BV TWENTSCHE KABELFABRIEK

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"The effect of adding Intelligence into the relation between customer attractiveness, supplier satisfaction, supplier resource allocation and firm performance by using the production related resource supplier database of a Dutch cable manufacturing company"

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MANAGEMENT SUMMARY

When speaking about competition in relation to a company, most people know that companies have to compete with other companies in selling finished products in the so-called product market. An example is the automotive industry, wherein two different car-manufacturing companies want to sell the same type of car to the same group of customers. It is for companies not only important to focus on the well-known product market, but it is also important to focus on the factor market, wherein buying firms have to compete with each other to receive the best resources from the same group of suppliers.

This study focuses on this factor market; by looking to the relationship between the Dutch cable manufacturing company BV Twentsche Kabelfabriek (further TKF) and its production related resource suppliers. Previous research showed that the concepts of customer attractiveness and supplier satisfaction are related to supplier resource allocation and therefore these concepts are the starting point of this study. To dive deeper into the relationship between TKF and their suppliers, a new concept called 'Intelligence' is added into the relation between the concepts of customer attractiveness and supplier satisfaction on one hand and supplier resource allocation on the other hand. The moment a buying firm has a broad supplier base, the company has to deal with a lot of different suppliers and all these suppliers have different perceptions, feelings, interests etc. and therefore every buyer-supplier relationship is different. For example one supplier could be interested in the high degree of innovation of a firm and another supplier could be interested in the "on time" payment behaviour of a firm. In this situation, wherein a buyer has to deal with a lot of different suppliers, all buyer-supplier relationships are different and therefore it is not possible to treat all suppliers in the same way. To effectively treat every supplier, the buying firm need to have knowledge about every supplier, because the better the buyer knows the supplier, the more it can improve the concepts of customer attractiveness and supplier satisfaction in the eyes of this supplier. The importance here is that the concepts of customer attractiveness and supplier satisfaction are positively related to the resource allocation of suppliers and therefore it is likely that if the buyer is able to improve both concepts it can become the preferred customer.

The data for this study is obtained by using two surveys. The supplier should fill in the first survey and therefore the "real" values occurred and later the buyer had to fill in another survey that indicates the "expected" values. Both values were compared to each other to see if the buyer's expectations met the reality of the suppliers. In this comparison the conclusion can be made that the moment the difference between the two values are small, the buyer has more knowledge about the supplier. In the situation that the difference is big, the buyer has no knowledge about the supplier. The purpose of buying firms should be that the differences are small, because than the buyer has knowledge about the supplier and is more able to improve the concepts of customer attractiveness and supplier satisfaction, which are related to the resource allocation of suppliers. The moment the buyer has no knowledge about the supplier, the buyer do not know the supplier and could not improve the concepts customer attractiveness and supplier satisfaction and could therefore not become the preferred customer, which is the purpose of buying firms in buyer-supplier relationships.

The results of this study show that there is a positive relation between the new concept Intelligence and the concepts of customer attractiveness and supplier satisfaction, which means that the more knowledge the buyer has about the supplier, the better the buyer knows this supplier and is therefore more able to improve the concepts of customer attractiveness and supplier satisfaction. These concepts could be improved by effective practices and in this study practices are the all kind of actions from buyers to improve customer attractiveness and supplier satisfaction. For example if the buyer has the knowledge that one specific supplier is interested in a high degree of innovation, the buyer could invite this specific supplier to visit their factory with the most innovative machines. If the buyer has no knowledge about a supplier and invites this supplier to visit the factory, it could be that this invitation (the practice in this situation) has no or even a reversed effect, because, for example, this supplier is not interested in innovation, but is interested in the "on-time" payment behavior of a firm. Further can be concluded that customer attractiveness and supplier satisfaction both are positively related to both physical and innovation resource allocation from suppliers, which means that the more attractive the buyer is in the eyes of the supplier or the more the buyer can satisfy the supplier, the more likely it is that this buyer receives preferential resource allocation from this supplier and can become the preferred customer. Finally the resource allocation from suppliers, both physical and innovation, are positively related to the competitive firm performance of BV Twentsche Kabelfabriek, which means that if the buyer receives better resources from the supplier in the factor market this advantage can lead to a competitive advantage in the product market by offering products to customers. Overall can be concluded that the more knowledge the buyer has about its suppliers the better the firm performance will be in the product market.

This study contains the variables competitiveness, trust, customer attractiveness, supplier satisfaction, physical resource allocation, innovation resource allocation and firm performance. The variables competitiveness and trust are together the pillars of the new concept Intelligence in this study. The variables competitiveness and trust are the independent (exogenous) variables in this study, because these variables are not dependent (endogenous) on other variables. All other variables are dependent, because these are based on the other variables.

TABLE OF CONTENTS

1 INTRODUCTION

This first part will give insight in the company BV Twentsche Kabelfabriek and their purchasing department, followed by an explanation of the current situation and the goal of this study and finally the outline of this study will be described.

1.1 The company: BV Twentsche Kabelfabriek

BV Twentsche Kabelfabriek (further TKF) was grounded in 1930 and can be seen as the starting company around, which the TKH group NV (further TKH) is built. Currently TKH consists of 65 worldwide-located companies with around 5300 employees and a turnover of 1.375 billion Euros. The cable manufacturing company TKF is established in Haaksbergen (the Netherlands) has a work floor of 165.000 square meters, around 450 employees and a turnover of around 200 Million Euros. The company is since it's founding developed from a manufacturer of cables to a technologically leading supplier of connectivity solutions. TKF can offer safe and reliable energy and data connections to worldwide customers, because of their broad portfolio of cables, systems and services. The core business of TKF is developing, manufacturing, installing and monitoring cables and cable solutions within the telecom, building and industrial market segments. The different types of cables the company offers are: low voltage cables, medium voltage cables, high voltage cables, data cables, signal cables and fibre optic cables. TKF distinguishes itself in their market segments through the use of specialized knowledge of applications and solutions with high reliability, quality and service. By continuously investing in relationships with customers, quality and supplementary services TKF has reached sustainable cable solutions and successful long-term relationships. The core values of the company are innovation, maximum reliability, excellent quality, high service level and Corporate Social Responsibility. As a part of the TKH Group NV, TFH has access to targeted solutions, concepts and technologies. Due to the corporation with other sister companies it is possible for TKF to offer complete and effective solutions, which will unburden the customers (TKF, 2016). Figure 1 "The organizational chart of TKF" shows that the company is divided in different departments and one important department is the purchasing department, for which this paper is written (TKH Group NV, 2015; TKF, 2016).

Figure 1: The organizational chart of TKF
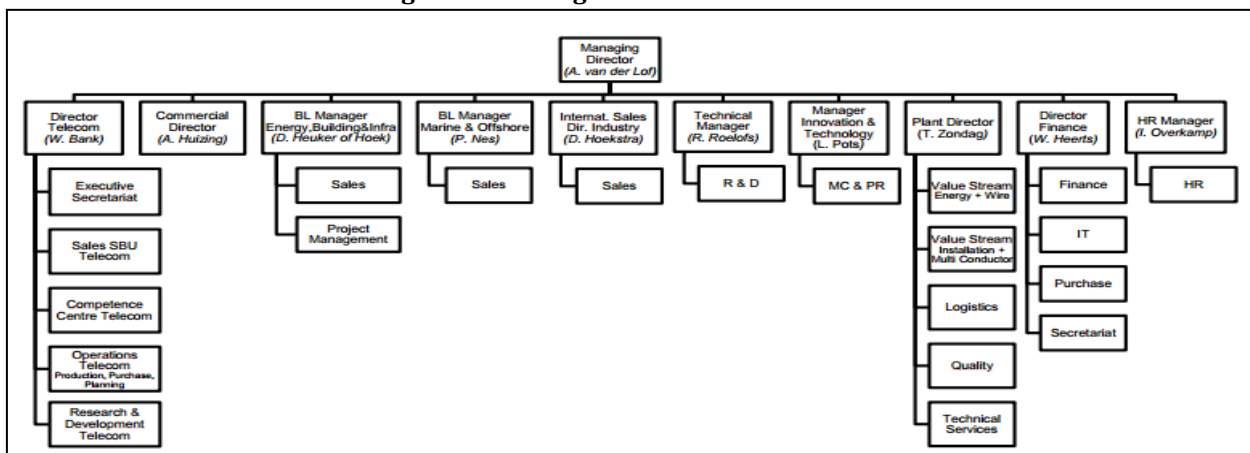
Source: TKF

1.2 The purchasing department of TKF

From the turnover of TKF around 60 percent, which is around 120 million Euros a year, is spent on purchasing and therefore the company TKF can be seen as a typical manufacturing company (normally 40-80 percent of turnover spent on purchasing). This high percentage confirms that the purchasing department can be seen as a fundamental part in the whole organization. To go in depth, the purchasing department of TKF consists of four employees. One employee is responsible for the purchasing of non-production resources (NPR) such as office furniture and the other three are responsible for the purchasing of production related resources (PR) such as raw materials, machinery and equipment. This research is focused on the PR resources, because these resources are fundamental in the production process of the cables, which TKF offers to their customers. TKF offers a broad portfolio cables to their customers and all these different types of cables must be produced. In general all cables are produced in the same way. First, the conductor will be produced, then the conductor will be insulated, subsequently the insulated conductors will be beat together and finally these bundles of insulated conductors will be wrapped. In the production process of these cables the production related resources are used and therefore it is important that the purchasing employees do know at what time, which resources for which type of cable is necessary to make sure that the needs of the customers can be met. The moment these PR resources are not available, qualitative enough etc. stagnation occurs in the production process, which results in high costs and longer delivery times. Finally it is even possible that the customers of TKF will look for other cable manufacturing companies to work with, because of the complaints with TKF. Overall can be concluded that all departments within TKF should work together to make sure that the production process is organized in such way that all aspects (amount, quality, delivery times etc.) agreed with their customers can be achieved.

1.3 The current situation

As described before, three purchasing employees are responsible for the purchase of the PR resources, which are further called resources. Hunt and Davis define resources as "the tangible (physical) and intangible (innovation) entities available to the organization that enable it to produce efficiently and/or effectively a market offering that has value for some market segments"(2008, p.13). The purchasing employees buy these resources from around a hundred different worldwide-located suppliers. These suppliers sell their resources to different customers like TKF and just as TKF all other buying firms want to receive the best resources that are needed in their production process at the right time, in the right quantity etc. from this shared supplier. In other words TKF has to compete with the other buying firms to receive the best resources from a shared supplier. This competition over resources is growing and that results in the fact that suppliers do not devote their resources to all customers in the same way or in other words, the suppliers become highly selective (Schiele et al., 2012). This competition is growing, because there is an increscent recognition that buying firms are able to gain competitive advantage by selling their finished products in the product market, the moment they are able to achieve a competitive advantage in the factor market (Markmann et al., 2009). Because of this growing recognition more buyers want to collaborate with the shared supplier to receive the best resources and that result in the fact that suppliers do not devote their resources to all customers in the same way, or in other words the suppliers become highly selective

(Schiele et al., 2012). There is just a small group of buying firms that are able to establish a close relationship with the supplier, which result in a preferential resource allocation (Krapfel et al., 1991; Ivens et al., 2009) and therefore these buyers can be seen as the preferred customer by the shared supplier (Schiele et al., 2011; Steinle & Schiele, 2008). The importance of creating and maintaining a close relationship with suppliers is that these suppliers are more willing to give the buying firm the best resources and this is essential for the buyer in gaining competitive advantages (Ellram et al., 2013; Hitt, 2011). An example for TKF concerning competitive advantage might be that in times of scarcity, TKF receives as first the required raw materials compared to their competitors. The advantage of receiving these materials as first, can lead to advantages in the product market, for example that the production does not have to stand still (cost-effective) and the possibility that TKF is able to continuously serve their customers. It would even be possible that customers of TKF's competitors will contact TKF to deliver cables to them, instead of waiting until their own supplier is able to deliver the necessary cables to them. Another example might be the possibility that one of the resource suppliers want to test innovative ideas/solutions in the factory of TKF, because of their attractiveness and close relationship. That moment, TKF can impose the condition that they want to have first access to these innovations compared to their competitors. The advantage of having first access to innovations, can lead to advantages in the product market by the ability to offer most innovative cable solutions to customers. It would even be possible, which is also mentioned in the previous example, that customers of TKF's competitors contact TKF to deliver these most innovative cable solutions to them, because their own supplier is not able to deliver these cable solutions.

