in organizational purchasing: the functional specialization of the buying center members, decision-making centralization, and autonomy. It has been argued that these attributes affect the influence of different buying center roles. The results indicate that the influence of roles vary with customer company size, which gives support to contingency theory (Fiedler 1978), that claims that the effectiveness of selling behavior depends on situational factors (Weitz 1981).

After indicating the "most suitable" customer contact person, the second research objective was identifying the "most suitable" customer company, which should be prioritized for value creation to receive value to the supplier. The perspective expands from an inter-personal level in study 1 to an inter-organizational level of CRM in study 2.

In the second study (chapter 4) the value-driven approach (which attempts to create value to the customer) was linked with the deriving-value approach (which tries to derive value to the supplier). The study explained how value to the customer impacts customer behavior to create value to the supplier. Several findings have been received:

1. Value does not automatically breed value. The empirical results show that the relationship between value to the customer and value to the supplier is not strong. This can be explained by the study's finding that not all customers reciprocate value to the same extent.

2. The perceived replaceability of a supplier weakens the relationship between value to the customer and value the supplier and vice versa; when customers depend heavily on their supplier, customers are more strongly motivated to reciprocate value than to exploit a supplier.

3. An internalized reciprocity norm in the customer's culture enhances the relationship between value to the customer and value to the supplier. Findings show that the degree to which customers internalize a reciprocity norm and apply reciprocity principles varies strongly from customer to customer.

4. Findings show that multiple economic perspectives (transaction cost, social exchange, power-dependence, equity, reciprocity norm, and relational norm perspective) are needed for understanding how value creation to the customer leads to value creation to the supplier. It was worked out that these perspectives provide distinct theoretical approaches which can be condensed to two orientations: future- and past-oriented value creation. Both complement each other and help to explain why value breeds value. Being aware of these orientations help to improve the prediction of future sales performance depending on value creation efforts to the customer:

   Customer's future-orientation reinforces the relationship between value to the customer and value to the supplier. This orientation is based on self-seeking principles and thus primarily focuses on the payoff for investing in the supplier. The results support social exchange theory (Blau 1964), which argues that value creation to the customer increases future value potential and therefore, makes

investments into the relationship more attractive to the customer. Furthermore, the findings give support to power-dependence theory (Emerson 1962), since the results show that dependent customers are more strongly motivated to reciprocate value than independent customers. Additionally, these results give support to transaction cost theory (Williamson 1973), since customers have to fear a higher loss (costs) when losing a high value relationship compared to a low-value relationship. These aspects motivate calculative reciprocal value creation behavior and thereby increase sales performance to the supplier.

Besides the future orientation, customer's past-orientation enhances the impact of value to the customer on value to the supplier. The findings give support to the theory of reciprocity (Gouldner 1960). Following normative reciprocity rules, customers reward received value based on self- and other-regarding principles. Customers judge received value in the past based on their internalized norms. A favorable judgment may lead to attempts to return value-creating behavior to suppliers. Hence, the results give support to the relevance of internalized norms of companies – in particular, the internalized norm of reciprocity.

5. The findings highlight the importance of controlling the relationship to existing customers to increase sales performance. Not every customer relationship should be retained, let alone developed. Thus, the decision about relationship expansion or disinvestment has to be made based on selection criteria such as perceived replaceability or the internalized norm of customers. These criteria help to distinguish customers who reciprocate from customers who do not.

Even when the first study emphasizes acquiring customers and the second on maintaining customer relationships, customer acquisition and maintenance should not be regarded as totally segregated processes, but rather their strategies should be aligned (Reinartz et al. 2005; Thomas 2001). The results of the first study about customer acquisition can be used for improving customer maintenance strategies, and the second study about customer maintenance can be used for developing customer acquisition strategies:

The selection criteria of the "most suitable" contact can also be applied for existing customers. Buying center members who show higher sales effectiveness should be prioritized when developing and maintaining existing relationships with, e.g., up-/cross-selling offers or when redeveloping inactive customer relationships with, e.g., presenting new product innovations or providing win-back-offers (Kumar et al. 2015).
Furthermore, the identified selection criteria of the "most suitable" customer company are not exclusively applicable for customer maintenance, but instead should be used additionally in an earlier stage of the customer life cycle – when selecting the prospective customers. Customer acquisition creates the base for future customer relationships, and thus, customers who reward received value should also be prioritized in customer acquisition attempts. Acquiring customers who do not have the potential to be valuable would be bad investments. Thus, prioritizing relationships with a high value potential already in the very beginning of the customers' lifetime will further improve the potential to increase customer equity of suppliers (overall lifetime value of all current and future customers) (Rust et al. 2004).
For boosting the profitability of the customer base, sales have to be increased and/or costs should be lowered, which include improving both acquisition campaign effectiveness (Tillmanns et al. 2017) and efficiency of managing long-term profitable customers (Lewis 2005). Thus, both studies combined develop concepts for a more comprehensive view of the different aspects of sales effectiveness and efficiency. They show that sales performance depends on the behavior of the supplier, but their relationship strength is contingent on other moderating factors. These are customer characteristics, such as customer attributes, cultures, and perceptions.

