

An Exploratory Study of Business to Business (B2B) Brand Sensitivity - How do brands influence a German hospital's buying decision-making process.

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Abstract

Historically branding was seen as having limited significance for organisations in industrial markets (Saunders & Watt, 1979). Research in the 1990s began to challenge this earlier view and delivered evidence of B2B's branding relevance (Leek & Christodoulides, 2012; Veloutsou & Taylor, 2012) but still there is a lack of understanding when brands are the most significant in the context of B2B (Zablah, Brown, & Donthu, 2010).

The researcher set out to investigate the B2B brand sensitivity in buying units of German hospitals. This required two prime investigations and analysis, to gain knowledge of the factors influencing brand sensitivity when buying medical devices.

The researcher approached the investigation from a constructivist paradigm perspective and decided that a sector level case study approach of German hospitals was the most suitable method in order to explore in depth different aspects of the process and to get a comprehensive view of the situation (Yin, 2013). To gain 'outsider' research, qualitative semi-structured interviews have been the research method adopted, in order to understand why and how the situation occurred (Guba & Lincoln, 2005).

The thesis highlights the role of brands in the context of organisational buying and provides guidance when brand sensitivity is present. In addition, B2B branding theory is enhanced and the managerial implications for managers in the medical device industry have been developed. The key findings of the thesis include the different participants in the buying unit of a German hospital and the influence factors for buying centre composition. Furthermore, the key findings show the factors that influence the decision making of a German hospital, and the parameters that have an influence on brand sensitivity are displayed. It is recommended to invest in branding strategies if the respective purchase decision is characterized by such a situation or the outlined brand values are required.

Key Words: B2B branding, brand sensitivity, decision-making, decision-making process, German hospitals, brand influence, organisational buying, buying units of German hospitals, branding in industrial markets, purchasing

Declaration of Original Content

I declare that the work in this thesis was carried out in accordance with the regulations of the University of Gloucestershire and is original except where indicated by specific reference in the text. No part of the thesis has been submitted as part of any other academic award. The thesis has not been presented to any other education institution in the United Kingdom or overseas. Any views expressed in the thesis are those of the author and in no way represent those of the University.

Signed:

Kristin Kaminski

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Abbreviations

(B2B) Business to Business

(B2C) Business to Consumer

(DMU) decision making unit

(e.g.) *exempli gratia*/for example

(KHG) Krankenhaus Gesetz (engl.: hospital law)

(OEM) original equipment manufacturer

(p.) page

(RQ) research question

(U.K.) United Kingdom

(U.S.) United States

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Chapter 1 Introduction

The first chapter of the thesis, 'Business to Business (B2B) brand sensitivity - How do brands influence a German hospital's buying decision-making process', includes the explanation of the research background and further states how the research will contribute to the existing knowledge. Furthermore, different terminologies used in the thesis are explained. In addition, the research problem, research aim and the research questions are introduced. The structure of the thesis and the applied methodology are also outlined at the end of the chapter.

1.1 Background of the Research

As research has concluded on the benefit of branding in the B2B market (Aaker & Joachimsthaler, 2000; Bendixen, Bukasa, & Abratt, 2004), the thesis is going even further. The thesis is focusing on B2B brand sensitivity and when a buyer or buying centre can be influenced by a brand. The study examines the influence of a brand during the buying process of an organisation and especially if there are different circumstances where the sensitivity of the buyer is higher for brand information. Different circumstances could for example be different situations, different types of products or different stages in the buying process.

Furthermore, the thesis focuses on a special type of B2B relationship and participants of the buying process. It is about hospitals buying products for their daily operations. The specific type of organisation was selected because it can be assumed that different industry sectors have different circumstances which can influence the brand sensitivity of the buyer or buying unit. It can be assumed that the industry sector of health care and more specifically of hospitals is characterized by humanity and social competencies, because the subsequent end customers of the hospital are human beings, and due to the fact that they are in the hospital, they have severe health issues. The target of the hospital and the employees working in the hospital is based on humanity, because they want to help the patients to recover or at least to improve their situation. The social competence the hospital employees might have in addition to the buyer or the buying centre of the hospital will assume a different circumstance for hospitals compared to other industry sectors.

The thesis aims to obtain a deeper understanding of B2B brand sensitivity in a German hospital's buying unit. This requires two prime investigations and analysis to gain knowledge and insight into the factors influencing brand sensitivity and to build a full understanding of German hospitals' purchase behaviour when buying medical devices. Brand sensitivity in this case is defined as a dimension to which brand names receive active recognition in organisational purchase considerations (Zablah et al., 2010).

When discussing brands and branding, one could think that it is about the name and the logo of a product, but a brand is much more than that.

According to Aaker (2014, p. 1) a brand

is an organisation's promise to a customer to deliver what the brand stands for not only in terms of functional benefits but also emotional, self-expressive, and social benefits...It is also a journey, an evolving relationship based on the perceptions and experiences that a customer has every time he or she connects to the brand.

Brands can be established in the Business to Business (B2B) as well as in the Business to Consumer (B2C) market (Interbrand, 2019). The phrase Business to Business includes the relationship between two business companies, while Business to Consumer covers the relationship of a company and a consumer (Lilien, 2016). A more detailed description of the terminologies is provided in Section 1.2.

To develop and establish a brand is essential for a company, because positive effects can be achieved. Backhaus, Steiner, and Lügger (2011) say that particularly brands reduce the purchase risk which is perceived by the consumer. In addition, the costs of collecting and evaluating information during the decision making are reduced. Moreover, image effects, for example increasing the status are caused (Backhaus et al., 2011). Further, for strong brands buyers are willing to pay a premium price in B2C as well as in B2B markets (Bendixen et al., 2004; Taylor, Hunter, & Lindberg, 2007). Finally, consumer choices are determined mainly by branding (Philiastides & Ratcliff, 2013).

Traditionally branding was seen as having limited significance for organisations in industrial markets (Saunders & Watt, 1979). Further research in the 1990s began to challenge the earlier view and delivered evidence of the B2B brand relevance (Leek & Christodoulides, 2012; Veloutsou & Taylor, 2012). The increase of work concerning the value of B2B brands of for example Leek and Christodoulides (2011a, 2011b) is a result of changes in the business environment, such as the growing product homogeneity and increasing digital and online communication (Baumgarth, 2010; Leek & Christodoulides, 2011b). In addition globalization, distribution of similar products and services, higher competition, growing complexity and high price pressure have led in B2B markets to an increase of implementation of branding strategies (Kotler & Pfoertsch, 2006). The growing importance and rise of B2B brands is also reflected in the Interbrand (2019) list. Today among the best global brands are B2B brands such as IBM, GE and SAP. The described developments of increasing significance and value of branding in the B2B field and the increasing implementation of branding strategies highlight the fact that B2B branding has developed into its own distinct field of study (Seyedghorban, Matanda, & LaPlaca, 2016).

B2B researchers have found that firms can achieve tangible as well as intangible benefits from strong brands (Elsäßer & Wirtz, 2017; Homburg, Klarmann, & Schmitt, 2010; Nyadzayo, Matanda, & Ewing, 2016). But still there are sceptic B2B marketers regarding the position of brands in the situation of organisational buying. The scepticism is based on the opinion that organisational buyers decide based on objective, rational and functional facts (Amonini, McColl-Kennedy, Soutar, & Sweeney, 2010).

Despite the growing empirical evidence (Brown, Zablah, Bellenger, & Johnston, 2011; Zablah et al., 2010), B2C branding has still received much higher attention in the marketing literature compared to B2B branding (Mudambi, 2002). Studies in the area of B2B appear less frequently compared to those in the consumer (B2C) market domain. This delay could be ascribed to the field of organisational buying models (Brown et al., 2011), which belongs to the theory of organisational buying behaviour and is close to B2B branding. There the decision on product choice is shown as highly objective and rational (Robinson, Faris, & Wind, 1967; Sheth, 1973;

Webster & Wind, 1972). Traditional organisational buying models, for example the models of Sheth (1973) or Webster and Wind (1972), evaluate that buyers make rational decisions when deciding for or against specific products and the decisions are based on objective attributes such as the price or product features. Subjective benefits which are perceived by the buyer and can be influenced with marketing, such as perceived security, are often related to brands. The subjective benefits were not considered in this rational view of how organisational buyers are deriving decisions (Wilson, 2000).

Also in the practical field, branding has a higher importance in B2C segments compared to B2B segments. This is reflected in the strategic focus of companies on branding. In Business-to-Consumer markets, it is a crucial part of the marketing strategy to develop and maintain strong brands (Aaker, 2012; Keller & Lehmann, 2006). In comparison, the strategic focus on branding is lower in Business-to-Business markets (Bendixen et al., 2004). This is also reflected in the brand ranking performed by Interbrand (2019). In this ranking the vast majority of brands which are of most value are consumer brands (Interbrand, 2019). That the large majority are B2C brands is surprising, because comparing the economic value of transactions from the B2B and B2C segment, the B2B transactions are of high importance (Hutt & Speh, 2006). Therefore, Homburg et al. (2010, p. 201) see B2B markets confronted with the question: "Have they unjustly neglected branding as a marketing instrument, or do B2B market characteristics prevent brands from being effective?"

Nevertheless B2B branding is gaining more and more attention in marketing research (Low & Blois, 2002; Mudambi, 2002). Guzmán, Iglesias, Keränen, Piirainen, and Salminen (2012, p. 404) say that "as a response to increasing industry attention, recent years have seen the publication of a vast number of B2B branding articles, and special issues devoted to B2B branding." Organisational buying is often very complex because of the complex technological makeup of the offers. The offers are therefore not easy to evaluate (Mudambi, 2002). The enlarged network of several stakeholders has additionally influenced the increased complexity of organisational buying (Brown, Dacin, & Pitt, 2010). The technological requirements and in fact that the offers are very often a bundle of tangible products and intangible

services make the evaluation of the offer for the buyer more challenging (Mudambi, 2002). To help their decision-making for the purchase, organisational buyers base their decision not just on objective factors. Subjective factors, like brand information, also contribute to the decision-making process (Brown et al., 2011). As organisational buying is determined by the level of risk perception (Mudambi, 2002), organisational buyers try to reduce the perceived risk by establishing collaborative and long-term relationships, as well as the trust towards brands (Brown et al., 2011).