1.4 The goal of this study
Till now many researchers explained the preferential resource allocation by suppliers and the concept of preferred customer status. Previous research showed that customer attractiveness and supplier satisfaction are practices that have influence in obtaining the preferred customer status by suppliers. This study can be seen as the next step in this research, by adding a new concept in the relationship between customer attractiveness and supplier satisfaction on the one hand and the preferential resource allocation (preferred customer status) on the other hand. The new concept in this study is called intelligence and can be seen as the knowledge of a buying firm about the supplier's perception of their relationship. The expectation is that when a buying firm is more intelligent, has more knowledge, about the supplier's perception of their mutual relationship the chosen practices related to customer attractiveness and supplier satisfaction are likely to be more effective. On the other side, when a buying firm is not intelligent, has less knowledge, the expectation is that the buyer used the practices in such way that they have no or even a reversed effect. Concluded from above, in this study the relationship between the Dutch cable manufacturing company TKF and their PR suppliers and the addition of the concept of intelligence will be tested, with the expectation that this new concept has a positive impact on the preferential resource allocation of suppliers.

1.5 The outline of this report

This paper is structured as follows. In the following sections, there is an explanation of the factor-market, a description of the concept of preferred customer status, the benefits of being a preferred customer are mentioned and the practices that obtain the preferred customer status are explained. Then the established hypotheses and the conceptual model concerning this study are mentioned, followed by the methodology part and the results of this study. Finally there is a discussion about the results of this research, a description of the limitations of this study and the directions for future research.

2 THEORETICAL BACKGROUND

Competition or rivalry between firms is a well-known subject these days. According to Porter (1985) rivalry can exist at any level, from factor markets to product markets, within a firm's value chain. An overview of the factor and product market is shown in figure 2 "An overview of the factor and product market". In product markets, where companies offer their products to the same group of customers, there is a high degree of rivalry (Yu & Canella, 2007). This product market rivalry is well known, because it is often used as the topic in different studies. An important point related to rivalry is that companies not only have to focus on the well known product market rivalry, but also focus on the factor market rivalry, which exists in an early phase within a firm's value chain as earlier mentioned by Pulles (2014).

Figure 2: An overview of the factor and product market
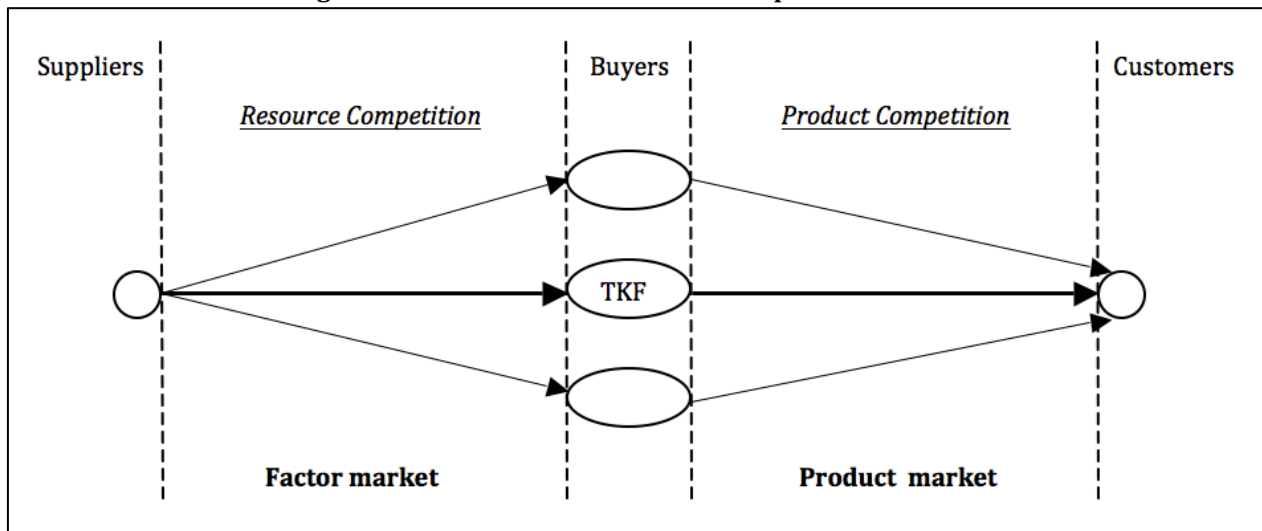
2.1 Factor market

As shown in figure 2 "An overview of the factor and product market", in the factor market a same group of suppliers offer their resources to different buying firms and therefore Markman et al. (2009) defines factor market rivalry as "the competition over resource positions" (p. 423). The reason for companies to also focus on the competition in the factor market is that when a company wants to compete and receive competitive advantage in the product market, a strong position in the factor market is necessary (Miller, 2003). The competing firms in the factor market are looking for the same resources in the same supply base (Dyer & Hatch, 2006). This competition is growing and that results in the fact that suppliers do not devote their resources to all customers in the same way or in other words, the suppliers become highly selective (Schiele et al., 2012). Consequently, these days it is not important anymore to strive for the lowest purchasing price possible, but buying firms have to pay attention to the role of strategic suppliers (Olsen & Ellram, 1997; Bensaou, 1999). As described above the resources are the factors, which create competition between buying firms, because resources -such as ideas, capabilities and materials- which suppliers can provide to buyers can lead to competitive advantages that otherwise may not be achieved (Koufterous et al., 2012). Hunt and Davis define resources as "the tangible

(physical) and intangible (innovation) entities available to the organization that enable it to produce efficiently and/or effectively a market offering that has value for some market segments"(2008, p.13).

To receive the best resources from suppliers many buying firms want to collaborate with their suppliers and the knowledge of this buyer-seller relationship was founded in the 1980s (Jackson, 1985). According to Pulles et al. (2016) it is not obvious that all kind of buyer-supplier collaborations will result in a competitive advantage, because there are still competitors who can have a better or closer relationship with the shared supplier and therefore receive better resources. The crucial point here is that a buying firm has to convince the shared supplier that a relationship between them creates (most) value for both parties (Walter et al., 2001) and the moment the supplier recognize this value, there is more willingness to engage in the collaboration.

2.2 Preferred Customer Status

Concluded from above, buying firms want to collaborate with suppliers to receive the best resources from them and therefore buyers have to convince the suppliers with the value that comes out of their relationship (Walter et al., 2001). There is just a small group of buying firms that are able to convince the shared supplier and establish a close relationship, which result in a preferential resource allocation (Krapfel et al., 1991; Ivens et al., 2009) and therefore these buyers can be seen as the preferred customer by the shared supplier (Schiele et al., 2011; Steinle & Schiele, 2008). To describe the concept of preferred customer, some definitions out of the current literature are used and stated below.

Nollet et al. defines a preferred customer as "a buying organization who receives better treatment than other customers from a supplier, in term of product quality and availability, support in the sourcing process, delivery and/or prices" (2012, p. 1186).

Schiele et al. stated that "a firm has preferred customer status to a supplier, when the supplier offers the buyer preferential resource allocation" (2012, p.1178).
Pulles et al. noticed that "the buying firm that is able to attain a preferential resource allocation position from suppliers that are shared with competitors is a preferred customer" (2016, p. 130).

The concept of preferred customer is also known as "interesting customer" (Christiansen & Maltz, 2002), "attractive customer" (Ellegaard & Ritter, 2006), "customer of choice" (Bew, 2007; Ramsay & Wagner, 2009) and "best costumer" (Moody, 1992).

Hüttinger et al. (2012) found out that there are different drivers of preferred customer status and these drivers can be found in table 1 "The drivers of preferred customer status".

Table 1: The drivers of preferred customer status

• Economic value	• Instruments of interaction
o High purchase volumes	o Early supplier involvement
o Profitability	o Involvement in product desing
o Business opportunities	o Supplier development
o Total cost as a basis for purchasing price	o Quality initiatives
o Low cost to serve the customer	o Schedule sharing
	o Response to cost reduction ideas
• Relational quality	o Communication and feedback
o Loyalty	o Action-oriented crisis management
o Trust	o Simple and coordinated business processes
o Commitment	o Predictable decision processes
o Satisfaction	
o Customer attentiveness	• Strategic compatibility
o Respect	o Strategic fit
o Fairness	o Shared future
o Strong bonds	o Geographical proximity
	o Cluster membership

Source: Hüttinger et al., 2012

A very important point concerning preferred customer status is the moment a buying firm reach this status, it cannot sit down and expect to hold this preferential status forever, because suppliers are continuously comparing the value of the relationship with the preferred customer to the expectations and relations with the competing buying firms in a so-called customer portfolio analysis (Nollet al al., 2012). In this analysis customers will be classified in groups of importance according to different variables, such as the possibility to increase volume, the image of the supplier and the knowledge they have (Turnbull, 1990). The moment the preferred customer cannot fulfill the requirements of the supplier or the supplier is convinced that a collaboration with another buyer creates more value, the close relationship between the preferred customer and the supplier will crumble and finally it is possible that the preferred customer status will fall down, which is in favor of the other buying firms. Another threat for a preferred customer is the fact that competitors want to break down the preferred customer status with the purpose to receive the same resources as the preferred customer (Pullet et al., 2016; Hunt & Davis, 2008; Ellram et al., 2013) and therefore the preferred customer has to pay attention to the actions of competitors. As described before, the competition over resource positions is growing, because the preferred customers status lead to different types of benefits and therefore buying firms want to reach the status of preferred customer by their suppliers.

2.3 The benefits of having a Preferred Customer Status
Many researchers described the benefits of a buyer with the status of preferred customer by their suppliers in their studies. As said before, buying firms want to establish a close relationship with their suppliers with the purpose to become the preferred customer, because this preferred customer status has several types of benefits. Table 2 "The benefits of being a preferred customer", shows all benefits related to the preferred customer status out of the study of Hüttinger et al. (2012).

Table 2: The benefits of being a preferred customer

Source of value for the buyer	Supplier's contribution
Product quality and innovation	• Customize products according to the customer's specifications • Deliver consistent quality levels • Suggest or/and initiate quality improvements and innovations for the products required by the customer • Increased technological capability applied to products sold to the customer

Support	• Provide the appropriate information on a timely basis:
	    o Sharing information about products and markets
	    o Sharing new solutions to solve problems at a lesser cost
	• Be available and responsive:
	    o Physical presence
	    o Speed of response
	    o Speed of adaptation to the customer's needs (ex. Customize processes)
	• Accept and perform steps that are not part of the customer's core business

Delivery reliability	• Give priority to the customer when overall demand exceeds supply • Adjust to changes in delivery schedules due to peaks in demand or changes in delivery requested • Take prticular care for the orders deliverd to that customer • Be ready to deliver missing components within reasonable time • Keep safety stocks or locate warehouse close to the customer's facilities
Price	• Offer one of the lowest prices on the market • Be more receptive to further price negotiations with the customer

Costs	• Contribute to the reduction of the costs incurred by the customer:
	    o Acquisition costs (transportation costs, inventory management, order handling, product checking)
	    o Operational costs (product costs, manufacturing process costs, tooling and warranty costs

Source: Hüttinger et al., 2012

The benefits mentioned in table 2 "The benefits of being a preferred customer" come from the study of Hüttinger et al. (2012). During this research some adjustments to the above described benefits and some new benefits are found, which are described below.

Cost saving potential
Different researchers noticed that preferred customers receive preferential treatment according to cost saving potential (Moody, 1992; Hald et al., 2009). These cost savings can be achieved by the fact that suppliers offer their preferred customers unique cost reduction opportunities, such as standardization and less costs for new solutions (Bew, 2007; Nollet et al., 2012). Another point in this aspect is that suppliers are more interested in offer further price reductions to the preferred customer, compared to the other buyers (Nollet et al, 2012).

Supplier innovation
According to Schiele (2012) a preferred customer receives as first innovations or aspects around innovations compared to the other buying firms. Another point in this aspect could be that suppliers are more willing to help the preferred customer, compared to the other buyers, by for example the distribution of the products. Last point here is that suppliers even can enter into an exclusive agreement with the preferred customer.

Dedicate best personnel
The moment the preferred customer of a supplier is trying to develop a new product (New Product Development, NPD), the supplier could dedicate its best personnel to the buyer to help in this development process (Schiele, 2012).

Improvement of logistic process
According to Christiansen and Maltz (2002) there is a possibility to improve the logistic process by reducing the inventory and by supply chain visibility. This benefit can occur by engaging in activities such as "vendor-managed inventory (VMI)".

Customized products
The supplier is more willing to customize products, which will be sold to the preferred customer and therefore the requests of the preferred customer will be met (Schiele, 2012).

Time-to-market reduction
According to Christiansen and Maltz (2002) and Ulaga (2003) a close buyer-supplier relationship can lead to the reduction of lead time or time-to-market. Ulaga (2003) identifies three stages in the process of product development where it is possible to reduce the lead times. These stages are: the design stage, the prototype development stage and the product testing/validation stage.

