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Antecedents of Supplier Satisfaction: The influence of Corporate Culture

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Abstract

The increasing awareness and importance of preferred customer status and supplier satisfaction unveil new opportunities to gain competitive advantages as buying firm. By achieving preferred customer status, a buyer can benefit from preferential treatment of the supplier. In the process to become a preferred customer, supplier satisfaction plays a major role. This study extends existing literature by taking the effect of corporate culture into account. Empirical data for the quantitative research is collected from suppliers of an organisation. The research consists of a thesis part and an additional research paper. Both independently test the influence of corporate culture with different methods on the same data. The results of the thesis with PLS path modelling show that corporate culture has no moderating effect on supplier satisfaction. However, further analysis, implemented in the paper, highlights the importance of corporate culture in relational behaviour when it comes to supplier satisfaction. Here, outcomes of polynomial regression show that intensifying the relationship with suppliers, that do not have a high focus on flexibility and discretion but on stability and control, has the most potential to improve supplier satisfaction through relational behaviour. Furthermore, a discussion of the results provides managerial and theoretical implications. Finally, suggestions for further research and limitations are considered.

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AVE	average variance extracted
CR	composite reliability
CVF	competing values framework
e.g.	for example
Fig.	figure
H	hypothesis
HTMT	heterotrait-monotrait
PLS	partial least squares
SET	social exchange theory
SEM	structural equation modelling
SPSS	statistical package for the social sciences

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1 The strategic role of purchasing and focus of the research

1.1 Purchasing as a strategic function of a firm

Historically, successful purchasing was defined by buying products for the lowest price.¹ However, the success of purely cost-oriented strategies may not be guaranteed with suppliers that are highly innovative and thus creating competitive advantages for the purchasing firm. During the past 40 years, purchasing has shifted from a “just buying-function” to a strategic function.² Furthermore, the number of suppliers for specific products can be limited and therefore, customers are often bounded to one supplier. In that case, a strategic approach with focus on the relationship may be more successful than a low-cost strategy.³ Accordingly, organisations realise more and more the potential of the purchasing function to increase competitive advantage beyond keeping prices low. A global study from 2013 of almost 2000 publicly traded firms showed that about 70% of the expenses of a firm are spent on suppliers with an increasing trend, making supplier relations an important factor of a modern company.⁴ The increasing recognition of purchasing and its long-term orientation leads to different strategies to gain competitive advantage. Traditional marketing as the competition of organisations about customers is not the only way to achieve a better position in the market anymore. Besides that, the competition about suppliers is gaining popularity in practice. This is called “reversed marketing”.⁵

Previous studies show that part of gaining competitive advantage through the purchasing function is to become a preferred customer of suppliers in order to get preferential treatment.⁶ The theory of becoming a preferred customer for competitive advantage has been developed since the first contributions to this topic were published in 1970.⁷ One of the biggest outcomes in literature about buyer-supplier relationships is the cycle of preferred

¹ See Benton & Maloni (2005), p. 1.

² See Ellram & Carr (1994), p. 11.

³ See Hüttinger, Schiele & Veldman (2012), p. 1194.

⁴ See Proxima (2013), p. 5.

⁵ See Nyaga, Whipple & Lynch (2010), p. 101.

⁶ See Schiele, Veldman & Hüttinger (2011), p. 7; Pulles, Schiele, Veldman & Hüttinger (2016a), p. 130.

⁷ See Hottenstein (1970), pp. 47-49., cited by Schiele, Calvi and Gibbert (2012a), p. 1179.

customership, customer attractiveness and supplier satisfaction.⁸ Since inquiries about single components are still in their infancy, researchers are currently trying to explore more about influencing factors to further explain the construct of becoming a preferred customer. A necessity to become a preferred customer is to satisfy the suppliers.⁹ Besides economic aspects, also social and relational behaviour are influencing factors.¹⁰

One topic finding its way to supplier satisfaction research is the effect of culture.¹¹ The increased awareness of potential issues caused by organisational culture in buyer-supplier relationships enables companies to negotiate more effectively which results in higher savings and profits.¹² Because of its strong influence on business and buyer-supplier relationships, it is important to study this context in the setting of supplier satisfaction. This research will focus on the aspect of supplier satisfaction, as it presents one of the most important antecedents of becoming a preferred customer, and its dimensions extended by the moderating influence of corporate culture on satisfaction.¹³

1.2 The influence of corporate culture on supplier satisfaction as central focus of the research

To examine influential effects on antecedents of supplier satisfaction, this thesis will include the moderating influence of corporate culture on the relationship between antecedents and supplier satisfaction. Hereby, the main research question is:

- What is the influence of corporate culture on antecedents of supplier satisfaction to become a preferred customer of that supplier?

To answer this question, a quantitative research project will be implemented in corporation with a case company. The survey will be based on the articles of Hüttinger, Schiele and

⁸ See Schiele et al. (2012a), pp. 1181-1182.

⁹ See Schiele et al. (2012a), p. 1180; Pulles et al. (2016a), p. 130; Vos, Schiele & Hüttinger (2016), p. 4613.

¹⁰ See Vos et al. (2016), p. 4612.

¹¹ See Schiele, Ellis, Eßig, Henke & Kull (2015), p. 132.

¹² See Polychroniou & Trivellas (2018), p. 27.

¹³ See Schiele et al. (2012a), p. 1180.

Schröer (2014) and Vos et al. (2016).¹⁴ This research will contribute by extending already existing findings about supplier satisfaction with the influence of corporate culture. Furthermore, a best-practice comparison is added, in which suppliers do not only have to evaluate the case company according to their satisfaction, but also a best-practice company out of their customer base. On one hand, this procedure gives further information for the focal company to know how satisfied suppliers are with benchmark organisations in comparison to their own company. On the other hand, it provides additional data to validate the outcomes of the model of Vos et al. (2016). The goal of this research is to further explore the construct of supplier satisfaction as antecedent of preferred customer status. Because the effect of culture has been underexplored yet, even though its strong impact on businesses is already known, it is important to include this aspect in supplier satisfaction research.¹⁵ As an example, corporate culture is widely acknowledged as a critical factor in sustainable financial success.¹⁶ There is not a lot of empirical research regarding the impact of culture on supplier satisfaction. Existing literature only covers the role of national culture and does not yet regard organisational culture. This highlights the importance to consider this aspect in future research to better understand the effects of relational constructs. This information can be used to increase supplier satisfaction in order to become preferred customer and secure preferential treatment.

The theoretical part of this thesis provides a determination and explanation of the key concepts: Preferred customership, supplier satisfaction and corporate culture. Hereby, the terms are defined and theoretical foundations are explained. Based on that theory, hypotheses are generated and the conceptual model of this research is developed. As subsequent section, the methodology part gives an introduction to the case company and an overview on the methods and measurements used for the empirical section. After that, results are presented and discussed. Finally, limitations of this research and possible directions for future research in this topic area are given.

¹⁴ See Hüttinger et al. (2014); Vos et al. (2016).

¹⁵ See Cameron & Quinn (2011), p. 6.

¹⁶ See Kotter & Heskett (2008), p. 11.

2 The cycle of preferred customership: Definition of the key concepts

2.1 Expectations of the supplier from the buyer in inter-firm relationships – theoretical approach based on social exchange

The trend to explain buyer-supplier relationships had experienced a shift from transaction cost economics (TCE) to social exchange theory (SET). In the past, research about the topic had a focus on transaction-specific investments and contractual clauses as key element of exchange partnerships.¹⁷ Williamson (1985) defines transaction costs as “all of the ex-ante and ex-post contracting, monitoring and enforcement costs connected with conducting exchange activities between firms”.¹⁸ Nowadays, relationships and social exchange are more often the central element of exchange between organisations. In the field of inter-firm relationships, the influence of social exchange theory (SET) is an often-used concept.¹⁹ SET is a well-known marketing-approach to explain B2B relational exchange.²⁰ Relational aspects are relevant for the co-creation of unique resources. Those resources are not available to competitors that rely on non-relational aspects and thus the resources provide competitive advantage.²¹ SET is defined as “voluntary actions of individuals that are motivated by the returns they are expected to bring and typically do in fact bring from others”, which makes it particularly suitable to a business-to-business context.²² Here, social and economic outcomes are involved. The additional value resulting from the exchange is compared to the expected value from an alternative exchange.²³ The awarding of buyers with preferential treatment because of a satisfying relationship and a certain attractiveness of the buyer is having SET as underlying theory, assuming that buyer-supplier-relationships are a social exchange process.

¹⁷ See Cao & Zhang (2011), p. 164.

¹⁸ See Shahzad, Ali, Takala, Helo & Zaefarian (2017), p. 1.

¹⁹ See Khalid & Ali (2017), p. 491.

²⁰ See Lambe, Wittmann & Spekman (2001), p. 1.

²¹ See Dyer & Singh (1998), p. 662.

²² Blau (1964), p. 91.

²³ See Homans (1958), p. 602.

Pioneers of social exchange theory came from the fields of sociology (e.g. Homans (1958); Blau (1964); Emerson (1976)) and social psychology (e.g. Thibaut and Kelley (1959)). The three main elements of SET according to Thibaut and Kelley (1959) in a buyer-supplier context are (1) expectations, (2) satisfaction and (3) experiences with other customers.²⁴ (1) Expectations are the factors that lead to an exchange interaction. Expectations can be related to certain criteria of a buyer that need to be fulfilled by the supplier, for example quality, price or delivery time expectations.²⁵ Examples of expectations from a supplier on a buyer can be also related to access to innovation or a long-term relationship.²⁶ An evaluation of the outcomes compared to the expectations determine how satisfied the supplier is. If expectations are met or exceeded, the buyer will be (2) satisfied and is likely to rebuy from that supplier. The authors were the first ones to include the (3) comparison level and the comparison level of alternatives. In this case, the comparison level is what the supplier expects from the relationship with the buyer, with an existing knowledge based upon previous experiences with comparable relationships. The comparison level of alternatives defines the average quality of outcomes accessible from a best-practice-firm representing the best alternative exchange relationship. If the benefit achieved from the initial interaction is greater than the satisfaction level of alternatives, the supplier will likely decide in favour of the initial exchange.²⁷

SET was originally designed to describe relationships between persons, but it finds application in analysing inter-firm relationships between buyers and suppliers as well.²⁸ SET helps to explain what motivates suppliers to treat their customers differently. It provides information about the evaluation of customer-suppliers relationships and the reason suppliers target to cooperate more intensively with some customers rather than others. Finally, conclusions can be drawn from SET why suppliers would award preferred customer status.²⁹ SET is the basic theoretical framework of the research. However, it is limited in giving explanations to the three compartments of preferential treatment, customer

²⁴ See Thibaut & Kelley (1959), p. 31.

²⁵ See Ho, Xu & Dey (2010), p. 21.

²⁶ See Kasi, Hautamaki, Pullins & Kock (2017), p. 47.

²⁷ See Anderson & Narus (1984), p. 64.

²⁸ See Harris, O'Malley & Patterson (2003), p. 11.

²⁹ See Schiele, Veldman, Hüttinger & Pulles (2012b), p. 136.

attractiveness, supplier satisfaction and preferred customer status.³⁰ Therefore, the following chapter is giving further insights about the preferred customer construct and its benefits and presents an extended SET view on preferred customership.

2.2 Preferred customer construct in buyer-supplier relationships

2.2.1 Empirical development of preferred customership

In the 20th century, often only one side of buyer-supplier relationships was being considered – the view of the customer, in this case the purchasing company.³¹ Also, former research from 20-40 years ago was sporadic and did not build upon each other or previous findings.³² The first ones to publish research about preferential treatment from suppliers to specific customers were Brokaw and Davisson (1976). They introduced a new purchasing strategy derived from marketing approaches and included the dependence of preferred customer status on the satisfaction of the supplier. However, this was the only published research that time without any follow-up on this topic for about 15 years.³³ Several years later, Williamson (1991) suggested a strategy to implement preferential status through long-term contracts between the two parties. However, because not all contingencies could be covered through this approach, he suggested to change traditional supplier management to a preferred-customer orientation with concentration on one main supplier.³⁴ One year later, Moody (1992) was the first to identify characteristics of a “best customer” and therefore antecedents of preferred customership. The most important factors were early supplier involvement, trust, profitability, schedule sharing, communication and feedback, quality initiatives, schedule sharing, cost reduction input, commitment and crisis management.³⁵ Steinle and Schiele (2008) introduced the factor of geographical distance between buyer and supplier and cluster location as antecedent of preferred customer status.³⁶

³⁰ See Hüttinger et al. (2014), p. 698.

³¹ See Hottenstein (1970), p. 46.; Carr and Pearson (1999), p. 497.

³² See Schiele et al. (2012a), p. 1179.

³³ See Hüttinger et al. (2012), p. 1200.

³⁴ See Williamson (1991), p. 79.

³⁵ See Moody (1992), p. 52.

³⁶ See Steinle & Schiele (2008), p. 11.

Compared to the past development of the construct, preferred customer research gained popularity in literature when the Industrial Marketing Management Journal released a special issue dedicated to the topic in 2012. It contains nine articles which cover recent findings of customer attractiveness, supplier satisfaction and preferred customer status. The articles relevant to this research deal with how to become a preferred customer³⁷, linkages among buyer behaviours and supplier technology-sharing³⁸, attractiveness³⁹ and to summarise an overarching framework and a literature review about the connection between the three concepts⁴⁰. For the first time, not only antecedents, but also consequences of preferred customer status were analysed. The special issue developed a conceptual base and formed a foundation for coming publications about the topic. As a follow-up, Schiele et al. (2012b) suggested that the three concepts follow a circular relationship, which is further explained in chapter 2.2.3. Since 2012, research focused on further explaining components of preferred customership, supplier satisfaction and customer attractiveness. Likewise, Bemelmans, Voordijk, Vos and Dewulf (2015) explored further antecedents by considering maturity in supplier relationship management. In 2015, Schiele and Vos (2015) pointed out that there is a risk of dependency involved while being or becoming a preferred customer using resource dependency theory as theoretical foundation.⁴¹

Therefore, researches about buyer-supplier relationships are vastly present in literature. This thesis takes the perspective of the supplier into account to further develop the theory of becoming a preferred customer. In literature, different terms are used to describe the same phenomenon, e.g. becoming an “interesting customer”⁴², an “excellent customer”⁴³ or a “preferred customer”.⁴⁴ Suppliers have an adequate ability to innovate and therefore they are crucial to generate differentiation advantages for organisations. Hence, organisations are not competing only for customers anymore, but also for suppliers. Because of suppliers’ ability to innovate and their strategic relevance for the organisation they have a growing market

³⁷ See Baxter (2012); Nollet, Rebolledo & Popel (2012).

³⁸ See Ellis, Henke & Kull (2012).

³⁹ See Ellegaard (2012); Hald (2012); La Rocca, Caruana & Snehota (2012); Mortensen (2012).

⁴⁰ See Hüttinger et al. (2012); Schiele et al. (2012a).

⁴¹ See Schiele & Vos (2015), p. 143.

⁴² See Christiansen & Maltz (2002), p. 192.

⁴³ See Moody (1992), p. 52.

⁴⁴ See Schiele et al. (2011), p. 7.

power, so that characteristics of a seller's market can be assumed.⁴⁵ The importance of becoming a preferred customer and to gain preferential treatment has also found its way to literature.⁴⁶ A reason for the importance of becoming a preferred customer lies in the scarcity of suitable suppliers.⁴⁷ As current developments show, supplying firms are more and more collaborating or merging, which leads to a decrease in the total number of suppliers which forces organisations to buy from same sources.⁴⁸ It is important to note that the goal is not to become preferred customer of all suppliers, but to determine the most relevant suppliers with whom it is possible to realise strategic advantages. Gaining an exclusive status at key sources can benefit the company by generating competitive advantage. An organisation is considered as preferred customer when it achieves preferential treatment, for example preferential resource allocation, from the buyer.⁴⁹ Therefore, preferred customer status influences the degree of collaboration between buyers and suppliers.⁵⁰ By achieving preferred customer status, the exclusivity and sustainability of the inter-firm relationship can be ensured.⁵¹

The following chapter will give a deeper understanding of what benefits can be achieved from the buyer by becoming a preferred customer. Afterwards, recent findings about the relationship between preferred customer, supplier satisfaction and customer attractiveness and an extended social exchange view are presented.

2.2.2 Benefits of being a preferred customer: Gaining preferential resource allocation

As stated in the previous chapter, in practice, suppliers are not able to treat all their customers equally. Reasons for that lay in the limited availability of resources like time, money or employees. Furthermore, some customers are more attractive to suppliers.⁵² Natural disasters also raise questions which customer would first have access to the remaining scarce

⁴⁵ See Schomann, Sikora & Mirzaei (2018), p. 231.

⁴⁶ See Schiele (2012), pp. 46-47.

⁴⁷ See Wagner & Bode (2011), p. 471.

⁴⁸ See Deloitte (2017), p. 11.

⁴⁹ See Steinle & Schiele (2008), p. 11.

⁵⁰ See Bemelmans et al. (2015), p. 179.

⁵¹ See Schomann et al. (2018), p. 231.

⁵² See Mortensen (2012), p. 1208.

resources left from the supplier.⁵³ In case a supplier gets hit by an earthquake or tsunami he has to pick customers who receive the remaining products or production capacity first.⁵⁴ Organisations having a preferred customer status achieve benefits from a supplier which other customers of that supplier do not achieve and therefore gaining competitive advantage. Steinle and Schiele (2008) state that preferred customers are given preferential resource allocation. This can be accomplished in different ways. Pulles, Veldman, Schiele and Sierksma (2014) distinguish between physical and innovation resources.⁵⁵ Intangible resources, such as innovation resources, are typically exchanged interpersonally, while tangible resources, such as physical resources, involve more impersonal settings.⁵⁶ Innovation resources include knowledge and expertise sharing, collaborations, joint new product development, access to innovations and exclusivity agreements. Examples of physical, tangible, resources are the dedication of shelf space, customisation of products and carrying more products in inventory.⁵⁷ In addition, agreements can be made that the supplier ensures privileged treatment when bottlenecks occur, for example in the case of a natural disaster.⁵⁸ In the special issue of Industrial Marketing Management in 2012, Ellis et al. (2012) published a paper to provide empirical evidence of the benefits of preferred customers status. They came out that preferred customer status leads to technology access. It is surprising to note that they did not find evidence to support that a high share of turnover with a supplier leads to being a preferred customer.⁵⁹

Steinle and Schiele (2008) differentiate between different gradations of preferred customer status. A non-preferred customer is assumed to be a regular customer who is not treated preferentially over other customers. One step higher on preferred customer status are medium-preferred customers. They receive some benefits, for example through exclusive products, special delivery or pricing conditions. However, those benefits are granted for extra payment. The highest level are preferred customers who receive most benefits without

⁵³ See Schiele (2012), p. 49.

⁵⁴ See Pulles et al. (2016a), p. 8.

⁵⁵ See Pulles et al. (2014), pp. 20-21.

⁵⁶ See Chen (1995), p. 411.

⁵⁷ See Anderson, Lodish & Weitz (1987), p. 85.

⁵⁸ See Schiele (2012), p. 49.

⁵⁹ See Schiele et al. (2012a), p. 1182.

having to pay extra for it. The relationship is valuable to the supplier, which is why the buying firm receives better treatment from that supplier compared to other customers.⁶⁰ Besides to preferential resource allocation, special pricing is a common benefit of preferred customer status. In her research, Bew (2007) found out that the potential value coming from being “customer of choice” and gaining exclusive prices are equivalent to two to four percent of savings off of the organisation’s total spend base.⁶¹ Likewise, Schiele et al. (2011) discovered a significant effect on benevolent pricing of the supplier and being a preferred customer.⁶² To conclude, the benefits of being a preferred customer are widespread. Next to contractual benefits (e.g. when bottlenecks occur), preferred customers achieve preferential resource allocation. Most researchers distinguish between tangible and intangible resources. A common practice is also to give preferred customers benevolent pricing and exclusive access to technology. All mentioned benefits connected to being a preferred customer lead to competitive advantage and highlight the importance for the buyer to strive for preferred customership. In the following chapter, supplier satisfaction and customer attractiveness as antecedents of preferred customer status and their circular relationship are presented.

2.2.3 Supplier satisfaction, customer attractiveness and preferred customer status follow a circular relationship

The goal of being a preferred customer is to win preferential treatment including preferential resource allocation from suppliers.⁶³ It can be concluded that one buyer is in some way more valuable or more attractive to the supplier so that both sides benefit from an exclusive relationship. The link between supplier satisfaction, customer attractiveness and preferred customer status is a central topic in research. As mentioned in chapter 2.2.1, the first one to do research about antecedents of becoming a “best customer” was Moody in 1992.⁶⁴ However, it took until 2012 to summarise all the existent researches to give an overview of supplier satisfaction, customer attractiveness and preferred customer status and their respective antecedents. The literature review of Hüttinger et al. (2012) provides extensive insights into the three constructs. It is stated that customer attractiveness is required for the

⁶⁰ See Steinle & Schiele (2008), p. 11.

⁶¹ See Bew (2007), p. 2.

⁶² See Schiele et al. (2011), p. 15.

⁶³ See Pulles, Veldman & Schiele (2016b), p. 1458.

⁶⁴ See Moody (1992), p. 52.

supplier to begin an interaction with the buyer. If expectations on this relationship are met, the supplier will be satisfied. If satisfaction is higher than expected and higher in comparison to the satisfaction with other customers, there is a possibility for the buyer to be rewarded as preferred customer.⁶⁵ Most of the researches show that there is an important interaction between supplier satisfaction, customer attractiveness and preferred customer status/treatment. Previous studies show a close influential relationship of customer attractiveness and supplier satisfaction on the preferred customer status, whereas recent findings conclude that preferred customership, customer attractiveness and supplier satisfaction follow a circular relationship.⁶⁶ The most influential theory in current literature is SET, which was already introduced in chapter 2.1. SET is based on the assumption of reciprocity in an exchange interaction, whereas individuals cooperate with the expectation that they will both get and receive from the interaction.⁶⁷ Using SET as underlying theory, Nollet et al. (2012) came up with a four-step model to show how to become a preferred customer with specific methods that help the buyer to get and maintain preferential status and treatment. Based on the assumption of SET that the relationship between buyers and suppliers is a social exchange, it can be inferred that customer attractiveness is connected to the expectations of a supplier. This is also represented by the first step of the model – the initial attraction of the attention of the supplier.⁶⁸ In the same way, supplier satisfaction, as an evaluation of the outcome compared to previous expectations, relates to the comparison level of SET. This is shown in the second step of Nollet et al. (2012) which includes the foundation of supplier satisfaction as one of the essential antecedents for preferred customer status. The reason to create supplier satisfaction is to call attention at the supplier to the advantages to continue the exchange relationship. Step three comprises that the customer continually needs to outperform the expectations of the supplier in comparison to available alternatives. Preferred customer status is achieved at that stage.⁶⁹ This step is equivalent to the “comparison level of alternatives” (Cl_{alt}) which originally came up from Thibaut and Kelley (1959).⁷⁰ The fourth and last step considers the sustainability of the preferred

⁶⁵ See Hüttinger et al. (2012), p. 1194.