Research finds that the organisational decision making is influenced by brand information. According to Kotler and Pfoertsch (2006), brands help to make product identification easier, as well as reducing the complexity and the risk of the buying decision. B2B brands can also lead to more efficient information processing (Kotler & Pfoertsch, 2006; Zablah et al., 2010). In addition, brands transmit values and benefits. As organisations try to reduce the risk and uncertainty for purchasing decisions, strong B2B brands are of special value (Homburg et al., 2010). “Brand cues influence the decision process by communicating information about the product offering and the overall experience a customer might expect with a seller” (Brown, Zablah, Bellenger, & Donthu, 2012, p. 508). In business markets, the influence of brands on decision making is shown, but still there is no clarity about when brands influence most. Not for all buyers, sellers or in all purchase situations may B2B brands be influential in the same intensity (Brown et al., 2012).

This indicates that in specific cases a higher sensitivity of organisational buyers or buying centres to brand information exists (Brown et al., 2012). Brown et al. (2012) define brand sensitivity as “the degree to which brand information and/or corporate associations get actively considered in organisational buying deliberations” (Brown et al., 2012, p. 509).

1.2 A need for distinct terminology

In the thesis there are terminologies used such as brand sensitivity or purchasing group which require further explanation. In addition, the meaning of ‘German hospital’ and the different terms of B2B and B2C will be explained in more detail.

1.2.1 Brand sensitivity

One core terminology of the thesis is brand sensitivity and the definition of Brown et al. is used. They define brand sensitivity as “the degree to which brand information and/or corporate associations get actively considered in organisational buying deliberations” (Brown et al., 2012, p. 509). In addition to the active consideration of brand information, the definition for the terminology is enlarged for the thesis. It also includes the circumstances when brands are preferred during the decision-making process of a German hospital.

1.2.2 German hospital

The research took place in the environment of German hospitals. Therefore, a short description of the German hospital market is provided in the following section.

The German hospital law defines in § 2 Nr. 1 KHG (paragraph in the German hospital law) the terminology of a hospital. According to this definition hospitals are institutions, where, through medical and nursing aid, diseases, suffering or physical injuries are determined, healed or mitigated or birth assistance is provided. The people who are serviced are located in the institution and are fed (Justiz, 2020). In 2017 there were 1942 hospitals available in Germany. Not all hospitals are categorized in the same way. There are different types of hospitals in Germany and since 2012 the division is as follows:

- ‘General hospitals’ are hospitals with completely stationary specialist departments.
- ‘Other hospitals’ are hospitals with exclusively psychiatric, psychotherapeutic, neurological and geriatric beds as well as day-care and night-care hospitals.
- ‘Hospitals of the German Army’

The hospitals are further divided according to the type of admission, this means if the hospital has a supply contract or not. Furthermore, sponsorship is a distinguishing feature. A hospital can be public-owned, a non-profit organisation or a private institution.

The legal form of a hospital can be public-authorised or can be led according to public law (DESTATIS, 2018).

For the research, there was no distinction between the different types of hospitals, because there was no influence on the results for specifically the defined research questions expected. It might be a further topic to investigate separately, if the different types of hospital do distinguish in the brand sensitivity during the purchasing process.

German hospitals can be also distinguished according to the number of beds the institution has. This provides insight into the size of the hospital. In addition, the number of specialist departments can be a differentiating characteristic. This criterion informs about the range of services a hospital offers and the specialization of the institution (DESTATIS, 2018). For the thesis there was no differentiation of the size or the speciality departments of the hospitals due to unexpected influence and the topic would have become much more complex. The complexity would not have been possible to handle within the framework of the thesis.

1.2.3 Purchasing group

In the thesis the terminology 'purchasing group' or 'purchasing organisation' is used and will be defined in the next paragraph.

According to Hennig and Schneider (2018), a purchasing group is an association of companies for a collaborative purchase, with the purpose to use the price advantage of bulk purchasing. The buying of the purchasing group can be either a proprietary business or an intermediary business.

For the further understanding of the thesis, it is important to know more about the relationship between the purchasing group and the individual hospitals. This will be explained with the following figure.

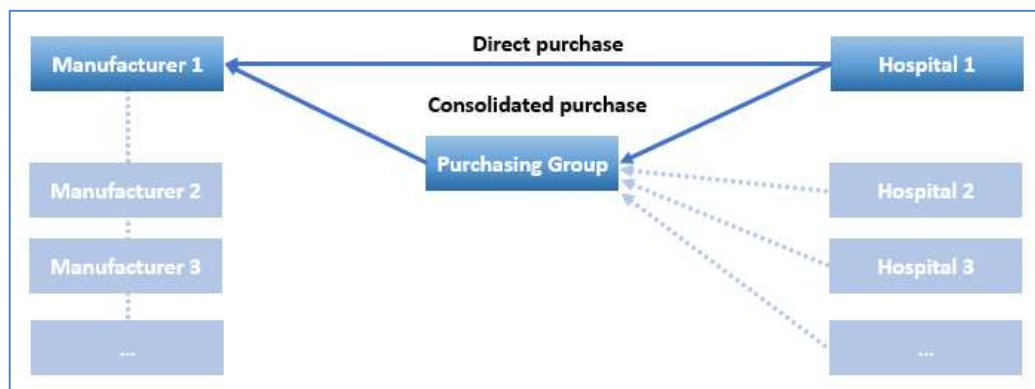


Figure 1: Relationship between hospitals and purchasing groups

In general, hospitals have the possibility of purchasing directly from the manufacturer they prefer or indirectly through a purchasing group, where the volumes are consolidated with other hospitals. Currently German hospitals are faced with constantly increasing cost pressure that forces them to optimise economic actions in order to respond successfully to competition. Sustainable solutions are required and this is what purchasing organisations want to provide when they act as a direct link between manufacturers and hospitals. With this, the general target is to decrease the material costs and, if possible, the overhead costs in the hospitals. The advantage for a hospital of joining a purchasing group instead of buying directly is that through the consolidation of the quantities of all member hospitals, significant price advantages can be achieved. The price advantage is possible to achieve because with one central negotiation the complete volume of one purchasing group can be assigned. In addition, hospitals cannot afford to negotiate every product directly with a high number of suppliers. This service is undertaken by the purchasing organisation. Moreover the purchasing organisation pools expertise and consults the hospitals, which persuades a large number of hospitals to join a purchasing group (BME, 2016).

In Germany more than ninety percent of the institutions of the healthcare sector joined a purchasing group. Currently there are seven market leading purchasing groups in Germany. As already stated, the core competence of a purchasing group is to offer better prices. Besides this focus, the purchasing groups try to differentiate among each other through additional services such as logistics, consulting, portfolio management, trainings or digital procurement platforms (Krojer, 2017).

1.2.4 Business-to-Business vs. Business-to-Consumer

Industrial marketing was the terminology which was initially used for B2B marketing (Webster, 1978). The main focus of industrial marketing was on raw material transactions like wood, iron ore, petroleum and the accessories and equipment used by other businesses. With the increased growth of technology and the service sector and at the same time with the slower growing production sector, the terminology of industrial marketing was changed to a broader terminology of B2B marketing. B2B marketing includes

the full range of value-generating relationships between businesses, government agencies and not for profit organisations and the many individuals representing those organisations. B2B relationships include those between manufacturers and both wholesalers and retailers; between agribusiness firms and farmers; and between pharmaceutical firms and both hospitals and physicians. (Lilien, 2016, p. 544)

In comparison the B2C domain covers the relationship of firms and consumers. Differentiation of B2B and B2C can be made by the request for a service or product. If it is derived by subsequent customers, it is B2B. In cases where the demand is primary, this means that the preferences and tastes of the buyer drive the demand, and then it is B2C (Lilien, 2016).

According to Lilien (2016, p. 544), B2B marketers:

- (a) operate in a culture driven by manufacturing or technology (rather than marketing);
- (b) aim at value chain intermediaries (not end consumers);
- (c) develop a technical or economic (rather than perceptual) value proposition; that
- (d) incorporates a major component of economic (versus brand) value;
- (e) face far fewer customers; but
- (f) see far larger individual transactions;
- (g) are often linked to buyers through interlocked production and delivery processes;
- (h) whose purchasing process can be highly complex;
- (i) involving a far wider range of stakeholders.

1.3 Research Problem and Research Aim

Although there is an increase of empirical evidence for the influence of brands in organisational buying decisions, there is still a lack of understanding when brands matter most in the context of B2B (Zablah et al., 2010). Only Brown et al. (2011) started to examine the relationship between the brand sensitivity of a buying centre and the purchase risk, which could be one factor that influences the decision making of a buying unit. The current study plans to contribute to the question of when brand sensitivity appears during the buying process of a German hospital.

If branding is examined from an organisational buying perspective, it is often applied to B2C branding and this incurs disadvantages, because if a B2C brand perspective is applied to B2B brands, sometimes the specialized nature of business marketing and purchasing is ignored (Glynn, 2012). For example, the most important factor for the influence of the brand on the purchase decision is in B2C markets image-associated brand functions. In contrast there were findings that in a B2B setting the biggest driving factor for brand influence is the risk reduction (Backhaus et al., 2011). The difference in what is the biggest driving factor for brand influence might be justified by the organisational buying behaviour's specific nature (Homburg et al., 2010). Therefore, Hutt and Speh (2012) promote clearly a separate understanding of B2C and B2B marketing.

Companies are at the moment not able to make an informed decision about their brand strategy due to the fact that for example the brand perception of B2B branding is not completely clear (Ohnemus, 2009). In recently published B2B branding literature, managerial questions such as why companies should establish a branding strategy and whether a customer should buy a brand instead of other alternatives still remain unresolved (Seyedghorban et al., 2016). Thus, the research will provide an increase in knowledge to be able to give managerial advice regarding whether it will be worth investing in building a brand.

Regarding German hospitals buying units, there is a shortage of literature and research concerning their decision making. Only a few studies have been close to the topic. There is some limited work from a bachelor thesis by Edrén and Sundin (2011), which deal with the buying process within hospitals in Sweden; and research on different buying behavioural patterns in the Hungarian hospital network (Simon, Mandják, & Szalkai, work-in-progress). Additionally, approaches on buying decisions of organisational buyers and users were developed by Moon and Tikoo (2002), based on the data of purchasing managers and doctors of 150 general hospitals in Korea. Also Wernz, Zhang, and Phusavat (2014) investigated the investment decisions of hospitals and especially focused on the influence factors of organisations and country specific factors that affect the investment behaviour of hospitals. Felgner, Ex, and Henschke (2018) explored the decision making of

physicians in regard to the adoption of new technologies. Although there are a few studies dealing with the decision making of hospitals, none of them investigate the decision making in regard to brands and brand sensitivity.