Prioritized delivery
When so-called bottlenecks occur in the production process of the supplier, this supplier often ask the preferred customer to deliver their products or services, which the suppliers need to pass or solve the bottleneck and therefore a prioritized delivery of products or services from the preferred customer to the supplier will occur (Schiele, 2012).

Competency development
Competency development means that a buying firm can learn from the competencies of their best supplier and can use this experience in the relation with other suppliers (Hald et al., 2009). According to Dyer and Singh (1998) the potential for relational rent will be greater when the dyad investments in inter-firm knowledge sharing routines and the specific knowledge absorptive capacity will also be greater.

The above-described benefits are the reasons for buying firms to do their best to become the preferred customer. As said before, it is very important for a buying firm with the status of preferred customer to pay attention to actions from competitors, because the competitors want to break down the preferred customer status with the purpose to receive the same resources as the preferred customer (Pulles et al., 2016; Hunt & Davis, 2008; Ellram et al., 2013). Till here the factor market, the concept of preferred customer and the benefits of being a preferred customer are described. The following part of this report describes the two concepts customer attractiveness and supplier satisfaction, which play a crucial role in becoming a preferred customer (Pulles, 2014).

2.4 The concepts that obtain Preferred Customer Status

In current literature two different concepts are described, which play a crucial role in becoming preferred customer (Pulles, 2014). These concepts are customer attractiveness and supplier satisfaction.

2.4.1 Customer Attractiveness

According to Pulles et al. (2016) customer attractiveness, or the attractiveness of a customer, by their suppliers plays a role in obtaining the status of preferred customer (Ellegaard et al., 2003; Hald et al., 2009; Aminoff & Tanskanen, 2013; Tóth et al., 2014; Pulles et al., 2016). As described above, buying firms want to establish a valuable relationship with their suppliers to improve their status by them. It is important to keep in mind that suppliers are more willing to engage in a relationship when they recognize the value of this relationship and therefore customer attractiveness can be seen as an important factor in creating and maintaining buyer-seller relationships (Pulles et al., 2016). The value of a relationship can be seen as the outcome of the attractiveness of the buyer. Pulles et al. stated that "a customer is perceived as attractive by a supplier if the supplier in question has a positive expectation towards the relationship with this customer. These expectations are based on the <u>expected</u> value of a given buyer leading to the supplier's interest to intensify or engage in a relationship with this buyer" (2016, p. 131). This is confirmed by Schiele, who stated that "customer attractiveness is based on the expectations that a supplier has towards the buyer at the moment of initiating or intensifying a business relationship (2012, p. 1180), or in other words, the interest of parties to intensify or engage in a relationship can be seen as attractiveness (Blau, 1964). Hüttinger et al. (2012) made a clear overview of all the drivers of customer attractiveness, which can be found in table 3 "The drivers of customer attractiveness".

Table 3: The drivers of customer attractiveness

• Market growth factors	• Economic factors
o Size	o Margins
o Market share	o Price / Volume
o Growth rate	o Cost elements
o Influence on the market	o Value creation
o Barrier to entry or exit	o Leveraging factors (economies of scale, experience etc.)
o Access to new customers / markets	o Capacity utilisation
	o Negotiating pressure
• Risk Factors	
o Risk sharing	• Social factors
o Standardisation of product	o Possibilities for extensive face-to-face contact
o Dependence (single-sourcing strategy, knowledge of alternatives)	o Supplier participation in internal teams
o Level of transaction-specific assets	o Tight personal relations
o Demand stability	o Familiarity
o Patent protection	o Similarity
o Level of integration	o Compatiblity
o Political risk	o Behaviour
o Market stability	o Communication
	o Information exchange
• Technological factors	o Output factors (trust, commitment, adaption,
o Customer's ability to cope with changes	long-term interactions/loyalty, reliability)
o Depth of skills	
o Types of technological skills	
o Commitment to innovation	
o Knowledge transfer	
o Supplier trainings and field visits	
o Early R&D involvement and joint improvement	

Source: Hüttinger et al., 2012

2.4.2 Supplier Satisfaction

Pulles et al. stated that "satisfaction refers to the <u>perceived</u> feeling of equity or fulfillment when the outcomes are actually achieved in the relationship" (2016, p. 131) and satisfaction can therefore be seen as a criterion which is achieved when the quality of outcomes from a relationship between buyer and supplier meets or exceeds the expectations of the supplier (Schiele et al., 2012). In other words, when the buyers meet the expectations of the supplier, the supplier is satisfied and this can lead to the allocation of the best resources, known as the concept preferred customer (Essig & Amann, 2009; Ghijsen et al., 2010; Nyaga et al., 2010; Ramsay et al., 2013; Pulles et al., 2016). Important point here is that the moment a buyer cannot meet the expectations of the supplier and dissatisfy the supplier, the supplier may look to the relation with the other buying firms and might allocate its best resources to one of the other relationships (Ellegaard & Koch, 2012). The concept of supplier satisfaction is often used as a topic for researchers, also by Hüttinger et al. (2012), who made a clear overview of all the drivers of supplier satisfaction, which can be found in table 4 "The drivers of supplier satisfaction".

Table 4: The drivers of supplier satisfaction

• Technical excellence (R&D)
   o Early supplier involvement
   o Technical compentence
   o Supplier development
   o Response to supplier requests and suggestions for improvement
   o Joint relationship effort
	• Mode of interaction
	   o Communication
	   o Structure (availability of direct contact in the buying firm, definition of roles and responsibilities, communication media used)
	   o Reaction (politeness of employees, openess and trust, commitment, reciprocity, feedback, conflict mangement, constructive controversy, reaction speed, quality of reaction)
	   o Information (level of information, exchange, quality of information, accuracy and timeliness of information exchange)

• Supply value (purchasing)
   o Profitability
   o Bargaining position
   o Substantial volumes
   o Long-term time horizons
   o Adherence to agreements
   o Cooperative relationships
   o Commitment to supplier satisfaction
   o Dedicated investments
   o Reward-mediated power sources
   o Non-mediated power sources (expert, referent and traditional legitimate)
	• Operational excellence (production)
	   o Forecasting / Planning
	   o Order process
	   o Time scheduling
	   o Billing / Delivery
	   o Payment habits
	   o Required effort needed for delivery
	   o Suport
	   o Business competence

Source: Hüttinger et al., 2012

However the two above explained concepts are well described in current literature, it is a real challenge for buying firms to improve these concepts in the eyes of the supplier. The reason is that a buying firm does business with a lot of different suppliers and all these suppliers have different interests, feelings, perceptions etc. Therefore the buyer should have knowledge about every supplier to know his or her interest, feelings, perceptions etc., because than a buyer is able to improve the concepts of customer attractiveness and supplier satisfaction in the eyes of the supplier, which can lead to preferential resource allocation and the preferred customer status. This knowledge for a buyer is the new concept in this study and is called intelligence. The following part of this report will dive deeper into the relation between this new concept intelligence and the preferred customer status.

# 3 THE LINK BETWEEN INTELLIGENCE AND PREFERRED CUSTOMER STATUS

Till here, all theory about the concepts of customer attractiveness, supplier satisfaction and preferred customer status are described. This part of the report will dive deeper into the relationship between the concepts of customer attractiveness and supplier satisfaction on one hand and preferred customer status on the other hand. As mentioned earlier, it is a real challenge for buying firms to be more attractive in the eyes of the supplier or to satisfy the supplier more, especially when the buying firm does business with a lot of different suppliers. The reason is that all the different suppliers have different interests, feelings, perceptions etc. and therefore the buyer should have knowledge about all these different aspects. If a buying firm wants to be able to improve customer attractiveness and supplier satisfaction, the buyer should have knowledge about every single supplier, because than the buyer is able to chose practices that are likely to be more effective. In this study practices can be seen as all kind of actions, which the buyer uses to improve the concepts of customer attractiveness and supplier satisfaction. For example if the buyer has the knowledge that one specific supplier is interested in innovation, the buyer could invite this specific supplier to visit their new factory with the most innovative machines. If the buyer has no knowledge about a supplier and invites this supplier, it could be that this invitation (the practice in this situation) has no or even a reversed effect, because this supplier is not interested in innovation, but is for example interested in the "on-time" payment behavior of a firm.

The above described situations of 'mis' and 'good' perception could be illustrated by using the share in supplier's turnover, as can be seen in figure 3 "Situations of buyer-supplier perceptions". The first situation shows that the buyer has no knowledge about the supplier, because the percentage share in turnover is different and therefore in this situation a misperception occurred. The misperception here is that the buyer expects that he is an important customer by having 80 percent share in the supplier's turnover, but in reality this buyer is just a small customer by having only 20 percent share in the supplier's turnover. In this situation the buyer could use practices that will have no or even a reversed effect. For example, the buyer expects that he is an important customer (80 percent) and therefore want to put pressure on the prices from the supplier, but in reality this buyer is just a small customer (20 percent) and therefore the supplier do not want to give this buyer discount and it is even possible that this buyer has to pay higher prices next time. The second situation shows the opposite from the first situation, because in this situation no misperceptions occurred. There is no misperception, because the buyer's expectation and the supplier's reality are the same as can be seen in the same percentage share in turnover (20 percent). In this situation the buyer has the knowledge and knows the supplier better, which can be seen by the same percentages in supplier's turnover, and therefore the buyer could chose practices that are likely to be more effective compared to the first situation. For example the buyer wants first to establish a strong relationship with the supplier based on mutual trust, because with a low percentage it is first important to maintain the relationship with the supplier.

If a buyer is able to improve customer attractiveness and supplier satisfaction it is more likely that this buyer receives preferential resource allocation and can be seen as the preferred customer, because according to Pulles et al. (2016) the concepts of customer

attractiveness and supplier satisfaction are positively related to the preferential resource allocation of suppliers (Pulles et al., 2016).

Figure 3: Situations of buyer-supplier perceptions
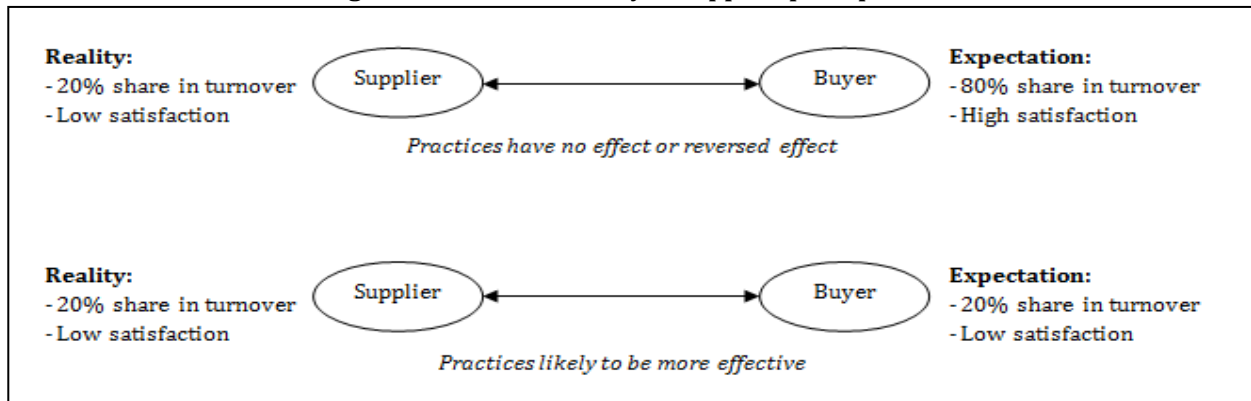
The knowledge that a buyer should have about every supplier in order to improve the concepts of customer attractiveness and supplier satisfaction, will be described by the hand of the concept (business) intelligence in this study. Wieder and Ossimitz stated that (business) intelligence can be seen as "an analytical, technology supported process, which gathers and transforms fragmented data of enterprises and markets into information or knowledge about objectives, opportunities and positions of an organization (2015, p. 1164) and according to Kahaner (1997) intelligence can be seen as the collection of information pieces that are filtered, distilled, and analyzed and turned into something that can be acted upon. Different researchers described the benefits of the concept intelligence, which are stated below (Wright et al., 2009; Nasri, 2010; Johns & Van Doren, 2010):

-   Improve the competitiveness of the firm
-   Predicting: the evolution of the business environment, supply chain activities, actions of competitors, requirement of competitors and even influences generated by political change, with a high level of trust
-   Providing better support for making strategic decisions
-   Revealing opportunities and threats by surveying weak signals and early warnings
-   Processing and combining data and information to produce knowledge and insights on competitors
-   Decreasing reaction time, and satisfying the information needs of problem-solving and decision-making
-   Inventing marketing strategies

In this study, the new concept of intelligence is divided into the two concepts competitive intelligence and supply chain intelligence, which will be described in the following part of this report. These concepts are both related to the environment of a buying firm concerning the preferred customer status by suppliers and therefore both concepts give a deeper explanation of the concept intelligence.