5.2. Limitations and Research Outlook

Even when this research gives answers to the question "Which customers pay?", it is still just one piece of the puzzle. The research methods used to investigate sales performance in industrial markets enabled the thesis to take advantage of the strengths of two valuable data sets; nonetheless, the strengths go hand-in-hand with several

limitations (additionally see limitations and research outlooks in chapters 3.6.2 and 4.6.2).

The first study investigates the sales effectiveness on an inter-personal level and primarily uses objective CRM-data, which has been collected over eight years by sales representatives; while the second study researches sales efficiency on an inter-organizational level that is based on a dyadic questionnaire data set with supplier and customer perceptions, since subjective constructs like relationship value had to be measured.

Both studies have in common that they use data created by diverse actors (customers and/or sales representatives); however, only one focal supplier company has been investigated in each study. Both supplier companies are developers and manufacturers of engineering solutions in industrial markets, and thus, the findings are primarily relevant for this restricted field. The results are very unlikely transferable to business relationships with no direct contact between supplier and customers since the interaction is a necessary condition in both studies. Thus, the results are probably less helpful for transaction-oriented marketing. However, it seems to be especially attractive to investigate key account relationships, since there are very close relationships between the business partners. Furthermore, suppliers put significantly more effort into value creation behavior in these relationships (Ivens and Pardo 2007).

Future studies should try to replicate the obtained results for other companies, other products and services, and other industries. For example, the information technology (IT) sector could be an interesting field, especially software which is developed or customized in close interaction with customers and combined with services (e.g., software as a service).

The investigated customer companies are from diverse industries and thus provide a relatively broad spectrum of industrial manufacturers. Nevertheless, the results are not directly transferable to consumer markets. Obviously, the buying center concept and customer company size as a contingency factor cannot be used in the consumer context. However, the future- and past-orientated motivation to reciprocate value could also be researched in the consumer context. It is likely that a consumer may pay even more for a valuable product or service when the provider is difficult to replace, or the

consumer is guided by a personal, internalized reciprocity norm. Perugini et al. (2003) and Eisenberger et al. (2004) worked out personal norms of reciprocity as personality constructs that could be used for measuring the internalized norm of reciprocity of consumers. It is conceivable that the measurement for one person is more accurate than of a whole organization and thus, the consumer's perceived replaceability and internalized norm of reciprocity may even better predictors of future sales outcomes compared to the B2B context.

Additionally, mediating factors could shed light on the black box between selling behavior and selling the outcome. Mediating factors between value to the customer and value to the supplier are, e.g., emotional states like gratitude or indebtedness (Pelser et al. 2015). Palmatier et al. (2009) demonstrate that gratitude mediates the relationship between relationship management investments and sales performance. Mediating factors between approaching a buying center role and selling effectiveness are especially the behaviors of the buying center members in the purchasing process (e.g., reward, promise, punishment, and threat – see (non-)coercive strategies in chapter 2.4.1).

Acquisition and maintenance are separated in the two studies. Future research could also investigate the moderating factors but also make a longitudinal study of the whole life cycle of customers. Thus, following an approach which directly links the customer acquisition with the maintenance process could be a fruitful avenue for future research (Lewis 2006; Reinartz et al. 2005).

Findings demonstrate the importance of understanding the purchasing behavior of customers. The purchasing behavior depends on customer characteristics, which exceed the scope of rational utility-maximization considerations. The results show that, besides calculative factors, also non-calculative factors, like norms and attitudes, determine purchasing behavior. Normative motivations of customers provide in addition to egoism a pluralistic explanation of why suppliers buy. The non-calculative motivation indicates that "soft" factors of customer companies, such as customers' norms, core values, virtues, and cultures, may play a more significant role in customer-supplier relationships than expected by CRM researchers. This is a fruitful avenue for future research.

5.3. Managerial Implications

This thesis indicates that suppliers should be more selective regarding proposing and creating value for customers. Time and resources should not be wasted for customers who do not appreciate the value provided. Sales representatives have to learn under which circumstances they should choose (or reject) to invest in a specific (prospective) customer. Salespeople need guidance by marketing and sales management to prioritize and manage customers using information related to the customers' value creation potential (Raman et al. 2006).

Nevertheless, social relationships are such complex systems that management could not consider every contingency in sales interactions. Thus, it still primarily remains the responsibility of a sales representative to navigate own experiences and to use their individual intuition. However, salespeople could be supported by CRM-technologies, with which new insights can be gained. The studies show that these insights could give guidance for choosing the most effective and efficient selling behavior in interaction with specific customer attributes or with customers with certain perceptions (see managerial implications in chapter 3.6.3. and 4.6.3).

This thesis shows that a high-quality CRM-data base is helpful for managers to develop effective sales tactics and strategies. It is crucial that managers define their required information. The findings of this study suggest gathering information, not exclusively about existing customers, but also about non-customers (which were approached but did not become customers – collected information in the first study is, e.g., customer company size), because this information can help to improve future customer acquisition attempts (won/lost analysis). Furthermore, it is valuable to incorporate both individual (function/buying center role) and organizational data into marketing and sales efforts, since the different characteristics on both levels help to adapt selling behavior appropriately. Finally, data which measures customer perceptions (e.g., about the replaceability of the supplier), should be collected in addition to hard facts such as customer company size, industry, etc. Customer-data gathering questions could be asked in combination with customer satisfaction or value surveys.