Whilst undertaking the review of the existing literature, it can be noticed that B2B branding is an important field of study, and a research gap is evident around awareness of brand sensitivity. Moreover, German hospitals' purchase behaviour patterns and methods when buying medical devices is a second gap where this research will add to knowledge.

This research it is hoped will make a contribution to knowledge in response to the calls for research that explains the role of brands in the context of organisational buying (Seyedghorban et al., 2016; Webster, 2000). The research will focus on the role of medical device brands in the organizational buying context of German hospitals.

The understanding of the path of purchase and how branding could be a lever to attract purchasers will be advanced, which is among the Marketing Science Institutes' research priorities for 2016-2018 (Marketing Science Institute, 2016).

The question of when brand sensitivity is present and when it is not, is still open (Brown et al., 2011) and this research aims to provide some possible answers to that question. In addition, enhancing and extending B2B branding theory and the managerial implications for managers in the medical device industry will be developed. Advice for the development of branding strategy for medical devices will also be developed and postulated.

The motivation to solve the problem of when brands influence the decision-making process of a German hospital has, in addition to the academic perspective, a more practical background. The thesis will also have implications for B2B managers and practitioners, especially in the medical device industry.

Acquiring knowledge about the brand sensitivity of German hospitals will help a manager in a medical device company to decide when it is worth investing in

branding. Therefore, the resource allocation for the efforts to build a brand can be improved. Investing in a brand where the buyer has no or less brand sensitivity might have a lower efficiency than allocating resources to a brand where the buyer has brand sensitivity.

Acquiring knowledge about the brand sensitivity of buyers and buying units in German hospitals can help to define appropriate marketing actions and strategies in order to increase the influence of brands and consequently to boost brand equity.

In addition, the results of the research will offer a guideline for B2B managers and practitioners for the development of communication strategies through focusing on specific circumstances where the buyer or the buying unit shows brand sensitivity.

1.4 Research Questions

The research questions are formulated, in order to support the answer or explanation of the research problem. The research problem is 'how can a brand influence the buying decision-making process of a German hospital'. In the following section, the three research questions and the respective research objective will be introduced.

Research question 1

The first research question is about the different participants in the buying unit of a German hospital, the factors influencing the buying centre composition and the roles in the buying centre. The objective is to identify the key actors, the people who are part of the buying decision process in a German hospital and their roles in the buying unit, and to explore the factors that have an influence on how the buying centre is composed.

Research question 2

The second research question focuses on the influence factors for the decision making. The objective is to explore and analyse relevant parameters for decision making, which could have an effect on brand sensitivity.

Research question 3

The third research question targets how and why brands influence the decision making of a German hospital. The objective of this research question is to identify how and why certain parameters have an influence on brand sensitivity and purchasing decisions.

The following table summarizes the research problem and the consequent research questions.

Research Problem	
How can a brand influence the buying decision-making process of a German hospital?	
Research Question	Research Objective
1) Who are the participants in the buying unit of a German hospital and how are the composition of the buying centre and the roles of the participants influenced?	1) Identify the key actors, the people who are part of the buying decision process in a German hospital, and their roles in the buying unit, and explore the factors that have an influence on how the buying centre is composed.
2) What are the influence factors for decision making?	2) Explore and analyse relevant parameters for decision making which could have an effect on brand sensitivity.
3) How and why does a brand influence the decision making of a German hospital?	3) Identify how and why certain parameters have an influence on brand sensitivity and purchasing decisions.

Table 1: Summary of Research Problem – Research Questions – Research Objectives

1.5 Structure of the Thesis

After the introduction, which sets the scene for the research, the thesis continues with the literature review. The literature review of the thesis mainly considers the relevant fields of the research questions and research aim in order to discover what

other authors and researchers in the field have written. The focus is therefore on two major research fields.

The first part of the literature review summarizes the current status of Business-to-Business research. It differentiates between B2B branding and B2C branding, in order to explain that B2C models cannot be transferred to B2B without respecting the specific requirements of B2B marketing. In addition, this first part analyses the currently available knowledge about B2B brand sensitivity and the benefits of branding in the industrial market. Finally, the literature about the rational and emotional factors influencing a brand and branding in the decision-making process is reviewed.

The second part of the literature review is about the research field of organisational buying behaviour, which includes the review of literature about the buying centre, the organisational buying process and the factors influencing the buying process and buying centre.

The literature review concludes with a conceptual framework to represent the outcomes. This chapter provides the theoretical foundation for the following chapters.

The methodology and methods describe the way of obtaining the data required to answer the research questions. As it is the research aim to obtain a deeper understanding of B2B brand sensitivity of German hospitals' buying units it was decided to approach the research from a constructivist research paradigm perspective. "For the constructivist, truth lies in the eyes of the observer, and in the constellation of power and force that supports that truth" (Moses & Knutsen, 2007, p. 11). The reality is socially constructed and an individual will perceive varying situations in different ways due to their own view of the world (Saunders, Lewis, & Thornhill, 2009). Moreover, reality is seen as highly context specific (Guba, 1990). The constructivist paradigm is selected because it is the aim of the research to understand when brand sensitivity appears during a buying decision of a German hospital's buying centre and what the influencing factors are for that appearance.

A case study is an appropriate approach in order to explore different aspects of the situation and to get a comprehensive view of a situation (Yin, 2013). The qualitative case study will focus on a sector level case study of German purchasing organisations for hospitals with the target to gather as much information as possible from the purchaser of the purchasing organisations about the hospital buyers and medical employees who are part of the decision-making process for purchasing medical devices. The cases will focus on identifying the buying unit, the influence factors on the buying decision and the brand sensitivity in the buying process.

Qualitative semi-structured interviews will be the research method adopted in order to understand why and how the situation occurred (Guba & Lincoln, 2005). A semi-structured interview approach will help in achieving this (Bryman & Bell, 2015) because it gives a structure for the interview and at the same time enables flexibility to focus on interesting issues which were not apparent before.

As the target is not to achieve generality but to give additional, high-quality insight into the medical device market and gain knowledge for the research gap, four interviews will be enough.

The interviews are planned to be conducted in person and will be audio recorded. The market where the research takes place is German and thus the interview language will also be German. The tape recordings will be transcribed and short drafts of key points will be translated into English. One example will be translated in full into English and will be attached to the appendix (see appendix 1).

For the gathered information, in the form of translated interview transcripts, the thematic analysis, as one of the proposed approaches of Saunders, Lewis, and Thornhill (2019), will be used. The thematic analysis can be used for different epistemologies as well as for a range of different research questions (Nowell, Norris, White, & Moules, 2017). The advantage of the thematic analysis is seen mainly in the flexibility of the approach, which can be adjusted for the requirements of different studies with complex and detailed data.

The thesis is grounded in the literature and the evidence is given by the interviews. Theory was derived based on the analysis of the data provided by the interviews and the literature review.

In the discussion chapter, the emerging study findings are critically reflected and compared to the findings achieved through the interviews. Based on the findings and results of the literature review, this chapter focuses on the theoretical, managerial and practical implications for B2B branding and buying behaviour of German hospitals.

The chapter, and the thesis, ends with the learning progress of the researcher and recommendations for further research.

The thesis ends with the conclusion chapter, which contains the conclusion of the research set up, the limitations of the research, and the conclusion of the findings. The chapter also provides an overview of the research contributions and shows to what extent the research questions have been answered. Furthermore, recommendations and theoretical and practical contributions are shown in this chapter. A review of the research journey, which displays the reflections and learnings through the journey and a summary of ideas and challenges for future research, closes the last chapter of the thesis.

In summary, the first chapter of the thesis has set the scene for the research and has built the framework for the literature review, which will follow in the next chapter.

Chapter 2 Literature Review

The literature review builds the theoretical foundation of the thesis and is divided into two main sections. The first chapter gives an overview of the relevant literature concerning business-to-business branding. This chapter explains the difference between B2B and B2C branding and shows why the application of B2C branding theory on B2B brands incurs disadvantages. It explains how a company could generate advantages of branding in the industrial market when it is used in the right way and what the current knowledge is about brand sensitivity. This chapter also summarises the known factors which influence a brand and shows the currently experienced role of branding in the decision-making process.

The second section provides more knowledge and insight into the organisational buying behaviour that provides the frame for the organisational buying process, which is a key element of the research. Here, the composition and roles of the buying centre staff are explained, as well as the knowledge of the organisational buying process. It also shows the factors influencing the decision making of the buying centre and process.

The field of hospitals and its specifics gives the framework for the research question and is concentrated on German hospitals. Healthcare Marketing is excluded because it traditionally has the focus on how to get more patients into the hospitals.

The choice of literature was conducted in a narrative way because it does not limit the way of searching for available literature. This helps in the procedure of understanding the construct better. The literature chosen is from primary and secondary sources, with the focus on academic journals and books.

2.1 Business-to-Business Branding

Due to increasing competitiveness, strong B2B brands have become more and more important and will be a key success factor in the future (Kotler & Pfoertsch, 2007a; Rooney, 1995).

Traditionally branding was seen as having limited significance for organisations in industrial markets (Saunders & Watt, 1979). Further research in the 1990s began to

challenge this earlier view and delivered evidence of the B2B brand relevance (Leek & Christodoulides, 2012; Veloutsou & Taylor, 2012). The increase of research work concerning the value of B2B brands is a result of changes in the business environment, for instance, the growing product homogeneity and the increasing use of digital and online communication (Baumgarth, 2010; Leek & Christodoulides, 2011b). In addition, globalisation, distribution of similar products and services, higher competition, growing complexity and high price pressure have led in B2B markets to an increase of implementation of branding strategies (Kotler & Pfoertsch, 2006). Also Wang and Hao (2018) see an increasing interest of marketing managers and researchers in B2B branding. The growing importance and rise of B2B brands is also reflected in the Interbrand (2016) list. Today among the leading global brands are B2B brands such as IBM, GE and SAP. These developments highlight the fact that B2B branding has developed into its own distinct field of study (Seyedghorban et al., 2016).

The definition of what constitutes a brand is discussed in the literature. Ambler and Styles (1997) said that a brand is a promise of the attribute bundle that someone purchases. This means a value proposition for the customer which promises to satisfy special customer needs (Merz, He, & Vargo, 2009; Vargo & Lusch, 2004). Whether in B2B or in B2C markets, brands follow the same purpose. They simplify the identification of products and distinguish them from competitor products (Anderson & Narus, 2004). Branding is a possibility for industrial marketers “to create value for customers, provided that the various members of decision-making units (DMUs) perceive the product as valuable to their organisations”(Alexander, Bick, Abratt, & Bendixen, 2009, p. 1). In the B2B market, products are often very similar regarding their specification and thus it is not easy to achieve differentiation to the competition. Despite this similarity of products, there is normally one market leader with high market shares able to achieve premium prices (Mudambi, Doyle, & Wong, 1997).