3.1 Competitive Intelligence

Many businesses formulate and implement their strategy based on the external and internal environment of the business (Porter 1980). For that reason companies need knowledge, data and information to develop strategies and to make and implement specific decisions (Köseoglu et al., 2016). The processes to gain this knowledge, data and information are called competitive intelligence, also known as competitor intelligence, business intelligence, environmental scanning and market intelligence (Adidam et al., 2012; Okumus, 2004; Leung et al., 2015). According to Adidam et al. (2012) the purpose of competitive intelligence is to make a better preparation to identify pre-empt threats and opportunities in the external environment and therefore can this concept be useful for any type of business if the requirement, which is that managers pay more attention to all activities concerning a firm, is met (Alonse-Almeida et al., 2015). In the current literature there are many definitions of competitive intelligence and Köseoglu et al. noticed that the two most common aspects of these definitions are:

(i) "Competitive intelligence, as a process, goes from the gathering of data through the dissemination of information or the creation of knowledge to make decisions in whatever strategic perspective is required to succeed in a fierce competitive environment"

(ii) "Competitive intelligence holistically involve all activities in an organization at the operational, tactical and strategic levels: hence, it covers all activities, including market research, competitor analysis, business intelligence, and environmental scanning" (2016, p. 162).

To go in depth, the term competitive intelligence can be divided into the two concepts: competitive and intelligence. Competitive refers to the process of competition between at least to parties and intelligence refers to the capability to forecast change in time to do something about it (Köseoglu, 2016). According to Breakspear (2013) the purpose of this capability is to identify changes, opportunities and threats. Firms have to identify critical data, because then they are able to structure the competitive intelligence data and often this data is divided into competitors, customers and market information (Köseoglu et al., 2016). According to Ahmed et al. (2014) the advantage of the concept competitor intelligence is that it can help a firm to gain competitive advantage. This competitive advantage can be achieved, because a firm can distinguish itself by the use of an effective decision-making process, which is based on the received knowledge, data and information about the market, competitors, estimates, forecasts etc., (Adidam et al., 2012).

Competitive intelligence has several direct and indirect benefits. The direct benefits are: manage and reduce risk, provide useful information, avoid unnecessary information, make data reliable, make data special and use information strategically. The indirect benefits are: provide a basis for steady development, help to solicit the strategies of the rival firms, give support to the acceleration of globalization, enhance the firm's survival potential, increase the business volume, evaluate customers more effectively and improve the understanding of external influences (Shih et al., 2010; Brody, 2008; Guimares, 2000).

3.2 Supply Chain Intelligence

High competition, rapid technological advancements and changing requirements of customers and employees are the characteristics of the modern business environment and therefore managers have to make informed decisions to survive in this environment (Temtime, 2008) or in other words, it is essential for companies to gain strategic information about its changing environment and turbulent dynamic markets, because otherwise it might become a threat to the survival of the firm (Kloviene & Gimzauskiene, 2015). Because there is a growing need for successful integration and collaboration strategies between supply chain partners, supply chain intelligence can be used by many firms to improve their organizational performance and competiveness in the markets. Jaharuddin et al. define supply chain intelligence as "a set of systematic intelligence processes concerning opportunities or developments that have the potential to affect the individual firms and their supply chain networks as a whole towards improving long-term performance" (2014, p. 180) and the difference with competitive intelligence is that supply market intelligence is not limited to operational aspects of supply chain management and therefore describes not only the information about individuals, but also the links and interactions between supply chain partners (i.e. communication, trust, commitment, etc.).

Concluded from above, supply chain intelligence can be seen as a way that provides a broad view on the dynamic relationship of supply chain integration for making better business decisions (Dishman & Calof, 2008; Gilad, 2004). The moment a buying firm is able to make better decisions compared to their competitors, it is possible to gain competitive advantage and therefore the concept of supply chain intelligence can be seen as a source of competitive advantage (Yap & Rashid, 2011). The possibility to gain a competitive advantage by the use of supply chain intelligence is when the supply chain intelligence personnel gain unique expertise and skills about the environment, supply chain network and competitors, the firm is able to distinguish themselves from their competitors by making more effective decisions (Jaharudding et al, 2016). The other way around, when a competitor is able to replicate or imitate the supply chain routines of the high developed supply chain intelligence personnel, the firm can lose their value (Kahaner, 1997; Teece et al., 2000). The moment a buying firm has unique supply chain intelligence routines it is very hard for competitors to replicate or imitate these routines in short time, because the process involve the long-term processes data gathering, data analysis and data dissemination. The buying firm, which has a unique supply chain intelligence routines can therefore make more effective decisions, which are based on the gained knowledge and information about its changing environment and turbulent dynamic markets, compared to their competitors.

One of the most famous examples of supply chain intelligence is "Inditex". Inditex is the Spanish parent of the Zara chain of "fast fashion" retail outlets. The company makes use of the concept supply chain intelligence and can therefore speed up the design, production and delivery process with the result that they can offer "on-trend" clothes at bargain prices to a broad audience. By using sales data from its retail outlets Zara ascertains the demand. Zara produces the products most often in Spain and nearby locales in Europe instead of manufacturing in Asia, like most of their competitors. The higher labour costs of producing in Europe are offset by the flexibility of having the production close to the centralized

warehouses and distribution centres. With the knowledge of their supply chain Inditex can use strategies in an effective way, as is done for Zara, and therefore Zara can distinguish themselves from its competitors. Nowadays competitors want to copy the concept of Zara, because of the effectiveness of this concept (The Economist Intelligence Unit, 2014).

4 HYPOTHESES

In the following section the hypotheses, which are build on Social Exchange Theory (SET) reasoning, the Resource Based View (RBV) and existing research will be introduced. The first two hypotheses (H1 - H2) link the concept of intelligence to customer attractiveness and supplier satisfaction. According to Galbreath (2005) and Cropanzona & Mitchell (2005) resources can be divided into the categories: physical (tangible) and innovation (intangible) resources, in situations of interpersonal exchange applied to inter-organizational studies (Foa & Foa, 1980) and therefore this study differentiates between these two categories by linking the concepts of customer attractiveness and supplier satisfaction to it (H3a – H4b). According to Ellram et al. (2013) these resources are vital to the competitive advantages of a firm in almost all industries and therefore the two categories of resources will be linked, based on RBV, to firm performance in the last two hypotheses (H5 – H6). Figure 4 "Conceptual model" shows the all concepts including all hypotheses of this study.

Figure 4: Conceptual Model
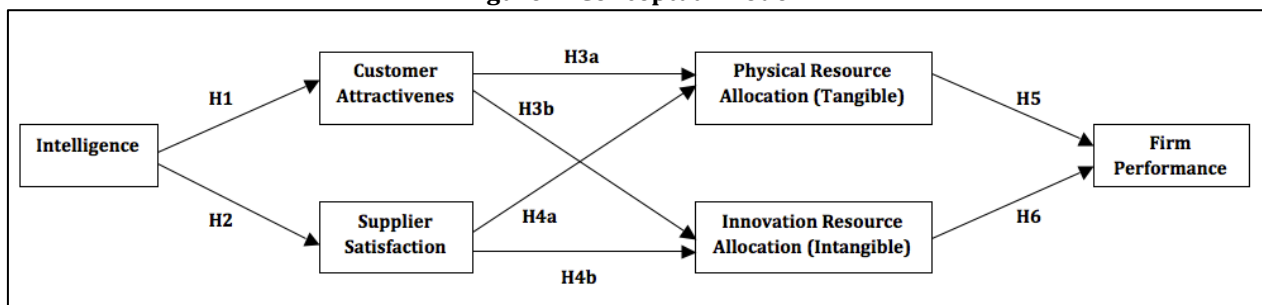
4.1 The Effect of Intelligence on Customer Attractiveness and Supplier Satisfaction

Schiele et al. (2012) found out that customer attractiveness and supplier satisfaction both have influence on the supplier resource allocation and also other researchers confirmed that these two concepts can lead to the allocation of best resources from a shared supplier, which can finally result in the preferred customer status for the buyer (Essig & Amann, 2009; Ghijsen et al., 2010; Nyaga et al., 2010; Ramsay et al., 2013; Pulles et al., 2016). As mentioned earlier, Pulles et al. stated that "a customer is perceived as attractive by a supplier if the supplier in question has a positive expectation towards the relationship with this customer and these expectations are based on the expected value of a given buyer leading to the supplier's interest to intensify or engage in a relationship with this buyer" (2016, p. 131). Satisfaction can be seen as a criterion that is achieved when the quality of outcomes from a relationship between buyer and supplier meets or exceeds the expectations of the supplier; this refers to the perceived feeling of equity or fulfillment (Schiele et al., 2012; Pulles et al., 2016). In other words, when the buyers meet the expectations of the supplier, the supplier is satisfied and this can lead to the allocation of the best resources, known as the concept preferred customer (Essig & Amann, 2009; Ghijsen et al., 2010; Nyaga et al., 2010; Ramsay et al., 2013; Pulles et al., 2016).

Concluded from above, when a buyer is more attractive and/or the supplier is more satisfied compared to the relationships with other buying firms, the supplier is more willing to intensify this relationship, which will lead to the allocation of better resources to this specific buying firm and finally this buyer can become a preferred customer (Schiele et al., 2012; Pulles et al., 2016). As mentioned earlier in this report, it is a real challenge for buying firms to become more attractive or to satisfy the supplier more. To become more attractive or to satisfy the supplier more, the buying firm should have knowledge about every single supplier, because than the buyer can use practices that are likely to be more effective. As described earlier, an example of this situation is that the buyer invites suppliers to visit their new innovative fabric. The moment the buyer has the knowledge that this supplier is interesting in innovation; it is likely that this invitation (practice) is more effective than a situation wherein the buyer does not have this knowledge. The moment the buyer does not have this knowledge it could be possible that this invitation has no or even a reversed effect, because this supplier is interested in Corporate Social Responsibility instead of innovation. In this study the above-described knowledge, which is necessary for a buyer to become more attractive or to satisfy the supplier more by using effective practices, is called intelligence. This new concept of intelligence will be added into the relationship between the concepts customer attractiveness and supplier satisfaction on one hand and supplier resource allocation on the other hand, which is already known in literature. Based on the above, the expectation is that the concept of intelligence will have a positive effect on customer attractiveness and supplier satisfaction, because the buyer has more knowledge about the supplier and can therefore choose practices that are more likely to improve both concepts.

H1. Intelligence is positively related to Customer Attractiveness
H2. Intelligence is positively related to Supplier Satisfaction

4.2 The Effect of Customer Attractiveness on Physical and Innovation Resources

In a shared supply base it is possible that certain customers receive better resources than others and the reason therefore can be explained by the concept of customer attractiveness (Schiele et al., 2012). Pulles et al. stated that "interactions between partners are regulated on norms of reciprocity that are based on the expectations of giving and receiving relational benefits" (2016, p.131), as stipulated in the social exchange theory (SET). The moment a player is attracted to its partner, this player wants to provide itself attractive to this partner and this process result in the establishment of social associations or the expansion of already formed associations between players (Blau, 1964). A situation in which suppliers make voluntary efforts to become attractive in the eyes of the buyer can be created customer attraction (Aminoff & Tanskanen, 2013) and therefore can be concluded that the concept of customer attractiveness can help buying firms to obtain better resources from a shared supplier. The perception of suppliers about the attractiveness of a buying firm might result in the extend to the allocation of suppliers to buying firms (Pulles et al., 2016). As described earlier, buying firms want to establish a valuable relationship with their suppliers to improve their status by them. Important point here is to keep in mind that suppliers are more willing to engage in a relationship when they recognize the value of this relationship and therefore customer attractiveness can be seen as an important factor in creating and

maintaining buyer-seller relationships (Pulles et al., 2016). The value of the relationship can be seen as the outcome of the attractiveness of the buyer and Pulles noticed that " a customer is perceived as attractive by a supplier if the supplier in question has a positive expectation towards the relationship with this customer and these expectations are based on the expected value of a given buyer leading to the supplier's interest to intensify or engage in a relationship with this buyer" (2016, p. 131). In other words the supplier resource allocation can be influenced by the extend to which suppliers perceive the attractiveness of buying firms (Pulles et al, 2016). The expectation is that the more attractive the buyer is in the eyes of the supplier, the more this supplier is willing to allocate their best resources to this specific buying firm and therefore would be expected that the concept of customer attractiveness is positively related to supplier resource allocation. As mentioned earlier, resources can be divided into the categories physical and innovation and therefore the concept of customer attractiveness will be linked to both categories of resources.