An understanding of the examined moderators can guide suppliers in what to ask a (potential) customer to plan value creation efforts for current and prospective customers. In contrast to the perceived replaceability of a supplier (dependency of the customer), the internalized norm of reciprocity is an attribute of the customer, which is not specific to an individual relationship. Besides asking the customers directly about corporate norms, customers with a high or low reciprocity norm may be identified indirectly with the help of other characteristics. It is very interesting that the reciprocity norm in the second study shows a bimodal distribution. Two modes are often an indication for two distinct populations with specific characteristics, which may be used for profiling and targeting purposes (Rettie et al. 2012). Suppliers could analyze their CRM data and try to find specific helpful characteristics to distinguish customers with a low and high reciprocity norm. Furthermore, suppliers could use external sources to obtain information. Many companies publish their core values on their website. Some companies state having a supplier-orientation and, e.g., seek to grow with their suppliers. This may give an indication for an internalized reciprocity norm. Additionally, managers or sales representatives could ask other suppliers of their customer about their perception regarding the customer's reciprocity norm.
It is crucial that sales representatives understand that data collection does not keep them away from selling but improves their selling in the long run. This thesis demonstrates that CRM-analyses can help to improve the sales effectiveness of sales representatives (when approaching or maintaining a specific customer group). This could lead to a positive effect towards the salespeople's conscientious usage of CRM-systems, which is a significant issue of many companies but essential for CRM-analysis (Raman et al. 2006; Reid and Catterall 2015).

Overall, this thesis supports companies to identify and target customer contact persons and companies who show a higher potential to create future value to the supplier and, therefore, should be approached and maintained. On the operative level, selling tactics should be adapted to specific customer characteristics (e.g., customer company size). On the strategic level, customer segmentation criteria (e.g., dependency and reciprocity norm) must be used for targeting (customized value proposition) and

prioritizing (dis-/investment strategies) customers who have a high likelihood to reward value-creating efforts. This is relevant for both managing the existing customer portfolio and planning sales or marketing campaigns.

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A. Appendix – Study 1

A.1. Descriptive Statistics

Potential project volume:

Figure 28 shows the bar chart of the log-transformed potential project volume variable (logPPV). No outliers with SD over +/-3 were detected (see figure 29).

Figure 24: Bar chart with distribution of logPPV

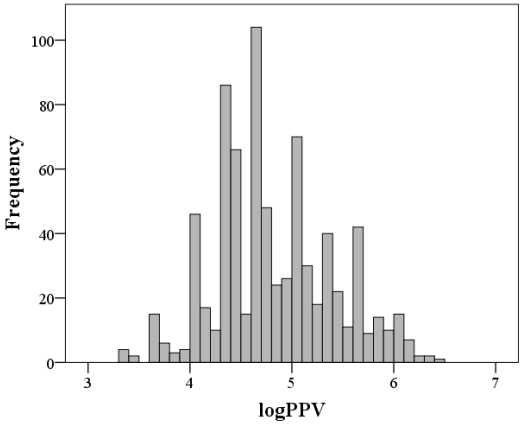
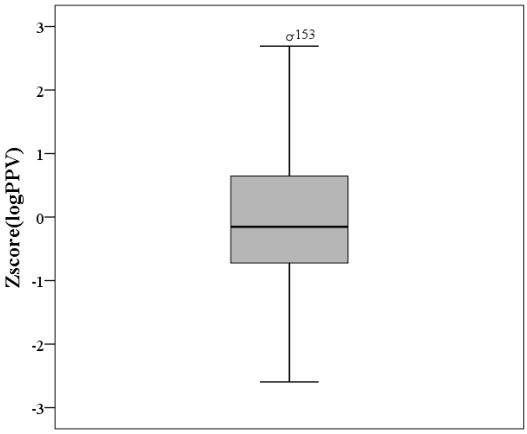


Figure 25: Boxplot of logPPV (z-standardized)



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Customer company size:

Figure 24 shows the bar chart of the log-transformed customer company size variable (logCS). After log-transformation, some cases with SD slightly over +3 were detected (see figure 25). The sizes of these companies are validated and have been concluded to be realistic since they are multinational corporations. Hence, these cases stay in the sample.

Figure 26: Bar chart with distribution of logCS

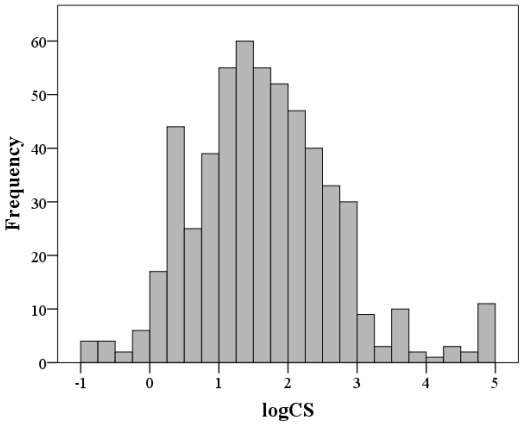
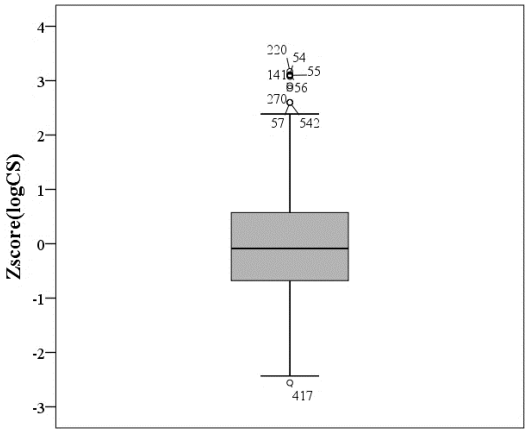