Abimbola, Trueman, Iglesias, Abratt, and Kleyn (2012, p. 1050) define corporate brand as “expressions and images of an organisation’s identity.” They further argue that corporate branding consists of corporate expression (including brand promise, visual identity and brand personality) and brand images.

In the literature on branding, there are few approaches to analyse or explain branding in industrial markets. Despite the significantly greater economic value of B2B transactions compared to consumer transactions (Hutt & Speh, 2005), branding research conducted for consumer products is still predominant (Lynch & de Chernatony, 2004; Webster & Keller, 2004). The research status of B2B branding is criticised by several studies, for example Mudambi et al. (1997); Roper and Davies (2010) see this marketing segment as under-researched. It lags behind the practice of industry (Mudambi, 2002). From a market perspective, B2B markets are faced with challenges like commoditisation, globalisation and increasing power of customer control leading to a higher intensity of business markets. Due to these challenges, B2B companies increasingly aim to build competitive advantages by developing brands (Mudambi et al., 1997; Walley, Custance, Taylor, Lindgreen, & Hingley, 2007). The previously mentioned changes of business environment, such as the increasing communication in digital and online form as well as product homogeneity have also resulted in more empirical work regarding the value of brands in the B2B market (Baumgarth, 2010; Leek & Christodoulides, 2011b).

Kotler and Pfoertsch (2007a) also see a strong brand as the only sustainable competitive advantage in today's highly competitive B2B market. Competitive performance of B2B firms can be improved by successful brands (Hirvonen, Laukkanen, & Salo, 2016; Reijonen, Hirvonen, Nagy, Laukkanen, & Gabrielsson, 2015) by strengthening the loyalty of customers (Biedenbach, Bengtsson, & Marell, 2015). However, despite the growing interest in branding in B2B markets, the existing literature is perceived as fragmented and further examination is necessary (Glynn, 2007; Kuhn, Alpert, & Pope, 2008). Even though industrial marketers are forced to build brands (Steve, Niraj, & Deva, 2012), they are still uncertain why and how to do. There is still a lack of clarity about the difference of brand concept in the B2B market compared to the B2C context. Moreover, there is missing knowledge regarding the financial benefits, the meaning of emotional values as well as the meaning of 'brand' itself to the different stakeholders in B2B markets (Leek & Christodoulides, 2011b).

Also later results of Seyedghorban et al. (2016) show that B2B branding still requires further attention in order to develop further. They also see that many B2C branding

insights have been adapted to the B2B context and essential questions, such as why companies should develop a branding strategy, are currently not answered by the branding literature.

The existing literature on B2B branding includes investigations regarding brand naming, brand equity and industrial brand value (Mudambi, 2002). Shipley and Howard (1993) identified that brand names in the industrial market are commonly used. Brand equity is defined as the willingness of the buyer to pay a higher price for a preferred brand compared to an unknown or generic brand and to recommend the brand to colleagues. Additionally the buyer gives particular attention to other products with identical brand names (Hutton, 1997a). Keller, Parameswaran, and Jacob (2011) define it as a difference of advantages of the branded product in comparison to the identical unbranded product. The difference is called brand knowledge. It consists of brand image and brand awareness.

Besides brand name and brand equity, industrial brand value is also explored. It is described as a combination of expected price and benefits of the basic product. In addition the expected quality of services are the intangibles of the brand (Mudambi et al., 1997).

Within the available branding literature, there are different opinions about the value of B2B branding and consequently involved brand sensitivity. Saunders and Watt (1979) found that the large number of brands which are available for the customer has a confusing effect and offers no value. However, this analysis was conducted only for the U.K. man-made fibre market and cannot be generalised to all other markets. Moreover they measured the brand perception at the consumer level and not at the organisational level, which reduces the statement for the B2B sector. Sinclair and Seward (1988) analysed branding in their study of North American wood products and did not find support for the use of branding.

The most important point is that these sources are very old and, as previously discussed, the B2B market has changed recently. If literature sources which were created more recently are evaluated, the perspective is different. B2B branding becomes increasingly valuable. For example Shipley and Howard (1993) indicated

in their study that branding provides powerful benefits for industrial companies. This is supported by other researches like Michell, King, and Reast (2001), Gordon, Calantone, and di Benedetto (1993) and Hutton (1997b).

The effect of a brand management system was also investigated by Lee, Park, Baek, and Lee (2008) and the result was that the effect of a brand management system on customer preference was actually stronger for B2B brands than for B2C brands.

In summary, there are different opinions in the literature about the value of branding but also a strong indication is shown that branding can also have an impact in the B2B world and companies can benefit from a branding concept. For example the research by Lee et al. (2008) showed that a brand management system had a stronger effect on B2B brands on customer preference than on B2C brands.

In order to be successful in B2B branding, it is necessary to be aware of the differences concerning B2B branding. In the next section, the differences between B2B branding in comparison to B2C branding are summarised.

2.1.1 Difference between B2B branding and B2C branding

If branding is examined from an organisational buying perspective, it is often applied via a B2C branding lens (Glynn, 2012). Many of the studies on B2B branding make use of consumer branding concepts, e.g. Davis, Golicic, and Marquardt (2008); Gordon, Calantone, Di Benedetto, et al. (1993); Michell et al. (2001); Taylor and Hunter (2014). These studies refer to constructs, concepts, and measurement scales of the B2C segment, and there is no explicit evidence if this is also applicable to the B2B context. This view implies disadvantages, because if a B2C brand perspective is applied to B2B brands, sometimes the specialised nature of business marketing and purchasing is ignored (Glynn, 2012). For example, the work on B2B branding by Lamons discusses brand architecture, brand personality and brand positioning, which are topics coming from consumer branding (Lamons, 2005).

In the literature, the relevance of B2C frameworks to the industrial buying process is questioned. For example Kuhn et al. (2008) state that the emotional and self-

expressive dimensions from the framework of Keller (2003) are less relevant for B2B brands.

In general, there are two main approaches in the literature. The first approach underlines that B2B and B2C markets are similar and connects consumer psychology (Gupta, Grant, & Melewar, 2008; Gupta, Melewar, & Bourlakis, 2010) and emotional values (Lynch & Chernatony, 2007; Lynch & de Chernatony, 2004) to B2B branding strategies. Salesperson-oriented models, focusing on communication in a personal way in order to transport the message of the brand to buyers, are the proposition of that approach.

The second approach underlines that the B2B market is different compared to the B2C market and that there is a necessity for a specific branding approach (Blois, 2004; Kim, Reid, Plank, & Dahlstrom, 1998; Webster & Keller, 2004). In this approach, the business marketing offerings are the core and the brand is built around that offer (Beverland, Napoli, & Lindgreen, 2007). This could be done in a co-creation with the buyer or other relevant stakeholder in order to increase the branding experience (Ballantyne & Aitken, 2007; Morgan, Deeter-Schmelz, & Moberg, 2007).

There is no doubt that consumer branding delivers a starting point for the research in B2B branding (Mudambi et al., 1997) but it is not possible to transfer branding frameworks directly to the B2B context (Beverland et al., 2007; Jensen & Klastrup, 2008; Kuhn et al., 2008; Mudambi et al., 1997).

What follows is a more detailed discussion about the differences between B2B and B2C markets described in the literature, because, as Mudambi (2002) says the differences between B2B and B2C branding are small but important.

Ohnemus (2009) sees a significant difference in marketing orientations of a B2B company compared to B2C company. The emphasis is more on corporate than on product branding and the focus is on risk reduction (Mudambi, 2002). There are different factors which distinguish business marketing and purchasing from end-consumer buying. One factor is the value of the transaction. In general, a business-

to-business related transaction is much higher in financial value. Raw materials have to be considered in addition to component parts, capital items, operating supplies and maintenance items (Kotler & Pfoertsch, 2006). Another factor is that the purchase situation is much more complex. There is not only one individual with whom the supplier has to deal in the purchase situation, in a B2B context you are faced with a buying unit, which includes several individuals of the company (Glynn, 2012).

Moreover, B2C markets are more transactional compared to B2B markets which have a more relational focus (Coviello, Brodie, Danaher, & Johnston, 2002). The relationship between seller and buyer has to be built up like a long term business partnership, because there are fewer customers compared to the consumer sector (Glynn, 2012). For example, there were according to the Federal Statistical Office of Germany, 1925 hospitals in Germany in 2018. This means that the number of customers in that market is limited to that figure. Also, there is not always a direct relationship between end user and the selling company, e.g. the production process may include original equipment manufacturer (OEMs) or the brand of the supplier is resold by a distributor. Normally, in the B2B market the end user is not the buyer (Glynn, 2012), but the medical staff.

In B2B marketing, it is not that branding itself is less important. It seems more that the marketing programme is much broader. Compared to the traditional marketing mix, including product, price, place and promotion, intangibles such as corporate support, service and delivery are also included. In addition, the actions of employees and the opinions of peer and professional networks are also included in the marketing programme. Additionally, in B2B marketing, there is predominantly direct customer contact and therefore personal selling is essential. Moreover, the brand image is developed when a B2B buyer searches for information about the purchase (Glynn, 2012).

Mudambi (2002) summarised consumer and industrial market characteristics in the following table:

Consumer markets (B2C)	Industrial markets (B2B)
Emphasis on the tangible product and intangibles in the purchase decision	Emphasis on tangible product and augmented services in the purchase decision
Standardised products	Customised products and services
Impersonal relationship between buyer and selling company	Personal relationships between buyer and salesperson
Relatively unsophisticated products	Highly complex products
Buyers growing in sophistication	Sophisticated buyers
Reliance on mass market advertising	Reliance on personal selling

Table 2: Consumer and industrial market characteristics (Mudambi, 2002, p. 527)

Kuhn et al. (2008) refer to the fact that research on consumer branding theory could miss important brand attributes and that questions regarding important success factors are unanswered. To give an example, Jalkala and Salminen (2010) see customer references in the B2B context as an essential marketing element, but until now there has been no branding framework including customer references.