H3a. Customer Attractiveness is positively related to Physical Resources Allocation
H3b. Customer Attractiveness is positively related to Innovation Resources Allocation

4.3 The Effect of Supplier Satisfaction on Physical and Innovation Resources
In the same way as the concept of customer attractiveness might explain why certain customers receives better resources from a shared supplier, the concept of supplier satisfaction is also related to this allocation of supplier resources to customers (Schiele et al., 2012). Relational benefits and the expectations that these benefits are reciprocated result, suggests by SET, in the adjustment of behavior and actions between partners towards each other (Nyaga et al., 2013). According to Schiele et al. (2012) if these relational benefits meet or exceed the supplier's expectations, supplier satisfaction will be developed. Pulles et al. stated that: "if a supplier perceives a relationship to be satisfactory, the notion of reciprocity implies that the supplier may feel socially indebted to make relational investments (2016, p. 131). When suppliers experience more relational benefits in a relation with a buying firm, it would be expected that this supplier wants to show more commitment to this relationship instead of other less satisfying relationships and therefore higher levels of supplier commitment are often reached by buying firm that invest in relationships through for example supplier development of knowledge sharing (Dyer & Hatch, 2006). The other way around is also possible if a supplier might allocate their resources to other relationships, because of the dissatisfying relationship with a specific buyer (Ellegaard & Koch, 2012). According to Pulles et al. (2016) suppliers should prefer a collaboration with a buying firm who is continuously reaching higher levels of supplier satisfaction compared to the other buying firms (competitors), which result in the allocation of better resources to this specific buyer and therefore in the allocation of better resources from suppliers, the concept of supplier satisfaction can help buying firms to achieve this. Pulles et al. (2016) found out that supplier satisfaction has positive impact on resource allocation and therefore the expectation is that supplier satisfaction is positively related to resource allocation. In the same way the resource allocation is divided for customer attractiveness, the concept of supplier satisfaction will also be linked to the allocation of the two categories of resources.

H4a. Supplier Satisfaction is positively related to Physical Resources Allocation
H4b. Supplier Satisfaction is positively related to Innovation Resources Allocation

4.4 The Effect of Physical and Innovation Resources on Firm Performance
According to Barney (1991) resources and capabilities can lead to sustainable competitive advantage if they have four attributes, which are valuable, rare, imperfectly imitable and not substitutable (VRIN framework). Barney et al. stated that: "these resources and capabilities can be seen as bundles of tangible (physical) and intangible (innovation) assets, including a firm's management skills, its organizational processes and routines, and the information and knowledge it controls (2001, p. 625). To give insight in these attributes; valuable means that a resource must enable a firm to employ a value-creating strategy, a resource must be rare to be valuable, in-imitable means that competitors should not be able to duplicate this valuable resource and non-substitutable can be seen as the fact that competitors should not be able to counter the value-creating strategy of the firm with a substitute resource. These attributes of firm resources can be seen as empirical indicators, which indicates the heterogeneous and immobile of the firm's resources, that show the usefulness of these resources in generating sustained competitive advantage and therefore firm resource heterogeneity and firm resource immobility can be seen as the two vital assumptions for resources in the resource based-view (Barney, 1991). Barney stated that: "a firm has sustained competitive advantage when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors and when these other firms are unable to duplicate the benefits of this strategy (1991, p. 102).

The moment a buying firm receives better resources from a shared supplier, because of their valuable relationship, this specific buyer achieves an advantage in the factor market compared to their competitors. According to Markmann et al. (2009) an advantage in the factor market can lead to a competitive advantage in the product market. This means that a buyer, which receives preferential resource allocation from a shared supplier in the factor market, can distinguish themselves to competitors by offering products in the product market and therefore the expectation is that both physical resource allocation and innovation resource allocation are positively related to the performance of the firm.

H5. Physical Resource Allocation is positively related to Firm Performance
H6. Innovation Resource Allocation is positively related to Firm Performance

5 METHODOLOGY

This part explains and describes the actions, which were taken by the researcher to set up this study and to receive all data. First the sample and data collection will be explained, followed by the measures, the data validity and common method bias, and finally the data analysis.

5.1 Sample and Data Collection

The data for this study were collected in collaboration with the Dutch cable manufacturing company TKF. It is interesting to do research to the position of TKF in the factor market, because the factor market, which can be seen as the competition over resources, is growing (Markmann et al., 2009). The cable manufacturing company supported the data collection by giving entry to their production related resource supplier database, which gave the research team the possibility to send all the relevant suppliers the survey.

In July 2016, an email was sent to a sample of 101 suppliers out of the database to ask if the suppliers were willing to participate in an online survey. To prevent bias, the suppliers filled in the surveys anonymous, which means that the answers were only visible for the researcher and for TKF only aggregate results were visible. Another point of interest was that there was no good or bad answer, because the situation for every supplier is different. Last point for the participating suppliers is that they could receive a management summary after the study was finished. Before the invitation email was sent to all suppliers, first the purchasing manager of TKF sent an introduction email, to introduce all suppliers about the research. Three days later the suppliers received the invitation email with the link to the survey. To receive as much answers as possible, the suppliers who did not filled in the survey after two weeks received a reminder and also after three weeks a reminder was sent. Another action to receive as much answers as possible was the fact that the standard English version of the survey was translated to a German and Dutch version, because the experience was that some people did not understand all the questions in English. All questions in the survey were mandatory, because otherwise participants want to choose the "no answer" option and therefore there were no missing values in the data. The online survey was accessed 161 times and 79 out of the 101 suppliers filled in the survey and therefore consists the final sample size of this study out of 79 suppliers, which represents a response rate of 78,2 percent. For these 79 respondents (suppliers) TKF (the buyer) had to fill in another survey. The suppliers filled in the reality values and the buyer TKF filled in the expected values. These two values were compared to each other and the differences were used as indicator for the latent variables competitiveness and trust, which are together the pillars of the new concept intelligence. For example if the supplier answered 60 and buyer 80 or visa versa, the difference is 20. All absolute differences (79) were reversed, because than the concept of intelligence was positively linked to the concepts of customer attractiveness and supplier satisfaction, which is in accordance with the hypotheses and makes it clearer to understand. The variable firm performance is based on questions regarding the competitive performance of TKF. The reason therefore is that an advantage in the factor market can be used as a competitive advantage in the product market, which means that these can be linked to each other. In the final sample most of the respondents are located in the Netherlands, closely followed by Germany. It is possible that

firms are located in more than one country, because they could have more factories. To verify the appropriateness of the respondents, some questions in the survey were about their tenure and expertise (Schilke, 2014). The average years of working for their current firm was 13,4 and the average years of personally involvement with TKF was 8,3 years. In table 5 "Overview of the sample" all aspects related to the respondents are shown.

<div align="center">Table 5: Overview of the sample</div>

Country	Frequency	Continent	Frequency
Netherlands	25.7%	Europe	84.4%
Germany	24.8%	Asia	11.9%
Italy	6.4%	America	2.8%
Spain	5.5%	Africa	0.9%
France	5.5%		
Norway	5.5%		
China	4.6%		
Korea	3.7%	**Annual Turnover (in €)**	**Frequency**
Turkey	2.8%	0 - 10 Million	43.0%
Belgium	2.8%	11 - 50 Million	25.3%
Czech Republic	2.8%	51 - 200 Million	15,2%
Bulgaria	1.8%	201 - 750 Million	7.6%
Finland	0.9%	> 750 Million	8.9%
USA	0.9%		
Austria	0.9%		
Tunisia	0.9%		
Unighted Kingdom	0.9%	**Work experience (in years)**	**Average**
Sweden	0.9%	Years supplier is supplying TKF	14.4
Brazil	0.9%	Years of working for current firm	13.4
Mexico	0.9%	Years personally involved with TKF	8.3
India	0.9%		

As described before 79 out of the 101 participants filled in the survey and that means that 22 participants did not fill in the survey, which represents a non-response rate of 21,8 percent. The 79 responses of this study were received within a period of four weeks and therefore, similar to Hong and Hartley (2011), the early (first 20) and the late (last 20) responders will be compared. The results of these t-tests, which can be found in appendix 1 (page 43), did not yield significant differences between the early and late responders in all but one survey item, the supplier satisfaction2 ($p < 0.05$). In addition, there is a comparison of the final sample size to the 22 respondents that did not finish the survey based on the share in total spend of TKF. The results of this t-test did not yield significant differences between respondents and non-respondents based on the share in total spend of TKF ($p > 0.05$), which can be seen in appendix 2 on (page 44). To gain insight in the reasons why some respondents did not filled in the survey, the researcher called these respondents. The reasons were mainly vacation, lack of time and the low level of business between both parties. Based on the insignificant differences between early responders and late responders, the final sample and nonfinishers, and the e-mails that were received from the non-responders, nonresponse bias is unlikely to pose a serious threat in this study.

5.2 Measures

The constructs in this study are intelligence, customer attractiveness, supplier satisfaction, physical resource allocation, innovation resource allocation and firm performance. All constructs except intelligence, which consists of competitiveness and trust, were measured on a five-point Likert scale ranging from 1 ("Strongly disagree" or "Very unlikely") to 5 ("Strongly agree" and "Very likely"). The construct Intelligence was measured by the absolute differences between the buyer's expectations and the supplier's reality.

The intelligence measures, trust and competitiveness, were measured based on Pulles (2014). The survey items of intelligence measured the trust suppliers have in TKF and the competitiveness of TKF concerning the resource allocation of their production related suppliers. The survey items to measure trust were for the supplier: "When TKF makes a promise, we trust that TKF has the managerial and technical capabilities to do what they say they will do" and for the buyer: "When TKF makes a promise, this supplier trusts that TKF has the managerial and technical capabilities to do what they say they will do". The survey items for competitiveness for supplier and buyer were: "Our firm has ..... customers that account for a similar share in our turnover as TKF" and "This supplier has ..... customers that account for a similar share in their turnover as TKF". The customer attractiveness measures were measured based on Pulles et al. (2016). The survey items of customer attractiveness measured the attractiveness of buying firms in the eyes of the supplier, which finally has influence in the resource allocation of suppliers. Examples of items that measured customer attractiveness are: "We consider TKF to be an attractive partner for future collaborations" and "Our firm has positive expectations about the value of the relationship with TKF". The supplier satisfaction measures were measured based on Cannon (1998) and Pulles et al., (2016). These survey items measured the extend to which buying firms meets or exceeds the supplier's expectation and have influence in the resource allocation of suppliers. Examples of the survey items are: "Our firm is satisfied with the value we obtain from the relationship with TKF" and "Our firm is very satisfied with the relationship with TKF". The preferential resource allocation measures, both physical and innovation, were measured based on Pulles et al. (2014). The survey items concerning physical resource allocation measured the extent to which the supplier allocates better physical resources to the specific buyer than to the buyer's competitors. Examples of the survey items concerning physical resource allocation are: "Compared to our other customers, we grant TKF better utilization of our production facilities" and "Compared to our other customers, we allocate our scarce materials to TKF in case of capacity bottlenecks". The innovation resource allocation is the same, but than for the allocation of better innovation resources to the specific buyer than to the buyer's competitors. Examples of the survey items that measured innovation resource allocation are: "Compared to our other customers, we share are best ideas with TKF first" and "Compared to our other customers, we dedicate more innovation resources to the relationship with TKF". The firm performance measures were measured the competitive performance of TKF by doing business with their production related resource suppliers. Examples of survey items that measured competitive firm performance are "The relationship with this supplier, has provided TKF with strategic advantages over competitors" and "The relationship with this supplier, enabled TKF to defend against competitive threats". Both surveys can be found in appendices 3 (page 45-47) and 4 (page 48-50).

5.3 Data Validity and Common Method Bias

To assess the measurement instruments of this study in terms of reliability and validity, several tests were conducted and the results can be found in Table 6 "Measurement Items". First the average variance extracted is examined, to test the convergent validity of the reflective constructs. As shown in table 6, all AVE values of the constructs exceed the cut-off of 0,50 (Fornell & Larcker, 1981). The Cronbach Alpha values of all constructs exceed the recommended threshold of 0,7 (Nunnally, 1978), which indicates satisfactory levels for internal consistency reliability. The values of the composite reliability all exceed the recommended threshold of 0,7 (Fornell & Larcker, 1981).

Table 6: Measurement Items

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Competitiveness	1,00	1.00	1.00
Customer Attractiveness	0.91	0.95	0.85
Firm Performance	0.86	0.76	0.53
Innovation Resource Allocation	0.83	0.90	0.74
Physical Resource Allocation	0.82	0.89	0.73
Supplier satisfaction	0.80	0.87	0.62
Trust	1.00	1.00	1.00

In addition, the square roots of the AVE values were greater than their correlation coefficients with the other constructs (table 7 " Mean, Standard Deviations, and Correlations of the Constructs). Therefore the requirement for discriminant validity is fulfilled. The means for the variables competitiveness and trust are negative, because these are reversed to be in accordance with the hypotheses.