⁶⁶ See Schiele et al. (2012a), p. 1181.

⁶⁷ See Nyaga et al. (2010), p. 102.

⁶⁸ See Nollet et al. (2012), p. 1188.

⁶⁹ See Nollet et al. (2012), p. 1190.

⁷⁰ See Thibaut & Kelley (1959), p. 31.

customer status with the supplier. It is inevitable to keep satisfying the suppliers' needs to maintain preferred customer.⁷¹ The circle from preferred customer status to customer attractiveness is closed when positive outcomes of the exchange relationship increase the perceived strength of attraction.⁷² Positive outcomes may work in favour of the increased attraction but it is also possible that negative outcomes have an opposite effect.⁷³ In addition, alternative interactions with competitors could be perceived as less attractive, if the current relationship is satisfying, because the comparison level of alternatives (C_{alt}) has been increased.⁷⁴ It is also to be considered that a preferred customer might also be downgraded to a standard customer, if supplier expectations cannot be met or exceeded and if the buyer does not appear attractive anymore.⁷⁵ The subsequent chapters provide further insights into supplier satisfaction, as it presents an essential element of preferred customership and the focus of this research. After the definition of the term is developed, a summary of the theoretical history is presented. In the end of the chapter, antecedents of supplier satisfaction and the underlying theoretical framework are discussed.

2.3 Supplier satisfaction as necessary element of preferred customer status

2.3.1 Meeting or exceeding the expectations of the supplier

For achieving preferred customer status, not only the structure and management of the inter-firm relationship and customer attractiveness are relevant. In addition, supplier satisfaction is crucial, because the supplier decides whether to foster or terminate the existing relationship.⁷⁶ Most scholars regard supplier satisfaction as amplifier of the buyer-supplier relationship and thus as foundation for a long-term collaboration.⁷⁷ Suppliers can generate competitive advantages for the buyer by providing physical or knowledge resources.⁷⁸ The preferential allocation process of resources to the buyer is a selective process.⁷⁹ That means that buying firms should be aware of the fact that unsatisfied suppliers will most likely not

⁷¹ See Nollet et al. (2012), p. 1191.

⁷² See McNaughton, Osborne, Morgan & Kutwaroo (2001), p. 534.

⁷³ See Harris et al. (2003), p. 13.

⁷⁴ See Ping (2003), p. 239.

⁷⁵ See Schiele et al. (2012b), p. 141.

⁷⁶ See Schomann et al. (2018), p. 231.

⁷⁷ See Hüttinger et al. (2014), p. 712.

⁷⁸ See Koufteros, Vickery & Dröge (2012), p. 96.

⁷⁹ See Pulles et al. (2016a), p. 129.

give effort to treat the buyer differently than any other customer. In fact, the missing preferential treatment of unsatisfied suppliers can lead to competitive disadvantage, if competitors themselves secured preferential resource allocation. This emphasises the importance of supplier satisfaction.⁸⁰ Supplier satisfaction was a long-neglected and underexplored concept.⁸¹ In history, buyer-supplier relationships were only seen from the perspective of the supplier, because he had to meet the customer's expectations and fulfil the customer's needs. The change of perspectives to see the relationship from a buyers' point of view is called reverse-marketing and had its debut already in 1988.⁸² Therefore, supplier satisfaction has been regarded as relevant to organisations for decades but still, it is only recently that supplier satisfaction is getting more attention in research.⁸³ Nevertheless, research on the topic has mainly been conceptual in nature.⁸⁴

Definitions of supplier satisfaction vary and developed over time. A definition based on Anderson and Narus (1984) and Dwyer, Schurr and Oh (1987) is that supplier satisfaction is a positive affective state which is resulting from a positive evaluation of the aspects of the relationship with the buyer.⁸⁵ However, this definition does not cover supplier satisfaction to the full extent. It disregards the roots of the positive affective state and the positive evaluation by the supplier. Based on SET, the evaluation by the supplier is resulting from a comparison of the expected value of the exchange relationship to the actual outcome that it achieves. The differences between expectations and value that is actually obtained determine the perceived satisfaction of the supplier.⁸⁶ Therefore, the definition of Schiele et al. (2012a) seems applicable for this study: supplier satisfaction is a "condition that is achieved if the quality of outcomes from a buyer-supplier relationship meets or exceeds the supplier's expectations".⁸⁷ This definition combines previous explanations of supplier satisfaction and covers the assumptions of SET, that a relationship is based on the difference of the expected and obtained value. The exact scope of the expectations can vary, but as long as expectations

⁸⁰ See Essig & Amann (2009), p. 104.

⁸¹ See Schiele et al. (2011), p. 12.

⁸² See Leenders & Blenkhorn (1988), p. 1.

⁸³ See Hüttinger et al. (2012), p. 1198.

⁸⁴ See Benton & Maloni (2005), p. 1.

⁸⁵ See Hüttinger et al. (2014), p. 703.

⁸⁶ See Thibaut & Kelley (1959), p. 31.

⁸⁷ Schiele et al. (2012a), p. 1181.

are met, the supplier will be satisfied.⁸⁸ Following the basic thoughts of SET, expectations are an essential element for suppliers to evaluate the relationship with the buyer.

2.3.2 Supplier satisfaction history and research state of the art

The concept of customer satisfaction has been considered an important element of corporate success for a long time. However, research about supplier satisfaction has been “widely neglected” and remained “largely unexplored”.⁸⁹ The first one to do research on supplier satisfaction was Wong (2000). He suggested that relational aspects and a cooperative partnership lead to supplier satisfaction.⁹⁰ His research was conceptual in nature and therefore did not provide any empirical evidence.⁹¹ His assumptions are shared by Forker and Stannack (2000), who collected empirical data on the impacts of competitive and cooperative relationships on perceived supplier satisfaction in exchange relationships.⁹² Based on those assumptions, a buyer could increase supplier satisfaction if he engaged in a more intimate and personal relationship with the supplier to foster a cooperative interaction. Two years later, Whipple, Frankel and Daugherty (2002) identified the importance of both buyer and supplier satisfaction. They found a positive effect of the amount of shared information between businesses on an overall level of satisfaction of both parties.⁹³ In 2003, Maunu (2003) published her dissertation that consists of a conceptual research developing a questionnaire that helps the buyer to improve processes with external partners. It includes nine dimensions of supplier satisfaction which are grouped into “harder” business-related and “softer” communication-related dimensions. Business-related dimensions are profitability, agreements, early supplier involvement, business continuity and forecasting/planning. Communication-related dimensions are roles and responsibilities, openness and trust, feedback and company values.⁹⁴ Then, two years later, Benton and Maloni (2005) empirically assessed the effect of power-driven relationships between buyers and suppliers on both performance and satisfaction. Their outcomes show that there is a

⁸⁸ See Schiele et al. (2012a), p. 1181.

⁸⁹ See Schiele et al. (2011), p. 12.

⁹⁰ See Wong (2000), p. 430.

⁹¹ See Schiele et al. (2012b), p. 140.

⁹² See Forker & Stannack (2000), p. 31.

⁹³ See Whipple et al. (2002), p. 67.

⁹⁴ See Maunu (2003), p. 95.

strong impact of the relational quality on supplier satisfaction. Furthermore, they found that if a power holder makes effort to encourage satisfaction, he should follow a relationship-driven strategy rather than a performance based strategy.⁹⁵ That means that supplier satisfaction is driven by the nature of the buyer-supplier relationship rather than by performance, which also supports previous findings of Forker and Stannack (2000).⁹⁶ One year later in 2006, Leenders, Johnson, Flynn and Fearon (2006) developed a framework named “The Purchaser- Supplier Satisfaction Matrix”. The framework included four marketing and supply chain strategies to enhance supplier satisfaction. However, this study is of conceptual nature and did not test the tools empirically. The four developed tools are: (1) Long-term commitments, exclusive agreements and granting substantial volumes, (2) Internal information sharing and extensive communication, (3) Exhibit a willingness to change behaviour in the buying organisation and (4) Respond quickly on supplier requests.⁹⁷ In 2009, Essig and Amann (2009) explored supplier satisfaction as an element of buyer-supplier relationship quality. Antecedents of supplier satisfaction are grouped into strategic, operative and accompanying levels. The first “strategic” dimension has a focus on the intensity of the cooperation. On the “operational” dimension, the focus is on the order process, billing and delivery performance of the buyer. On the third dimension with the “accompanying level”, the authors focus on communication, conflict management and a general view of the relationship as influencers on satisfaction.⁹⁸ One year later, Nyaga et al. (2010) observed the impact of collaborative activities (e.g. dedicated investments, joint effort, information sharing) on satisfaction from the perspectives of both, suppliers and buyers. Their research shows that all three collaborative elements positively influence satisfaction. This influence is mediated by trust and commitment simultaneously and both factors separately.⁹⁹ In the same year, Ghijsen, Semeijn and Ernstson (2010) examined the effect of influence strategies and supplier development on commitment and satisfaction of the supplier. They grouped influence strategies into indirect and direct strategies. Indirect influence strategies are information exchange and recommendations, whereas direct influence strategies are requests, promises, legalistic please and threats. Furthermore, two

⁹⁵ See Benton & Maloni (2005), p. 16.

⁹⁶ See Hüttinger et al. (2012), p. 1199.

⁹⁷ See Leenders et al. (2006). cited by Hüttinger et al. (2012), p. 1199.

⁹⁸ See Essig & Amann (2009), p. 105.

⁹⁹ See Nyaga et al. (2010), p. 101.

dimensions of direct supplier development activities were considered: Human-specific supplier development and capital specific supplier development. Results show that buyers should execute indirect influence strategies and capital-specific supplier development activities to enhance supplier satisfaction. In addition, threats, requests and legalistic pleas as direct strategies have a negative influence on supplier satisfaction.¹⁰⁰

A breakthrough in supplier satisfaction research was the publication of a special issue of *Industrial Marketing Management* in 2012. Part of it was the literature review of Hüttinger et al. (2012) which summarises supplier satisfaction research state of the art and a reflection on existing literature about antecedents of supplier satisfaction. All previously discussed articles are also found in this literature review. The authors found two major trends in the examined articles. (1) Scholars base their research in purchasing and supply management literature mainly to examine the effect of different relationship strategies on supplier satisfaction. Buyers are considered to be more focused on outcomes and performance, whereas suppliers seem to put more value on the relational atmosphere and the development of norms. This is to be taken into account by the buyer, because otherwise it could lead to dissatisfaction of the supplier. (2) Other scholars in the field of purchasing and supply management often use supply chain management or marketing literature as a conceptual foundation. These articles have a strong emphasis on management implications and do not explain on a theoretical level why items should be included in satisfaction research.¹⁰¹ Also in 2012, Schiele et al. (2012a) came up with a conceptual paper about the circle of preferred customership. As discussed earlier, this research suggests SET as a theoretical background and supplier satisfaction can emerge when the suppliers' expectations are met or exceeded.¹⁰² Furthermore, Schiele et al. (2012b) dedicated a book chapter to SET as a theoretical basis for further supplier satisfaction research. However, their work was conceptual and therefore not tested empirically.¹⁰³ In the same year, Meena and Sarmah (2012) published an empirical study where they tested a scale to measure supplier satisfaction. Their results show that the purchasing policy, payment, coordination and

¹⁰⁰ See Ghijssen et al. (2010), p. 24.

¹⁰¹ See Hüttinger et al. (2012), p. 1200.

¹⁰² See Schiele et al. (2012a), p. 1179.

¹⁰³ See Schiele et al. (2012b), p. 133.

corporate image of the buyer have a positive influence on supplier satisfaction.¹⁰⁴ Two years later and as a follow-up to Schiele et al. (2012a), Hüttinger et al. (2014) further examined the antecedents of customer attractiveness, supplier satisfaction and preferred customer status. They assumed that relational behaviour, growth potential, reliability, innovation potential, operative excellence, involvement, support and access to contacts are antecedents leading to supplier satisfaction. Through a combination of qualitative and quantitative methods they found that growth opportunity, reliability and relational behaviour positively influence supplier satisfaction.¹⁰⁵

Two years later, in 2016, Pulles et al. (2016a) examined the relation between supplier satisfaction, customer attractiveness and preferential resource allocation. They supported the hypothesis that supplier satisfaction is a necessary condition to achieve preferred customer status and finally preferential treatment.¹⁰⁶ In the same year, Vos et al. (2016) replicated and extended the previously discussed study of Hüttinger et al. (2014). They added profitability as an antecedent and tested the model on direct and indirect materials. The authors show that indirect materials have the same results as direct materials and they suggested a different arrangement of antecedents in an updated model.¹⁰⁷ This article was chapter two of the dissertation of Vos (2017), which was defended in 2017. In his dissertation he examined supplier satisfaction, preferred customer status and their contingencies. He added dependencies and power as contingency factors that have an impact on supplier satisfaction. Results show that the negative impact of coercive power and dependencies on supplier satisfaction is dependent on the buyers' relational behaviour which does not automatically lead to negative supplier satisfaction.¹⁰⁸ In addition, asymmetric and balanced dependency relationships and their effect on supplier satisfaction were tested. The outcomes indicate that mutual dependency has a positive impact on supplier satisfaction, and that asymmetric dependence can also be related to higher levels of supplier satisfaction.¹⁰⁹

¹⁰⁴ See Meena & Sarmah (2012), p. 1249.

¹⁰⁵ See Hüttinger et al. (2014), p. 712.

¹⁰⁶ See Pulles et al. (2016a), p. 136.

¹⁰⁷ See Vos et al. (2016), p. 4620.

¹⁰⁸ See Vos (2017), p. 194.

¹⁰⁹ See Caniëls, Vos, Schiele & Pulles (2017), p. 6.

2.3.3 Antecedents of supplier satisfaction – an extended research model

In SET, satisfaction is the comparison of outcomes with expectations. Supplier satisfaction is supported to be closely linked to achieving preferred customer status and therefore it is relevant to further analyse and explore the construct. The following table provides an overview over the previously mentioned studies and their explored antecedents.

Table 1: Overview over antecedents of supplier satisfaction research

Authors	Publication	Method	Industry setting	Antecedents
Wong (2000)	Total Quality Management	Conceptual	-	Cooperative culture, commitment to suppliers' satisfaction, constructive controversy
Forker and Stannack (2000)	European Journal of Purchasing and Supply Management	Survey	Electronics and aerospace, USA	Cooperative relationships
Whipple et al. (2002)	Journal of Business Logistics	Survey	Food, health and personal care, USA	Level, accuracy and timeliness of information exchange,
Benton and Maloni (2005)	Journal of Operations Management	Survey	Automotive	Coercive-mediated power sources, reward-mediated power sources, non-mediated power sources, performance
Essig and Amann (2009)	Journal of Purchasing and Supply Management	Survey	Aviation	Intensity of cooperation, order process, billing/delivery, communications, conflict management, general view
Nyaga et al. (2010)	Journal of Operations Management	Survey	Manufacturing, service, USA	Collaborative activities, trust, commitment
Ghijzen et al. (2010)	Journal of Purchasing and Supply Management	Survey	Automotive, Germany	Indirect influence strategies, direct influence strategies, direct supplier development activities, dependence
Meena and Sarmah (2012)	Industrial Management and Data Systems	Survey	Electricity, India	Purchase policy, payment policy, coordination policy, corporate image
Schiele, Veldman et al. (2012)	Supply Management Research	Conceptual	-	Technical excellence, supply value, mode of interaction, operational excellence
Hüttinger et al. (2014)	Supply Chain Management: An International Journal	Mixed-methods: Word café, Survey	Automotive, Germany	Relational behaviour, innovation potential, growth opportunity, reliability, operative excellence, involvement, support, access to contacts
Vos et al. (2016)	Journal of Business Research	Survey	Chemical industry, Automotive, Germany	Relational behaviour, innovation potential, growth opportunity, reliability, operative excellence, involvement, support, access to contacts, profitability

The literature review of Hüttinger et al. (2012) provides an overview over previous researches dealing with antecedents of supplier satisfaction. They came up with a list of suggestions for supplier satisfaction antecedents, based on various researches.¹¹⁰ In 2014,

¹¹⁰ See Hüttinger et al. (2012), p. 1201.

Hüttinger et al. (2014) used a world-café method at an automotive OEM to identify eight categories of antecedents for customer attractiveness, supplier satisfaction and preferred customer status. The antecedents are growth opportunity, innovation potential, operative excellence, reliability, support of suppliers, supplier involvement and relational behaviour.¹¹¹ They tested the factors on each customer attractiveness, supplier satisfaction and preferred customer status respectively. Results show that three of the items - growth opportunity, reliability and relational behaviour - show a significant, positive impact on supplier satisfaction. A reason for that may be that results can fluctuate with different industry settings, therefore other factors or weights could emerge in other industries.¹¹²

Based on and as an extension of this work, Vos et al. (2016) developed one of the most recent models. The model replicates and extends the research with another antecedent: profitability. In addition, it applies the model on both direct and indirect material and suggests a different arrangement of antecedents. Therefore, it covers nine dimensions including first- and second-tier antecedents of supplier satisfaction. (1) First-tier antecedents have a direct influence on supplier satisfaction, whereas (2) second-tier antecedents are influencing indirectly. Antecedents included in the model of supplier satisfaction are: (1) growth opportunity, profitability, relational behaviour and operative excellence and (2) innovation potential, support, reliability, involvement and contact accessibility. They are positively linked to supplier satisfaction, whereas supplier satisfaction has a positive influence on preferred customer status and finally ensures preferential treatment. The following image shows the model.

¹¹¹ See Hüttinger et al. (2014), p. 703.

¹¹² See Hüttinger et al. (2014), pp. 712-713.

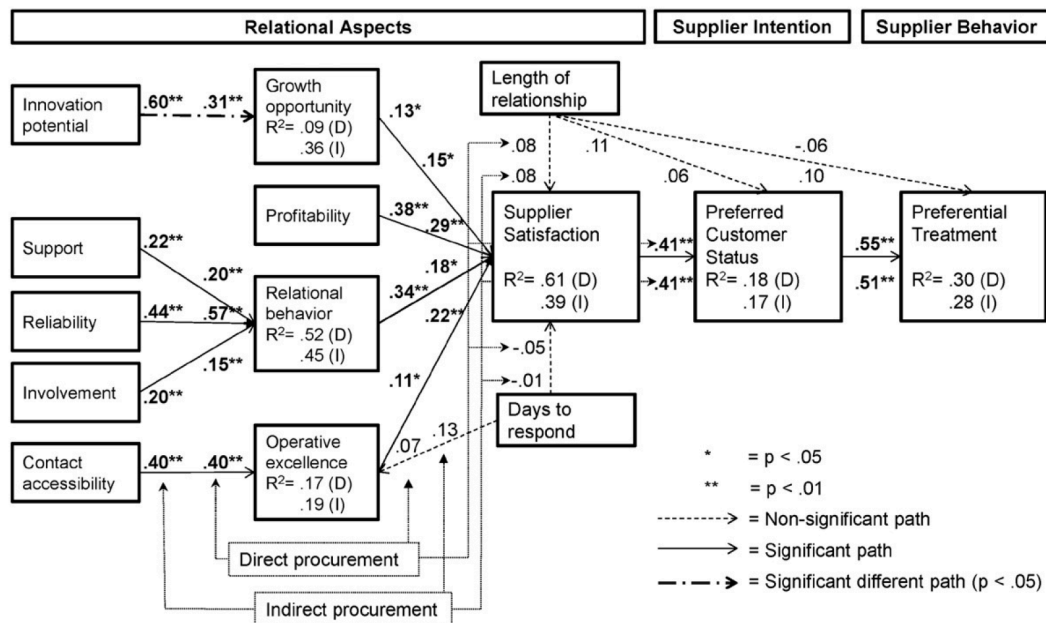


Fig. 1: The revised model for direct and indirect procurement from Vos et al. (2016)

The authors found that growth opportunity, reliability and profitability have an impact on supplier satisfaction for both direct and indirect material. Operational excellence only has an impact with indirect material, whereas relational behaviour only has an effect with direct material.¹¹³ Vos et al. (2016) state that a replication of the model with extending factors can be valuable to obtain further insights in supplier satisfaction.¹¹⁴

3 Corporate culture as an additional dimension of supplier satisfaction

3.1 Different approaches of defining culture: National and corporate culture

3.1.1 National culture: Distinguishing culture by geographical borders

Over several decades, culture has been part of the key research elements in various fields ranging from psychology and marketing to management. The popularity and the versatility of the term “culture” make it hard to find one overarching definition.¹¹⁵ In general, a widely accepted definition is that culture is “the collective programming of the mind which

¹¹³ See Vos et al. (2016), p. 4620.

¹¹⁴ See Vos et al. (2016), p. 4621.

¹¹⁵ See Taras, Steel & Kirkman (2012), p. 330.

distinguishes the member of one human group from another”.¹¹⁶ These human groups are defined in different contexts. They can be distinguished in different ways, for example through nation, ethnic group, region, gender culture, age group culture, social class, professions, work organisation (organisational culture) or even a family.¹¹⁷ To find a more accurate explanation of culture, the concept is split up into national and corporate culture. The variety of definitions of national culture indicates its multifarious structure. However, most definitions share the same basis, that national culture includes a shared set of values and beliefs, which characterises those individuals.¹¹⁸ One of the, if not the most, influential researcher of national culture is the Dutch psychologist and anthropologist Geert Hofstede. Hofstede argues that nation is a suitable distinguisher for culture because members share the same history, religion and language. Those factors are deeply rooted into the human mind.¹¹⁹ Hofstede’s model to explain national culture has been replicated and validated numerous times over 30 years.¹²⁰ Therefore, his concept including its dimensions is considered as most influential framework in cultural studies.¹²¹ Hofstede distinguishes six dimensions of national culture:

- Power Distance Index (PDI): measures the extent to which less powerful individuals of institutions expect and accept that power is spread unequally¹²²
- Individualism vs. Collectivism (IDV): relates to groups where there are loose ties between individuals and people are expected to look after themselves¹²³
- Masculinity vs. Femininity (MAS): masculinity measures the extent to which typical masculine characteristics as aggressiveness, success and competition are rewarded in a society¹²⁴

¹¹⁶ See Hofstede (1980), p. 25.

¹¹⁷ See Hofstede (1994), p. 1.

¹¹⁸ See Schwartz (1994), p. 86.

¹¹⁹ See Hofstede (2011), p. 3.

¹²⁰ See de Mooij & Hofstede (2010), pp. 78-88.

¹²¹ See Fernandez, Carlson, Stepina & Nicholson (1997), p. 44.

¹²² See Hofstede (2001), p. 79.

¹²³ See Hofstede (2001), p. 225.

¹²⁴ See Hofstede (2001), p. 279.