Seyedghorban et al. (2016, p. 2673) see that the research on “B2B branding has mostly adapted insights from the B2C context. The ‘Why should companies pursue a brand strategy?’ and ‘Why should customers purchase a brand over other alternatives?’ questions by managers still remain unresolved in current B2B branding literature.”

This raises the questions of ‘why’ customers should purchase a brand over other alternatives and also ‘when’ customers prefer to buy a specific brand instead of another product. With regard to this additional question, the term of ‘brand sensitivity’ becomes relevant. Due to this relevance, the term is explained in the following section.

2.1.2 Brand Sensitivity

Brand sensitivity needs to be understood by marketers in order to enhance the potential market impact of a brand (Blombäck, 2005). The first definition of the term

brand sensitivity was produced by Kapferer and Laurent (1983). They see brand sensitivity as a psychological construct that influences the decision making of a consumer regarding a purchase. If a consumer is brand sensitive, the decision making process before a purchase can be influenced by the brand (Kapferer & Laurent, 1992). According to Kapferer (1991), brand sensitivity of consumers depends on product category. The involvement of the consumer in a certain product category is directly related to brand sensitivity. The level of interest regarding the product category, the level of purchase risk and the level of creating a self-image affect the brand sensitivity level of a consumer (Kapferer & Laurent, 1983).

Determinants of brand sensitivity have been researched in the consumer market, for example concerning clothing. The research of Beaudoin and Lachance (2006) concluded that brand sensitivity is significantly connected to: receptivity for peer influence, gender, innovativeness of fashion, competence of the consumer, feeling of self-worth, how important brand clothing is for the father, as the father is forming the opinion and age.

As the literature has already stated that consumer branding works differently in comparison to B2B branding, therefore it could be surmised that the determinants of brand sensitivity could not be replicated one by one from the business to consumer environment to the business-to-business environment. The necessity of investigating the determinates of brand sensitivity especially for the hospital market is further emphasized by Cassia and Magno (2019). They see for each B2B market the importance of developing a specific branding strategy, as each market has specific characteristics. Another reason why it is necessary to investigate the determinants of the brand sensitivity of the decision maker in the hospital is that the literature stated that the product category has an influence on the extent of sensitivity regarding brands.

According to theories of brand management, brand information content (Kotler & Pfoertsch, 2006) is:

- (1) Simplification of product, service and business identification
- (2) Communication of benefits and values
- (3) Risk and complexity reduction of the buying decision

As organisations and individuals try to decrease elevated risk and to minimize existing uncertainty, strong B2B brands can be of special value in buying contexts (Homburg et al., 2010; Webster & Keller, 2004). This indicates that in some cases, “buying groups are likely to be more sensitive to brand information than in others” (Brown et al., 2012, p. 509). This can be supported by the results of Mutikainen (2017), which also show that the more buyers want to avoid risk, the more sensitive they are to brands, and, in decision-making, the importance of brands is higher.

Studies (Homburg et al., 2010; Webster & Keller, 2004) have established that in business markets brands also influence the decision making. Nevertheless, they do not show a great deal of insight into when the brand’s influence is greatest. As B2B brands may not be important similarly in different situations, e.g. the brand may not be similarly important to all buyers, all sellers or in all buying situations, the lack of knowledge about when and to whom brands are most influential is an important omission (Brown et al., 2012). Thus Brown et al. (2012, p. 508) started to investigate that topic and sought to answer the research question of “What factors determine the extent to which brand information influences organisational buying deliberations?” They built a conceptual model which shows the relationship between brand sensitivity and two critical purchase criteria. The purchase criteria are purchase complexity and purchase importance. In addition, the model includes the influence of key environmental (end-customer demand, brand presence), product (tangibility) and organisation (contractual ties, organisation size) factors.

The extent of the active consideration a brand receives during organisational buying deliberations, is defined as brand sensitivity (Hutton, 1997a; Kapferer & Laurent, 1988; Zablah et al., 2010). Brown et al. (2012) see brand sensitivity as the most likely key outcome variable displayed when brands influence the buying process of organisations.

Other brand constructs, for example brand loyalty, brand image or brand equity, which are often used, do not necessarily completely show the extent of influence that brand information has on the process of decision making (Zablah et al., 2010). Brown et al. (2011) also investigated the relationship between the level of purchase risk and brand sensitivity in the decision making of organisational buyers, with the

result that a U-shape could be recognised in the relationship between purchase risk and brand sensitivity. This means that brands function as choice simplification in situations with low purchase risk. In situations with high purchase risk brands reduce the risk. Further outcomes of the Brown et al. (2011) study were that competitive intensity mitigates the relationship of purchase risk and brand sensitivity. This means that if there is high competition, the brand sensitivity – purchase risk relationship is reduced, whereas a generally high level of brand sensitivity exists. Another finding was that the relationship of brand sensitivity and purchase risk might vary according to the type of risk. The results showed that different types of risks (e.g. financial, social or performance) could be more relevant in a decision-making situation under various types of conditions (Brown et al., 2011).

In earlier work McQuiston (1989) stated that buying centre members become more uncertain regarding the purchase decision the higher the complexity of the purchase situation is. Regarding complexity in industrial buying, there are two areas in which research takes place: the complexity of the product itself and the complexity of the situation in which the purchase takes place. The complexity of the purchase situation is defined by McQuiston (1989, p. 70) “how much information the organisation must gather to make an accurate evaluation of the product.”

2.1.3 Benefits of branding in the industrial market

Strong B2B brands have numerous benefits and have similar benefits to consumer brands. According to Cretua and Brodie (2007), branding has a strong influence on the perceived quality of the product or service. Moreover, it is easier to get a brand on the bid list compared to an unbranded product (Lowa & Blois, 2002) and it can influence the bidding decision (Wise & Zednickova, 2009). Additionally it gives companies the ability to charge premium prices (Lowa & Blois, 2002; Michell et al., 2001; Ohnemus, 2009) and the customer becomes less resistant to increasing prices (Anderson & Narus, 2004). With a brand, a good customer-brand relationship can be built to increase satisfaction (Lowa & Blois, 2002), which results in more loyalty (McQuiston, 2004) and more recommendations (Bendixen et al., 2004; Hutton, 1997b). Furthermore, the customer becomes less inclined to test offers of competitors (Anderson & Narus, 2004). If a brand has an identity and constant image, it will also deliver differentiation in markets with a large number of

competitors (Michell et al., 2001). According to Hutton (1997b) the positive evaluation of one product category will also be transferred to the other product categories with the same brand. Due to the fact that a brand reduces the uncertainty and perceived risk within a buying situation (Mudambi, 2002; Ohnemus, 2009), a brand also helps to make the purchaser confident in the choice (Lowa & Blois, 2002; Michell et al., 2001), and provides a comfortable feeling regarding the purchase (Mudambi, 2002). Moreover, a brand can support the buying unit to reach an agreement for the buying decision (Wise & Zednickova, 2009).

Mudambi (2002) assumes that the most relevant benefits are functional, but emotional as well as self-expressive benefits can also have relevance. Brands are sought out by buyers for an anticipated functional benefit, e.g. higher quality or connected services. Through limiting the search to well-known products, the search and transaction costs can be reduced and thus deliver a functional benefit.

Well-known brands give the emotional benefit to the buyer and to the company buying the brand that the perceived risk or at least uncertainty is reduced. Branding is able to give the business customer a higher purchase confidence. A purchase of a well-known brand can strengthen earlier relationships and experiences; moreover, it can increase satisfaction of the customer, giving additional comfort and instilling a good feeling in the business customer. They feel they have made the right choice.

Another possible benefit, as Mudambi (2002) explains, could be a self-expressive benefit, which means that a buyer personally or the buying company itself represents themselves for example by using products of a well-respected supplier. They like to have business connections with top companies. The reason for that is the judgement of a purchasing department is seen by the companies they work with (Scheuing, 1988).

Michell et al. (2001) summarised the benefits of industrial brand names in the following table.

Importance Ranking	Benefit from Industrial Brand Name
1	Provides product identity
2	Provides image consistency
3	Valuable to marketing success
4	Major asset to firm
5	Confers uniqueness
6	Provides competitive edge
7	Helps product positioning
8	Aids communication
9	Helps market segmentation
10	Makes buying easier
11	Of value to customers
12	Provides legal protection

Table 3: Ranking of importance of benefits from industrial brand names (Michell et al., 2001, p. 420)

Although there are several benefits that brands can have on business, only a few industrial companies are using them. This can be ascribed to the lack of academic research for B2B branding compared to the B2C context (Lynch & de Chernatony, 2004; Ohnemus, 2009). At the moment companies are not able to make an informed decision about their brand strategy due to the fact that for example the brand perception of B2B branding is not completely clear and it is not fully known if an investment in branding will bring financial reward (Ohnemus, 2009).

Due to the number of potential benefits a brand can deliver, one of the main targets and a central element of marketing strategy in B2B companies is, to build and maintain strong brands (Leek & Christodoulides, 2011a). However,

topics such as intangible attributes and benefits of branding in B2B, industrial buyers' perception of branding, how to successfully brand products and

services in B2B, branding and commoditization in B2B, and the market share, financial, and economic implications of branding in B2B are some of the issues warranting further empirical attention. (Seyedghorban et al., 2016, p. 2673)

2.1.4 Rational vs. Emotional factors influencing brand

The general view has been that marketers in the B2B sector are more doubtful about the benefits of a brand (Leek & Christodoulides, 2011b) and think that the decision making process is rational and focused on functional qualities and not as in the B2C context on emotional qualities (Leek & Christodoulides, 2012). Therefore, the value of a B2B brand is developed through functional qualities of a product, the product performance features (Kuhn et al., 2008). This also includes other tangible features such as after sales service, the supplier's profit and lead times (Mudambi et al., 1997). It is necessary that the buyer can justify the decision of buying a special product with tangible features. Various studies have confirmed the necessity of rationally functional product performance features (Aaker, 1991; Abratt, 1986; Bendixen et al., 2004). Meanwhile there is research available which confirms that emotional qualities contribute to B2B brands, for example the study of Jensen and Klastrup (2008). They measured customer brand relationships as an indicator for brand equity and found that they are driven by rational as well as emotional evaluations of the brand. The rational evaluations were associations of product quality, service quality and price. The emotional evaluations were differentiation, promise and trust/credibility. The resulted ranking for the determinants of buyer brand relationship was product quality, differentiation and trust/credibility (Jensen & Klastrup, 2008).