Table 7: Means, Standard Deviations, and Correlations of the Constructs

	M	SD	1	2	3	4	5	6	7
1 Competitiveness	-63.84	177.89	**1.00**						
2 Customer Attractiveness	4.38	0.66	0.12	**0.92**					
3 Firm Performance	2.56	1.03	0.02	0.04	**0.73**				
4 Innovation Resource Allocation	3.51	0.82	0.05	0.47	0.22	**0.86**			
5 Physical Resource Allocation	3.54	0.77	0.14	0.37	0.13	0.56	**0.85**		
6 Supplier satisfaction	3.77	0.85	0.21	0.58	0.07	0.44	0.45	**0.79**	
7 Trust	-15.95	14.62	0.11	0.12	-0.12	-0.07	0.10	0.21	**1.00**

M, mean; SD, standard deviation.
Bold elements on the diagonal represent the square roots of the AVE. Off-diagonal elements are correlations between the constructs.


5.4 Data analysis

By using Structural Equation Modeling (SEM) the proposed hypotheses of this study were tested. The SEM software can be divided into the two types AMOS and PLS. The AMOS software applies covariance based SEM and the SmartPLS software applies variance based SEM (PLS). The difference between the two types of SEM is the parametric (CB-SEM) or non-parametric (VB-SEM) statistical approach (Awang, Afthanorhan & Asri, 2015). For this study the SmartPLS software is chosen to analyze the structural model, because this software is based on regression, the variables do not have to be normally distributed (Reinartz, Haenlein & Henseler, 2009) and according to Hair, Ringle and Sarsted (2011) the non-parametric process of SmartPLS can execute the analysis by using a small sample size.

6 RESULTS

Figure 5 "Results of Structural Equation Model" shows the results of this study using the tool for non-parametric tests SmartPLS. The complete model with all indicators of the latent variables can be found in appendix 5 (page 51). Here you can see that the new concept intelligence has the two pillars competitiveness and trust.

Figure 5: Results of Structural Equation Model
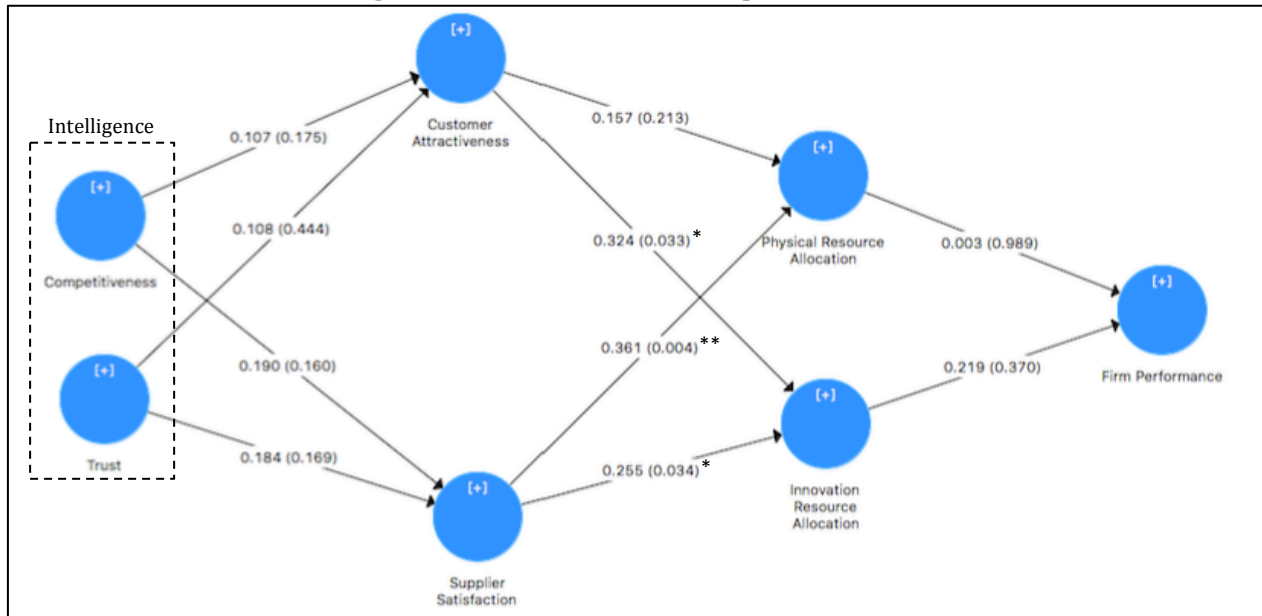
* $p < 0.05$, ** $p < 0.01$, all others are nonsignificant.

As figure 6 shows, intelligence is positively related to customer attractiveness (Competitiveness: $\beta = 0.107$, nonsignificant; Trust: $\beta = 0.108$, nonsignificant) and supplier satisfaction (Competitiveness: $\beta = 0.190$, nonsignificant; Trust: $\beta = 0.184$, nonsignificant). Although these effects are hypothesized, H1 and H2 are not supported, because these effects are insignificant.

The effect of Customer Attractiveness is positively related to Physical Resource Allocation ($\beta = 0.157$, nonsignificant) and Innovation Resource Allocation ($\beta = 0.324$, $p < 0.05$). The effect of Customer Attractiveness to Physical Resource Allocation is insignificant and the effect of Customer Attractiveness to Innovation Resource Allocation was found to be significant, which means that H3a is not supported and H3b is supported.

The effect of Supplier Satisfaction is positively related to Physical Resource Allocation ($\beta = 0.361$, $p < 0.01$) and Innovation Resource Allocation ($\beta = 0.255$, $p < 0.05$). Both effects are significant and therefore H4a and H4b are both supported.

The effects of Physical Resource Allocation to Firm Performance ($\beta = 0.003$, nonsignificant) and Innovation Resource Allocation to Firm Performance ($\beta = 0.219$, nonsignificant) were both found to be not significant and therefore H5 and H6 are not supported.

The structural model accounted for 2,6 percent of the variance in customer attractiveness, 7,8 per cent in supplier satisfaction, 22,1 percent in physical resource allocation, 26,5 percent in innovation resource allocation and 4,9 percent in firm performance (i.e., R^2 = 0.026, 0.078, 0.221, 0.265 and 0.049) The R squares of the latent variables can be found in table 8 "R Square (R^2) of the latent variables".

Table 8: R Square (R^2) of the latent variables

	R Square
Customer Attractiveness	0.026
Firm Performance	0.049
Innovation Resource Allocation	0.265
Physical Resource Allocation	0.221
Supplier Satisfaction	0.078

7 CONCLUSIONS AND DISCUSSION

A challenge for buying firms is, in times of growing resource competition, to receive better resource allocation from a shared supplier compared to their competitors. To belong to the small group of preferred customers, who receive the best resources from the supplier, buyers should focus on the concepts of customer attractiveness and supplier satisfaction (Markann et al., 2009; Schiele et al., 2012; Pulles, 2014), because these concepts can affect the supplier's preferential resource allocation. This study aimed to identify if buying firms, which have more knowledge about their suppliers and perceptions, can improve customer attractiveness and supplier satisfaction by using practices that are likely to be more effective and this knowledge is called Intelligence.

7.1 Conclusions

In this study was found that the concept of intelligence is positively related to customer attractiveness and supplier satisfaction, which means that the more knowledge the buyer has about the supplier, the better the buyer can improve the concepts of customer attractiveness and supplier satisfaction. Customer attractiveness was found to positively relate to physical and innovation resource allocation. Customer attractiveness does not significantly affect physical resource allocation, but does significantly affect innovation resource allocation of suppliers. The concept of supplier satisfaction was found to positively relate to both physical and innovation resource allocation of suppliers and both effects were found to have a significant effect. The physical resource allocation of suppliers was found to positively relate to firm performance, although this relation is very weak and therefore negligible, and there was no significant effect of physical resource allocation on firm performance. The innovation resource allocation of suppliers is positively related to firm performance, but there is no significant effect between them.

7.2 Impact on literature

The findings of this study contribute to the literature that includes the concepts of customer attractiveness and supplier satisfaction related to the resource allocation of suppliers. In this study a new concept Intelligence is added into the relationship between customer attractiveness and supplier satisfaction on one hand and preferential resource allocation on the other hand. The aim of adding this new variable was to see if the more knowledge the buyer has about their different suppliers, the better the buyer could improve customer attractiveness and supplier satisfaction, concepts which have positive effect on the preferential resource allocation of suppliers. This study showed that if the buyer has more knowledge about the supplier, the buyer is able to improve customer attractiveness and supplier satisfaction. The additional value for literature is that what is expected based on theory can be confirmed in practice, with the results of this study. This study also confirms the results of the study of Pulles (2014) wherein a positive effect between customer attractiveness and supplier satisfaction on one hand and the resource allocation of suppliers on the other hand, which means that if the buyer can make itself attractive in the eyes of the supplier and/or is able to satisfy the supplier more than the supplier is more willing to devote the best resources to this buyer.

Finally this study showed that preferential resource allocation is positively related to the competitive performance of the buyer, which means that if the buyer receives better resources in the factor market, this advantage can lead to competitive advantages in the product market.

7.3 Managerial impact

Managerially, this study provides insights into the relationship between the concepts of customer attractiveness and supplier satisfaction on the one side and supplier resource allocation on the other side. For the cable manufacturing company that helped in collecting this study's data, the key managerial take-away was the realization that the more positive the practices related to the concepts of customer attractiveness and supplier satisfaction in the eyes of the supplier were, the more positive the supplier resource allocation was and that this finally lead to a positive firm performance. The purchasing manager of TKF realized the importance of having knowledge of every single buyer-supplier relationship and therefore the purchasing employees should pay more attention to the relationship with their suppliers to reduce the differences between their perceptions. The moment that the differences between both perceptions are small, the purchasing employees know the supplier better and are than able to improve the attractiveness of TKF and the satisfaction of the supplier. According to Pulles et al. (2016) there is a positive relation between customer attractiveness and supplier satisfaction on one hand and preferential resource allocation on the other hand, which means that if TKF is able to improve their attractiveness or to satisfy the supplier more it is likely that TKF receives preferential resource allocation of this supplier. Finally, if TKF receive better resources (preferential resource allocation), in the factor market, this advantage can lead to a competitive advantage in the product market that means that TKF has a stronger competitive performance compared by their competitors.

7.4 Reflection of this study

Afterwards the conclusion can be made that this research was very interesting and relevant. By looking to the results the conclusion can be made that all the hypotheses are supported, which means that the effects in practice agree with the theory. Another interesting point of this study is that the new variable intelligence is positive related to customer attractiveness and supplier satisfaction. This means that it is important for buyers to have knowledge about every single supplier to improve these concepts. By improving these concepts, it is likely that the buyer receives preferential resource allocation, because of the positive effect and finally preferential resource allocation (or better resources) has a positive effect on the competitive performance of a firm in the product market. The challenge in this research was to receive enough data to draw conclusions. The production related resource suppliers database of TKF consists of only 101 suppliers, which is a relative low sample. Afterwards can be concluded that the response rate, which was nearly 80 percent, was relative high and that result in drawing useful conclusions.

Beside, the above-mentioned aspects, also the supervision from the University and TKF were useful to complete this research and to make it an interesting and relevant topic.

8 LIMITATIONS AND FUTURE RESEARCH

The findings of this study should be viewed in light of some limitations that suggest the need for caution in drawing conclusions, but also provide opportunities for future research.

8.1 Limitations

The findings of this study were based on data from a cable manufacturing company and its production related resource suppliers, because this typical manufacturing company faces the situation of a growing resource competition by their suppliers. Although focusing on a single industry has its merits, this approach may not be sufficient to fully assess the scope of the results presented here. Another limitation is that the results of this study are based on subjective data that rely on the respondent's perceptions and survey studies could be subject to misinterpretation. It is also possible that respondents did not fully understand the survey questions, because the questions were not formulated in their own language. Another point is that this study only uses the two indicators competitiveness and trust for the construct intelligence. Finally, the sample size of this study is just 79 production related resource suppliers. The reason for this small sample size is that only the production related resource suppliers of TKF could be used, because this study depends on the relationship between TKF and their production related resource suppliers. Thus, the results of this study should be interpreted with a certain degree of caution considering the limitation of sample size. The above-mentioned limitations should be taken into considering in future research and therefore in the next part of this chapter some solutions will be given.

8.2 Future Research

The first aspect for future research is a wider range of industries. As described in the limitations this study in corporation with a cable manufacturing company may not be sufficient to fully assess the scope of the results presented here and therefore a wider range of industries to evaluate this study's findings with other relationships. Another point for future research should also address the shortcomings of misinterpretation by the use of objective data and the survey should be translated to all languages of respondents to prevent misperception of the questions. Further, future research could use more or even other indicators for the intelligence construct, to expand the scope of the findings. Finally, future research should use a bigger sample size to make sure that the sample size is comparable and enable to support or reject our hypotheses.