Figure 27: Boxplot of logCS (z-standardized)



First contact interest:

Figure 26 shows the bar chart of the first contact interest variable (FCI). It is noticeable that only very fewer values are smaller than 4. This is the case since only cases are chosen which reached the stage, where the first contact had enough interest in inviting the sales representative for a more detailed presentation of his/her offer. It shows that only a few exceptions have been persuaded to agree to a visit even though the contact did not really want the product. No outliers with SD over +/-3 were detected (see figure 27).

Figure 28: Bar chart with distribution of FCI

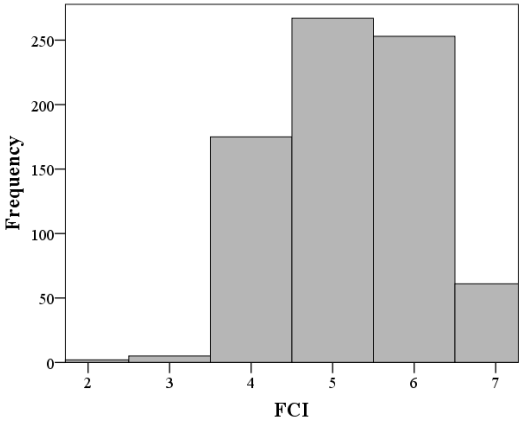
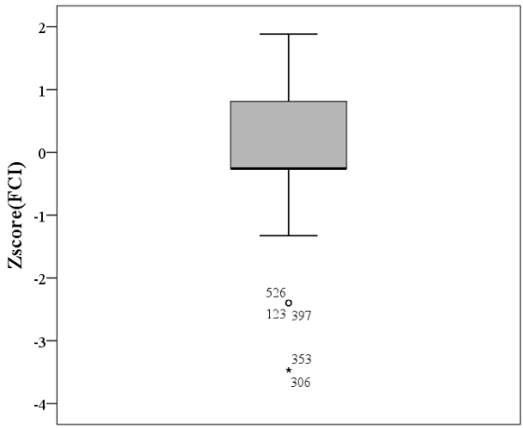


Figure 29: Boxplot of FCI (z-standardized)



A.2. Testing of Logistic Regression Assumptions

Table 30: Linear relationship test – separated by first contact type (FCT)

FCT	Variable	B	S.E.	Wald	df	Sig.	Exp(B)
Purchasing agent	ZFCI	0.913	0.208	19.281	1	0.000	2.492
	ZlogPPV	0.078	0.210	0.139	1	0.710	1.081
	ZlogCS	0.128	0.249	0.263	1	0.608	1.136
	ZFCI x ZlogFCI	-0.377	0.219	2.963	1	0.085	0.686
	ZlogPPV x ZloglogPPV	-0.124	0.165	0.568	1	0.451	0.883
	ZlogCS x ZloglogCS	0.234	0.291	0.651	1	0.420	1.264
	Constant	-0.496	0.299	2.752	1	0.097	0.609
Top manager	ZFCI	0.341	0.287	1.412	1	0.235	1.406
	ZlogPPV	-0.394	0.339	1.345	1	0.246	0.675
	ZlogCS	-0.929	0.514	3.268	1	0.071	0.395
	ZFCI x ZlogFCI	0.515	0.276	3.482	1	0.062	1.673
	ZlogPPV x ZloglogPPV	-0.149	0.246	0.365	1	0.546	0.862
	ZlogCS x ZloglogCS	-0.006	0.294	0	1	0.983	0.994
	Constant	-2.354	0.593	15.753	1	0	0.095
Technical engineer	ZFCI	0.692	0.141	24.045	1	0	1.998
	ZlogPPV	-0.258	0.154	2.821	1	0.093	0.773
	ZlogCS	0.363	0.156	5.393	1	0.02	1.438
	ZFCI x ZlogFCI	0.366	0.123	8.853	1	0.003	1.442
	ZlogPPV x ZloglogPPV	-0.132	0.123	1.153	1	0.283	0.877
	ZlogCS x ZloglogCS	-0.112	0.251	0.198	1	0.656	0.894
	Constant	-1.613	0.230	49.305	1	0	0.199

Note: All variables are z-standardized.