It seems that the less tangible, emotional aspects are perceived as less important than the functional performance related aspects of the brand. In the study by Bendixen et al. (2004), buyers rated nine attributes of their preferred brand and quality was ranked first most often: followed by reliability, performance, after-sales service, ease of operation, ease of maintenance, price, supplier's reputation and the relationship with the personnel of the supplier. Furthermore, according to Leek and Christodoulides (2012) it is obvious that functional qualities are important for buyers and, in order to generate positive emotions or at least no negative emotions, it is

necessary to provide these tangible and intangible aspects. It is suggested that functional and emotional qualities are connected, that they interact with each other, and that delivering functional qualities leads to developing emotional qualities.

2.1.5 Branding in the decision-making process

Although Brown et al. (2011) see an increasing growth in the interest of B2B branding, they also see that the studies in this area develop more slowly compared to the studies in the B2C market. According to Brown et al. (2011), this postponement in academic research can be ascribed to the organisational buying models in the field. Buyers are presented in these models as extremely objective when making decisions for product choice. Influences of subjective, brand based decisions have not been allowed to take a decisive role, due to the view in organisational buying models that organisational buyers are objective decision makers (Brown et al., 2011). However, other research, by for example Aaker and Joachimsthaler (2000) and Bendixen et al. (2004) recommends that brands in business markets can play an important role. In particular they can represent the quality of the product or the total relationship and experience of the supplier. Although research is recommends that brands have an influence on the organisational buying decisions, there is still a lack of understanding of when brands are able to play an important role in B2B contexts (Zablah et al., 2010). Brown et al. (2011) started to examine “the relationship between purchase risk and a buying centre’s level of brand sensitivity” (Brown et al., 2011, p. 194) and the outcome was that there is a complex relationship between brand sensitivity and purchase risk. When the purchase risk is very high or very low, the brand sensitivity is high. In addition, the results showed that if there is a highly competitive intensity this relationship is not as strong as in other situations. This means that if there is a highly competitive environment the risk level does not influence the brand sensitivity of the purchaser as it is in a low competitive environment (Brown et al., 2011).

With regard to the research field of German hospitals, this is quite an interesting find from the literature. In a hospital the staff are always confronted by risk because they have to treat sick people and they, in using the purchased materials, are not allowed to make mistakes. This raises the question of the existence of different risk levels, as well as criteria for high and low level of risk, and when is an environment highly

competitive. In addition, there is the question of when a German hospital experiences high competition.

Within the decision making process, branding is used at different stages to communicate a bundle of values to potential buyers (Sweeney, 2002). Therefore, it is important to understand the **decision-making process** at the different stages. Moreover, as Lynch and de Chernatony (2004) say, it is also important to understand the structure of the **decision making unit (DMU)**, the **evaluation criteria** which will be used for the decision of purchase and the characteristics of purchasers in the business segment. This can be supported by the result of Ferguson, Brown, and Johnston (2017), who see the characteristics of DMUs and the type of involved buyers as determinants for brand relevance.

As branding in the decision-making process is very important for the research topic, a summary of the relevant literature with regards to the decision-making process, decision making unit and evaluation criteria will follow. The overall frame for these themes is the topic of organisational buying behaviour, which will be the start of the second part of the literature review.

2.2 Organisational Buying Behaviour

Despite the growing interest in B2B branding, studies in the area of B2B appear less frequently compared to those in the consumer (B2C) market domain. This delay could be ascribed to the field of organisational buying models (Brown et al., 2011), which belongs to the theory of organisational buying behaviour and is close to B2B branding. There the decision on product choice is shown as highly objective and rational (Robinson et al., 1967; Sheth, 1973; Webster & Wind, 1972). According to Grewal et al. (2015), there are substantial differences between B2B and B2C buying behaviour. B2B buying satisfies a specific demand, the purchase decision is derived by a group of people and embedded in a network, and the purchasing process needs much more time due to factors such as higher complexity, a higher number of involved stakeholders and higher investment. An additional specific for B2B buying behaviour is seen in the need for the satisfaction of a total need compared to just buying a single product. In the literature, the frame for the decision making process is given by the topic of organisational buying behaviour. Johnston and Lewin (1996)

evaluate the understanding of customer companies' buying behaviour as important to be successful in business-to-business markets, but because buying behaviour is a process of multi phases, multi persons, multi departments and multi objectives, it is not easy to achieve such an understanding.

According to Wind and Thomas (1980), buying behaviour can be subdivided into three parts:

- 1) Buying centre
- 2) Organisational buying process
- 3) Factors influencing the buying process and buying centre

The research concerning the understanding of organisational buying processes started in the late 1960s. There are three original models which are the fundament for further research on organisational buying behaviour. Robinson et al. (1967) developed the first model of "the industrial buying process" and the "buygrid framework". Webster and Wind (1972) followed with their "general model of understanding organizational buying behaviour" and finally Sheth (1973) presented the "model of industrial buying behaviour". According to Johnston and Lewin (1996), "together, these three works laid the conceptual foundation for the study of organizational buying behaviour" (Johnston & Lewin, 1996, p. 1). Wilson (1996) agrees that they are valuable in terms of giving a descriptive, organizing framework (Wilson, 1996). The three models describe in their own ways industrial buying behaviour. Sheth (1973) and Webster and Wind (1972) have a more diagrammatic presentation of industrial buying, whereas Robinson et al. (1967) show a buygrid framework and introduced their "buyphases". An order of activities is displayed within the phases, which are usually conducted when an organisation is in the situation to buy: (1) realization of need and a universal solution, (2) definition of properties and quantity, (3) specification of properties and quantity, (4) scan for potential sources, (5) take in and analyse proposals, (6) value proposals and chose supplier(s), (7) chose an order routine, and (8) feedback on performance and assessment (Robinson et al., 1967). Also Webster and Wind (1972) and Sheth (1973) presented processes for organisational buying behaviour. These processes also consist of an order of phases, which are quite similar in nature and order, but they present it in fewer than eight phases.

The three original models contain the following variables:

- Environmental influences (e.g. legal, cultural, political, competitors)
- Organisational influences (e.g. size, structure, tasks, goals)
- Characteristics of individual participants (related to buyer) (e.g. personality, experience, education)

Robinson et al. (1967) and Sheth (1973) added another two variables:

- Purchase (product) characteristics (product type, product complexity, perceived risk)
- Seller characteristic, which means the evaluation criteria for potential supplier (e.g. price, match of requested product specification, product quality, delivery time, service)

Webster and Wind (1972) underlined the uniqueness of every buying centre and that this uniqueness is not just affected by organisational influences. There are also influences such as size, structure, experience, objectives... of the buying group. Thus, they introduced another variable named:

- Group characteristics (e.g. size, structure, expectations, experience, leadership)

Sheth (1973) introduced another two variables:

- Informational characteristics (e.g. sales people, fairs, advertising)
- Conflict negotiation characteristics

The three original models are very similar in how they are constructed. To Johnston and Lewin (1996), it is not a surprise because they were built almost at the same time and describe the same basic process of buying behaviour. In addition, "it appears that these models were correct in proposing that environmental, organizational, group, participant, purchase, seller, informational, and conflict/negotiation characteristics as well as the stages in the buying process significantly affect organizational buying behaviour" (Johnston & Lewin, 1996, p. 2).

These models were criticised by for example Anderson and Chambers (1985). The criticism was that "the early models of the organizational buying process failed to establish coherent research programs in this field. In part, this reflects the fact that these models are highly descriptive in character" (Anderson & Chambers, 1985, p. 7). The limitation of not being able to generate concrete predictions with a

descriptive approach that can be faced with empirical data is seen as the main point of criticism (Johnston, 1981; Wind & Thomas, 1980).

Anderson and Chambers (1985) appreciated the models in the fact that the models have obviously influenced the manner how problems have been structured and the way in which variables have been specified.

In the following years, new models and empirical studies appeared to gain more knowledge about organisational buying behaviour and “the most dramatic shift in research focus has been the movement from studying buyers and sellers in isolation to studying the relationship between firms” (Wilson, 1995, p. 3). The relationship between buyers and sellers is now studied as a continuous relationship rather than separated transactions (Wilson, 1995). In this section, studies of for example Anderson and Narus (1984, 1990); Dwyer, Schurr, and Oh (1987), Frazier (1983); Frazier, Spekman, and O'Neal (1988) and Heide and John (1990, 1992) will appear.

Traditionally B2B was seen as highly rational, but more recent studies of, for example, Pandey and Mookerjee (2018) and Kaufmann, Wagner, and Carter (2017), have investigated the role of emotions in the B2B buying context, with the result that in B2B decision-making emotions do have a role to play.

With social media, another new trend that influences B2B buying could be recognised. Diba, Vella, and Abratt (2019) concluded that social media is important for organisational buying behaviour and has relevance for the buying centre and for all the buying process stages. Via social media, buyers obtain immediate access to other buyer experiences and offerings of various suppliers. This results in higher buying power and more informed choices. Also, the role of the sales force as an information provider is shifted to other channels such as websites or digital media (Wiersema, 2013).

Based on the three original models, Johnston and Lewin (1996) display a model with the following variables:

- Purchase characteristics
- Organisational characteristics

- Group characteristics
- Participants characteristics
- Processes or stages of organisational buying behaviour
- Seller characteristics
- Environmental characteristics
- Conflict/negotiation
- Communication networks
- Decision rules
- Role of stress

In the initial research studies, the first four groups of variables draw the most attention. Purchase characteristics, organisational characteristics, group characteristics and participants characteristics were in the focus of research (Johnston & Lewin, 1996). Research that takes place at a later point of time turned the focus more on exploring the process of organisational buying behaviour (Makkonen, Olkkonen, & Halinen, 2012; Thompson, Mitchell, & Knox, 1998) and decision-making related to organisational buying behaviour (Barclay & Bunn, 2006; Moon & Tikoo, 2002).

As Wind and Thomas (1980) stated that buying behaviour can be subdivided into three parts: buying centre, organisational buying process and factors influencing the buying process and buying centre, the next chapter will continue with an explanation of the buying centre.

2.2.1 The Buying Centre

In order to research the influence of a brand on the decision-making process, it is necessary to know who is part of this process and thus later there will be reference to the interview partners for the research. The people involved in the decision-making process of a purchase are summarised with the term 'buying centre', also often called decision making unit (DMU).