There are several aspects of this study, which should be taking into considering by the research team concerning future research to improve the quality. As mentioned before, it was a challenge to receive enough data, because of the small sample (101 potential respondents). To receive as much response as possible, the standard English survey was translated into different languages, the potential suppliers received before the invitation of the survey an announcement from the purchasing manager of TKF and finally the research team contacted all potential respondents to ask if they received the invitation and were able to fill in the survey. Beside, the suppliers that filled in the survey had the opportunity to receive a management summary afterwards, to get insight in the research. These actions resulted in a response rate of nearly 80 percent, which is relative high and therefore these

actions could help to increase the response rate in future research. Another aspect, which should be taken into considering for future research, is the moment of sending the invitation to participate in the research. In this study the invitation was send in the month July and therefore several suppliers did not filled in the survey, because they were on a vacation. It is better to send an invitation before or after the summer holiday months, because this will increase the response rate. Last aspect for future research is that the research team should take a company, which is very interested in the topic. The moment the supervisor of the company is interested in the topic, this will lead to close cooperation and finally the research will be more interesting and relevant.

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10 APPENDICES

Appendix 1: T-test Early and Late Responders

Group Statistics

	Response	N	Mean	Std. Deviation	Std. Error Mean
SUPCompetitiveness1	Early Responders	20	23.500	27.3294	6.1110
	Late Responders	20	12.550	24.1279	5.3952
SUPTrust1	Early Responders	20	88.750	10.4975	2.3473
	Late Responders	20	88.950	16.5576	3.7024
SUPAttractiveness1	Early Responders	20	4.500	.6070	.1357
	Late Responders	20	4.600	.5026	.1124
SUPAttractiveness2	Early Responders	20	4.450	.5104	.1141
	Late Responders	20	4.400	.5982	.1338
SUPAttractiveness3	Early Responders	20	4.500	.6070	.1357
	Late Responders	20	4.450	.5104	.1141
SUPSatisfaction1	Early Responders	20	3.800	.6959	.1556
	Late Responders	20	3.700	.8645	.1933
SUPSatisfaction2REV	Early Responders	20	3.850	.6708	.1500
	Late Responders	20	4.050	1.1459	.2562
SUPSatisfaction3	Early Responders	20	3.600	.6806	.1522
	Late Responders	20	3.700	.6569	.1469
SUPSatisfaction4	Early Responders	20	3.850	.8751	.1957
	Late Responders	20	3.850	1.0400	.2325
SUPAllocationPhysical1	Early Responders	20	3.550	.7592	.1698
	Late Responders	20	3.400	.5982	.1338
SUPAllocationPhysical2	Early Responders	20	3.700	.7327	.1638
	Late Responders	20	3.750	.8507	.1902
SUPAllocationPhysical3	Early Responders	20	3.500	.6882	.1539
	Late Responders	20	3.500	.6882	.1539
SUPAllocationInnovation1	Early Responders	20	4.050	.8870	.1983
	Late Responders	20	3.650	.9881	.2209
SUPAllocationInnovation2	Early Responders	20	3.600	.6806	.1522
	Late Responders	20	3.300	.9234	.2065
SUPAllocationInnovation3	Early Responders	20	3.600	.7539	.1686
	Late Responders	20	3.400	.8208	.1835
BUYCompetitivePerformance1	Early Responders	20	2.750	1.0699	.2392
	Late Responders	20	2.850	.9333	.2087
BUYCompetitivePerformance2	Early Responders	20	2.650	1.0894	.2436
	Late Responders	20	2.750	.9105	.2036
BUYCompetitivePerformance3	Early Responders	20	2.600	1.1425	.2555
	Late Responders	20	2.600	.8826	.1974

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2–tailed)	Mean Difference	Std. Error Difference	Lower	Upper
SUPCompetitiveness1	Equal variances assumed	.429	.517	1.343	38	.187	10.9500	8.1518	−5.5525	27.4525
	Equal variances not assumed			1.343	37.425	.187	10.9500	8.1518	−5.5609	27.4609
SUPTrust1	Equal variances assumed	2.512	.121	−.046	38	.964	−.2000	4.3838	−9.0745	8.6745
	Equal variances not assumed			−.046	32.150	.964	−.2000	4.3838	−9.1279	8.7279
SUPAttractiveness1	Equal variances assumed	1.630	.209	−.567	38	.574	−.1000	.1762	−.4567	.2567
	Equal variances not assumed			−.567	36.723	.574	−.1000	.1762	−.4571	.2571
SUPAttractiveness2	Equal variances assumed	.756	.390	.284	38	.778	.0500	.1758	−.3060	.4060
	Equal variances not assumed			.284	37.081	.778	.0500	.1758	−.3063	.4063
SUPAttractiveness3	Equal variances assumed	1.150	.290	.282	38	.780	.0500	.1773	−.3090	.4090
	Equal variances not assumed			.282	36.914	.780	.0500	.1773	−.3093	.4093
SUPSatisfaction1	Equal variances assumed	.844	.364	.403	38	.689	.1000	.2482	−.4024	.6024
	Equal variances not assumed			.403	36.341	.689	.1000	.2482	−.4031	.6031
SUPSatisfaction2REV	Equal variances assumed	8.537	.006	−.674	38	.505	−.2000	.2969	−.8011	.4011
	Equal variances not assumed			−.674	30.654	.506	−.2000	.2969	−.8058	.4058
SUPSatisfaction3	Equal variances assumed	.281	.599	−.473	38	.639	−.1000	.2115	−.5282	.3282
	Equal variances not assumed			−.473	37.953	.639	−.1000	.2115	−.5282	.3282
SUPSatisfaction4	Equal variances assumed	.408	.527	.000	38	1.000	.0000	.3039	−.6153	.6153
	Equal variances not assumed			.000	36.921	1.000	.0000	.3039	−.6158	.6158
SUPAllocationPhysical1	Equal variances assumed	1.650	.207	.694	38	.492	.1500	.2161	−.2875	.5875
	Equal variances not assumed			.694	36.030	.492	.1500	.2161	−.2883	.5883
SUPAllocationPhysical2	Equal variances assumed	.640	.429	−.199	38	.843	−.0500	.2511	−.5582	.4582
	Equal variances not assumed			−.199	37.183	.843	−.0500	.2511	−.5586	.4586
SUPAllocationPhysical3	Equal variances assumed	.000	1.000	.000	38	1.000	.0000	.2176	−.4406	.4406
	Equal variances not assumed			.000	38.000	1.000	.0000	.2176	−.4406	.4406
SUPAllocationInnovation1	Equal variances assumed	.444	.509	1.347	38	.186	.4000	.2969	−.2011	1.0011
	Equal variances not assumed			1.347	37.566	.186	.4000	.2969	−.2013	1.0013
SUPAllocationInnovation2	Equal variances assumed	.525	.473	1.170	38	.249	.3000	.2565	−.2192	.8192
	Equal variances not assumed			1.170	34.939	.250	.3000	.2565	−.2207	.8207
SUPAllocationInnovation3	Equal variances assumed	.000	1.000	.803	38	.427	.2000	.2492	−.3045	.7045
	Equal variances not assumed			.803	37.729	.427	.2000	.2492	−.3046	.7046
BUYCompetitivePerformance1	Equal variances assumed	.061	.806	−.315	38	.754	−.1000	.3175	−.7427	.5427
	Equal variances not assumed			−.315	37.312	.755	−.1000	.3175	−.7431	.5431
BUYCompetitivePerformance2	Equal variances assumed	.433	.515	−.315	38	.754	−.1000	.3175	−.7427	.5427
	Equal variances not assumed			−.315	36.839	.755	−.1000	.3175	−.7434	.5434
BUYCompetitivePerformance3	Equal variances assumed	1.385	.247	.000	38	1.000	.0000	.3228	−.6535	.6535
	Equal variances not assumed			.000	35.722	1.000	.0000	.3228	−.6549	.6549

Notes:
- All items except SUPSatisfaction2REV (p < 0.05) have equal variances (Levene's Test)
- There are no significant differences between early and late responders (p > 0.05)

Appendix 2: T-test Respondents and Non-respondents

Group Statistics

	Respondents	N	Mean	Std. Deviation	Std. Error Mean
Share in total spend TKF	Respondents	79	.5658	2.66550	.29989
	Non-respondents	22	.1023	.24518	.05227

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Share in total spend TKF	Equal variances assumed	2.309	.132	.812	99	.419	.46355	.57100	-.66944	1.59654
	Equal variances not assumed			1.523	82.529	.132	.46355	.30441	-.14197	1.06907

Notes:
- The item share in total spend TKF has equal variances (p > 0.05)
- There are no significant differences in share in total spend of TKF between responders and non-responders (p > 0.05)

Appendix 3: Survey Suppliers

Preferential resource allocation (physical)
Compared to our other customers…

(on a 5 point scale from "1, Strongly disagree" to "5, Strongly agree")

Scale — Strongly disagree / Strongly agree

	1	2	3	4	5
…we grant TKF better utilization of our production facilities	☐	☐	☐	☐	☐
…we would choose to give TKF priority in the allocation of our products in the case of extreme events (e.g., natural disasters)	☐	☐	☐	☐	☐
…we allocate our scarce materials to TKF in case of capacity bottlenecks	☐	☐	☐	☐	☐

Preferential resource allocation (innovation)
Compared to our other customers…

(on a 5 point scale from "1, Strongly disagree" to "5, Strongly agree")

Scale — Strongly disagree / Strongly agree

	1	2	3	4	5
…we are more willing to share key technological information with TKF	☐	☐	☐	☐	☐
…we share our best ideas with TKF first	☐	☐	☐	☐	☐
…we dedicate more innovation resources to the relationship with TKF	☐	☐	☐	☐	☐

Poaching
How likely is your firm to use information obtained from TKF…

(on a 5 point scale from "1, Very unlikely" to "5, Very likely")

Scale — Very unlikely / Very likely

	1	2	3	4	5
…to gain favor with other clients	☐	☐	☐	☐	☐
…to help win new business with other customers	☐	☐	☐	☐	☐
…to develop new services that you can offer in the marketplace	☐	☐	☐	☐	☐

Customer attractiveness
These questions are about the expectations you have of the relationship with TKF

(on a 5 point scale from "1, Strongly disagree" to "5, Strongly agree")

Scale — Strongly disagree / Strongly agree

	1	2	3	4	5
We consider TKF to be an attractive partner for future collaborations	☐	☐	☐	☐	☐
We expect positive outcomes from the relationship with TKF	☐	☐	☐	☐	☐
Our firm has positive expectations about the value of the relationship with TKF	☐	☐	☐	☐	☐

Supplier satisfaction
These questions are about the current relationship with TKF

(on a 5 point scale from "1, Strongly disagree" to "5, Strongly agree")

Scale — Strongly disagree / Strongly agree

	1	2	3	4	5
We are very pleased with what TKF does for us	☐	☐	☐	☐	☐
Our firm is not completely happy with what TKF does for us	☐	☐	☐	☐	☐
Our firm is satisfied with the value we obtain from the relationship with TKF	☐	☐	☐	☐	☐
Our firm is very satisfied with the relationship with TKF	☐	☐	☐	☐	☐

Supplier dependence

(on a 5 point scale from "1, Strongly disagree" to "5, Strongly agree")

Scale — Strongly disagree / Strongly agree

	1	2	3	4	5
Our firm could easily replace TKF's volume with sales to some other buyers	☐	☐	☐	☐	☐
It would be relatively easy for us to find another buyer for the components we sell to TKF	☐	☐	☐	☐	☐
If the relationship with TKF was terminated, it would not hurt our firm's operations	☐	☐	☐	☐	☐

Perceived division of power
In your interaction with TKF…

("1, Always my firm; 2, Mostly my firm; 3, Both firms equally; 4, Mostly TKF; 5, Always TKF")

Scale

	1	2	3	4	5
…which party can get the other to do what they want	☐	☐	☐	☐	☐
…which firm has a great deal of power	☐	☐	☐	☐	☐
…which firm's wishes carry more weight	☐	☐	☐	☐	☐

Expert power	Scale				
(on a 5 point scale from "1 . Strongly disagree" to "5, Strongly agree")	Strongly disagree				Strongly agree
TKF is an expert in the industry	1	2	3	4	5
We respect the judgment of TKF's representatives	☐	☐	☐	☐	☐
TKF has business expertise that makes them likely to suggest the proper thing to do	☐	☐	☐	☐	☐