- Uncertainty Avoidance Index (UAI): measures the extent to which individuals of a culture feel comfortable/uncomfortable with ambiguity¹²⁵
- Long Term Orientation vs. Short Term Normative Orientation (LTO): measures the extent to which a group attaches to the future as opposed to the past and present¹²⁶
- Indulgence: measures the extent to which individuals try to control their impulses and desires¹²⁷

As this research is executed in a German organisation, Figure 3 shows the illustration of national culture of the German nation.

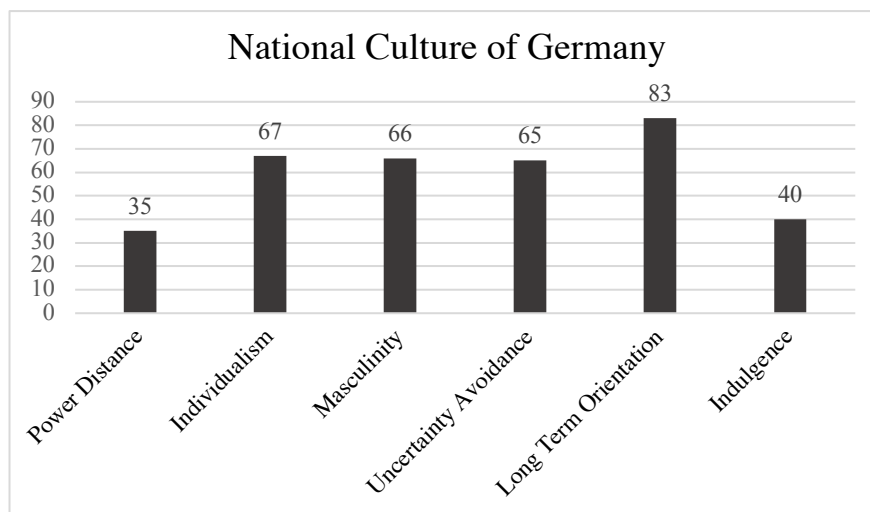


Fig. 2: Hofstede's dimensions of German culture

3.1.2 Corporate culture: Defining culture on an organisational level

The term culture is not limited to the national level. Corporate culture is also a common way to distinguish cultures amongst different organisations. In the same way as national culture, it is seen as a subpart of general culture.¹²⁸ In comparison to national culture, corporate culture differs from organisation to organisation and does not generalise the culture of organisations and individuals which share the same nationality. Thus, membership in the corporate culture is partial and voluntary in nature, while being part of a nation is involuntary

¹²⁵ See Hofstede (2001), p. 145.

¹²⁶ See Hofstede (1991), p. 237.

¹²⁷ See Hofstede (2011), p. 8.

¹²⁸ See Schein (2015), p. 923.

and permanent.¹²⁹ In literature, corporate culture is also often referred to as organisational culture.¹³⁰ In this research, both terms are used interchangeably. Corporate culture represents the glue that holds an organisation together and encourages employees to commit to the company and to perform.¹³¹ Estimations are given that more than 4600 articles were published on the role of culture in organisational life, highlighting its importance in business research.¹³² The importance of corporate culture also found its way to practice: According to a recent study, 91% of executives value corporate culture to be “very important” or “important” at their organisation.¹³³ Similarly to definitions of national culture, there are numerous definitions for corporate culture. Most of them share the same underlying idea, that corporate culture is “a set of norms and values that are widely shared and strongly held throughout the organisation”.¹³⁴ This definition is chosen, because analysis on organisational level implies that the understanding of corporate culture is shared by the majority of all members throughout the hierarchy of the organisation. To say differently, corporate culture is the culture where all employees of a firm are part of and stakeholders have to deal with.¹³⁵ Research about organisational culture came up in the late 1970s. It was seen as an approach to understand how people interact within an organisation and how organisations do their business to achieve their goals.¹³⁶ Publications on organisational culture have been traced back to the first paper by Pettigrew (1979). At this time, anthropological and sociological theories about culture to understand norms and beliefs have already been developed. Pettigrew (1979) regarded organisational culture as relevant because it cultivates commitment among employees, especially within new established organisations.¹³⁷ Interest in organisational culture was driven by Japan’s thriving economic performance at that time. It motivated scholars to analyse Japanese management practices as potential cause of their

¹²⁹ See Hofstede (1994), p. 9.

¹³⁰ See Schein (1990), p. 56; Naranjo-Valencia, Jiménez-Jiménez & Sanz-Valle (2011), p. 55; Prajogo & McDermott (2011), p. 712.

¹³¹ See van den Berg & Wilderom (2004), p. 571; Schein (2010), p. 274.

¹³² See Hartnell, Ou & Kinicki (2011), p. 677.

¹³³ See Graham, Harvey, Popadak & Rajgopal (2016), p. 2.

¹³⁴ See O’Reilly & Chatman (1996), p. 158.

¹³⁵ See Barney (1986), p. 657.

¹³⁶ See Chatman & O’Reilly (2016), p. 200.

¹³⁷ See Pettigrew (1979), p. 572.

success.¹³⁸ It came out that Japanese firms are putting a high value on long-term employment, social programs, rituals and symbols, socialisation and commitment-enhancing training.¹³⁹ Those practices were considered as strong culture.¹⁴⁰ Organisational culture is considered one of the few topics where conceptual work provided guidance for managers and not the other way around.¹⁴¹ After that time, most scholars realised that organisational culture has an impact on the performance and sustained success of organisations, which led to a high number of publications.¹⁴²

Inter-national and inter-company research has shown that national and corporate cultures are of different nature and should not be compared.¹⁴³ As an example, values are fundamental parts to both cultures, but corporate cultures differentiate more in practice than in values. Conversely, national cultures differentiate more in values, because they are part of how the people were raised and therefore taught in the national and family setting.¹⁴⁴ The role of culture in buyer-supplier relationships is discussed in the following chapter. The subsequent chapter presents the most influential frameworks that have been developed to assess corporate culture. Finally, the chosen competing values framework (CVF) is described in detail, as it presents the theoretical foundation of this study.

3.2 Culture in buyer-supplier relationships

Wong (2000) was the first one to link corporate culture topics to a buyer-supplier context. In his conceptual research, he suggests that a co-operative culture is an antecedent of supplier satisfaction.¹⁴⁵ His assumptions go in line with the empirical research of Forker and Stannack (2000), who also found that cooperation, rather than competition, promotes higher levels of supplier satisfaction.¹⁴⁶ However, those studies focus on the interaction culture of inter-firm relationships, whether it is cooperative or competitive, and not on the respective corporate

¹³⁸ See Ouchi (1981), p. 5; Ohmae (1983), p. 10.

¹³⁹ See Marsh & Mannari (1977), p. 58.

¹⁴⁰ See Chatman & O'Reilly (2016), p. 201.

¹⁴¹ See Cameron & Quinn (2011), p. 18.

¹⁴² See Denison & Spreitzer (1991), p. 2.

¹⁴³ See Hofstede, Neuijen, Ohayv & Sanders (1990), p. 313.

¹⁴⁴ See van den Berg & Wilderom (2004), p. 571.

¹⁴⁵ See Wong (2000), p. 430.

¹⁴⁶ See Forker & Stannack (2000), p. 31.

culture of the supplying or buying organisation. The influence of three organisational cultures on supply chain management and organisational innovation is tested by Shieh (2010).¹⁴⁷ The three cultures he distinguishes are: bureaucratic, supportive and effective culture. However, none of the cultures shows an enhancing impact on the existing positive correlation between the dimensions of supply chain management and organisational innovation.¹⁴⁸ Reasons for that may be that the original positive correlations were already strong enough and the cultures could not show a significant difference on that. In supply-chain research, corporate culture was also considered in the way organisations are internally or externally oriented. It is assumed that a more externally oriented organisation has a better relation to the previous or following member of the supply chain and that performance is enhanced. Gillespie, Denison, Haaland, Smerek and Neale (2007) found evidence that organisational culture is positively linked to customer satisfaction.¹⁴⁹

To sum up, research on the influence of corporate culture in buyer-supplier relationships is still in its infancy and not yet considered in supplier satisfaction research. However, there is particular interest in the effect of national culture in supplier satisfaction. Likewise, Zhao, Flynn and Roth (2006) suggest further cross-cultural supply chain management research questions. A trend was showing to examine the moderating effect of national culture on different elements of the relationship, like the role of culture in creating and maintaining long-term relations between buyers and suppliers.¹⁵⁰ The moderating influence of national culture is also tested in antecedents of supplier satisfaction directly: Schiele et al. (2015) suggest that the perception and acceptance of power differences as a result of dependency are highly culture specific.¹⁵¹ Nevertheless, only national culture is considered and thus there is no scientific research about the moderating effect of corporate culture in supplier satisfaction yet. Even if many scholars have recognised the importance of organisational culture in businesses, less emphasis is given to its role in supply chain management.¹⁵² Therefore, developments in research towards considering corporate culture in satisfaction in

¹⁴⁷ See Shieh (2010), pp. 1738-1739.

¹⁴⁸ See Shieh (2010), p. 1742.

¹⁴⁹ See Gillespie et al. (2007), p. 16.

¹⁵⁰ See Cannon, Doney, Mullen & Petersen (2010), p. 506.

¹⁵¹ See Schiele et al. (2015), p. 132.

¹⁵² See McAfee, Glassman & Honeycutt (2002), p. 1.

buyer-supplier relationships are already scarcely available, but not yet implemented in the model of Vos et al. (2016). It can be assumed, that due to the parallelism of national and corporate culture, corporate culture has a moderating effect on elements of supplier satisfaction as well. Corporate culture may be even the more precise measurement item, because it differs from firm to firm and does not generalise a whole nation, which is resulting in a more realistic picture. That goes in line with the common critiques on national culture that it was constructed on a national level, which means that those variables are correlated across nations and not across individuals or organisations.¹⁵³ Therefore, national culture does not provide empirical evidence to show that those dimensions are also applicable to organisations.¹⁵⁴

3.3 Tools to assess corporate culture

Literature suggests different approaches and tools to assess corporate culture. A lot of frameworks have been developed to define the culture of an organisation. The complexity of organisational culture is mirrored by the variety of tools existing to assess the construct. Jung et al. (2009) provide a literature review where qualitative and quantitative instruments to measure corporate culture and their findings are presented. In total, they identified 70 different instruments. However, some similar instruments were given different names, and different instruments were given similar names. In addition, when an existing instrument has been modified, authors often retain the original name, which leads to confusion.¹⁵⁵ Most of the instruments include a predefined set of dimensions, whereas others have the approach to ask individuals or groups to provide a set of ideas that incorporate the perception or organisational culture in their context.¹⁵⁶ One of the first authors to create a model based on empirical data was Harrison (1972). His “organisation ideologies” (=dimensions) are: “power orientation”, “role orientation”, “task orientation” and “person orientation”.¹⁵⁷ “Task orientation” was later renamed to “achievement culture” and “person orientation” to “support culture”.¹⁵⁸ The same pattern of dimensions can be seen in later models as well.

¹⁵³ See Minkov & Hofstede (2011), p. 12.

¹⁵⁴ See Venaik & Brewer (2013), p. 478.

¹⁵⁵ See Jung et al. (2009), p. 1089.

¹⁵⁶ See Jung et al. (2009), p. 1090.

¹⁵⁷ See Harrison (1972), p. 121.

¹⁵⁸ See Harrison (1987), p. 13.

One of them is the competing values framework (CVF) based on Quinn and Rohrbaugh (1983). Originally, Quinn and Rohrbaugh (1983) developed the framework by analysing the relationship of effectiveness criteria by Campbell (1977).¹⁵⁹ Together with 52 scholars they had a look on how to order and classify the 30 criteria listed by Campbell (1977). Initially, they came up with three dimensions: internal-external, control-flexibility and means-ends. The last one was integrated into the other two ones and the CVF was developed.¹⁶⁰ Using this framework as theoretical foundation, Cameron and Quinn (2011) present the “Organisational Culture Assessment Instrument” (OCAI) as a widely used tool to diagnose organisational culture. It is an often selected tool for its theoretical validity and wide acceptance in research. Supporters of the CVF claim that the framework has been used in over 10.000 organisations all over the world and in a high number of academic investigations.¹⁶¹ Therefore, several empirical studies have empirically established validity and reliability of the CVF and its measurement items in cross-cultural research.¹⁶² It is seen as effective to study organisational culture because it is applicable in varied situations. Compared to other organisational culture models, the CVF includes relatively little dimensions, but has broad implications. Common dimensions of other models are indirectly combined in the theoretical model. In addition, it only includes a small number of items which makes it convenient for practical implications.¹⁶³ The CVF can be used as a strategic instrument to develop management programmes, supervision and to provide organisations with a tool to diagnose their existing and desired cultures.¹⁶⁴ Given these reasons, the CVF is considered as appropriate for this study to examine the moderating effect of organisational culture on supplier satisfaction. The following section is giving thorough insights into the framework and its structure.

¹⁵⁹ See Hartnell et al. (2011), p. 678.

¹⁶⁰ See Quinn & Rohrbaugh (1983), p. 369.

¹⁶¹ See Hartnell et al. (2011), p. 677; Cameron, Quinn, DeGraff & Thakor (2014), p. 118.

¹⁶² See Yeung, Brockbank & Ulrich (1991), p. 60; Chatman & O'Reilly (2016), p. 208.

¹⁶³ See Yu & Wu (2009), p. 40.

¹⁶⁴ See Quinn & Rohrbaugh (1983), p. 364.

3.4 The competing values framework (CVF) as measurement instrument of corporate culture

3.4.1 The CVF measurement to assess corporate culture

To define culture in this research, the CVF is used. It is an often applied framework, especially in a medical setting.¹⁶⁵ It is important to mention that the CVF does not exhaustingly characterise cultural phenomena, but it explains key dimensions and elements of corporate culture. The CVF distinguishes four different kinds of cultures: Adhocracy, clan, market and hierarchy culture. The culture types are also referred to as developmental, group, rational and hierarchical cultures.¹⁶⁶ The authors state it as important to note that the names of the culture were not randomly selected, but that they are the outcome of a thorough research in literature that explains how corporate values have become associated with special forms of organisations.¹⁶⁷ The cultures are arranged on a two-dimensional model. The x-axis reaches from internal to external focus and differentiation. To describe in detail, it differentiates between effectiveness criteria that focus on internal orientation, unity and integration from effectiveness criteria that focus on an external orientation, rivalry and differentiation. That means that some organisations are considered effective when they focus on internal characteristics, whereas others are considered more effective when they focus on interaction outside their borders and on external competition. The vertical axis reaches from stability and control to flexibility and discretion. In the same way as before, some organisations are regarded as effective if they are flexible, changing and organic. They do not remain on the same stage for a long time. Examples for flexible organisations are Google or Nike. On the contrary, other firms are regarded as effective if they are steady, predictable and mechanistic. Examples of stable organisational cultures are government bodies and universities.

¹⁶⁵ See Helfrich, Li, Mohr, Meterko & Sales (2007); Ancarani, Di Mauro & Giammanco (2009); Adams, Dawson & Foureur (2017).

¹⁶⁶ See Sasaki et al. (2017), p. 385.

¹⁶⁷ See Cameron & Quinn (2011), p. 40.

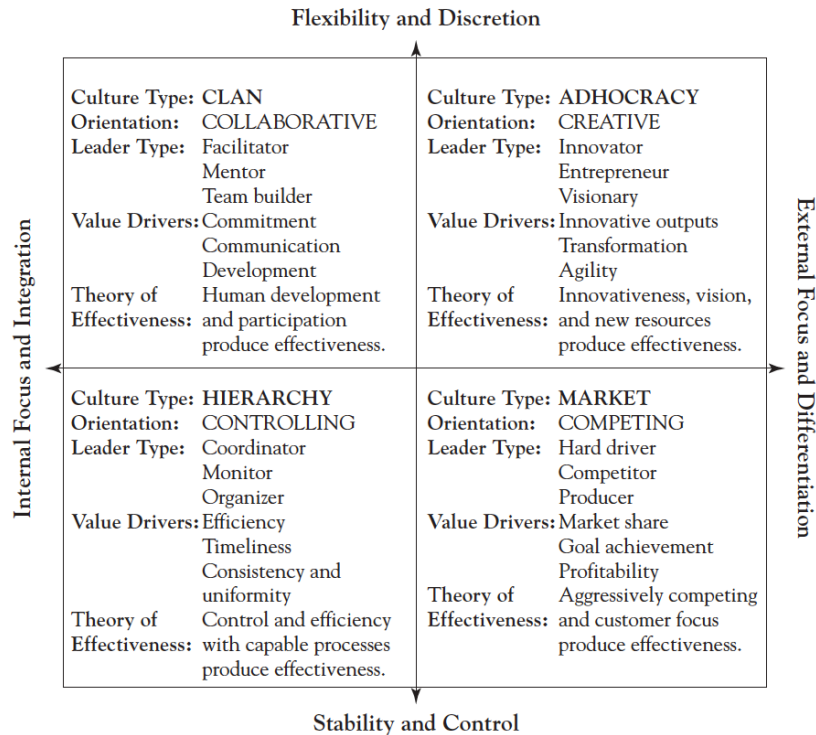


Fig. 3: The CVF of Cameron & Quinn (2011), p. 46

The two dimensions together create four quadrants, each characterising a separate group of organisational effectiveness indicators. Hence, each quadrant represents one of the mentioned cultures, which is a way of dealing with opportunities and challenges, and a set of values and beliefs that stimulate value creation in organisations.¹⁶⁸ It is important to note that this is about the shared set of values and beliefs. On corporate level, they are the “norms or shared expectations about what is important, how to behave or what attitudes are appropriate”.¹⁶⁹ The four quadrants are sometimes also associated with four C’s: collaborate for clan, create for adhocracy, control for hierarchy and compete for market.¹⁷⁰ These four underlying values represent opposite assumptions. Each culture emphasises a core value that is competing with the value on the opposite end of the model. Therefore, the dimensions create quadrants that are contradictory on the diagonal.¹⁷¹ However, it is not unusual that organisations show values of every quadrant, sometimes also with a high emphasis on core values which are located on the opposite of the diagonal and thus are competing in theory.

¹⁶⁸ See Cameron & Quinn (2011), pp. 38-41.

¹⁶⁹ See O’Reilly, Chatman & Caldwell (1991), p. 495.

¹⁷⁰ See Cameron et al. (2014), p. 30.

¹⁷¹ See Cameron & Quinn (2011), p. 40.

Research has shown that the paradox of emphasising the clan culture together with the market culture, or the hierarchy culture together with the adhocracy culture, often exists in high-performing organisations.¹⁷² It has also been examined that strong, balanced cultures show a higher performance on internal matters such as innovation competence and human relations. In addition, strong cultures also support external firm outcomes like profitability and growth.¹⁷³ A detailed explanation of the four respective cultures is given in the following chapters. It is important to mention that every form of culture is an ideal form of organisation and in practice a pure culture does not exist.

3.4.2 Four major culture types: clan, adhocracy, hierarchy and market

Clan culture: Commitment, Communication, Development

Clan culture is represented by the upper left quadrant of the model. Therefore, it has a high internal focus and integration and is effective on flexible and at the same time emphasises flexibility, dynamism and discretion. It is comparable to a family-type organisation. Typical characteristics of clan cultures are teamwork, employee involvement and organisational commitment to employees. These characteristics are expected to enhance the outcomes of employee drive, commitment and satisfaction. The organisational culture profile of the clan culture describes it to be a friendly place to work in where leaders are regarded as mentors, or even parent figures. Tradition and loyalty play a major role and commitment is high. Shared values and goals and a feeling of belonging together characterises clan-type organisations. Some underlying assumptions of the clan culture are that an organisation can be best managed through employee development and teamwork. Customers are regarded as partners and the business develops a humane working environment. The recognition of firms run with clan culture is highly influenced by the visible success of Japanese organisations after World War II, followed years later by US and Western European organisations. They realised that it is an effective technique to manage company activity is to make sure that all employees share the same values and goals.¹⁷⁴

¹⁷² See Cameron (1986), pp. 545-546.

¹⁷³ See Polychroniou & Trivellas (2018), p. 30.

¹⁷⁴ See Cameron & Quinn (2011), pp. 46-48.

Adhocracy culture: Innovative Outputs, Transformation, Agility

Adhocracy culture is located on the upper right quadrant of the framework. Same as the clan culture, it emphasises flexibility and discretion. However, it is externally oriented and sets a high focus on competition and discretion. Adhocracy culture organisations have the aim to be leading related to new product, service or knowledge development. It meets a set of assumptions that is different from the ones of the other cultures: that pioneering and revolutionary initiatives lead to success. The term adhocracy culture has its root in “ad hoc”, which means to imply strategies temporarily, specialised and dynamic. Similarly, adhocracy cultures are temporary by nature and reconfigure and adapt rapidly when changes occur. A major goal of adhocracies is to promote flexibility, adaptability and creativity in uncertain and ambiguous situations. Typical industries where adhocracy cultures can be found are aerospace, filmmaking and software development. Popular companies are Google and most start-ups and entrepreneurial organisations. In comparison to market or hierarchy cultures, adhocracies have no stiff hierarchical structure. However, it is also possible that adhocracy substructures are present in hierarchical systems, for example as project or creative groups. People and managers are characterised by taking high risks and being visionary and success is mostly defined by uniqueness and originality.¹⁷⁵

Hierarchy culture: Efficiency, Timeliness, Consistency, Uniformity

The quadrant on the bottom left represents hierarchy culture with a high internal focus and integration and high stability and control. Hierarchies are also referred to as control cultures. They were the earliest approach to coordinate a firm in the modern era. Typical features of hierarchies are strict rules, low flexibility, accountability, impersonality and reliability. Success is defined by generating an efficient and predictable output. In the 1960s, this led to highly stable and consistent products and services. Universities, government bodies and large organisations are usually dominated by a hierarchy culture, but can be also present in smaller organisations.¹⁷⁶ Attributes of those companies are a high standardisation, several hierarchical levels and an importance on rule enforcement. Leaders of hierarchies are good

¹⁷⁵ See Cameron & Quinn (2011), pp. 49-51.

¹⁷⁶ See Cameron & Quinn (2011), pp. 41-43.

coordinators and organisers who are efficiency-driven. They promote timeliness, smooth functioning and efficiency.¹⁷⁷

Market culture: Market share, Goal achievement, Profitability

Market culture is also known as competition culture and is represented by the bottom right quadrant of the CVF. The term market does not refer to the marketing function or customers in the marketplace. It refers to an organisation that rather functions as a market by itself. Corresponding to the hierarchy culture, it works efficiently when circumstances are controlled and the environment is stable and not fluctuating. On the contrary, it has an external orientation and high differentiation. The set of assumptions in market cultures is fundamentally different than in hierarchies and based on the work of Williamson (1975) and Ouchi (1981). The most important indicator of organisational effectiveness in market cultures are transaction costs that are mainly externally oriented like suppliers, contractors, customers, unions and regulators. The culture functions highly through competitive dynamics. Therefore, the primary focus lies on transactions that are made externally with other constituencies to generate competitive advantage. Core values of market cultures are competitiveness and productivity. The organisation is driven by profit and results and regards the external environment as aggressive instead of benevolent. A market culture assumes that consumers are demanding and interested in value and that the organisation is working to increase its competitive position. In the same way, leaders are tough and demanding as well.¹⁷⁸

4 Hypotheses: The moderating effect of corporate culture

4.1 Replication and extension of the model: Adding a best practice comparison

The positive relationship between supplier satisfaction and preferred customer status is an often described phenomenon in literature.¹⁷⁹ Supplier satisfaction is seen as necessary condition for suppliers to award preferred customer status. The central idea of SET is

¹⁷⁷ See Denison & Spreitzer (1991), p. 6.