Table 31: Linear relationship test – overall model

Variable	B	S.E.	Wald	df	Sig.	Exp(B)
ZFCI	0.667	0.099	45.517	1	0.000	1.948
ZlogPPV	-0.170	0.098	2.998	1	0.083	0.844
ZlogCS	0.157	0.096	2.656	1	0.103	1.169
ZFCI x ZlogFCI	0.103	0.093	1.247	1	0.264	1.109
ZlogPPV x ZloglogPPV	-0.071	0.077	0.860	1	0.354	0.931
ZlogCS x ZloglogCS	0.080	0.061	1.729	1	0.189	1.083
Constant	-1.239	0.143	75.144	1	0.000	0.290

Note: All variables are z-standardized.

Table 32: Collinearity statistics

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-0.185	0.161		-1.150	0.251		
FCI	0.132	0.017	0.281	7.722	0.000	0.999	1.001
logPPV	-0.059	0.027	-0.080	-2.169	0.030	0.972	1.028
logCS	0.024	0.015	0.057	1.551	0.121	0.973	1.028

Table 33: Collinearity diagnostics

Variable	Eigenvalue	Condition Index	Variance Proportions			
			(Constant)	FCI	logPPV	logCS
1	3.744	1.000	0.00	0.00	0.00	0.02
2	0.226	4.072	0.00	0.01	0.00	0.96
3	0.024	12.457	0.02	0.77	0.20	0.03
4	0.006	24.495	0.97	0.21	0.79	0.00

A.3. Logistic Regression Results – without Control Variables

Table 34: Logistic regression results – overall model – without control variables

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
FCT			16.151	2	0.000			
Purchasing agent	-0.640	0.508	1.584	1	0.208	0.527	0.195	1.428
Technical engineer	-1.673***	0.438	14.570	1	0.000	0.188	0.079	0.443
logCS	-0.800**	0.318	6.310	1	0.012	0.449	0.241	0.839
FCT x logCS			10.988	2	0.004			
Purchasing agent x logCS	0.771**	0.367	4.410	1	0.036	2.161	1.053	4.438
Technical engineer x logCS	1.073***	0.337	10.167	1	0.001	2.925	1.512	5.656
Constant	-0.097	0.364	0.071	1	0.790	0.908		

R^2=0.031 (Cox & Snell); 0.045 (Nagelkerke). $\chi^2(8)$=10.623; p=0.224 (Hosmer & Lemeshow).
$\chi^2(5)$=19.846; p=0.000 (Omnibus test). Significances: *p <0.1; **p <0.05; ***p <0.01.

Table 35: Logistic regression results – separated by first contact type (FCT) – without control variables

FCT	Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Purchasing agent	logCS	-0.029	0.183	0.026	1	0.873	0.971	0.679	1.389
	Constant	-0.737**	0.355	4.315	1	0.038	0.479		
Top manager	logCS	-0.800**	0.318	6.310	1	0.012	0.449	0.241	0.839
	Constant	-0.097	0.364	0.071	1	0.790	0.908		
Technical engineer	logCS	0.273**	0.109	6.288	1	0.012	1.314	1.061	1.627
	Constant	-1.770	0.244	52.498	1	0.000	0.170		

R^2=0.000, 0.076, 0.016 (Cox & Snell); 0.000, 0.108, 0.025 (Nagelkerke). $\chi^2(1)$=4.888, 9.245, 13.530; p=0.769, 0.322, 0.095 (Hosmer & Lemeshow). $\chi^2(1)$=0.025, 7.574, 6.260; p=0.872, 0.006 , 0.012 (Omnibus test). Significances: *p <0.1; **p <0.05; ***p <0.01.

B. Appendix – Study 2

B.1. Descriptive Statistics

Table 36: Descriptive variable statistics

Variable	Mean	Median	Min	Max	SD	Kurtosis	Skewness
prod1	5.576	6	2	7	0.958	1.579	-0.911
prod2	5.592	6	2	7	1.047	0.902	-0.873
prod3	5.643	6	2	7	1.081	1.046	-0.963
prod4	5.386	6	1	7	1.104	1.742	-1
prod5	4.594	5	1	7	1.317	-0.136	-0.409
deliv1	5.626	6	2	7	1.136	1.024	-1.054
deliv2	5.165	5	1	7	1.178	0.175	-0.542
deliv3	5.553	6	2	7	1.148	0.293	-0.727
deliv4	5.875	6	1	7	1.208	2.422	-1.46
serv1	5.375	6	1	7	1.202	1.432	-1.032
serv2	5.642	6	1	7	1.263	1.777	-1.232
serv3	5.519	6	1	7	1.316	1.328	-1.182
serv4	5.45	6	1	7	1.231	1.875	-1.188
serv5	5.328	6	1	7	1.269	0.859	-0.898
serv6	5.444	6	1	7	1.269	1.39	-1.17
price1	4.357	4	1	7	1.25	0.222	-0.253
price2	4.056	4	1	7	1.435	-0.521	-0.142
price3	4.491	4	1	7	1.282	0.435	-0.321
price4	4.471	4	1	7	1.343	0.102	-0.348
v2c1	4.93	5	1	7	1.306	0.786	-0.827
v2c2	5.013	5	1	7	1.343	0.743	-0.898
v2c3	4.804	5	1	7	1.431	0.126	-0.659
v2c4	4.646	5	1	7	1.41	-0.021	-0.559
v2c5	4.567	5	1	7	1.43	0.169	-0.588
repl1	4.278	4	1	7	1.59	-0.369	-0.175
repl2	4.286	4	1	7	1.451	-0.244	-0.19
repl3	4.622	5	1	7	1.536	-0.318	-0.291
repl4	4.139	4	1	7	1.642	-0.726	0.042
reci1	3.765	4	1	7	1.701	-0.729	-0.246
reci2	3.523	4	1	7	1.761	-1.007	-0.062
reci3	4.431	5	1	7	1.786	-0.517	-0.607
reci4	3.833	4	1	7	1.736	-0.805	-0.29
reci5	4.263	4	1	7	1.706	-0.509	-0.404
v2s1	4.258	4	1	7	1.297	-0.071	-0.411
v2s2	4.117	4	1	7	1.298	0.084	-0.475
v2s3	3.72	4	1	7	1.511	-0.647	-0.063
v2s4	3.607	4	1	7	1.544	-0.722	0.026
v2s5	3.717	4	1	7	1.561	-0.576	-0.073