Supplier involvement in product development	Scale				
To what extend is your firm involved in the product development of TKF?					
("1. Not al all; 2. To a small degree; 3. To some degree; 4. To a moderate degree; 5. To a very high degree")					
Idea generation	1	2	3	4	5
Product concept development	☐	☐	☐	☐	☐
Prototype building	☐	☐	☐	☐	☐
Prototype testing	☐	☐	☐	☐	☐

Supplier development / Knowledge transfer	Scale				
Employees of TKF…					
("1. Never; 2. Seldom; 3. Sometimes; 4. Very often; 5. Always")					
…visit us to help improve our performance	1	2	3	4	5
…invite us to visit their site to increase awareness of how our product is used	☐	☐	☐	☐	☐
…conduct training and education programs for our personnel	☐	☐	☐	☐	☐

Share in turnover
Please indicate TKF's share (from 0-100%) in the supplier's turnover

TKF accounts for …………………….% in my firm's turnover

Number of competitors (competitiveness)
Please indicate how many customers your firm has that are similar to TKF

Our firm has ………… customers that account for a similar share in our turnover as TKF

Our firm has ………… customers that buy similar products as TKF

Trust
Please indicate how much trust (from 0-100%) in TKF you have

When TKF makes a promise, we trust that TKF has the managerial and technical capabilities to do what they say they will do   …………………… %

We believe that TKF would make sacrifices for us to support our firm   …………………… %

Product specification
Please indicate how much influence (from 0-100%) TKF has in your product design specification

TKF has ………… % influence in our product design specifications

Complaints and claims

(on a 5 point scale from "1 , Strongly disagree" to "5, Strongly agree" or "Not applicable")

Scale
Strongly disagree — Strongly agree

The complaints our firm receives from TKF are realistic	1	2	3	4	5	NA
The claims our firm receives from TKF are realistic	1	2	3	4	5	NA

Consequential Damage / Loss

("1 , Never; 2, 1-5 times; 3, 6-10 times; 4, 11-15 times; 5, >15 times")

How many times in a year your firm paid the consequential loss of one of their customers

☐ Never
☐ 1 – 5 times
☐ 6 – 10 times
☐ 11 – 15 times
☐ > 15 times

8D Template (problem solving method)

(on a 5 point scale from "1, Very ineffective" to "5, Very effective" or "Not applicable")

Scale
Very ineffective — Very effective

How would you rate the effectiveness of the 8D Template, which TKF uses by the handling of non-conformities

1 2 3 4 5 NA

Value items
How would you rate the…

(on a 10 point scale from "1 , Very bad" to "10, Excellent".)

Scale
Very bad — Excellent

…image of TKF	1	2	3	4	5	6	7	8	9	10
…payment behavior of TKF	1	2	3	4	5	6	7	8	9	10
…personal relationships of your firm's employees with the purchasers of TKF	1	2	3	4	5	6	7	8	9	10

Points of improvement
Please share if you have any aspects which can be improved by TKF

Final questions
Please share the following general information about your company. If your company belongs to a group of companies please share the information and data of your site.

The annual turnover of your firm in k euro's (1000 euro's = 1k - 1000000 euro's = 1000k)	K euro's
The number of employees of your firm	
The country where your firm is located	
The number of years that your firm has been supplying TKF	
The number of years that you are personally involved with TKF	
The number of years that you have been working for your firm	

Management summary

Do you want to receive a management summary after the research is finished?

☐ Yes
☐ No

Appendix 4: Survey Buyer

Supplier Operational Performance Please indicate the performance of this supplier on the dimensions below (on a 5 point scale from "1 , Poor performance; 3, Average performance; 5, Good performance")	Scale				
	Poor		Average		Good
Cycle time (total time from beginning to the end of the process)	1	2	3	4	5
% on-time shipments	☐	☐	☐	☐	☐
Quality of deliveries	☐	☐	☐	☐	☐
Responsiveness to requests for change	☐	☐	☐	☐	☐

Supplier Competitive Performance The relationship with this supplier… (on a 5 point scale from "1 , Strongly disagree" to "5, Strongly agree")	Scale				
	Strongly disagree				Strongly agree
…has provided TKF with strategic advantages over competitors	1	2	3	4	5
…enabled TKF to reduce cost to a highly competitive level	☐	☐	☐	☐	☐
…enabled TKF to defend against competitive threats	☐	☐	☐	☐	☐

Supplier Innovation Performance TKF's relationship with this supplier… (on a 5 point scale from "1, Strongly disagree" to "5, Strongly agree")	Scale				
	Strongly disagree				Strongly agree
…has a positive effect on TKF's ability to make improvements/adaptations to existing products	1	2	3	4	5
…has a positive effect on TKF's ability to develop successful new products for markets	☐	☐	☐	☐	☐
…has helped TKF to achieve a great number of product adaptations/improvements in the last three years	☐	☐	☐	☐	☐

Coercive power (on a 5 point scale from "1, Strongly disagree" to "5, Strongly agree")	Scale				
	Strongly disagree				Strongly agree
TKF made it clear to this supplier that failing to comply with TKF's request will result in penalties against them	1	2	3	4	5
If this supplier did not do as asked, they did not receive very good treatment from TKF	☐	☐	☐	☐	☐
If they do not go along with us, TKF threatened to withdraw certain services	☐	☐	☐	☐	☐

Reward power (on a 5 point scale from "1 , Strongly disagree" to "5, Strongly agree")	Scale				
	Strongly disagree				Strongly agree
TKF offers this supplier rewards so that they will go along with TKF's wishes	1	2	3	4	5
If this supplier did not do as asked, they did not receive the award offered by TKF	☐	☐	☐	☐	☐
If this supplier agrees with our requests, TKF offer them rewards	☐	☐	☐	☐	☐

Relational Investment (on a 5 point scale from "1 , Strongly disagree" to "5, Strongly agree")	Scale				
	Strongly disagree				Strongly agree
If TKF switches to another partner, TKF would lose a lot of the investment made in this relationship	1	2	3	4	5
TKF made a substantial investment in personnel development dedicated to this partner	☐	☐	☐	☐	☐
TKF has invested a great deal in building up the relationship with this partner	☐	☐	☐	☐	☐

Buyer Dependence (on a 5 point scale from "1 , Strongly disagree" to "5, Strongly agree")	Scale				
	Strongly disagree				Strongly agree
TKF could easily replace this supplier's volume with purchases from some other suppliers	1	2	3	4	5
There are many competitive suppliers for this component	☐	☐	☐	☐	☐
TKF's production system can be easily adapted to use components from a new supplier	☐	☐	☐	☐	☐

Share in turnover

Please indicate TKF's share (from 0-100%) in the supplier's turnover

TKF account for ....% in this supplier's turnover

Number of competitors (competitiveness)

Please indicate how many customers this supplier has that are similar to TKF

This supplier has .... customers that account for a similar share in their turnover as TKF

This supplier has .... customers that buy similar products as TKF

Trust

Please indicate how much trust (from 0-100%) this supplier has in TKF

When TKF makes a promise, this supplier trusts that TKF has the managerial and technical capabilities to do what they say they will do	.... %
This supplier believes that TKF would make sacrifices for them to support their firm	.... %

Product specification

Please indicate how much influence (from 0-100%) TKF has on the product design specification of this supplier

TKF has .... % influence on the product design specifications of this supplier

Complaints and claims

(on a 5 point scale from "1 , Strongly disagree" to "5, Strongly agree".)

	Scale — Strongly disagree ... Strongly agree
The complaints TKF pose to this supplier are realistic	☐1 ☐2 ☐3 ☐4 ☐5
This claims TKF pose to this supplier are realistic	☐ ☐ ☐ ☐ ☐

Consequential Damage / Loss

How many times in a year TKF pays the consequential loss of one of their customers	☐ Never ☐ 1 – 5 times ☐ 6 – 10 times ☐ 11 – 15 times ☐ > 15 times

8D Template (problem solving method)

(on a 5 point scale from "1, Very ineffective" to "5, Very effective".)

	Scale — Very ineffective ... Very effective
How would you rate the effectiveness of the 8D Template, which TKF uses by the handling of non-conformities	☐1 ☐2 ☐3 ☐4 ☐5

Value items How would this supplier rate… (on a 10 point scale from "1 , Very bad" to "10, Excellent".)	Scale Very bad Excellent
…TKF's image	1 2 3 4 5 6 7 8 9 10
…TKF's payment behavior	1 2 3 4 5 6 7 8 9 10
…their personal relationship with the purchasers of TKF	1 2 3 4 5 6 7 8 9 10
Pricing (on a 5 point scale from "1 , Much lower prices; 3, Similar prices; 5, Much higher prices".)	Scale Much lower prices Similar prices Much higher prices
Compared to suppliers of similar product, how would you assess the pricing of this supplier	1 2 3 4 5

Share in spent
Please indicate this supplier's share (from 0-100%) in TKF's total spent

This supplier accounts for ………… % in TKF's total spent

Appendix 5: Results Structural Equation Model
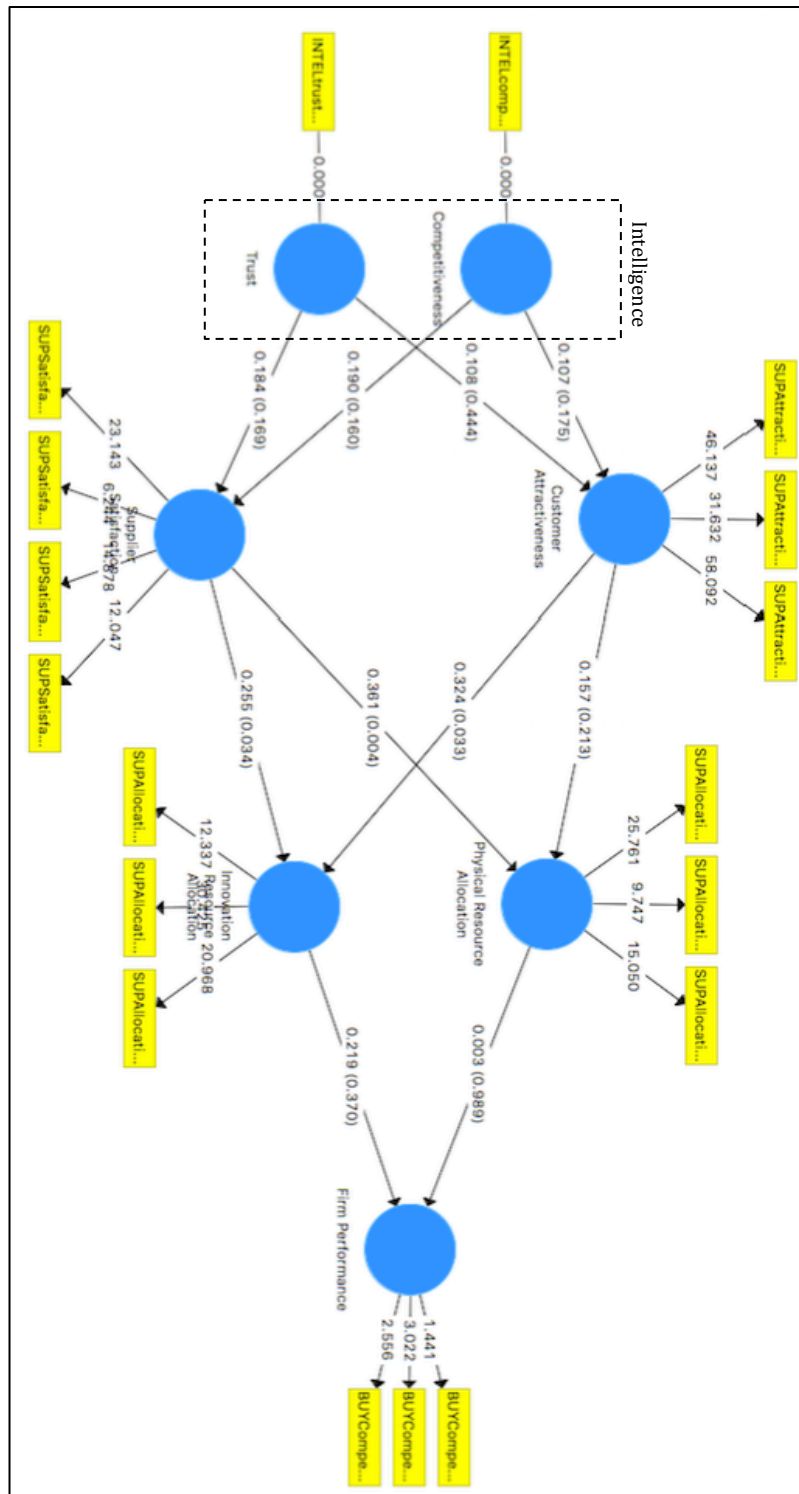
Notes:
- The values between the latent variables, without brackets, are the beta values (β)
- The values between the latent variables, with brackets, are the P-values
- The values between the indicators and the latent variables are T-values