¹⁷⁸ See Cameron & Quinn (2011), pp. 43-46.

¹⁷⁹ See Schiele et al. (2012b), p. 133; Bemelmans et al. (2015), p. 186; Pulles et al. (2016a), p. 129.

reciprocity - that if one is giving or receiving a favour in any kind, one is expected to get or receive a favour in return.¹⁸⁰ Conversely, the more negative actions are taken in a relationship and/or the relationship fails to generate the expected benefits, the less likely it is that the relation will be repeated in the future.¹⁸¹ Buyers can use this information to change their behaviour towards the supplier to achieve preferential treatment in return. This argumentation is empirically supported by Vos et al. (2016), who found a significantly positive impact of supplier satisfaction on preferred customer status. In the extended model of Vos et al. (2016), there are four first-tier antecedents: Growth opportunity, Profitability, Relational Behaviour and Operative excellence, which are all shown to have a significantly positive impact on supplier satisfaction.¹⁸² Therefore, it is hypothesised that each of these four factors will also have a positive impact on supplier satisfaction in this study.

H_{1.1}: Supplier satisfaction has a positive impact on preferred customer status.

H_{1.2}: Relational behaviour has a positive impact on supplier satisfaction.

H_{1.3}: Profitability has a positive impact on supplier satisfaction.

H_{1.4}: Growth opportunity has a positive impact on supplier satisfaction.

H_{1.5}: Operative excellence has a positive impact on supplier satisfaction.

4.2 The impact of corporate culture on the relationship between antecedents of supplier satisfaction and supplier satisfaction

It is advised to further analyse antecedents of supplier satisfaction to broaden the knowledge about supplier satisfaction and influencing factors.¹⁸³ As explained earlier, the corporate culture of a firm expresses the characteristics of the way in which an organisation conducts business. The component of corporate culture is not yet considered in the supplier satisfaction model of Vos et al. (2016). However, it has shown to be one of the key ingredients to organisational effectiveness and competitive advantage.¹⁸⁴ In addition, it can have a significant impact on the long-term financial performance of an organisation.¹⁸⁵ In

¹⁸⁰ See Blau (1964), p. 92.

¹⁸¹ See Nyaga, Lynch, Marshall & Ambrose (2013), p. 3.

¹⁸² See Vos et al. (2016), p. 4620.

¹⁸³ See Vos et al. (2016), p. 4621.

¹⁸⁴ See Barney (1986), p. 657; Hofstede et al. (1990), p. 313; Kim Jean Lee & Yu (2004), p. 340.

¹⁸⁵ See Kotter & Heskett (2008), pp. 11-12.

the same way, previous research shows that corporate culture has an impact on the interaction of suppliers and buyers.¹⁸⁶ Regarding its high status in customer satisfaction research, it is important to investigate the effect of corporate culture in supplier satisfaction research as well. This research focuses on the moderating effect of corporate culture dimensions on antecedents of supplier satisfaction. On the cultural side, the CVF distinguishes between a structure dimension and a focus dimension. The horizontal axis reaches from internal (left) to external (right) orientation. The vertical axis differentiates flexibility and dynamism (top) and order, stability and control (bottom). The set-up of the dimensions creates four cultures: clan, adhocracy, hierarchy and market culture. Each quadrant represents different values, which makes cultures located on the opposite of the diagonal contradictory to its counterpart.¹⁸⁷

Clan cultures have a high internal focus and integration, with a high flexibility and discretion. Their core value drivers are collaboration, loyalty and commitment with a high emphasis on people. Organisations with a clan culture are characterised by the development of human resources and the improvement of internal activities.¹⁸⁸ Therefore, relational behaviour may play a high role for the supplier if he conducts business in a clan culture. In the case of reciprocity, a clan culture may expect the other firm to have a high focus on relational behaviour as well. Consequently, there can be high expectations on relational behaviour. In that case, it is hypothesised that the extent to which a clan culture is present at the supplier, is positively moderating the positive effect between relational behaviour and supplier satisfaction. On the contrary, market cultures with a high focus on stability and control and an external orientation are driven by competition and success. Value drivers are market share, goal achievement and profitability. Therefore, it is hypothesised that the extent to which a market culture is present, positively moderates the positive impact of profitability on supplier satisfaction. As clan and market culture are contradictory by nature, the opposite effect is assumed for market culture on relational behaviour and for clan culture on profitability.

¹⁸⁶ See Shieh (2010), pp. 1740-1741.

¹⁸⁷ See Cameron & Quinn (2011), pp. 39-40.

¹⁸⁸ See Naranjo-Valencia, Jiménez-Jiménez & Sanz-Valle (2016), p. 32.

- H_{2.1}: Clan culture positively moderates the effect between relational behaviour and supplier satisfaction.
- H_{2.2}: Market culture negatively moderates the effect between relational behaviour and supplier satisfaction.
- H_{3.1}: Market culture positively moderates the effect between profitability and supplier satisfaction.
- H_{3.2}: Clan culture negatively moderates the effect between profitability and supplier satisfaction.

Adhocracy cultures have a creative orientation, with high flexibility and discretion and an external focus. Value drivers are innovative outputs, agility and transformation. The collective learning and information sharing are of a high importance to create and enhance relationships with suppliers. The external focus provides a basis to allow collective learning, communication and alignment of shared interests.¹⁸⁹ Therefore, as the supplier has a high extent of adhocracy culture, it can be positively related to his expectations on growth potential. To conclude, it is expected that the extent to which an adhocracy culture is present positively influences the relationship between growth potential and supplier satisfaction.

- H_{4.1}: Adhocracy culture positively moderates the effect between growth opportunity and supplier satisfaction.

With hierarchical cultures and their emphasis on stability and control with a focus on internal processes and integration, the opposite effect can be assumed.

- H_{4.2}: Hierarchy culture negatively moderates the effect between growth opportunity and supplier satisfaction.

The value drivers of hierarchy culture are efficiency, timeliness and rule conformity.¹⁹⁰ Therefore, hierarchy cultures function better in a stable surrounding with contracts, rules and planning. Due to the nature of hierarchy culture and their value drivers, it is assumable that they are seeking for high operative excellence when conducting business with other

¹⁸⁹ See Basnet (2013), pp. 169-170.

¹⁹⁰ See Cameron & Quinn (2011), p. 53.

organisations. With this assumption, it is expected that hierarchy culture has a moderating effect on operative excellence. The counterpart of hierarchy cultures are adhocracy cultures. They are assumed to have an opposite moderating effect on operative excellence.

H_{5.1}: Hierarchy culture positively moderates the effect between operative excellence and supplier satisfaction.

H_{5.2}: Adhocracy culture negatively moderates the effect between operative excellence and supplier satisfaction.

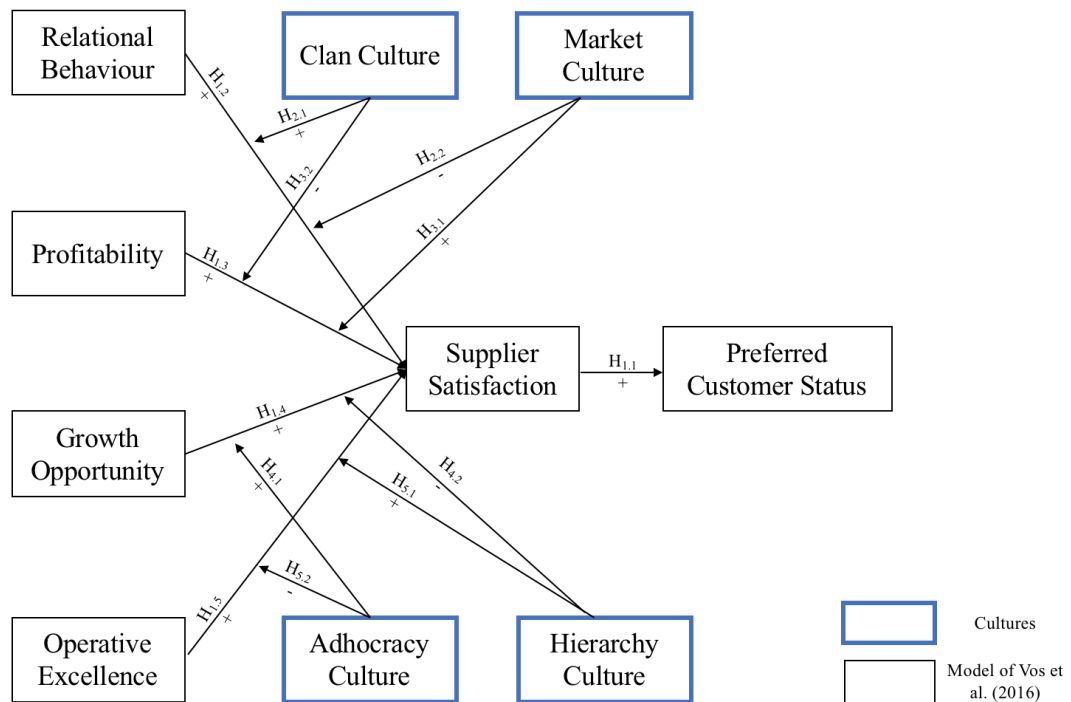


Fig. 4: Conceptual model: The moderating effect of culture

5 Methodology

5.1 Insight into a high-tech miniature and micro drive company: High demands and low volumes on purchasers with a focus on stability and control

The case company Dr. Fritz Faulhaber GmbH & Co. KG is established in 1947 and located in Schönaich, Baden-Württemberg in Germany. Baden-Württemberg is known for its economic power and is shaped by large enterprises and a strong mid-tier. The region is regarded as industrial and innovation cluster and driving force of one of the leading economic nations.¹⁹¹ Faulhaber is a family-run group of companies with about 650 employees in their headquarter in Schönaich and 1900 employees worldwide. They operate with sales partners and subsidiaries in over 30 countries around the world.¹⁹² Their annual turnover is about € 226 Million, of which 65% are spent on purchases. Their main product portfolio consists of miniature and micro drive technologies with standard and customised solutions for different markets. Main areas of use include the medical and health sector, factory automation and robotics, industrial tools and equipment, aerospace and aviation, optics and photonics. The micro and miniature motor industry is dominated by very few companies, Faulhaber being one of them. The high individuality and precision of the motors require high demands on the product. The core competence of Faulhaber is the unique winding of the motors with respect to their accuracy and reliability in the tiniest of spaces. However, Faulhaber does not produce any of the compartments by itself. This results in high requirements on the suppliers' products. In the past, it was usual to source from one supplier only for each product. This made them dependent on the resources of the suppliers and raised the risk of being denied access, which is an unwanted scenario for an organisation.¹⁹³ But since several years, Faulhaber is following a two-or-more supplier strategy to disperse risk. Thus, purchasing volumes are even lower compared to the past, which means that often Faulhaber is a small customer to its suppliers and responsible for a low turnover percentage. Nevertheless, Ellis et al. (2012) find no support that a high share of sales with a supplier automatically leads to becoming a preferred customer.¹⁹⁴ Therefore, the relatively small turnover share of Faulhaber with suppliers is no reason not to become preferred customer.

¹⁹¹ See Kreh (2017), p. 5.

¹⁹² "Faulhaber Company Website" , accessed on 15th March 2018

¹⁹³ See Schiele & Vos (2015), p. 140.

¹⁹⁴ See Ellis et al. (2012), p. 1264.

In total they conducted business with about 1000 suppliers within the past three years. Most of them are already in a long-term relationship with the company and are located in Germany and Switzerland. Only a few suppliers are from outside Europe, mostly from Asia (Japan and China) or the USA. In the beginning of every year, the purchasing department of Faulhaber, which consists out of fourteen people, is evaluating about 150 of their most important suppliers. Categories like product quality, delivery reliability and delays, reclamations and availability are considered in the evaluation process. The results are sent to the suppliers to provide them with an annual feedback. In addition, Faulhaber introduced a preferred supplier award five years ago. Suppliers winning the preferred supplier award convince with the highest performance in every evaluated category. Therefore, suppliers are motivated to perform well to achieve the award. Selected suppliers are also invited for an yearly supplier day, where they have the chance to deepen the relationship, learn about products and processes and about how business is conducted within Faulhaber.

The corporate culture of Faulhaber was assessed by seven employees from the purchasing department of the organisation. The corporate culture profile of Faulhaber shows that they have an emphasis on stability and control, whereas they have dominant characteristics of both hierarchy and market culture. A similar profile can be seen in various industries, thus Faulhaber represents no exception from other companies.¹⁹⁵

Given the characteristics and conditions applying for Faulhaber, it is an attractive organisation to implement the study in, because they do not profit from size or power advantage, and therefore it is relevant and interesting what other factors make suppliers satisfied. For the company itself, the study benefits by presenting a state-of-the art on satisfaction of the suppliers, divided up into categories. With the results, they can take specific action to increase satisfaction in those points that scored lower and they know where they are already good at in those points that scored higher.

5.2 Survey design and measures used

To test hypotheses and the impact of corporate culture, a questionnaire has been developed. It consists of four parts and it takes about 20 minutes to complete. The first two parts are

¹⁹⁵ See Cameron & Quinn (2011), pp. 90-91.

generally testing supplier satisfaction, attractiveness and preferred customer status. The sources of those question groups are the publications of Hüttinger et al. (2014)¹⁹⁶ and Vos et al. (2016)¹⁹⁷. To provide the researchers with further empirical data and information, the model of Vos et al. (2016) is replicated and presented in Annexure F. The measurement items of supplier satisfaction, customer attractiveness and preferred customer are taken over from the research of Vos et al. (2016). Question groups of supplier satisfaction are availability, growth potential, innovation potential, operative excellence, collaboration, support, involvement, relational behaviour, profitability and general satisfaction. However, slight changes to the original question method have been taken: This research added a benchmark-comparison to the existing question items. In comparison to the questions of Vos et al. (2016), the suppliers do not only have to evaluate their satisfaction with the case company (Faulhaber), but also with a best-practice company of their customer base. With that method, it is better to compare the company to other buying companies and a more precise conclusion can be drawn. In addition, empirical data of the benchmark organisation is collected as well, which gives further insights on the impacts on satisfaction elements. The question groups of attractiveness and preferred customer status include preferential treatment of physical and innovation resources. As in the original questionnaire, those questions only refer to the case company. All dependent and independent variables of this study are scored on a five-point Likert scale reaching from “strongly disagree” to “strongly agree”.

The third part of the questionnaire is testing the corporate culture of the supplier. The suppliers had to give a personal estimation of their perceived culture. The measurement item for the CVF of Cameron and Quinn (2011) is the Organisational Culture Assessment Instrument, OCAI. The original OCAI consists of six key dimensions of corporate culture, with four alternatives respectively.¹⁹⁸ Key dimensions are: Dominant Characteristics, Organisational Leadership, Management of Employees, Organisation Glue, Strategic Emphases and Criteria of Success.¹⁹⁹ Using the full scale would lead to 24 items per questionnaire. However, it has shown that shorter questionnaires result in a higher response

¹⁹⁶ See Hüttinger et al. (2014), pp. 720-721.

¹⁹⁷ See Vos et al. (2016), p. 4620.

¹⁹⁸ See Quinn & Spreitzer (1991), p. 116.

¹⁹⁹ See Cameron & Quinn (2011), pp. 30-32.

rate.²⁰⁰ To make the questionnaire of this survey more lean, the dimensions have been reduced to respectively three for every culture, resulting in 12 items in total. Included dimensions are Organisational Leadership, Organisation Glue and Criteria of Success. The CVF has extensively been used to assess corporate culture and is regarded as powerful instrument.²⁰¹ Initially the OCAI uses an ipsative scale for to measure culture. With this method, respondents have to choose among different responses. Thus, if more points are assigned to one answer, less can be assigned to other answers. Nevertheless, it is also possible and advised to use Likert scales.²⁰² This part of the survey has also been filled out by seven employees Faulhaber, to assess the culture of the buying firm as well.

The last section of the questionnaire includes control variables about characteristics of the supplier and characteristics about the relation to the case company. Therefore, data such as the supplier size, turnover, number of employees as well as length of relationship and proportional turnover of the case company is collected. Furthermore, it is asked to rate the complexity of the product and the streamlining of procedures. As an additional question, the supplier is asked to indicate how well he knows Faulhaber in order to answer all questions in the questionnaire reliably. This helps to sort out unusable questionnaires. Annexure B presents a full list of items.

5.3 Sample definition and data collection

The quantitative data needed for this study is collected on site in collaboration with the purchasing department of Dr. Fritz Faulhaber GmbH & Co. KG. Faulhaber Drive Systems in Schönaich (Germany) has 976 suppliers which were active at least once during the last three years. This number includes purchases which were only executed and needed once for special occasions, as well as purchases of a very small importance and volume. Therefore, not all suppliers are suitable for this study. The number of suppliers has been narrowed down to the top 200 suppliers for production material, relevant suppliers of manufacturing equipment and additional suppliers of a high importance. Production material includes all material which is directly incorporated in the product of Faulhaber. Examples attributed to this category are all elements implemented in the electric motor, like shafts, circuit boards,

²⁰⁰ See Deutskens, de Ruyter, Wetzels & Oosterveld (2004), pp. 29-30.

²⁰¹ See Yu & Wu (2009), p. 40.

²⁰² See Denison & Spreitzer (1991), p. 17; Cameron & Quinn (2011), p. 157.

bearings or electronics. In addition, all suppliers of manufacturing equipment with a higher purchasing volume than 10,000 € between 2016 and 2017 were included. Manufacturing equipment in this case can be packaging, glues, connection parts or auxiliary materials. Furthermore, suppliers which were of particular interest of Faulhaber and not yet included in one of the two previous categories are considered. This can be suppliers with a low purchasing volume but high strategic relevance. The procedure resulted in a list of 344 suitable suppliers with accessible contact persons and data. The responsible purchasers of Faulhaber for the respective suppliers had a look through the list and provided the researcher with contact information. It was rarely the case that contact data was not available, but if it occurred, a general e-mail in the form of info@company was chosen. Those addresses were publicly available and could be found on the suppliers' website most of the time. On 16th January 2018, a link to the online questionnaire was sent via a company e-mail-address of Faulhaber to the 344 suppliers. Within the following three weeks, two e-mail reminders were sent out and occasional phone calls were taken to motivate to participate. Also, the employees of Faulhaber were encouraged to remind suppliers, because they have an active relationship to some of them. In addition, the researcher could attend supplier visits and got to know various suppliers directly and therefore could introduce the topic and emphasise the importance of participation in person. After three weeks, 115 useable responses were collected, resulting in a response rate of 33,4%. There is no generally accepted guideline for the response rate, but the common rate usually fluctuates between 15 and 25%.²⁰³ Given that range, it can be argued that the response rate of this study is higher than average.²⁰⁴ The relatively high response rate can be explained by the carefulness of choosing the right contact partner of the suppliers. In addition, the researcher sought for personal contact to the suppliers, which is a method to eliminate obscurities and to build a personal relationship, therefore the supplier might feel obligated and committed to participate in the survey. Also, the moment of contact was chosen wisely with no holidays or other conflicting events in between.

²⁰³ See Caniëls, Gehrsitz & Semeijn (2013), p. 138; Vos et al. (2016), p. 4621.

²⁰⁴ See Deutskens et al. (2004), pp. 32-33.

Table 2: Characteristics of the sample

Length of relationship		Number of employees		Percentage turnover with Faulhaber as share of the total turnover	
< 5 years	15	< 50	39	< 1%	33
5 – 10 years	28	51 – 500	51	1% – 5%	59
11 – 20 years	49	> 500	23	6% – 10%	10
> 20 years	23	Not specified	2	11% – 30%	7
				> 30%	6
N			115		

Industry of respondent		Type of supplied product	
Primary sector	1	Manufacturing equipment	15
Secondary sector	82	Production material	85
Tertiary sector	27	Service	12
Quaternary sector	5	Not specified	3
N		115	

Notes: N=sample size

A typical concern of survey studies collecting quantitative data is the non-response bias, which deals with the difference between the participants of the survey and those who did not participate. If the difference is too strong, the collected observations do not speak for the whole same and therefore do not represent the population.²⁰⁵ Therefore, this research compares late respondents with early respondents among the variables to find potential non-response bias. To achieve this, the first quartile (N=29) is compared with the last quartile (N=29) of respondents with an independent t-test, whereas the last quartile represents the responses of the non-respondents. The results presented in Annexure C reveal no significant difference between early versus late respondents and therefore it can be assumed that the participants represent the whole sample.

²⁰⁵ See Armstrong & Overton (1977), p. 396.

5.4 Statistical analyses: PLS path modelling with SmartPLS 3.0

The collected data is evaluated by partial least squares (PLS) path modelling. To execute the tests, the software Smart PLS 3.0 is used.²⁰⁶ With PLS path modelling it is possible to test models consisting out of cause-effect relationships with latent variables, in which a variable can be both dependent and independent. This would not be possible using regression, because this method only allows to test models with one dependent variable. Henseler and Sarstedt (2012) state advantages of this PLS path modelling which make the method the most suitable for this research: (1) it does not include any assumptions about the scale of measurement of the population²⁰⁷, which means that it can be used when distributions show a high skewness, as it is assumed in satisfaction studies, (2) the method will provide information about relationships between latent variables with more than one indicator, even with small sample sizes.²⁰⁸ Therefore, it will still reveal estimations for relationships because it is not highly influenced by sample size requirements.²⁰⁹ This is an advantage and difference between SEM and PLS path modelling, because many authors agree that SEM requires minimum sample sizes of at least 200 cases to avoid results that cannot be interpreted.²¹⁰ PLS however can be performed with sample sizes as little as 50 cases, and there was a research in which even only ten cases were used to analyse a model.²¹¹ Nevertheless, to achieve higher statistical power, a popular way to define the minimum sample size for a PLS model is:

- ten times the largest number of formative indicators used to measure one construct;
or
- ten times the largest number of inner model paths directed at a particular construct in the inner model.²¹²

²⁰⁶ See Ringle, Wende & Becker (2015).

²⁰⁷ See Fornell & Bookstein (1982), p. 443.

²⁰⁸ See Chin & Newsted (1999), p. 310.

²⁰⁹ See Henseler & Sarstedt (2013), p. 566.