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Table 37: Descriptive variable statistics of log-transformed performance variables

Variable	Mean	Median	Min	Max	SD	Kurtosis	Skewness
log_rev_prod1	-0.351	-0.3	-0.78	0	0.177	-0.018	0.35
log_ rev_prod2	-0.34	-0.3	-0.78	0	0.195	-0.399	0.261
log_ rev_prod3	-0.327	-0.3	-0.78	0	0.202	-0.556	0.16
log_ rev_prod4	-0.379	-0.4	-0.85	0	0.188	-0.017	0.326
log_ rev_prod5	-0.496	-0.48	-0.85	0	0.186	0.392	0.666
log_ rev_del1	-0.328	-0.3	-0.78	0	0.205	-0.563	0.043
log_ rev_del2	-0.412	-0.48	-0.85	0	0.197	-0.162	0.521
log_ rev_del3	-0.339	-0.3	-0.78	0	0.214	-0.83	0.233
log_ rev_del4	-0.267	-0.3	-0.85	0	0.226	-0.764	-0.326
log_ rev_serv1	-0.374	-0.3	-0.85	0	0.201	-0.281	0.199
log_ rev_serv2	-0.314	-0.3	-0.85	0	0.227	-0.782	-0.055
log_ rev_serv3	-0.337	-0.3	-0.85	0	0.225	-0.65	-0.023
log_ rev_serv4	-0.358	-0.3	-0.85	0	0.208	-0.345	0.113
log_ rev_serv5	-0.377	-0.3	-0.85	0	0.213	-0.51	0.247
log_ rev_serv6	-0.357	-0.3	-0.85	0	0.211	-0.403	0.026

Note: Variables are log-transformed with reverse scores.

B.2. Distribution of Variables

The following figures show the variable distributions. The questions asked in the questionnaire for measuring each variable are listed in chapter 4.4.2.

Figure 30: Distribution of replaceability variables (ra)

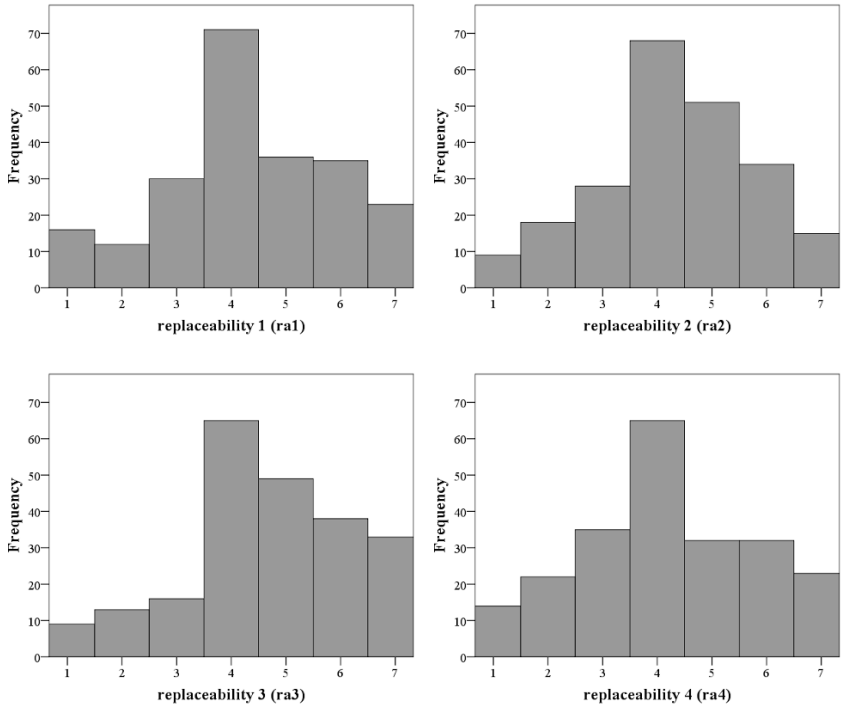


Figure 31: Distribution of reciprocity norm variables (rn)