Decision making units make most of the purchase decisions of organisations (Cheverton, 2015). For more than 40 years, buying centre analysis has been analysed in industrial marketing. That multiple participants are involved in the

organisational buying was agreed in the literature (Wind, 1978). However, despite the well accepted “buying centre” concept, there is little knowledge of the buying centre composition, the factors influencing the buying centre composition, changes in the buying centre, or influences among its participants (Wind & Thomas, 1980). Analysing the buying centre in-depth has only been seen as important by industrial marketing practice in recent years. Salespeople recognise the importance of understanding the structures of buying centres to be able to optimise selling efforts. This results in the increasing esteem of buying centre analysis (Klähn, 2013). Especially for sales people, the knowledge of buying centre structure and process is important (Kemmerling & Herbst, 2015) because buying centre members do not only vary in functional belonging, they also have different objectives and therefore they have different intensions (Sheth, 1973; Webster & Wind, 1972).

Johnston and Lewin (1996) summarised their findings out of a literature review and they see that the **buying centre composition** varies according to organisation.

Furthermore, it varies within one organisation according to the buying situation and other individual characteristics. The importance of **buying centre roles** varies according to the buying process phase and the size of the organisation is an important factor. In addition, a difference in responses exists to promotional stimuli. The **influence within the buying centre** depends on the study approach. For example, expert power was, in an attributional approach, relevant for influencing others, whereas, in an experimental approach, other foundations of power were rated as more important. The foundation of power varied then also according to the organisational position in the buying centre and the nature of conflict (Wind & Thomas, 1980).

Webster and Wind (1972) identified five roles in the decision-making unit:

- 1) Users – the people of the organisation using the purchased product.
- 2) Buyers – the people who are formally responsible and have the authority to close the deal with a supplier.
- 3) Influencers – directly or indirectly influencing the decision process by delivering information.

- 4) Deciders – able due to their authority to choose between other possible buying actions.
- 5) Gatekeepers – the people controlling the information flow (and materials) into the buying centre.

Bonoma (1982) later developed a sixth role of the decision-making unit. The additional role is the role of the person who initiates the buying process and is called: Initiator. By recognising the need for a product or service, the buying process is triggered.

The concept of the decision-making unit can be difficult to apply, because employees of the buying company do not wear role badges and mostly, they are not aware of their role. These roles are social roles and seldom do the people call themselves according to the roles or name themselves as a decision-making unit. Moreover, a certain role could not be assigned directly to a specific organisational rank or position (Bonoma, 1982). One role may be occupied by several individuals or several roles could be occupied by one person (Webster & Wind, 1972). In addition, it is also possible that the structure and size of the decision making unit varies along the buying process (Laing et al., 1998). Furthermore, Wind and Robertson (1982) recognised that there are intra-organisational dynamics between the decision making unit members and moreover there are inter-organisational between outside organizations and the decision making unit. Therefore, they developed further positions. The role of a linking pin and a boundary role.

Based on the model of Webster and Wind (1972), Laczniak (1979) conducted a qualitative study in the US, where the procurement was analysed by monitoring the equipment of hospitals. The main conclusion of the study was that the most influential deciders in the decision-making unit were the physicians and during the buying decision process they were also the most active participants. This study was completed almost forty years ago and the framework conditions could have changed. This leads to the need to review the situation, again and investigate whether the responsibilities and importance of decision unit members have remained the same.

The decision-making unit evaluates offerings according to specific factors. These factors refer to the purchase criteria (Jobber, 2010) and the importance differs between the different members of the buying unit (Hutt & Speh, 2010). According to Leek and Christodoulides (2011b), it is the role of the decision making unit which determines the importance of the decision criteria.

Lambert, Adams, and Emmelhainz (1997) carried out a study on supplier evaluation criteria of decision-making units in the healthcare industry. The result was that despite the pressure of cost reduction exerted by the government, low price was not the driving force for the selection of a supplier, and it has not become a more important criterion. The high criticality of product quality in the healthcare sector leads to a higher rating of product quality, delivery and service. A study by Liedes and Liimatainen (2010) in the Finish market examined the buying decision process of hospitals, its participants and the criteria used. According to their results, most of the purchases of a hospital are completed from the purchase office, but the need comes from medical staff. Technical criteria such as easy to use and connectivity were the most important criteria, followed by economic criteria such as purchase price, price/performance ratio and costs during the life cycle.

The DMU composition varies according to product and organisational characteristics. There are different sizes and different compositions of DMU. Different members of the DMU weigh product attributes differently. Wolter, Bacon, Duhan, and Wilson (1989) for example noticed that there is a difference in the evaluation of emotive and non-functional product attributes. Bendixen et al. (2004) looked at the DMU and how important the attributes for the members are. The result was that the price was the most important criterion for all roles and only technical specialists rank the brand name together with the price as the most important criterion. For the users, only the brand name was the most important criteria. For the buyer, the price was the most important criterion followed by the brand name. Moreover, there is not only a variation concerning the person in the DMU, there is also a difference of importance of particular attributes between the consideration stage and the choice stage (Howard & Sheth, 1969b). The consensus of the mentioned literature (Bendixen et al., 2004; Howard & Sheth, 1969a; Wolter et al., 1989) is that the different members of the DMU evaluate different criteria for the

purchase decision differently. Due to the fact that the studies were completed at different times, in different countries and among different organisations, it will be necessary to obtain current information and do further research on the contemporary composition of a German hospital's buying centre and on the evaluation criteria of each member.

2.2.2 Organisational buying process

As discussed, DMU composition and the importance of particular attributes vary according to the stage of the buying process, so it is also necessary to review the literature regarding the organisational buying process.

According to Manning, Ahearne, and Reece (2014, p. 180), the buying or decision-making process is a "systematic series of actions, or a series of defined, repeatable steps intended to achieve a result". The sequence of many activities starts with the rise of a need for a product or service, followed by the evaluation and finally completed with the purchase decision. There are a number of models, which vary in complexity. The process stages reach from four process stages in for example the model of Bradley (1977) to twelve stages in Wind's model. An overview was shown by Wind and Thomas (1980) in the following table.

Table II. Illustrative Formulation of the Organisational Buying Process

Robinson & Faris (1967)	Ozanne & Churchill (1971)	Webster & Wind (1972)	Kelly (1974)	Bradley (1977)	Wind (1978)
(1) Problem (need) recognition	(1) Awareness	(1) Identify needs	(1) Recognise need	(1) Purchase initiation	(1) Identification of needs
(2) Determine characteristics		(2) Establish specifications			(2) Establish specifications
(3) Describe characteristics					
(4) Search for sources	(2) Interest	(3) Identify alternatives	(2) Information search	(2) Survey of alternatives	(3) Search for alternatives
(5) Acquire proposals					(4) Establish contact
(6) Evaluate proposals	(3) Evaluation	(4) Evaluate alternatives	(3) Evaluate alternatives	(3) Supplier short-listing	(5) Set purchase and usage criteria
			(4) Approval of funds		(6) Evaluate alternatives
					(7) Budget availability
					(8) Evaluate specific alternatives
					(9) Negotiate
(7) Select order routine	(4) Trial	(5) Select supplier	(5) Decision	(4) Award contract	(10) Buy
	(5) Adoption				(11) Use
(8) Performance feedback					(12) Post-purchase evaluation

Table 4: Illustrative Formulation of the organisational buying process (Wind & Thomas, 1980, p. 243)

The table shows six ways of how the stages of the buying process are defined in the literature. The number of stages ranges from five to six. All models (Bradley, 1977; Kelly, 1974; Ozanne & Churchill Jr, 1971; Robinson et al., 1967; Webster & Wind, 1972) start with the same phase and are formulated with terms such as need, awareness or purchase initiation. The stages then continue on different levels and end at different places. All have the stage of the purchase decision named for example as buy, award contract or select supplier.

It seems that the stages are consistent, just the naming and how detailed the stages are differentiated is different.

Also, models which are developed at a later time, as for example the model by Manning et al. (2014) or Jobber and Lancaster (2015), are very similar to the already

existing models. The newer model summarises the buying process in the following five steps:

- 1) Need/Problem
- 2) Information gathering
- 3) Evaluation of alternatives and selection
- 4) Purchase
- 5) Implementation/Post-Purchase

According to Wind and Thomas (1980, p. 242), the buying process

...may vary by product/industry and buying situation (straight rebuy, modified rebuy, or new task), it is difficult to model, and, most critical, it is difficult to validate empirically since the order in which these steps typically are presented to the respondent can affect his/her response.

The recognition that the product and industry have an influence on the buying process leads to the second part of the first research question: Explore what the buying process is in a German hospital.

The environment of the decision-making process has changed. According to Coe (2004), the number of decision makers and influencers has increased over time. This brings more complexity to the process and thus the customer no longer follows a straight buying process. For the information gathering about products and companies, customers more often use the internet and social media (Coe, 2004; Edelman & Singer, 2015; Sharma & Sheth, 2010). Research by Google and the CEB with the title of 'Digital evolution in B2B marketing' also challenges the well-known buying models. The result in this study was that customers are nearly 60% through the sales process before they speak to a sales representative. In order to analyse their problems and build their own opinion about a possible solution, customers consolidate their personal networks and collect information which is publicly available. The channels tend to be more and more digital as well as social (CEB, 2011).

Regarding the buying behaviour and buying process of hospitals, there is only a limited number of studies. This was also recognised by other researchers such as

Vaalamäki (2009), Liedes and Liimatainen (2010) and Edrén and Sundin (2011). These authors referred to the steps of the buying process of the general models, which were already explained. These models were not developed especially for hospitals.

Laczniak (1979) described a model for the buying process steps in the context of hospitals. According to Laczniak (1979), there are four stages of the buying process of a hospital:

- 1) Identification of a need
- 2) Objective specification
- 3) Supplier evaluation
- 4) Supplier selection

An additional finding in this study was that if the purchaser, is also the buyer in the decision-making unit, this role then has less significance because of missing expertise and medical responsibility. Furthermore, doctors and nurses with the role of users and influencers were involved in the buying process earlier in comparison to other professions. The reason for that is the close contact to the need, which initiated the buying process. The findings by Laing et al. (1998) are corresponding. The result here was that in the initial phase of the buying process the administrative managerial staff have large roles and afterwards the involvement decreases. This means that they have a negligible role when the purchase decision is shaped. The medical staff have here the biggest impact in the decision-making unit. It is indicated that it depends on the stages of the decision-making process which member of the buying unit has an influence on the buying decision or supplier selection itself.

The results of Laczniak (1979) and Laing et al. (1998) can be a starting point for the research, but due to the fact that these studies were done several years ago, it will be necessary to verify if this is still the case today.