²¹⁰ See Marsh (1998), p. 34; Haenlein & Kaplan (2004), p. 295.

²¹¹ See Haenlein & Kaplan (2004), p. 295.

²¹² See Hair, Sarstedt, Hopkins & Kuppelwieser (2014), p. 109.

As the sample size of this study is 115 cases, sample size requirements are entirely met so that PLS can be performed without concerns. (3) Modern and easy-to-use software, such as SmartPLS 3.0, with graphical user-interfaces, have made the use of PLS more attractive to scholars.²¹³ (4) PLS is preferred over covariance-based SEM, when improper or non-convergent results are likely. This usually is the case for more complex models, when the number of latent variables is high in relation to the number of observations and when there is a low number of indicators per latent variable.²¹⁴ Within SmartPLS 3.0, bootstrapping with 5000 subsamples is used to analyse the conceptual model. To reinvestigate the outcomes on the hypotheses of PLS-SEM, polynomial regression is used to examine the main positive relationships indicated in the model. This analysis lead to the development of an additional research paper, which is presented in the Annexure. Furthermore, IBM SPSS 25 is used to calculate descriptive statistics and tests for data and sample characteristics.²¹⁵

5.5 Quality assessment of data and research model: Reliability, validity and model fit

As a first step of data structure quality assessment, a principal component analysis (PCA) is performed to examine if the used items to measure a construct actually measure the same. This method calculates factor loadings, and retains the unique variance of the items on their intended components.²¹⁶ PCA is applied for both default options: varimax and oblique (Delta=0) rotations. The varimax rotation only extracts nine and not the expected ten factors with an Eigenvalue > 1. In addition, one factor is only loaded with one item above the threshold of 0.5. This item (S_OperativeExc_40_6) is left out for further analysis. It is also noticeable that respectively two constructs load on the same factor: relational behaviour and supplier satisfaction, and market and hierarchy culture. The second round with the excluded item leads to almost the same outcome: nine extracted factors and respectively two constructs loaded on the same factor. In the third round it is pre-set to extract ten factors. Here, relational behaviour and supplier satisfaction load on different factors, but hierarchy and market culture still load on the same factor. Only one item of the market construct (S_market_303_3) loads on factor ten as well. The outcome of the factor analysis can be

²¹³ See Henseler & Sarstedt (2013), p. 566.

²¹⁴ See Reinartz, Haenlein & Henseler (2009), p. 338.

²¹⁵ See IBM-Corporation (2017).

²¹⁶ See Petter, Straub & Rai (2007), p. 614.

seen in Annexure D. The same procedure has also been run with oblique (Delta=0) rotation, which led to similar results: No ten factors and market and hierarchy loading on the same factor. The reason for that may be that market and hierarchy culture are both focusing on stability and control and therefore it can be that they are highly correlated. Despite the fact that they load on the same factor, market and hierarchy will be kept separate, because the check for face validity of the items revealed that they are not shaped in a similar way.²¹⁷

The reliability and validity of indicators and latent variables are evaluated with the programme SmartPLS 3.0 by calculating the model with a 5000 sample bootstrap. The outer loadings of each individual indicator imply the reliability of the indicator. The requirement is that each indicator has to be higher than 0.7 to be accepted.²¹⁸ The threshold has only been undercut by one item: S_OperativeExc_40_6, which was already noticeable in the factor analysis and therefore is removed for further analysis. Each of the remaining indicators load higher than 0.7. Therefore, they can be considered as a reliable measure for the particular construct. To evaluate the internal consistency reliability of the construct measures, composite reliability is used. Traditionally, this has been assessed using Cronbach's α .²¹⁹ All values for Cronbach's α are above threshold of 0.7.²²⁰ However, composite reliability gives a more appropriate measure, because it does not assume that indicator loadings are equal and it is avoiding the underestimation associated with Cronbach's α .²²¹ The value for composite reliability should be higher than 0.7, respectively higher than 0.6 if the research is exploratory.²²² As can be seen in the table below, composite reliability for all constructs is in line with the threshold.

In addition, the validity of the constructs is assessed to ensure that the constructs indeed measure what they are intended to measure.²²³ It is advised to employ different validity subtypes to ensure validity.²²⁴ For this research, convergent validity with the average

²¹⁷ See Holden (2010), p. 637.

²¹⁸ See Sarstedt, Ringle & Hair (2011), p. 145.

²¹⁹ See Cronbach & Meehl (1955), p. 281.

²²⁰ See Field (2013), p. 710.

²²¹ See Hair et al. (2014), p. 111.

²²² See Bagozzi & Yi (1988), p. 82.

²²³ See Campbell & Fiske (1959), p. 83.

²²⁴ See Henseler, Ringle & Sarstedt (2014b), p. 115.

variance extracted (AVE) and discriminant validity the heterotrait-monotrait ratio (HTMT) is examined. An acceptable AVE should be higher than 0.5, which is given in the table below.²²⁵ To test discriminant validity with the HTMT, the value should be below the suggested threshold of Henseler et al. (2014b) of 0.85.²²⁶ A table in Annexure E shows that with a maximum HTMT value of 0.81 these requirements are met and therefore validity is given according to the HTMT method. Also, the HTMT bootstrap analysis of the upper confidence intervals shows no values above the threshold of 1.0.²²⁷ To conclude, both convergent and discriminant validity are established. As a last step of quality assessment, model fit needs to be examined. A cut-off value of 0.1 of the standardised root mean square residual (SRMR) is considered as adequate to assess model fit.²²⁸ As the SRMR value of this model is 0.0635, model fit is established.

Table 3: Reliability and validity

		Composite reliability	Cronbach's α	AVE
1	Supplier Satisfaction	0.9402	0.9230	0.7259
2	Preferred Customer Status	0.9627	0.9515	0.8385
3	Relational behaviour	0.9216	0.9008	0.6300
4	Profitability	0.9518	0.9365	0.7987
5	Growth Opportunity	0.8833	0.8219	0.6581
6	Operative Excellence	0.8834	0.8359	0.6054
7	Clan	0.9149	0.8603	0.7840
8	Adhocracy	0.8958	0.8264	0.7435
9	Hierarchy	0.7980	0.8534	0.6493
10	Market	0.7786	0.7786	0.5971

Notes: AVE=average variance extracted

²²⁵ See Hair et al. (2014), p. 111.

²²⁶ See Henseler et al. (2014b), p. 123.

²²⁷ See Henseler et al. (2014b), pp. 121-122.

²²⁸ See Henseler et al. (2014a), p. 194.

6 Results

6.1 Hypothesis testing with Smart PLS

To test the conceptual model of this study, it is calculated by SmartPLS 3.0 using bootstrapping with 5000 subsamples. The model is tested on a significance level of .05 and a one-tailed test type. This can be done because the coefficients are already expected to have an either positive or negative effect.²²⁹ The outcomes of the model are mostly determined by the R^2 values of the endogenous variables and the value and significance level of the path coefficients. R^2 defines the amount of variance of a latent variable explained by other latent variables.²³⁰ In this model, supplier satisfaction and preferred customer status are endogenous variables. Their respective R^2 values are 0.31 for preferred customer status and 0.78 for supplier satisfaction. As a common rule in marketing research studies, values of 0.75, 0.5 and 0.25 respectively are regarded as substantial, moderate and weak.²³¹ This indicates that the R^2 value of preferred customer status is weak and the R^2 value of supplier satisfactions is almost substantial.

As a next step, the path coefficients are examined on their value and level of significance. If the found effect is significant, there is empirical support for the hypothesis and the outcome can be generalised from the sample to the population. If the paths are not significant or have contrary signs, they do not support the prior hypothesis.²³² The path coefficients and their significance levels are shown in the model and table below. The analysis of the model reveals a highly significant impact from supplier satisfaction on preferred customer status ($H_{1.1}$: $t=7.7$; $\beta=0.55$; $f^2=0.47$) and relational behaviour on supplier satisfaction ($H_{1.2}$: $t=3.84$; $\beta=0.39$; $f^2=0.27$). With a p-value of 0.059, the relationship between profitability and supplier satisfaction ($H_{1.3}$: $t=1.57$; $\beta=0.11$; $f^2=0.03$) is almost significant. Growth opportunity shows a positive impact on supplier satisfaction ($H_{1.4}$: $t=3.01$; $\beta=0.24$; $f^2=0.14$) at an alpha-level of 0.001. The relationship between operative excellence and supplier satisfaction ($H_{1.5}$: $t=1.47$; $\beta=0.13$; $f^2=0.04$) is not proven to be significant. Therefore, the results of Vos et al. (2016)

²²⁹ See Kock (2015), p. 7.

²³⁰ See Hair et al. (2014), p. 113.

²³¹ See Sarstedt et al. (2011), p. 145.

²³² See Sarstedt et al. (2011), p. 147.

can only partly be supported by this research. However, as part of the research, a replication of the full model of Vos et al. (2016) and its outcomes are shown in Annexure F.

Table 4: Effect statistics of partly replication of the model of Vos et al. (2016) $H_{1.1-1.5}$

Paths	t	β	f^2
H _{1.1} SS→PCS	7.7**	0.55	0.47
H _{1.2} RB→SS	3.84**	0.39	0.27
H _{1.3} P→SS	1.57	0.11	0.03
H _{1.4} GO→SS	3.01**	0.24	0.14
H _{1.5} O→SS	1.47	0.13	0.04

Notes: t =t-statistic; β =standardised coefficient beta; f^2 =effect size of variance explained by predictor; *= $p < .05$ (one-sided); **= $p < .01$ (one-sided); SS=Supplier satisfaction; PCS=Preferred customer status; RB=relational behavior; P=Profitability; GO=Growth opportunity; O=Operative excellence

The moderating effect of clan and market culture on the relationship between relational behaviour and supplier satisfaction (H_{2.1}: $t=0.77$; $\beta=-0.06$; $f^2=0.02$; H_{2.2}: $t=0.93$; $\beta=-0.09$; $f^2=0.07$) do not show any significant impact with p-values above 0.5. Likewise, they do not moderate the effect from profitability to supplier satisfaction (H_{3.1}: $t=0.38$; $\beta=0.04$; $f^2=0.02$; H_{3.2}: $t=0.11$; $\beta=0.01$; $f^2=0.01$). The same phenomenon can be seen at the moderating effect of adhocracy and hierarchy culture: the hypothesized moderating effect between growth opportunity and supplier satisfaction cannot be supported (H_{4.1}: $t=0.33$; $\beta=-0.03$; $f^2=0.01$; H_{4.2}: $t=0.09$; $\beta=-0.01$; $f^2=0.02$). The same counts for the effect of adhocracy and hierarchy culture on the relation between operative excellence and supplier satisfaction (H_{5.1}: $t=0.78$; $\beta=0.07$; $f^2=0.02$; H_{5.2}: $t=1.58$; $\beta=-0.09$; $f^2=0.03$). However, with a p-value of 0.0569 there is almost a significant moderating effect of adhocracy culture on the relationship between operative excellence and supplier satisfaction. With an f^2 value of 0.03, this effect can be regarded as very small.

Table 5: Effect statistics of moderating effects H_2-H_5

Paths	t	β	f^2
H _{2.1} RB→C→SS	0.77	-0.06	0.02
H _{2.2} RB→M→SS	0.93	-0.09	0.07
H _{3.1} P→M→SS	0.38	0.04	0.02
H _{3.2} P→C→SS	0.11	0.01	0.01
H _{4.1} GO→A→SS	0.33	-0.03	0.01
H _{4.2} GO→H→SS	0.09	-0.01	0.02
H _{5.1} O→H→SS	0.78	0.07	0.02
H _{5.2} O→A→SS	1.58	-0.09	0.03

Notes: t =t-statistic; β =standardised coefficient beta; f^2 =effect size of variance explained by predictor; *= $p < .05$ (one-sided); **= $p < .01$ (one-sided); SS=Supplier satisfaction; PCS=Preferred customer status; RB=relational behavior; P=Profitability; GO=Growth opportunity; O=Operative excellence; C=Clan culture; M=Market culture; A=Adhocracy culture; H=Hierarchy culture

To calculate moderator effects in SmartPLS 3.0, it is mandatory to include the direct effect of the moderator variables on the dependent variable. Therefore, the model calculates the direct effect of the respective four cultures on supplier satisfaction as well. The outcomes show that there is a significantly positive effect of clan culture on supplier satisfaction ($t=3.37$; $\beta=0.28$; $f^2=0.17$). Hierarchy, adhocracy and market culture however show no direct effect on supplier satisfaction.

Table 6: Effect statistics of direct effects of cultures on supplier satisfaction

Paths	t	β	f^2
C→SS	3.37**	0.28	0.17
A→SS	0.38	0.03	0.01
M→SS	0.15	0.01	0.02
H→SS	1.05	-0.12	0.04

Notes: t =t-statistic; β =standardised coefficient beta; f^2 =effect size of variance explained by predictor; *= $p<.05$ (one-sided); **= $p<.01$ (one-sided); SS=Supplier satisfaction; C=Clan culture; M=Market culture; A=Adhocracy culture; H=Hierarchy culture

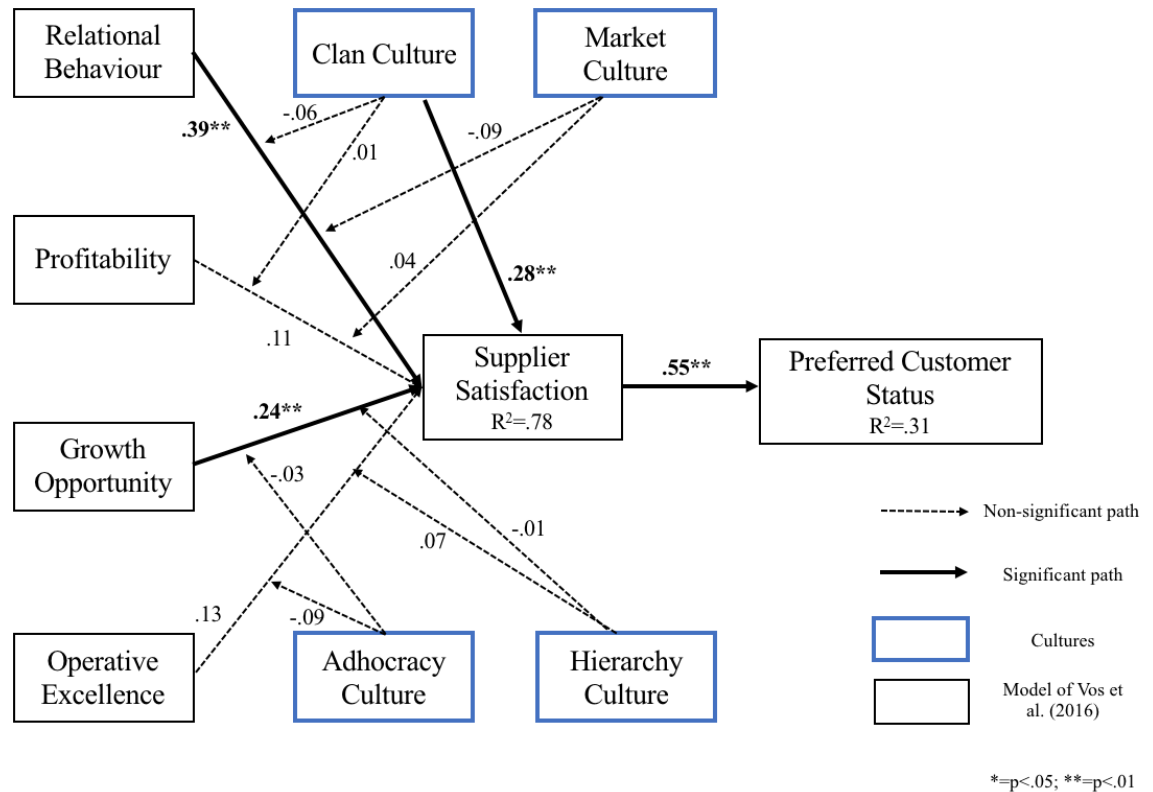


Fig. 5: Results from PLS path modelling

6.2 Reinvestigation of major relationships using polynomial regression

Because the calculation with SmartPLS 3.0 did not show a moderating effect of corporate culture on supplier satisfaction, interaction effects are reinvestigated using a different statistical method: polynomial regression with IBM SPSS 25. This analysis tests, whether it makes sense or not to intensify the relation with suppliers that have certain culture characteristics. As part of this thesis, a paper has been written which covers the findings of the polynomial regression with response surface analysis.²³³ The paper is attached in Annexure A.

²³³ See Shanock, Baran, Gentry, Pattison & Heggstad (2010), p. 543.

7 Discussion and conclusion

7.1 Evaluation and discussion of the results

The aim of this thesis is to explore the moderating effects of corporate culture on the relationship between first-tier antecedents of supplier satisfaction and supplier satisfaction. The results of the replication of the model of Vos et al. (2016) show that only relational behaviour and growth opportunity significantly influence supplier satisfaction. Profitability and operative excellence have no significant effect on supplier satisfaction. Likewise, operative excellence did not show an effect when it comes to direct material at the study of Vos et al. (2016). It can be the case that there are general issues with this antecedent, and that it is probably mediated by another factor. Nevertheless, this is an unexpected outcome, which does not support previous studies.²³⁴ The reason profitability might have no effect is that the case company usually purchases very little volumes compared to the total turnover of the suppliers (see table 2). They are positioned in a niche market and do not attract suppliers with high purchasing volumes. Therefore, profitability might not be linked to supplier satisfaction in this case. The results of this study may also differ in different industries or with a higher sample size.

The outcomes support no moderating relationship of culture. Out of these findings, it can be assumed that culture has no moderating influence on supplier satisfaction. However, that contradicts previous research, which suggests that corporate culture plays a major role in business-to-business relationships.²³⁵ The reasons why there was no significant effect vary. It may be that the sample size was too small to gain an effect. There is also the possibility that there simply is no effect. However, it can be also the case that different measurements for culture may lead to different results. Therefore, further research needs to be done to reject the moderating effect of culture. The calculation of moderating effects in SmartPLS 3.0 make it obligatory to include the direct effects. This analysis revealed a direct effect of clan culture on supplier satisfaction. It can be inferred that clan cultures are likely to be more satisfied than other cultures. It is also possible that the link between the buyer culture and

²³⁴ See Vos et al. (2016), p. 4620.

²³⁵ See Deshpandé, Farley & Webster (1993), p. 26; Conrad, Brown & Harmon (1997), p. 672.

clan culture of the supplier leads to a high satisfaction in this specific case. To generalise this finding, the research needs to be replicated in different industries and in an international context. This has not been assessed by previous studies, but it is an issue that needs to be investigated in future research.

Despite this study did not show the expected outcomes of corporate culture as moderator, there are particular managerial implications that can be inferred. Firstly, the results demonstrate the positive effect of supplier satisfaction on becoming a preferred customer. This emphasises the importance of having satisfied suppliers to gain preferential treatment and competitive advantage. Managers should be sensitive to this, because otherwise it could lead to competitive disadvantage if competitors are aware. Secondly, on one hand it has shown that profitability and operative excellence do not have a significant effect on supplier satisfaction. On the other hand, relational behaviour and growth opportunity have a significantly positive effect. Therefore, it is inferred that for the case company high purchasing volumes do not seem to influence supplier satisfaction as much as a good relation does. In order to have satisfied suppliers, the case company should focus on relational activities, such as providing support, being reliable and involving the supplier. In addition, managers should provide the suppliers with opportunities to grow together, for example through joint product development and research activities.

In addition to practical implications, theoretical implications can be drawn as well. This study delivers additional empirical data to provide insight into supplier satisfaction and preferred customer status. It has shown that corporate culture does not moderate the effect of first-tier antecedents on supplier satisfaction. However, there seems to be a positive influence of clan culture on supplier satisfaction, that could be further investigated as an additional antecedent. As a subsequent part of this research, the effect of culture has been further examined through polynomial regression. This method resulted in the development of a paper, which is presented in Annexure A.

7.2 Limitations and future research suggestions

This research has several limitations that need to be considered. Firstly, the valuation of the supplier relies on the opinion of a single employee of the firm. From a methodological perspective, it is difficult to draw a general picture out of the answers of one informant.

Likewise, the corporate culture of the firm was evaluated by that one employee. It is possible that his personal view does not align to the general culture of the company. One possible approach to minimise common method bias would be to include qualitative analyses. In addition, the sample size of this research is above the generally accepted limit of at least hundred participants, but it is still arguably small to generalise findings to the total population.

Secondly, there was an option at the end of the questionnaire to personalise the results. That means that if suppliers agreed to that clause, it was possible for the case company to trace back the source of the answers. Even if it was disclaimed that the questionnaire cannot be used as a marketing tool, it is possible that suppliers still tried to use it as such and that unsatisfied suppliers did not participate.

Thirdly, the measurement items of the OCAI usually exist out of 24 “indices of effectiveness”. This study used a leaner version of the original instrument with 12 questions in total, three for each culture. This may be the reason that the factor analysis did not had the expected results: two cultures (market & hierarchy) loaded on the same factor with both varimax and oblique rotation methods. In addition, measurements are subjectively evaluated, which is however a common approach in social sciences.

As a fourth limitation, profitability and operative excellence did not show to have an effect on supplier satisfaction, which contradicts previous studies. It may be the case that the sample size was too small to achieve the hypothesised results or that the study is not applicable in the special miniature motor industry.

Lastly, the hypothesised moderating effects of organisational culture did not occur. This is an unexpected result, because previous studies about organisational culture indicate that there should be a variance of different cultures and their preferences in satisfaction. A possible explanation for this would be that the measurement of corporate culture was not suitable for this study. As corporate culture is a broad field with several assessment tools, it is possible that different results would have been achieved with different measurements.

The lack of explanation of the effects of corporate culture and the unexpected outcomes lead to different future research suggestions. To begin, a different analytical method should be

used to examine the effect of culture. This can be as an interaction effect with regression, like in the attached paper. In addition, the antecedents and supplier satisfaction can be tested with a different measurement of corporate culture. If the CVF is used, more items for the respective cultures should be included. But as there are many established tools to assess organisational cultures, another measurement would probably be more suitable for this research. Also, a larger sample size is desired. If sample size is sufficient to group the sample into different kinds of cultures, it would also be possible to do a multigroup analysis with PLS path modelling to compare the results. To gain more insights into the link between corporate culture and supplier satisfaction, it is also advised to take the culture of the buyer into account. Here, a dyadic analysis from both perspectives may give more understandings than limiting it to the perspective of the supplier.

Regarding supplier satisfaction research, it is advised to further examine the effects and items of profitability and operative excellence, as they showed no significant effect on supplier satisfaction in this research. Additionally, as Vos et al. (2016) also recommend, further research needs to be done related to antecedents to fully explain the construct and the relationship of supplier satisfaction, preferred customer status and preferential treatment.