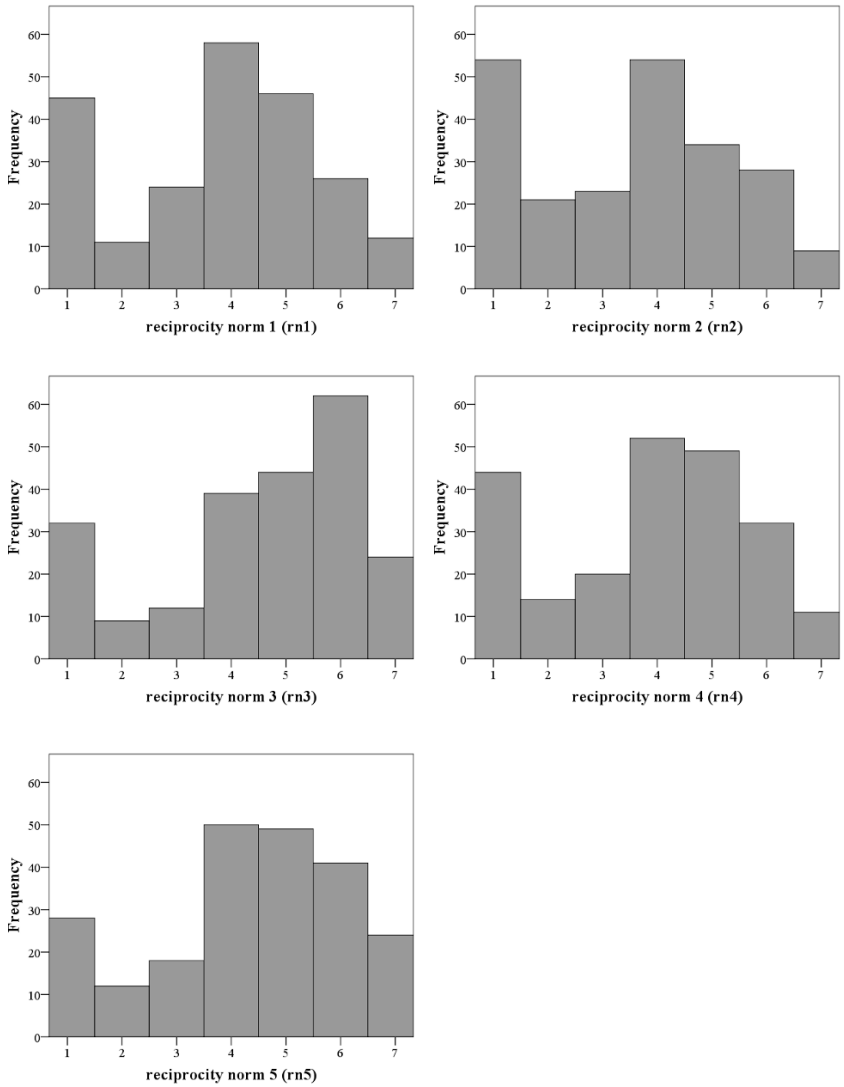


Figure 32: Distribution of value to the customer variables (v2c)