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Annexures

A: Research paper

Achieving supplier satisfaction: The importance of corporate culture in relational behaviour

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Abstract

The increasing importance of preferred customer status and supplier satisfaction unveils new opportunities to gain competitive advantages as buying firm. Relational behaviour plays a major role to have satisfied suppliers. The goal of this quantitative research paper is to identify the interaction effect of a suppliers' corporate culture and relational behaviour on supplier satisfaction through polynomial regression. Results show that intensifying the relationship with suppliers, that have a high focus on stability and control and that are not highly flexible, has the most potential to improve supplier satisfaction through relational behaviour.

Keywords: supplier satisfaction, corporate culture, relational behaviour, buyer-supplier relationships, polynomial regression

1. The relevance of supplier satisfaction to gain competitive advantage

During the past 40 years, purchasing has shifted from a “just buying-function” to a strategic function (Ellram & Carr, 1994). The increasing recognition of purchasing and its long-term orientation leads to different strategies to gain competitive advantage. Former studies show that part of gaining competitive advantage through the purchasing function is to become a preferred customer of suppliers. A necessity to become a preferred customer is to satisfy the suppliers (Hüttinger et al., 2012; Schiele et al., 2012a). Despite the awareness of the benefits supplier satisfaction offers, empirical research in this field is still in its infancy. Hence, researchers identified economic aspects, social and relational behaviour as influencing factors of supplier satisfaction just since the last decade (Vos et al., 2016). Previous research has shown that of all antecedents, relational behaviour is one of the biggest factors influencing supplier satisfaction (Essig & Amann, 2009; Hüttinger et al., 2014; Nyaga et al., 2010).

So far, supplier satisfaction has been measured from suppliers in their entirety. Previous tries to organise supplier groups by size have not shown any significant differences throughout the groups (Vos et al., 2016). It is a simplifying assumption to assess all suppliers as a homogenous group. Whereas first attempts have been taken to include national culture as an influencing factor, the component of corporate culture is not yet considered in supplier satisfaction research (Schiele et al., 2015). The increased awareness of potential issues caused by organisational culture in buyer-supplier relationships enables companies to negotiate more effectively which results in higher savings and profits (Polychroniou & Trivellas, 2018). The relevance of corporate culture has also been shown in customer satisfaction studies (Conrad et al., 1997) and from the perspective of the buyer (Hewett et al., 2002).

Because of its strong influence on businesses and buyer-supplier relationships, it is important to study this context in the setting of supplier satisfaction. This research will focus on the aspect of relational behaviour, as it presents one of the most important antecedents of supplier satisfaction (Benton & Maloni, 2005; Hüttinger et al., 2014; Schiele et al., 2012a), and the influence of corporate culture using the competing values framework (CVF) of Cameron and Quinn (2011). Results show that there is a significant influence of the extent to which a culture is present. Next to theoretical implications, the main outcomes of this study relate to managerial implications. Here, advice is given to intensify the relationship

with cultures that highly influenced and not to intensify the relationship if the culture that are less influenced by relational behaviour. The aim of this research is to extend the knowledge in supplier satisfaction and relational behaviour with the aspect of corporate culture and to provide guidance for managers on how to deal with certain cultures of suppliers to achieve the maximum satisfaction out of the relationship. It contributes to existing literature by debuting in research that combines both, corporate culture and supplier satisfaction.

This paper is divided into six sections. Section two (2) presents the theory concerning supplier satisfaction and corporate culture. Based on the theoretical foundation, hypotheses are developed in the third section (3). Section four (4) provides a summary of the methodological approach, followed by a presentation of the results in section five (5). As a final chapter, section six (6) gives an overall conclusion including limitations and suggestions for further research.

2. Supplier satisfaction and corporate culture research

2.1. Supplier satisfaction: When expectations of the supplier are met or exceeded

Most scholars regard supplier satisfaction as amplifier of the buyer-supplier relationship and thus as foundation for a long-term collaboration (Hüttinger et al., 2014). Suppliers can generate competitive advantages for the buyer by providing physical or knowledge resources (Koufteros et al., 2012). This preferential treatment occurs from the preferred customer status the buyer strives for (Nollet et al., 2012). The preferential allocation process of resources for the buyer is a selective process (Pulles et al., 2016). That means that buying firms should be aware of the fact that unsatisfied suppliers will most likely not give effort to treat the buyer differently than any other customer. In fact, the missing preferential treatment of unsatisfied suppliers can lead to competitive disadvantage, if competitors themselves secured preferential resource allocation. This emphasises the importance of supplier satisfaction (Essig & Amann, 2009). Supplier satisfaction was a long-neglected and underexplored concept (Schiele et al., 2011). In the past, buyer-supplier relationships were only seen from the perspective of the supplier, because he had to meet the customer's expectations and fulfil the customer's needs. The change of perspectives to see the relationship from a buyers' point of view is called reverse-marketing and had its debut already in 1988 (Leenders & Blenkhorn, 1988). Therefore, supplier satisfaction has been regarded as relevant to organisations for decades but still, it is only recently that supplier

satisfaction is getting more attention in research (Hüttinger et al., 2012). Nevertheless, research on the topic has mainly been conceptual in nature (Benton & Maloni, 2005). Based on social exchange theory (SET), the evaluation by the supplier is resulting from a comparison of the expected value of the exchange relationship to the actual outcome that it achieves (Emerson, 1976; Schiele et al., 2012b). Therefore, the definition of Schiele et al. (2012a, p. 1181) seems applicable for this study: supplier satisfaction is a “condition that is achieved if the quality of outcomes from a buyer-supplier relationship meets or exceeds the supplier’s expectations”. This definition combines previous explanations of supplier satisfaction and covers the assumptions of SET.

A breakthrough in supplier satisfaction research was the publication of a special issue of *Industrial Marketing Management* in 2012. Part of it was the literature review of Hüttinger et al. (2012) which summarises supplier satisfaction research state of the art and a reflection on existing literature about antecedents of supplier satisfaction. The authors found two major trends in the examined articles. (1) Scholars base their research in purchasing and supply management literature mainly to examine the effect of different relationship strategies on supplier satisfaction. Buyers are considered to be more focused on outcomes and performance, whereas suppliers seem to put more value on the relational atmosphere and the development of norms. (2) Other scholars in the field of purchasing and supply management often use supply chain management or marketing literature as a conceptual foundation. These articles have a strong emphasis on management implications and do not explain on a theoretical level why items should be included in satisfaction research (Hüttinger et al., 2012). Two years later and as a follow-up to Schiele et al. (2012a), Hüttinger et al. (2014) further examined the antecedents of customer attractiveness, supplier satisfaction and preferred customer status. They assumed that relational behaviour, growth potential, reliability, innovation potential, operative excellence, involvement, support and access to contacts are antecedents leading to supplier satisfaction. Two years later, in 2016, Vos et al. (2016) replicated and extended the previously discussed study of Hüttinger et al. (2014) with an additional antecedent (profitability) and a comparison of direct and indirect procurement. In both researches, relational behaviour is one of the most important antecedents leading to supplier satisfaction. Relational behaviour refers to the buyer’s behaviour towards the supplier with a special focus on relational parts of exchange. This is capturing multiple aspects of the exchange behaviour, for example flexibility, mutuality and solidarity (Griffith et al., 2006; Palmatier et al., 2007). Given these characteristics and the high influence on supplier satisfaction, it is important to know whether all suppliers value relational behaviour

the same or if there are differences in sensibility towards relational behaviour. This can be found out by grouping the supplier base into different cultures. The aspect of corporate culture is further explained in the following chapter.

2.2. Corporate culture and the competing values framework

As a subpart of general culture, corporate culture differs from organisation to organisation and does not generalise the culture of organisations and individuals which share the same nationality (Schein, 2015). Thus, membership is partial and voluntary in nature (Hofstede, 1994). In literature, corporate culture is also often referred to as organisational culture (Naranjo-Valencia et al., 2016; Prajogo & McDermott, 2011; Schein, 2010). Corporate culture represents the glue that holds an organisation together and encourages employees to commit to the company and to perform (van den Berg & Wilderom, 2004). Estimations are given that over 4600 articles were published on the role of culture in organisations, highlighting its importance in business research (Hartnell et al., 2011). This trend also found its way to practice: According to a recent study, 91% of executives value corporate culture to be “very important” or “important” at their organisation (Graham et al., 2016). Most of the definitions share the same underlying idea, that corporate culture is “a set of norms and values that are widely shared and strongly held throughout the organisation” (O’Reilly & Chatman, 1996). This definition is chosen, because analysis on organisational level implies that the understanding of corporate culture is shared by the majority of all members throughout the hierarchy of the organisation. In other words, corporate culture is the culture where all employees of a firm are part of and stakeholders have to deal with (Barney, 1986). An often used approach to assess corporate culture is the corporate values framework (CVF) of Quinn and Rohrbaugh (1983). The framework has been used in over 10.000 organisations all over the world and in a high number of academic investigations (Cameron et al., 2014; Hartnell et al., 2011). Therefore, several studies have empirically established validity and reliability of the CVF and its measurement items (Adams et al., 2017; Chatman & O’Reilly, 2016; Yeung et al., 1991; Yu & Wu, 2009). Compared to other organisational culture models, the CVF includes relatively little dimensions, but has broad implications. It only includes a small number of items, which makes it convenient for practical implications (Yu & Wu, 2009). It can be used to study corporate culture in a wide spectrum of situations (Quinn & Kimberly, 1984). In addition, it already established as a tool for inter-company research to identify the cultures of different firms (Eckenhofner & Ershova, 2011). Finally, predecessors of the CVF have already been successfully applied to customer satisfaction

studies (Conrad et al., 1997). Given these reasons, the CVF is considered as appropriate for this study to examine the moderating effect of organisational culture on supplier satisfaction. The CVF distinguishes four different kinds of cultures: Adhocracy, clan, market and hierarchy culture. The cultures are arranged on a two-dimensional model. The x-axis reaches from internal to external focus and differentiation. The y-axis reaches from stability and control to flexibility and discretion (Cameron et al., 2014).

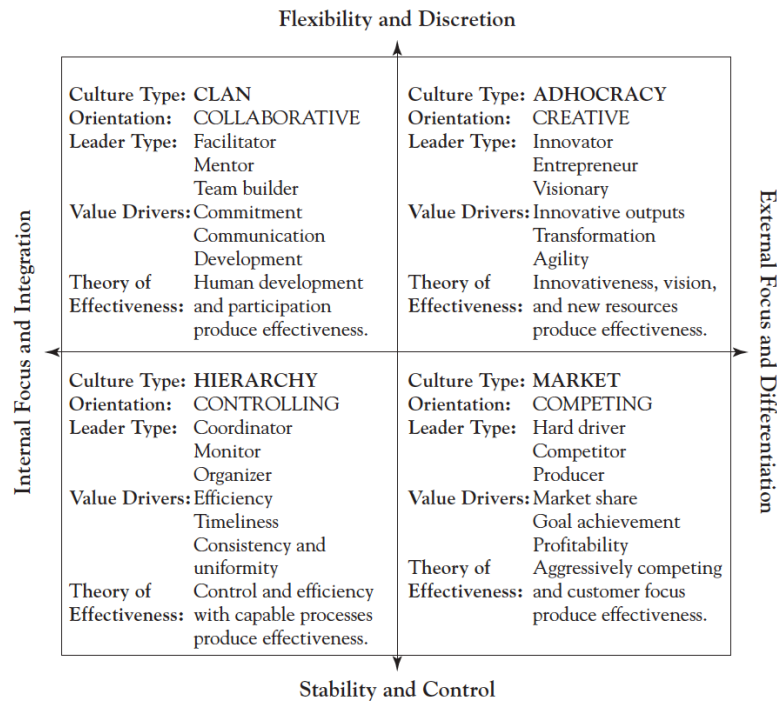


Figure 1: The CVF of Cameron & Quinn (2011), p. 46

The two dimensions together create four quadrants, each characterising a separate group of organisational effectiveness indicators. Hence, each quadrant represents one of the mentioned cultures, which is a way of dealing with opportunities and challenges, and a set of values and beliefs that stimulate value creation in organisations (Cameron & Quinn, 2011). On corporate level, they are the “norms or shared expectations about what is important, how to behave or what attitudes are appropriate” (O’Reilly et al., 1991). It is not unusual that organisations show values of every quadrant, sometimes also with a high emphasis on core values which are located on the opposite of the diagonal and thus are contradictory in theory. It is important to note that every form of culture is an ideal form of organisation and in practice a pure culture does not exist (Cameron et al., 2014).

Cameron and Quinn (2011) describe the respective cultures as the following: *Clan culture* is comparable to a family-type organisation. Typical characteristics of clan cultures are an emphasis on teamwork, employee involvement and organisational commitment to

employees. Some underlying assumptions of the clan culture are that an organisation can be best managed through employee development and teamwork. Customers are regarded as partners and the business develops a humane working environment. *Adhocracy culture* emphasises flexibility and discretion as well. However, it is externally oriented and sets a high focus on competition. Adhocracy culture organisations have the aim to be leading related to new product, service or knowledge development. A major goal of adhocracies is to promote flexibility, adaptability and creativity in uncertain and ambiguous situations. *Hierarchy cultures* have a high internal focus and integration and high stability and control. Typical features of hierarchies are strict rules, low flexibility, accountability, impersonality and reliability. They promote timeliness, smooth functioning and efficiency. *Market culture* is also known as competition culture. It works efficiently when circumstances are controlled and the environment is stable and not fluctuating. At the same time, it has an external orientation and high differentiation. The most important indicator of organisational effectiveness in market cultures are transaction costs that are mainly externally oriented. The market organisation is driven by profit and results and regards the external environment as aggressive instead of benevolent (Cameron et al., 2014).

In the following section, hypotheses are developed based on the theoretical foundation of supplier satisfaction and corporate culture. For the empirical part of the research, the methodological approach with data collection, used measurements and data analysis is described. Afterwards, results are presented and discussed in the subsequent section and finalised with a conclusion and limitations.

3. Hypotheses

Corporate culture influences the way a firm conducts business. It is seen as an important factor to organisational performance (Hartnell et al., 2011; Hofstede et al., 1990; Kotter & Heskett, 2008). It can also have an effect on buyer-supplier relationships, because it effects the firms' internal and external workings (Barney, 1986). That goes in line with recent findings from supply chain literature, where buyers are able to negotiate more effectively by taking the influence of culture from the supplier into account (Polychroniou & Trivellas, 2018). Whereas first attempts to include national culture have been taken, the component of corporate culture is not yet considered in supplier satisfaction research (Schiele et al., 2015). Relational behaviour stands out as a determinant of satisfaction in a buyer-supplier relationship (Hüttinger et al., 2014). This statement matches with previous findings of Wong

(2000), Forker and Stannack (2000), Benton and Maloni (2005) and Nyaga et al. (2010), who agree that supplier satisfaction is mainly influenced by a cooperative, relationship-driven supply chain strategy. As relational behaviour presents one of the most important antecedents of supplier satisfaction, this study concentrates on whether certain cultures value relational behaviour differently than others. Relational behaviour takes exchange behaviour such as mutuality, solidarity and flexibility into account (Palmatier et al., 2007). Knowing that, implications can be inferred whether it makes sense or not to intensify the relationship with the supplier.

The CVF distinguishes four cultures with different characteristics: clan, adhocracy, market and hierarchy. As these cultures embody ideal forms that are not present in reality, the respective extent to which the characteristics of the cultures are given is regarded. The clan culture is comparable to a family-type organisation. Clan cultures are internally oriented with an emphasis on integration. At the same time, they focus on flexibility and discretion. Theoretically, clans function most effectively when there is high human development and participation (Cameron & Quinn, 2011). Characteristics as teamwork, commitment and involvement are expected to enhance the outcomes of satisfaction (Naranjo-Valencia et al., 2016). This type of culture is assumed to support the establishment of solid networks the most. Typically, clan cultures perceive their stakeholders as partners, which is also related to the relevance of relationships for them (Eckenhof & Ershova, 2011). Given these characteristics, it can be assumed that relational behaviour plays an important role for suppliers with a high level of clan culture. Therefore, it is expected that the higher the level of clan culture is present at a supplier, the more important relational behaviour will be for the supplier in order to be satisfied.

H₁: The higher the level of clan culture, the higher the influence of relational behaviour on supplier satisfaction.

Adhocracy cultures are externally oriented and have a high focus on competition and discretion. Underlying values of adhocracies are creativity, flexibility and an external focus. They are temporary by nature and adapt quickly when changes occur. Characteristics of adhocracies do not emphasise the presence of strong relationships. On the contrary, strong relationships could be seen as binding and as a limitation of flexibility (Cameron & Quinn, 2011). Adhocracies may prefer to concentrate on their own ideas instead of sharing them with the buyer, which is an undesired base for solid network building (Eckenhof &

Ershova, 2011). The long-term emphasis of adhocracies lies on growth, autonomy and acquiring new resources, while being leader of a product or service is essential (Cameron et al., 2014). Consequently, it is assumed that those cultures have a different focus than relational behaviour when it comes to supplier satisfaction. Innovation and growth potential may play a more important role for adhocracies (Denison & Spreitzer, 1991). Due to these reasons, it is hypothesised that the higher the extent to which adhocracy characteristics are present, the more unimportant relational behaviour gets in order to achieve higher satisfaction. That means that if the level of adhocracy culture is high, it does not matter that much how relational behaviour is rated, because it does not influence supplier satisfaction as much as if the level of adhocracy culture was low.

H₂: The higher the level of adhocracy culture, the lower the influence of relational behaviour on supplier satisfaction.

Hierarchy cultures are also referred to as control cultures. Typical features are low flexibility and reliability. They function best when the environment remains stable. Comparable to clan cultures, hierarchies are internally oriented and value integration (Cameron & Quinn, 2011). Value drivers are consistency, efficiency, timeliness and consistency. Employees of hierarchy cultures will most likely do their job on time and efficiently to prevent negative consequences. Previous studies show, that communication also plays a high role for bureaucratic cultures as hierarchies (Hartnell et al., 2011). When there is a trusting relation, favours are likely to be exchanged in the theory of reciprocity (Eckenhof & Ershova, 2011). As trust is a relational factor, it is assumable that building up a strong relationship to suppliers with hierarchy cultures will benefit the buyer (Khalid & Ali, 2017). Therefore, it is inferred that relationships are important for hierarchies. To sum up, if the level of the hierarchy culture is high, it is assumed that relational behaviour plays a major role for the supplier to be satisfied. This leads to the hypothesis:

H₃: The higher the level of hierarchy culture, the higher the influence of relational behaviour on supplier satisfaction.

Market cultures are driven by competition and external orientation. The most important indicators of effectiveness are transaction costs that are mainly externally oriented towards contractors, customers and regulators (Ouchi, 1981; Williamson, 1975). Market cultures

function best when their environment is stable and they are in control. The theory of markets is that aggressive competition and customer focus enhance effectiveness (Cameron & Quinn, 2011). Likewise, they perceive their external environment as aggressive instead of benevolent. The strong customer focus of market cultures also includes a high need for communication (Hartnell et al., 2011). However, the creation of solid networks is most likely to be low. The leader of a market culture “barely pays attention to the creation of relationships and a warm and friendly environment” (Eckenhofner & Ershova, 2011, p. 39). This relates to their major focus on transaction costs as exchanges, contracts and sales instead of relational aspects. As market cultures see their external environment as aggressive and they do not focus on relational activities, it is assumed that a high level of market culture is not associated with a focus on relational behaviour when it comes to supplier satisfaction.

H₄: The higher the level of market culture, the lower the influence of relational behaviour on supplier satisfaction.

4. Methodology

4.1. Data collection and sample

The quantitative data needed for this study was collected in collaboration with the purchasing department of a company located in southern Germany. A structured selection process to pick suitable suppliers resulted in a list of 344 suppliers with accessible contact persons and data. To collect data in an efficient and effective way, a web-based survey was developed. After the initial invitations to participate, e-mail reminders were sent out and occasional phone calls were taken to emphasise the importance of contribution of all suppliers. This procedure enhances the motivation and makes the respondent feel obliged to participate (Dillman, 2000). After all actions to maximise the response rate have been taken, 115 useable responses were collected with a response rate of 33,4%. There is no generally accepted guideline for the response rate, but the common rate usually fluctuates between 15 and 25% (Caniëls et al., 2013; Vos et al., 2016). Given that range, it can be argued that the response rate of this study is higher than average (Deutskens et al., 2004). A typical concern of survey studies collecting quantitative data is the non-response bias, which deals with the difference between the participants of the survey and those who did not participate (Armstrong & Overton, 1977). A comparison of the first quartile and the last quartile of

respondents with an independent t-test reveals no significant differences. Therefore, it can be assumed that the participants represent the whole sample.

4.2. Measurements

A questionnaire was developed to test hypotheses and the impact of corporate culture on the effect between relational behaviour and supplier satisfaction. Question groups of relational behaviour and supplier satisfaction are adopted from the publications of Hüttinger et al. (2014) and Vos et al. (2016). All dependent and independent variables of this study are scored on a five-point Likert scale reaching from “strongly disagree” to “strongly agree”. The measurement item for an assessment of the corporate culture is the Organisational Culture Assessment Instrument, OCAI (Cameron & Quinn, 2011). The OCAI has extensively been used to assess corporate culture and is regarded as powerful instrument (Deshpandé et al., 1993; Quinn & Spreitzer, 1991; Yeung et al., 1991; Yu & Wu, 2009). Its reliability has been tested several times, leading to Cronbach’s alphas between .74 and .8, which is regarded as reliable (Cameron & Quinn, 2011). The original OCAI consists of six key dimensions of corporate culture, with four alternatives respectively (Quinn & Spreitzer, 1991). Using the full item list would lead to 24 items per questionnaire. However, it has shown that shorter questionnaires result in a higher response rate (Deutskens et al., 2004). To make the questionnaire of this survey more lean, the dimensions have been reduced to respectively three for every culture, resulting in 12 items in total. Included dimensions are Organisational Leadership, Organisation Glue and Criteria of Success. Initially, the OCAI uses an ipsative scale for to measure culture. Nevertheless, it is also possible to use Likert scales (Cameron & Quinn, 2011; Denison & Spreitzer, 1991). Cameron and Quinn (2011) advice to use the measurement which suits best to the study. As all items are measured in a five-point Likert scale, this measurement is also chosen for the CVP. With values of Cronbach’s α between .78 and .92, internal reliability is assumed. As Cronbach’s α generally tends to underestimate internal consistency reliability, composite reliability (CR) is applied as well. CR values lay between .78 and .94 and therefore also above the commonly accepted minimum of 0.7 (Field, 2013). To establish convergent validity, the average variance extracted (AVE) is observed. Again, all values are above the threshold of 0.5 (De Veaux et al., 2016).