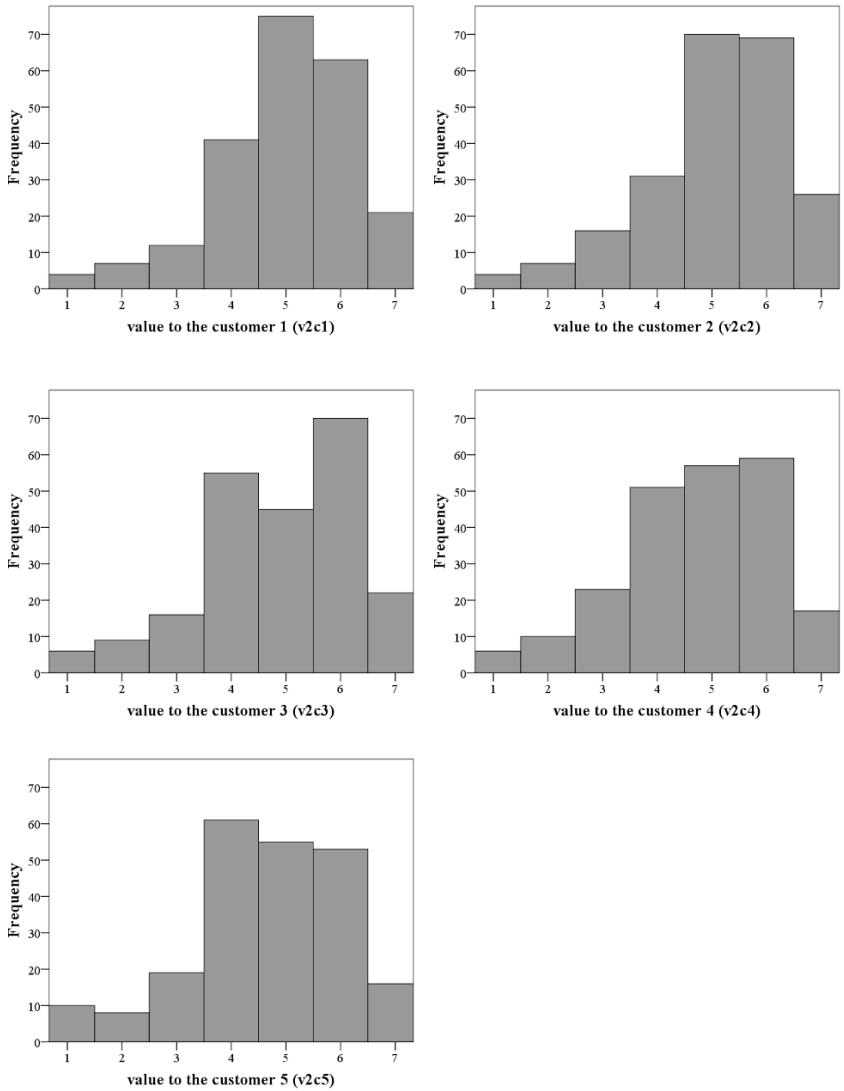
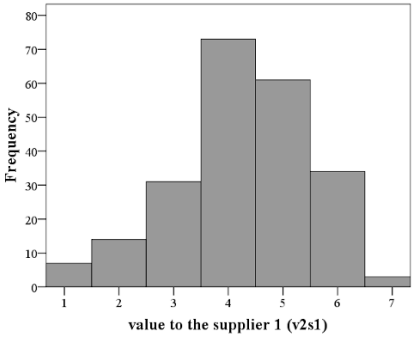
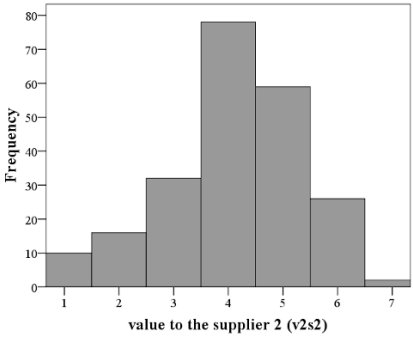
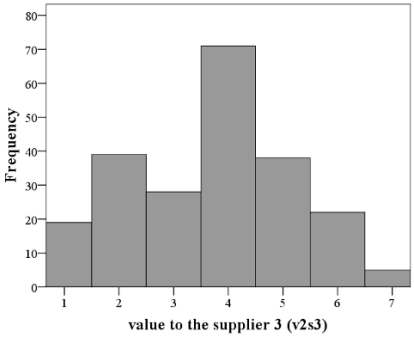
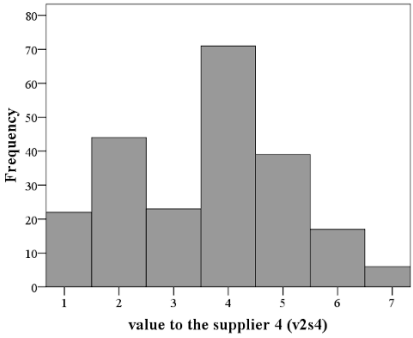


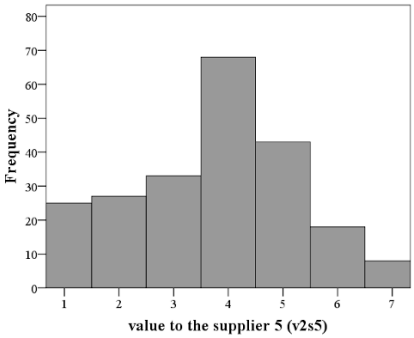
Figure 33: Distribution of value to the supplier variables (v2s)











B.3. Content Validity and HTMT

Table 38: Content validity of variables

	Component			
Variable	1	2	3	4
v2c1	0.907	0.077	-0.109	0.012
v2c2	0.892	0.122	-0.112	-0.016
v2c3	0.936	0.096	-0.114	0.095
v2c4	0.931	0.090	-0.129	0.041
v2c5	0.917	0.059	-0.130	0.037
v2s1	0.168	0.824	-0.191	0.106
v2s2	0.095	0.844	-0.095	0.132
v2s3	0.071	0.946	0.005	-0.002
v2s4	0.037	0.948	-0.002	0.018
v2s5	0.070	0.872	-0.097	-0.025
ra1	-0.216	-0.094	0.841	-0.011
ra2	-0.181	-0.063	0.832	0.046
ra3	-0.035	0.003	0.795	0.113
ra4	-0.085	-0.168	0.800	0.058
rn1	0.058	0.069	0.000	0.849
rn2	0.050	0.021	0.060	0.846
rn3	0.033	0.027	0.087	0.848
rn4	0.026	0.057	0.046	0.891
rn5	-0.018	0.029	0.033	0.806

Note: Extraction Method: Principal Component. Rotation Method: Varimax with Kaiser Normalization.

Table 39: HTMT

Relationships	2.5%	97.5%
RA x V2C → RN x V2C	0.015	0.457
RN → RN x V2C	0.000	0.013
RN → RA x V2C	0.000	0.094
RA → RN x V2C	0.032	0.156
RA → RA x V2C	0.118	0.450
RA → RN	0.049	0.285
V2C → RN x V2C	0.011	0.166
V2C → RA x V2C	0.018	0.368
V2C → RN	0.008	0.025
V2C → RA	0.142	0.481
V2S → RN x V2C	0.030	0.257
V2S → RA x V2C	0.012	0.087
V2S → RN	0.011	0.050
V2S → RA	0.112	0.329
V2S → V2C	0.098	0.342

Note: Confidence intervals are bias corrected.