4.3. Data analysis

Polynomial regression with response surface analysis is used to analyse the hypotheses of this study. In general, this method is applicable for any situation in which the combination of two independent variables relate to one outcome (Edwards & Parry, 1993; Shanock et al., 2010). It is particularly suitable for this study, because polynomial regression allows a three-dimensional examination of relationships, in this case relational behaviour, supplier satisfaction and each of the four culture types. In addition, it was already successfully used in a business-related context where culture is added as interaction (Lee et al., 2017). It is appropriate when discrepancies between predictor variables (relational behaviour and culture) relate to the outcome (supplier satisfaction). This cannot be presented with regular regression. To conduct a polynomial regression, a few assumptions have to be met (Edwards, 2007): (1) The two predictor variables have to be commensurate. As the predictors of this study are from the same conceptual domain, supplier satisfaction, this assumption is met. (2) Predictor variables must be measured on the same numeric scale, which is fulfilled by using Likert scale for all items. (3) All usual assumptions of multiple regression analysis should be met. An assessment of those assumptions is presented in the results chapter (De Veaux et al., 2016). To assure the quality of the data, a principal component analysis (PCA) is conducted first. Items that do not load above the threshold of 0.5 are excluded for further analysis (De Veaux et al., 2016). A thorough analysis reveals that with every option (varimax and oblique), hierarchy and market culture load on the same factor. The reason for that may be that market and hierarchy culture are both focusing on stability and control and therefore it can be that they are highly correlated. Despite the fact that they load on the same factor, the constructs will be treated separately, because the check for face validity of the items revealed that they are not shaped in a similar way (Holden, 2010). All calculations were made with IBM SPSS 25 (IBM-Corporation, 2017) on a significance level of $p < 0.05^*$ and $p < 0.01^{**}$.

5. Results

5.1. Assumptions of polynomial regression

Each of the predictors in relation to the dependent variable is tested for linearity and a normal distribution of data. The scatterplot of residuals revealed no remarkable changes in the spread about the line. In addition, a histogram and a normal probability plot shows a normal distribution of residuals. Before conducting polynomial regression, an inspection of discrepancies between the two predictors (culture and relational behaviour) is necessary (Shanock et al., 2010). Therefore, scores have been standardised and assigned to three different groups with discrepant values in either direction (Fleenor et al., 1996). Shanock et al. (2010) advise that at least 10% discrepancy is necessary for every group. This assumption is met for each of the four regressions. After running the regression, VIF values serve as indicators for issues with multicollinearity. As all variables have been centered to avoid multicollinearity issues, VIF values of all variables (except interaction variables) are below the threshold of 10 (Aiken & West, 1991). Rather than examining the regression coefficients as in a usual regression analysis, if the R^2 value is significantly different from zero, the results of the regression are evaluated with surface test values (Edwards, 2007). As this is the case for each of the four models with considerably substantial R^2 values between 0.513 and 0.613, the results of this analysis are presented in the following chapter (De Veaux et al., 2016).

5.2. The lower the levels of flexible cultures, the higher the influence of relational behaviour

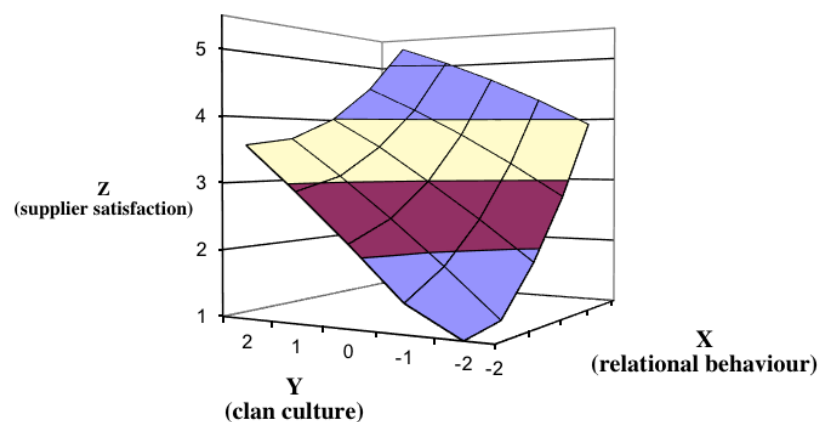


Figure 2: Supplier satisfaction as predicted by relational behaviour and clan culture agreement

The observation of four interaction effects on supplier satisfaction leads to four different polynomial regression models. In every tested model, relational behaviour has a direct significant effect on supplier satisfaction ($\beta=0.6-0.9$; $t=5.75-8.5^{**}$). Out of the cultures, clan culture appeared to have a direct influence on supplier satisfaction as well ($\beta=0.55$; $t=2.58^{**}$). The interaction effects of relational behaviour and the cultures on supplier satisfaction are evaluated by response surface analysis (Shanock et al., 2010). Figure 2 depicts an example of one graph. To test the hypotheses, two curves, (1) when there is an extremely high level of the culture (left side of the graph) and (2) an extremely low level of the culture (right side of the graph), are compared. Table 1 presents the predicted values of Z (supplier satisfaction) for each combination when Y (culture) is highly present ($y = +2$) and very low in presence ($y = -2$) and X (relational behaviour) is reaching from -2 to +2. Those values are based on the polynomial regression equation and associated unstandardized beta weights.

Table 7: Supplier satisfaction as projected by the discrepancy and agreement of relational behaviour and four types of corporate culture

Y = cultures		X = relational behaviour				
		-2	-1	0	1	2
high clan	2	3.56	3.66	3.99	4.55	5.33
low clan	-2	0.63	1.11	1.82	2.75	3.92
high adhocracy	2	3.35	3.74	4.13	4.53	4.92
low adhocracy	-2	0.70	1.93	3.15	4.38	5.61
high hierarchy	2	2.09	2.95	3.72	4.40	5.00
low hierarchy	-2	3.25	3.91	4.48	4.97	5.37
high market	2	2.11	2.94	3.69	4.36	4.95
low market	-2	2.50	3.26	3.93	4.53	5.04

Out of the values of table 1, it is possible to plot a longitudinal section of the polynomial graphs to compare the curves where cultures are of a very high and very low level. The horizontal axis presents relational behaviour and the vertical axis supplier satisfaction. Each of the two curves in figure 3 shows the relationship when the culture is highly or minor present.

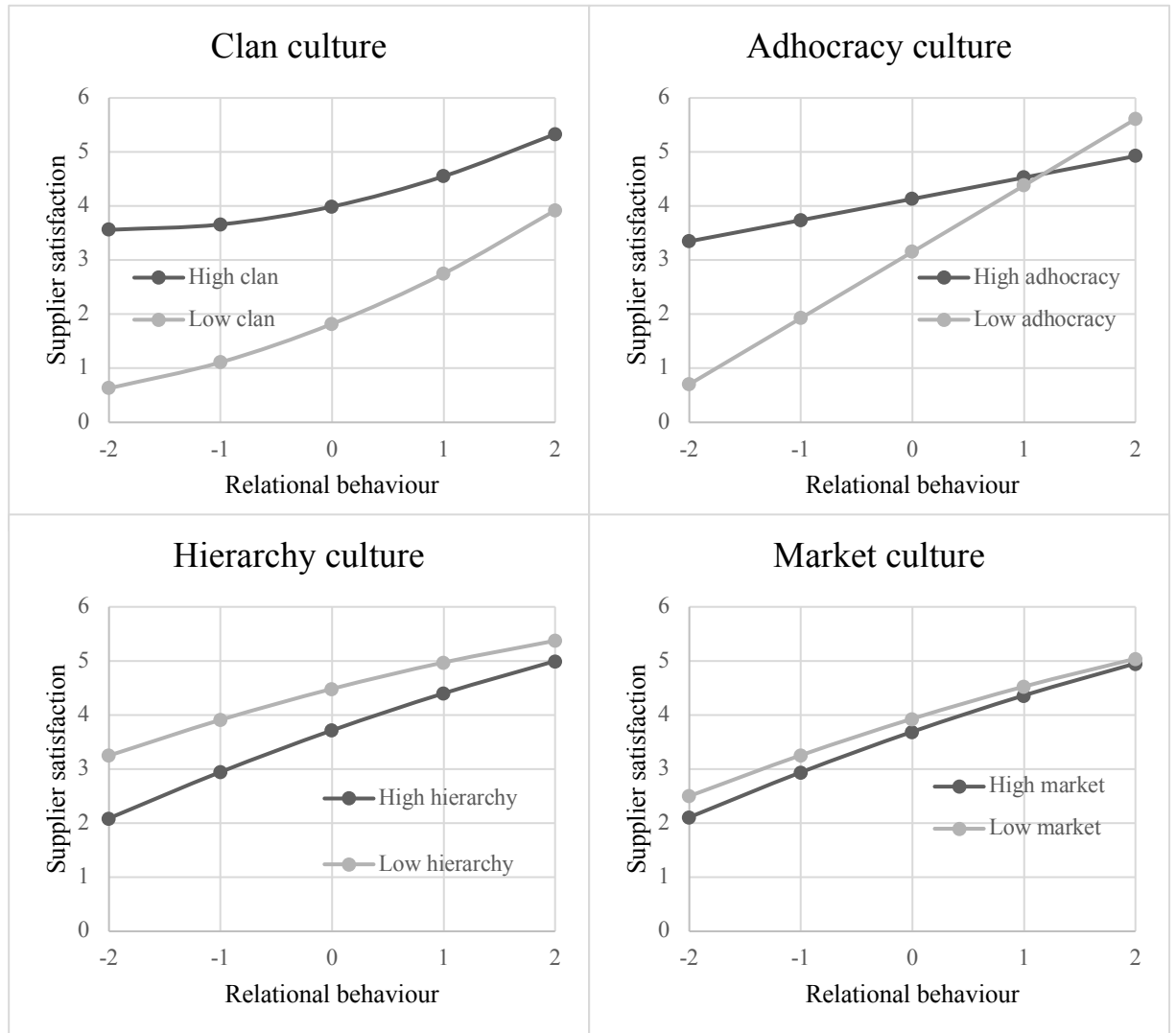


Figure 3: Interaction effects of relational behaviour and high and low levels of cultures on supplier satisfaction

The graphs in figure 3 show that a high level of clan culture generally perceives higher satisfaction in comparison to a low level of clan culture. However, low levels show a steeper curve in interaction with relational behaviour. This is an unexpected outcome and does not support H_1 , because it indicates that in fact lower levels of clan culture react more sensitive to relational behaviour. High levels of adhocracy culture appear to be more satisfied in general when relational behaviour is low, compared to low levels of adhocracies. Low levels again show a steeper curve which results in higher satisfaction than high levels when relational behaviour is high as well. H_2 is therefore supported, because low levels of adhocracy cultures are higher influenced by relational behaviour when it comes to supplier satisfaction. An opposite result than the previous ones is graphed for the cultures which share a high focus on stability: Hierarchy and market. Here, low levels of each of the two cultures

show a higher satisfaction on each level of relational behaviour. The curve for a high level of hierarchy culture is slightly steeper than for a low hierarchy. The same counts for market cultures. This supports H₃, because a high level of hierarchy shows a steeper curve than a low level of hierarchy in relation to relational behaviour. H₄ however cannot be supported, because the line of both levels is almost identical, whereas a high level of market culture is even slightly more responsive to relational behaviour. Out of these results, various advices for action can be inferred. Therefore, managerial and theoretical implications are discussed in the following section.









6. Discussion

6.1. Managerial implications: Relational behaviour should be emphasised when levels of adhocracy and clan cultures are low

Corporate culture research provides implications for managers on how to deal with different cultures to negotiate more effectively (Polychroniou & Trivellas, 2018). The managerial implications derived from this study are whether it is advised or not to strengthen the relationship with a supplier in order to gain a higher satisfaction. Therefore, the interaction of each culture with relational behaviour is observed. Sensitive cultures are those where the slope of the curve is steeper, meaning that by improving relational behaviour and intensifying the relation, substantial improvements in supplier satisfaction will be achieved. If the curve is flatter, less effects can be achieved through improving relational behaviour. Overall, it can be said that flexible cultures such as clan and adhocracy are more satisfied in general, independent from relational behaviour. It was shown that clan cultures, which are expected to value teamwork and commitment highly, are not highly influenced by relational behaviour. This means that if relational behaviour is rated badly, the supplier with a clan culture will most likely still be satisfied. A reason for that may be that clan cultures are highly internally oriented (Cameron & Quinn, 2011), and that the values of teamwork and commitment are related to the internal culture of the organisation and cannot be applied to the relationship with customers. Due to polynomial regression, inferences can be drawn to low levels of the respective cultures as well. For flexible cultures, low levels show a high influence of relational behaviour. Stable cultures, such as hierarchy and market culture, show more sensitivity towards relational behaviour when their level is high. Out of the conclusions presented in table 2, it can be inferred that managers should intensify the relationship with cultures that (1) do not have a high focus on teamwork, communication and commitment

themselves (→ low score in clan culture), (2) are not innovative and flexible (→ low score in adhocracy culture), (3) that are very efficient and have a high value on rules and conformity (→ high score in hierarchy culture) and (4) have a focus on competition, market share and goal achievement (→ high score in market culture). To conclude, specific action needs to be taken when clan and adhocracy culture levels are low. Here, it makes the most sense to intensify the relationship, because those low levels of cultures react sensitive to relational behaviour improvements. Therefore, the following approach is advised for managers: (1) Identify the culture of the supplier. (2) Figure out if the supplier has a very low level of clan or adhocracy culture. Also have a look if he has a hierarchy or market culture. (3) If one (or more) of the previous is the case, pay attention that relational behaviour to this supplier is in order.

Table 8: Importance of relational behaviour for different culture characteristics

		Culture and characteristics	Level	Sensitivity to relational behaviour	
Flexibility & Discretion	Clan culture:	Commitment, communication, teamwork	high	score: 3.56 – 5.00 28.8%	
			low	score: 0.63 – 3.92 65.8%	
	Adhocracy culture:	Innovative outputs, transformation, agility	high	score: 3.35 – 4.92 31.4%	
			low	score: 0.70 – 5.00 86.0%	
Stability & Control	Hierarchy culture:	Efficiency, timeliness, consistency, uniformity	high	score: 2.09 – 5.00 58.2%	
			low	score: 3.25 – 5.00 35.0%	
	Market culture:	Market share, goal achievement, profitability	high	score: 2.11 – 4.95 56.8%	
			low	score: 2.50 – 5.00 50.0%	

Notes: The blue filling of the circles shows how much more satisfaction can be achieved by improving relational behaviour. A fully blue circle would indicate that it is possible to achieve full satisfaction by maximising relational behaviour in combination with the respective culture. The maximum possible score for supplier satisfaction is 5.

6.2. Theoretical implications and future research

The theoretical implications from this study are twofold: Firstly, the results show that corporate culture is applicable and relevant when it comes to supplier satisfaction. This study is pioneering on the example of one of the most influential antecedents of supplier satisfaction – relational behaviour. It is shown that suppliers with different corporate culture characteristics value relational behaviour differently. It came out that suppliers that are not focused on innovation and growth (=low adhocracy culture) are the most influenced by relational behaviour. In addition, clan cultures appear to be generally satisfied, independent from relational behaviour. Previous studies found that there are various antecedents of supplier satisfaction (Hüttinger et al., 2014; Vos et al., 2016). It might be interesting to investigate the effect of organisational cultures on further antecedents, for example profitability, operative excellence and innovation potential. Therefore, it is suggested that further supplier satisfaction research takes the effect of culture into account, in order to provide more detailed outcomes.

Secondly, corporate culture research should further extend its field to satisfaction in business-to-business relationships. So far, corporate culture tools have mostly been used to identify and to change the culture of one company (Cameron & Quinn, 2011), but it is indicated that it also plays a role in inter-firm relationships. This is already known in national culture research, for example in behavioural attributes in buyer-supplier relationships (Graca et al., 2015). Therefore, research in corporate culture may focus on adapting their tools to be better applicable in a business-to-business context. Also, the results need to be validated by applying the study into a cross-cultural setting. A similar procedure is already known from customer satisfaction studies (Homburg et al., 2002). In addition, it has shown that the mixture of cultures could also impact the way two organisations conduct business (Conrad et al., 1997; Polychroniou & Trivellas, 2018). Also, the unexpected outcomes of clan culture and the direct effect of clan culture on supplier satisfaction needs further investigation to increase generalisability.

7. Conclusion and limitations

The aim of this research was to provide practical advice on whether to strengthen the relationship with the supplier or not, in order to create a higher satisfaction. It revealed that cultures with a focus on stability and control are more influenced by relational behaviour than cultures with a focus on flexibility and discretion. It has also shown that the intensification of the relationship with clan and adhocracy cultures is less effective, because their satisfaction appears to be rather independent from relational behaviour. However, low extents of clan and adhocracy cultures reveal to be highly influenced by relational behaviour. Therefore, it is also suggested to intensify the relationship with suppliers with low levels of flexible cultures.

Besides the theoretical and practical contributions of this study, some limitations have to be considered. Firstly, the evaluation of the supplier relies on the opinion of a single employee of the firm. From a methodological perspective, it is difficult to draw a general picture from one informant. Secondly, even though the sample size of this research is sufficient, it is still arguably small to generalise findings to the total population. Thirdly, the original measurement items of the OCAI exist out of 24 “indices of effectiveness”. A leaner version is used for this study, which probably did not cover the culture characteristics to the full extent. A final limitation is that the focal organisation and most of its suppliers are located in the same country. This indicates that they generally share the same national culture. Therefore, the results cannot be generalised into a cross-cultural context, before further research is conducted in this field. As this study is pioneering in investigating corporate culture effects on supplier satisfaction, limitations can be seen as a point to start for future research.

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Paper Appendix A – discrepancy analysis

Table 9: Discrepancy analysis

Groups	N	%	Groups	N	%
RB<C	39	34.8	RB<A	36	31.6
RB=C	31	27.7	RB=A	40	35.1
RB>C	42	37.5	RB>A	38	33.3
Total	112	100	Total	114	100
Groups	N	%	Groups	N	%
RB<H	36	31.3	RB<M	45	39.5
RB=H	45	39.1	RB=M	30	26.3
RB>H	34	29.6	RB>M	39	34.2
Total	115	100	Total	114	100

Notes: N= Number of cases; RB= Relational behaviour; C= Clan culture; A= Adhocracy culture; H= Hierarchy culture; M= Market culture; Upper and lower groups are 0.5 standard deviation difference between standardised scores

Paper Appendix B – regression results

Table 10: Regression - relational behaviour and clan culture on the dependent variable supplier satisfaction

Model I: Dependent variable - Supplier Satisfaction						
Variables	Model 1		Model 2		Model 3	
	B	SE	B	SE	B	SE
Step 1 – control variable						
(Constant)	4.30**	.12	3.14**	.14	2.95**	.22
Length of Relationship	-.03	.01	.00	.00	.00	.00
Step 2						
Relational Behaviour (RB)			.60**	.06	.63**	.08
Clan culture (C)			.37**	.07	.55*	.21
Step 3						
RB*C					-.10	.07
RB ²					.12	.14
C ²					-.02	.07
<i>Adjusted R²</i>	-.01		.59		.59	
<i>R² change</i>	.00		.60**		.61**	

Table 11: Regression - relational behaviour and adhocracy culture on the dependent variable supplier satisfaction

Model II: Dependent variable - Supplier Satisfaction						
Variables	Model 1		Model 2		Model 3	
	B	SE	B	SE	B	SE
Step 1 – control variable						
(Constant)	4.30**	.12	3.45**	.13	3.37**	.14
Length of Relationship	-.03	.01	.00	.00	.00	.01
Step 2						
Relational Behaviour (RB)			.60**	.06	.80**	.14
Adhocracy culture (A)			.21**	.08	.26	.17
Step 3						
RB*A					-.20	.13
RB ²					.00	.06
A ²					.05	.11
<i>Adjusted R²</i>	-.01		.53		.53	
<i>R² change</i>	.00		.54**		.56**	

Table 12: Regression - relational behaviour and hierarchy culture on the dependent variable supplier satisfaction

Model III: Dependent variable - Supplier Satisfaction						
Variables	Model 1		Model 2		Model 3	
	B	SE	B	SE	B	SE
Step 1 - control variable						
(Constant)	4.30**	.12	3.69**	.12	3.77**	.16
Length of Relationship	-.03	.01	.00	.01	.00	.01
Step 2						
Relational Behaviour (RB)			.65**	.06	.63**	.11
Hierarchy culture (H)			-.01	.07	-.19	.17
Step 3						
RB*H					.05	.09
RB ²					-.04	.06
H ²					.08	.07
<i>Adjusted R²</i>	-.01		.50		.49	
<i>R² change</i>	.00		.51**		.52**	

Table 13: Regression - relational behaviour and market culture on the dependent variable supplier satisfaction

Model IV: Dependent variable - Supplier Satisfaction						
Variables	Model 1		Model 2		Model 3	
	B	SE	B	SE	B	SE
Step 1 – control variable						
(Constant)	4.30**	.12	3.68**	.12	3.72**	.15
Length of Relationship	-.03	.01	.00	.01	.00	.01
Step 2						
Relational Behaviour (RB)			.65**	.06	.67**	.09
Market culture (M)			-.01	.07	-.06	.17
Step 3						
RB*M					.02	.10
RB ²					-.04	.07
M ²					.02	.09
<i>Adjusted R²</i>	-.01		.50		.48	
<i>R² change</i>	.00		.51**		.51**	

Results of the linear regression

The models were tested in three steps respectively. In *step 1*, length of relationship was included as control variable, because previous studies found that it is related to performance in buyer-supplier relationships (Nagati & Rebolledo, 2013). In this case, it showed no significant effect in any step ($\beta = -.13-0$; $p = \text{n.s.}$). *Step 2* tested the direct effect of the centered variables of culture and relational behaviour on supplier satisfaction. It shows that relational behaviour ($\beta = .60-.65$; $p < .01^{**}$), clan ($\beta = .37$; $p < .01^{**}$) and adhocracy culture ($\beta = .21$; $p < .01^{**}$) have a significant effect on supplier satisfaction. In *step 3*, interaction and squared variables are included. The inclusion of these variables is necessary to perform polynomial regression with response surface analysis. As soon as squared and interaction variables are included, adhocracy has no significant effect anymore ($\beta = .26$; $p = \text{n.s.}$). Relational behaviour ($\beta = .63-.80$; $p < .01^{**}$) and clan culture ($\beta = .55$; $p < .05^{*}$) are still showing a significant effect. Polynomial regression can be performed when R^2 increases significantly in the last step, which is given for every model. In addition, individual higher order terms should be significant and the relationship between dependent and independent variables should be nonlinear. The second assumption is only partly met, because whereas relational behaviour is always significant, only clan and adhocracy cultures are significant on the culture side (Edwards, 2002). However, polynomials were still created for every models to investigate the three-dimensional surface of the relationship. Therefore, the results of the linear regression analysis present an intermediate step to the final results, where curvilinear and interaction effects are tested through polynomial regression.

Paper Appendix C – polynomial regression and response surface modelling interpretation

Table 14: Polynomial analysis of slopes and curvatures of clan & adhocracy and relational behaviour

	Model I: y=clan			Model II: y=adhocracy		
	Coefficient	SE	t	Coefficient	SE	t
a1: slope along x=y	1.18	.21	5.60**	1.06	.18	5.83**
a2: curvature on x=y	.00	.07	-.05	-.15	.08	-1.81
a3: slope along x=-y	.09	.24	.38	.57	.25	2.29*
a4: curvature on x=-y	.19	.25	.74	.27	.24	1.11

Notes: * = $p < .05$; ** = $p < .01$; x = relational behaviour; SE = standard error; t = t-statistics

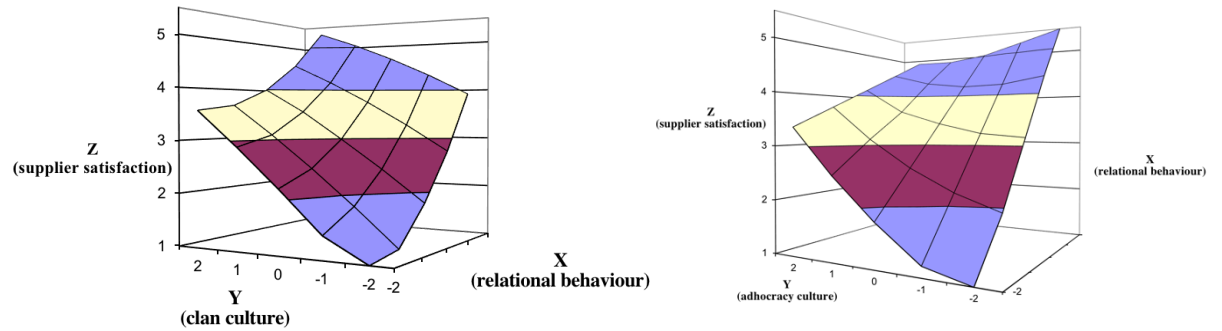


Figure 4: Surface analysis of clan & relational behavior (model I) and adhocracy & relational behavior (model II) on supplier satisfaction

To investigate the interaction effects of relational behaviour and corporate culture, the polynomial terms were included in the model of step 3 (tables 4 – 7). This analysis was executed with the Excel file provided by Shanock et al. (2010). The polynomial effects reveal significant results in every model (model I-IV). Model I, that tested clan culture and relational behaviour, indicates a significant slope along the line where $x=y$ ($\beta=1.18$; $p < .01^{**}$). When $x=y$, the line of perfect agreement between the two predictor variables clan and relational behaviour is regarded. The outcome is visualised in the left graph in figure 4. It shows a peak on the back side of the figure, where both, clan culture and relational behaviour, are high. This implies that the higher the agreement of both of the factors, the higher supplier satisfaction will be. The contrast situation happens when both factors are low: Here, supplier satisfaction will be significantly lower than if at least one of the two factors is present. These results seem to contradict with the findings of the paper, but go in

line with the hypothesised situation, that supplier satisfaction is important for clan cultures. The polynomial results show that the highest scores of satisfaction can be achieved when clan culture is present and relational behaviour is high. However, the graph also reveals that if clan culture is high, supplier satisfaction will still be on a high level, rather independent of relational behaviour. It can be inferred, that if a clan culture is present, relational behaviour becomes rather unimportant, which goes in line with the outcomes of the simplified curves in the previous analysis in the research paper. Model II, that tested adhocracy culture and relational behaviour, shows two significant slopes: along $x=y$ ($\beta=1.06$; $p<.01^{**}$) and along $x=-y$ ($\beta=.57$; $p<.05^{*}$). The slope along $x=-y$ indicates the extent to which the direction of discrepancy between two predictor variables matters. The right graph in figure 4 indicates a peak on the right side, where adhocracy is low and relational behaviour high. This implies that the higher the asymmetry in adhocracy culture and relational behaviour (when relational behaviour $>$ adhocracy), the higher the satisfaction of the supplier. In addition, the graph drops when both factors score low. This indicates, that satisfaction is the lowest, when neither adhocracy culture is present nor relational behaviour is rated high. The graph also shows that when adhocracy culture is present, the supplier seems to be satisfied in general, independent from relational behaviour. It suggests that adhocracies do not seem to be influenced by relational behaviour to a high extent when it comes to supplier satisfaction. This goes in line with the previous findings of the paper.

Table 15: Polynomial analysis of slopes and curvatures of hierarchy & market and relational behaviour

	Model III: $y=\text{hierarchy}$			Model IV: $y=\text{market}$		
	Coefficient	SE	t	Coefficient	SE	t
a1: slope along $x=y$.44	.24	1.85	.61	.19	3.25**
a2: curvature on $x=y$.08	.12	.73	.00	.09	-.03
a3: slope along $x=-y$.82	.15	5.33**	.73	.20	3.69**
a4: curvature on $x=-y$	-.01	.13	-.11	-.04	.18	-.23

Notes: * = $p<.05$; ** = $p<.01$; x = relational behaviour; SE = standard error; t = t -statistics

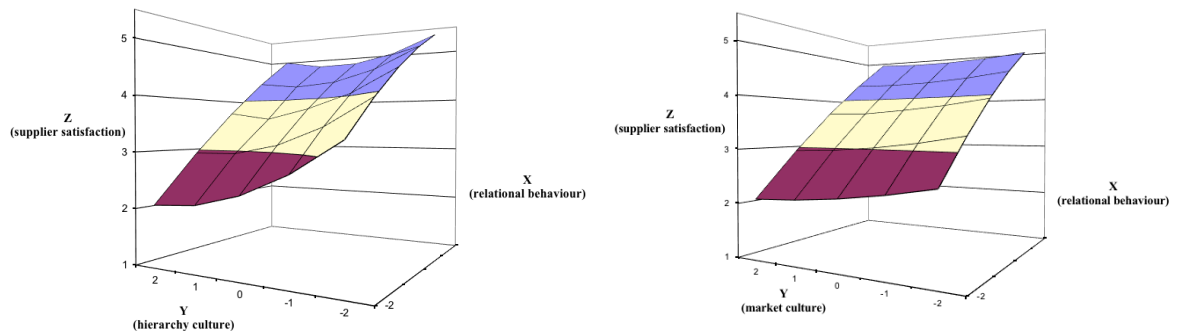


Figure 5: Surface analysis of hierarchy & relational behavior (model III) and market & relational behavior (model IV) on supplier satisfaction

The curvilinear effect of hierarchy culture and relational behaviour in model III has a significant slope along $x=-y$ ($\beta=.82$; $p<.01^{**}$). The significance of the slope implies that the asymmetry of relational behaviour and hierarchy culture (relational behaviour > hierarchy culture) leads to greater satisfaction. In addition, it indicates the importance of the extent of the direction of the discrepancy. This can be seen when looking at the left graph in figure 5. It peaks at the right side where hierarchy is low and relational behaviour is high and has its lowest point when hierarchy is high and relational behaviour is low. Regarding the sensitivity of culture on relational behaviour, the graph shows a steeper slope along the line where hierarchy culture is high than when it is low. This goes in line with the findings of the research paper. The polynomial graph of model IV (market culture and relational behaviour) shows a similar shape as model III, in a moderated way. Even though the graph appears like an even plank, it shows significant slopes along both, $x=y$ ($\beta=.61$; $p<.01^{**}$) and $x=-y$ ($\beta=.73$; $p<.01^{**}$). The most satisfaction can be achieved when market culture is low and relational behaviour is high. However, a high degree of market culture seems to be more influenced by relational behaviour. This is indicated by the steeper slope of the graph at high levels of market culture. Both outcomes go in line with the previous findings from the paper.

With a polynomial analysis of the regression, it is possible to provide additional information to the simplified curves in the previous analysis. In general, the outcomes go in line with the initial findings about the sensitivity of a high or low extent of corporate cultures. However, they provide a more detailed view, because the relationship between the two variables can be investigated at every combination and interaction. In addition, the significance of the slopes along $x=y$ and $x=-y$ gives information about the importance of asymmetry or symmetry and the direction of discrepancy. Therefore, the polynomials provide more in-depth information about the relationship between corporate culture, relational behaviour and supplier satisfaction.

B: Measurement items

Supplier Satisfaction: Vos et al. (2016)	
S_Satisfaction_100_1	Our firm is very satisfied with the overall relationship to Faulhaber/the best practice-company.
S_Satisfaction_100_2	On the whole, our firm is completely happy with Faulhaber/the best practice-company.
S_Satisfaction_100_3	Generally, our firm is very pleased to have Faulhaber/the best practice-company as our business partner.
S_Satisfaction_100_4	If we had to do it all over again, we would still choose Faulhaber/the best practice-company.
S_Satisfaction_100_5	Our firm does not regret the decision to do business with Faulhaber/the best practice-company.
S_Satisfaction_100_6	Our firm is satisfied with the value we obtain from the relationship with Faulhaber/the best practice-company.
Preferred Customer Status: Vos et al. (2016)	
	<i>Compared to other customers in our firm's customer base...</i>
PC_PC_110_1	...Faulhaber is our preferred customer.
PC_PC_110_2	...we care more for Faulhaber.
PC_PC_110_3	...Faulhaber receives preferential treatment.
PC_PC_110_4	...we go out on a limb for Faulhaber.
PC_PC_110_5	...our firm's employees prefer collaborating with Faulhaber to collaborating with other customers.
Relational Behaviour: Vos et al. (2016)	
S_RelBehavior_80_1	Problems that arise in the course of the relationship are treated by Faulhaber/the best practice-company as joint rather than individual responsibilities.
S_RelBehavior_80_2	Faulhaber/The best practice-company is committed to improvements that may benefit our relationship as a whole and not only themselves.
S_RelBehavior_80_3	We each benefit and earn in proportion to the efforts we put in.
S_RelBehavior_80_4	Our firm usually gets at least a fair share of the rewards and cost savings from our relationship with Faulhaber/the best practice-company.
S_RelBehavior_80_5	Faulhaber/The best practice-company would willingly make adjustments to help us out if special problems/needs arise.
S_RelBehavior_80_6	Faulhaber/The best practice-company is flexible when dealing with our firm.
S_RelBehavior_80_7	The collaboration with Faulhaber's/the best-practice company's operational/specialist department is very good.
Profitability: Vos et al. (2016)	
	<i>The relationship with Faulhaber/the best practice-company...</i>
S_Profitability_90_2	...provides us with large sales volumes.
S_Profitability_90_3	...helps us to achieve good profits.
S_Profitability_90_4	...allows us to gain high margins.
S_Profitability_90_5	...has a positive influence on the profitability of our firm.
S_Profitability_90_6	...enables us to raise our profitability together.

Growth Opportunity: Vos et al. (2016)	
	<i>The relationship with Faulhaber/the best practice-company...</i>
S_Growth_20_1	...provides us with a dominant market position in our sales area.
S_Growth_20_2	...is very important for us with respect to growth rates.
S_Growth_20_3	...enables us to attract other customers (e.g. through reputation).
S_Growth_20_4	...enables us to exploit new market opportunities.
Operative Excellence: Vos et al. (2016)	
	<i>Faulhaber.../The best practice-company...</i>
S_OperativeExc_40_1	...has always exact and in time forecasts about future demand.
S_OperativeExc_40_2	...provides us with forecasts our firm can rely and plan on.
S_OperativeExc_40_3	...has for our firm simple and transparent internal processes.
S_OperativeExc_40_4	...supports short decision-making processes.
S_OperativeExc_40_5	...stands open for process optimisations.
S_OperativeExc_40_6*	...has an optimal payment habit.
Clan Culture: Cameron & Quinn (2011)	
S_clan_301_1	Our management style is characterised by teamwork and participation.
S_clan_301_2	The glue that holds our company together is loyalty and mutual trust. Commitment to our organisation runs high.
S_clan_301_3	To us, success is defined based on people, teamwork and concern for people.
Adhocracy Culture: Cameron & Quinn (2011)	
S_adhoc_302_1	Our leaders are considered innovators, entrepreneurs and risk takers.
S_adhoc_302_2	Our management style is characterised by individual risk taking, innovation and flexibility.
S_adhoc_302_3	The glue that holds our company together is orientation towards innovation and development.
Market Culture: Cameron & Quinn (2011)	
S_market_303_1	Our management style is characterised by hard-driving competitiveness and achievement.
S_market_303_2	The glue that holds our company together is the emphasis on production and goal accomplishment.
S_market_303_3	Our organisation emphasises competitive actions and achievement. Targets and objectives are dominant.
Hierarchy Culture: Cameron & Quinn (2011)	
S_hierarchy_304_1	The glue that holds our company together is formal rules and policies. A smooth running organisation is important.
S_hierarchy_304_2	Permanence and stability are emphasised. Efficient operations are important.
S_hierarchy_304_3	Success is defined based on efficiency. Smooth scheduling and low cost production are critical.

*= deleted item

C: Non response bias

	Group	N	Mean	T-statistics	P-value	Std. Deviation	Std. Error Mean
Relational behaviour	<25%	29	3.9310	.434	.666	.98058	.18209
	>75%	29	3.8325			.72850	.13528
Growth opportunity	<25%	29	3.0000	-.407	.685	1.09789	.20387
	>75%	29	3.1121			.99460	.18469
Opex	<25%	29	3.6437	.272	.787	.81980	.15223
	>75%	29	3.5862			.79135	.14695
Profitability	<25%	29	2.5862	.808	.423	.86178	.16003
	>75%	29	2.3862			1.01690	.18883
SSatisfaction	<25%	29	4.2759	.357	.722	.68758	.12768
	>75%	29	4.2069			.77875	.14461
Clan	<25%	29	4.4598	-.435	.665	.76850	.14271
	>75%	29	4.5402			.63254	.11746
Adhoc	<25%	29	4.0345	-.549	.585	.58652	.10891
	>75%	29	4.1379			.82864	.15387
Market	<25%	29	3.9885	-.126	.900	.63921	.11870
	>75%	29	4.0115			.74792	.13889
Hierarchy	<25%	29	4.2529	.522	.603	.65861	.12230
	>75%	29	4.1494			.83849	.15570

Notes: N=Sample size

D: Factor rotation matrix

Rotated Component Matrix	1	2	3	4	5	6	7	8	9	10
S_Growth_20_1	0,452	0,123	0,015	0,175	0,02	0,091	0,3	-0,074	0,51	0,237
S_Growth_20_2	0,445	0,378	-0,003	0,243	0,128	0,004	0,283	-0,1	0,501	-0,02
S_Growth_20_3	0,159	0,233	0,15	0,133	-0,03	0,191	-0,175	0,17	0,751	-0,075
S_Growth_20_4	0,249	0,262	0,136	0,194	0,017	0,189	0,078	-0,12	0,803	0,021
S_OperativeExc_40_1	0,071	-0,079	0,272	0,11	0,091	0,733	-0,073	0,308	0,022	0,022
S_OperativeExc_40_2	0,364	0,11	0,164	-0,001	-0,068	0,654	0,005	0,168	0,343	0,136
S_OperativeExc_40_3	0,032	0,172	0,247	0,316	0,067	0,691	0,144	-0,234	0,152	-0,156
S_OperativeExc_40_4	0,082	0,171	0,198	0,339	0,07	0,658	0,052	0,001	-0,004	-0,106
S_OperativeExc_40_5	0,088	0,208	0,222	0,043	0,107	0,689	0,228	-0,098	0,142	0,162
S_RelBehavior_80_1	0,149	0,189	0,696	0,258	0,052	0,228	-0,034	0,061	0,022	-0,144
S_RelBehavior_80_2	0,121	0,094	0,807	0,12	0,086	0,293	-0,02	0,002	0,176	-0,172
S_RelBehavior_80_3	0,434	0,013	0,598	0,306	0,075	0,139	-0,023	0,184	0,057	0,235
S_RelBehavior_80_4	0,433	0,169	0,602	0,167	0,053	0,071	0,09	-0,009	0,05	-0,02
S_RelBehavior_80_5	0,157	0,043	0,666	0,11	0,04	0,342	0,253	-0,133	0,11	0,11
S_RelBehavior_80_6	0,099	0,148	0,704	0,344	0,009	0,099	0,229	-0,055	0,022	0,185
S_RelBehavior_80_7	0,121	0,339	0,552	0,457	0,123	0,219	0,085	0,042	0,021	0,047
S_Profitability_90_2	0,725	0,269	0,053	0,215	0,028	0,043	-0,001	0,11	0,238	-0,14
S_Profitability_90_3	0,856	0,197	0,112	0,202	0,039	0,157	0,008	0,11	0,087	-0,003
S_Profitability_90_4	0,847	0,152	0,194	0,097	-0,055	0,07	0,034	-0,019	0,022	0,008
S_Profitability_90_5	0,845	0,267	0,164	0,074	-0,053	0,042	-0,001	0,08	0,089	0,061
S_Profitability_90_6	0,814	0,191	0,252	0,099	-0,028	0,129	0,049	-0,064	0,148	-0,026
S_Satisfaction_100_1	0,25	0,177	0,28	0,608	-0,036	0,359	0,067	0,215	0,134	0,119
S_Satisfaction_100_2	0,175	0,21	0,331	0,646	0,078	0,116	0,25	0,079	0,163	-0,156
S_Satisfaction_100_3	0,247	0,202	0,276	0,742	0,034	0,151	0,162	0,156	0,141	-0,125
S_Satisfaction_100_4	0,109	0,226	0,347	0,629	0,116	0,146	0,071	0,216	-0,049	0,193
S_Satisfaction_100_5	0,249	0,208	0,255	0,687	-0,017	0,14	0,119	0,229	0,28	0,059
S_Satisfaction_100_6	0,322	0,331	0,23	0,546	-0,11	0,186	0,089	0,22	0,327	-0,013
PC_PC_110_1	0,254	0,824	0,106	0,255	0,042	0,16	-0,033	0,127	0,158	-0,09
PC_PC_110_2	0,255	0,876	0,075	0,133	0,136	0,107	0,053	-0,044	0,145	-0,009
PC_PC_110_3	0,205	0,9	0,091	0,11	0,01	0,073	0,016	-0,038	0,116	0,026
PC_PC_110_4	0,16	0,828	0,128	0,18	0,182	-0,011	0,026	0,009	0,116	0,08
PC_PC_110_5	0,22	0,801	0,212	0,105	-0,052	0,148	0,008	0,057	0,086	0,049
S_clan_301_1	-0,027	0,151	0,069	0,151	0,139	-0,024	0,46	0,625	0,017	-0,23

S_clan_301_2	0,069	0,055	0,029	0,152	0,18	0,066	0,368	0,805	0,005	-0,077
S_clan_301_3	0,093	-0,074	-0,096	0,294	0,084	0,026	0,172	0,798	0,011	0,145
S_adhoc_302_1	-0,003	0,044	0,114	0,127	0,349	0,11	0,734	0,176	0,082	-0,043
S_adhoc_302_2	0,034	-0,033	0,185	0,139	0,268	-0,003	0,734	0,246	0,029	0,068
S_adhoc_302_3	0,106	-0,007	0,028	0,117	0,173	0,159	0,676	0,32	-0,074	0,11
S_market_303_1	-0,211	0,194	0,094	-0,038	0,575	0,046	0,216	0,234	0,053	0,346
S_market_303_2	0,007	0,124	0,168	0,155	0,729	0,068	0,106	-0,043	-0,097	0,31
S_market_303_3	0,004	0,058	-0,018	0,013	0,634	0,042	0,098	-0,093	0,012	0,569
S_hierarchy_304_1	-0,122	0,044	-0,03	-0,104	0,81	0,048	0,134	0,163	0,185	0,006
S_hierarchy_304_2	0,037	-0,003	-0,053	0,105	0,842	0,025	0,154	0,104	-0,049	-0,156
S_hierarchy_304_3	0,118	0,022	0,153	-0,014	0,851	0,039	0,136	0,036	-0,058	-0,148

Notes: Extraction Method: Principal Component Analysis, Rotation Method: Varimax with Kaiser Normalisation

E: Validity - HTMT ratios

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1	SS	-	.70	.88	.68	.77	.76	.64	.59	.30	.36	.38	.22	.40	.23	.30	.17	.34	.45
2	PCS	.58	-	.62	.64	.73	.56	.34	.31	.31	.41	.25	.21	.28	.32	.24	.18	.23	.30
3	RB	.79	.48	-	.66	.70	.82	.43	.49	.34	.43	.31	.25	.27	.22	.25	.29	.34	.54
4	P	.58	.54	.56	-	.81	.56	.31	.32	.22	.23	.22	.31	.22	.21	.21	.22	.22	.22
5	GO	.66	.63	.52	.68	-	.68	.37	.42	.29	.33	.20	.27	.22	.24	.26	.31	.28	.24
6	OE	.65	.42	.71	.43	.57	-	.37	.50	.35	.40	.26	.24	.35	.26	.21	.21	.30	.32
7	C	.48	.18	.24	.18	.22	.25	-	.79	.62	.52	.39	.31	.31	.24	.54	.18	.50	.22
8	A	.44	.17	.36	.18	.29	.33	.68	-	.71	.69	.45	.22	.39	.27	.36	.19	.38	.21
9	H	.17	.17	.20	.14	.18	.20	.38	.54	-	.94	.21	.25	.26	.40	.22	.28	.32	.28
10	M	.22	.24	.28	.14	.20	.26	.30	.54	.81	-	.22	.28	.21	.33	.22	.30	.24	.35
11	GO-A-SS	.23	.13	.18	.10	.11	.15	.21	.24	.10	.12	-	.63	.66	.33	.56	.51	.53	.36
12	GO-H-SS	.11	.10	.13	.15	.13	.15	.19	.11	.13	.15	.46	-	.30	.56	.54	.54	.39	.40
13	OE-A-SS	.25	.13	.15	.10	.13	.17	.17	.22	.13	.12	.50	.17	-	.55	.36	.26	.44	.31
14	OE-H-SS	.12	.18	.12	.10	.14	.14	.13	.14	.20	.19	.19	.37	.27	-	.32	.26	.36	.45
15	P-C-SS	.16	.11	.13	.10	.13	.12	.37	.20	.12	.11	.38	.38	.20	.17	-	.49	.73	.32
16	P-M-SS	.10	.09	.15	.10	.17	.13	.10	.09	.14	.16	.34	.30	.10	.12	.29	-	.29	.68
17	RB-C-SS	.16	.11	.17	.10	.17	.19	.26	.21	.20	.14	.35	.23	.30	.19	.47	.13	-	.42
18	RB-M-SS	.27	.14	.34	.10	.14	.17	.10	.08	.15	.21	.16	.17	.14	.20	.12	.52	.18	-

Notes: SS=Supplier satisfaction; PCS=Preferred customer status; RB=relational behavior; P=Profitability; GO=Growth opportunity; O=Operative excellence; C=Clan culture; A=Adhocracy culture; H=Hierarchy culture; M=Market culture

The area below the diagonal covers HTMT ratios for the relationship between the variables on both axes; Above the diagonal are the HTMT upper confidence levels (95%) between variables of both axes

F: Replication of the model of Vos et al. (2016)