Blombäck and Axeisson (2007) showed that supplier selection processes are successive, starting with the situation that the customer has little concrete brand information moving to obtaining awareness until gathering all the necessary information they need to make the final decision. Due to this fact, it is necessary to

have a closer look to the stages of the decision-making process and after having a picture about the decision-making unit and the buying process, the third thematic field which belongs to organisational buying behaviour will be reviewed. The third part is regarding the factors which influence the buying decision process and the buying centre.

2.2.3 Factors influencing the buying process and buying centre

There are two main categories of factors influencing the buying process and the buying centre. First: the buying situation. This means that there is an influence whether the buy is a new purchase task, a varied rebuy or a direct rebuy. Second: the personal, interpersonal, environmental and organisational conditions. Additionally there are three other categories of influencing factors mentioned by Wind and Thomas (1980), which should be included:

- Company's marketing strategy (e.g. positioning, price, product design, advertising, distributing)
- Competitor's marketing strategy
- Environmental forces (including political, economic, technological, legal and social/cultural forces and trends)

The characteristics of the purchase situation could also affect the influence of branding in a buying decision. Mudambi et al. (1997) found that the more complex a buying situation is and the more uncertainty there is within this situation (for example need uncertainty or technical uncertainty), the more important branding is as an evaluation criterion. The importance of branding also increases as the degree of risk (individual or organisational) increases, according to Bengtsson and Servais (2005).

It could also be assumed that branding has an influence in whichever industry the decision-making process has taken place. If farmers and farm contractors think about buying a tractor, research shows that the brand name is the most important factor compared to the price, dealer and service quality attributes (Walley et al., 2007). Compared to the farming industry, another situation occurs in the wood industry. The research of Sinclair and Seward (1988) showed that there is relatively weak brand awareness of manufacturer brands in this sector. Therefore, it will be

necessary later in this process to take a closer look at the hospital sector within which the research takes place.

There is a growing evidence to suggest that organisational buying decisions are influenced by brands, but the knowledge of when brands matter most in the context of B2B is still lacking (Zablah et al., 2010). Due to this lack of clarity, especially the uncertainty over whether brands are most influential in high, low or moderate purchase risk situations, the study of Brown et al. (2011) investigated the brand sensitivity of a buying centre in relation to the purchase risk. Homburg et al. (2010) found that brands could play an important role in purchase situations which are risky. This consideration is in conflict with the findings of existing organisational buying models. These models suggest that a buyer faces high risk situations with the persuasion of disciplined purchasing strategies, which have the main focus on an extensive process of information search (Brown et al., 2011).

In the area of hospitals, the risk in purchase situation of medical devices varies according to the money a buyer or company can lose, but the risk of what happens when the product or the supplier fails is always connected to the patient's health. If a supplier delivered faulty equipment or there were problems with the purchase/delivery, in the worst case, the hospital would not be able to perform surgeries and to treat patients. Additionally, not all products are expensive and thus they only take a small part of the buyer's budget. It could be argued that the buyer is not willing, as described by the existing organisational buying models, to perform an extensive information search process. Here the brand could also have influence on the decision.

In the first section of the literature review, it became apparent that there is only limited research about business branding and especially how the organisational purchasers are influenced by brands when they make a purchase decision (Lynch & de Chernatony, 2004). The approach to look into the topic from another perspective of organisational buying behaviour also showed that there is not paid much attention to the role of brands in the decision-making process of an organisation.

2.3 Summary

After having reviewed the topics of B2B branding and organisational buying behaviour which are close to the research topic of B2B brand sensitivity and how brands influence a German hospital's decision making process, the main learning is summarised in the following section. Based on the knowledge gained from the review of the literature, a conceptual framework has been developed in the following section.

2.3.1 Conclusion

In general, the marketing segment of B2B branding is under researched (Glynn, 2007; Kuhn et al., 2008; Mudambi et al., 1997; Roper & Davies, 2010), but due to rising challenges in the markets, B2B companies aim to build brands in order to achieve a competitive advantage (Mudambi et al., 1997; Walley et al., 2007). However, there is still a lack of clarity about the difference of brand concept in the B2B market compared to the B2C context, and the meaning of 'brand' itself to the different stakeholders in B2B markets (Leek & Christodoulides, 2011b). Undertaking research on B2B brand sensitivity could add knowledge to the topic.

Although studies which were completed decades ago question the relevance of brands in B2B markets (Saunders & Watt, 1979; Sinclair & Seward, 1988), the literature review showed a clear picture that branding not only has its justification in the B2C world, but is also important in the B2B world. It is a key success factor and it is necessary to communicate benefits and values to the customer. The study result by Lee et al. (2008) found that the effect of a brand management system on customer preference was actually stronger for B2B brands than for B2C brands.

At the moment companies are not able to make an informed decision about their brand strategy due to the fact that for example the brand perception of B2B branding is not completely clear (Ohnemus, 2009). In current B2B branding literature, managerial questions such as why companies should establish a branding strategy and whether a customer should buy a brand instead of other alternatives still remain unresolved (Seyedghorban et al., 2016). Thus, the research will provide an increase in academic knowledge to be able to give managerial advice regarding whether it is worth investing in building a brand.

Examining branding from a buying perspective makes it necessary to be aware of the specialised nature of business marketing and purchasing and not to ignore it. This is often the case when B2C brand perspective is applied to B2B branding (Glynn, 2012; Seyedghorban et al., 2016; Taylor & Hunter, 2014). This will also be valid for the research project. The relevance of B2C frameworks to the industrial buying process is questioned and therefore it is probably necessary to differentiate the research from the results of B2C branding.

Although there is an increase of empirical evidence for the influence of brands in organisational buying decisions, there is still a lack of understanding over when brands matter most in the context of B2B (Zablah et al., 2010). Only Brown et al. (2011) started to examine the relationship between the brand sensitivity of a buying centre and the purchase risk, which could be one factor that influences the decision making of a buying unit. The current study plans to contribute to the question of when brand sensitivity appears during the buying process of a German hospital.

The extent of brand sensitivity depends on different determinants, for example the product category (Kapferer & Laurent, 1983), which make it necessary to investigate the determinants of brand sensitivity of decision makers in the hospital.

It became clear during the review of the literature that some studies identified that there are benefits a brand approach could deliver. Thus, it is one of the main targets and a central element of marketing strategy in B2B companies to build and maintain strong brands (Leek & Christodoulides, 2011a). This again emphasises the importance of the research topic. Seyedghorban et al. (2016, p. 2673) requested further empirical attention to

topics such as intangible attributes and benefits of branding in B2B, industrial buyers' perception of branding, how to successfully brand products and services in B2B, branding and commoditization in B2B, and the market share, financial, and economic implications of branding in B2B.

Although there is a study showing that the choice for a B2B brand is made with an objective decision making process, focused on hard facts (Leek & Christodoulides, 2012), it is stated in the literature that it is necessary to consider emotional factors

besides the rational factors (Jensen & Kjastrup, 2008). Functional and emotional qualities are connected, and the fact that they interact with each other to deliver functional qualities leads to developing the emotional qualities (Leek & Christodoulides, 2012). This indicates that it is important to look at the rational as well as at the emotional factors influencing brand sensitivity.

As the aim of the research project is to find out how brands influence a German hospital's buying decision-making process, it is important to understand the buying process of a hospital. The buying process for a B2B brand is much more complex because a buying unit with several individuals is involved in the process. Within the decision making process, branding is used at different stages to communicate a bundle of values to potential buyers (Sweeney, 2002). Therefore, it is important to understand the decision making process to be able to use branding effectively at the different stages of the decision making process and, as Lynch and de Chernatony (2004) said, it is also important to understand the structure of the **decision-making unit (DMU)**, the **evaluation criteria** which will be used for the decision of purchase and the characteristics of purchasers in the business segment. This refers to the first research questions with the target of identifying who the key actors are and are in the buying decision process of a German hospital.

In the literature, a number of models were identified which describe the buying process (Bradley, 1977; Jobber, 2010; Manning et al., 2014; Robinson et al., 1967; Sheth, 1973; Webster & Wind, 1972). The models vary according to the level of detail and they are very descriptive. For the research project, it is a good basis to start but it will be necessary to discover the stages of the buying process of a German hospital in a more specific way.

Existing literature regarding the buying process of hospitals is only limited (Edrén & Sundin, 2011; Liedes & Liimatainen, 2010; Vaalamäki, 2009).

The described model of organisational buying behaviour published by (Sheth, 1973) is a good basis for the development of a buying behaviour model specifically for hospitals. Therefore the model of Sheth (1973) has to be adapted and updated to the current 21st century market and buying/selling practices and behaviours in order to understand the decision making process to further understand the interplay

between branding and the decision making process. Moreover, the existing buying models have been developed at a time with a different environment and the time has changed. This additionally makes it necessary to challenge the existing models.

In the evaluated literature (Blombäck & Axeisson, 2007; Bradley, 1977; Coe, 2004; Edelman & Singer, 2015; Edrén & Sundin, 2011; Jobber & Lancaster, 2015; Kelly, 1974; Lacznia, 1979; Laing et al., 1998; Manning et al., 2014; Ozanne & Churchill Jr, 1971; Robinson et al., 1967; Sharma & Sheth, 2010; Vaalamäki, 2009; Webster & Wind, 1972; Wind & Thomas, 1980), the stages of the decision making process are described but not linked to branding. The target of a brand is to communicate values and benefits, and therefore it is necessary to know which values and benefits are important and to whom should it be communicated at which stage of the process to receive the best result.

As stated previously, regarding the decision making of German hospitals buying units, there is a shortage of literature and research. Only three studies were close to the topic. There is some limited work from a bachelor thesis by Edrén and Sundin (2011) which deal with the buying process within hospitals in Sweden; and a research on different buying behavioural patterns in the Hungarian hospital network (Simon et al., work-in-progress). Additionally, approaches on buying decisions of organisational buyers and users were developed by Moon and Tikoo (2002), based on the data of purchasing managers and doctors of 150 general hospitals in Korea.

In order to gain an understanding of the brand influence on the decision-making process, it is important to know who is making the purchase decision, which means who is going through the decision-making process and is possibly influenced. According to the literature, purchase decisions of organisations are made by decision making units, also called buying centres (Cheverton, 2015; Kemmerling & Herbst, 2015; Klähn, 2013; Sheth, 1973; Webster & Wind, 1972). The most important point here is to obtain knowledge about the composition of the buying centre as well as the intentions of the individual members (Kemmerling & Herbst, 2015; Sheth, 1973; Webster & Wind, 1972). This varies according to organisational characteristics (Johnston & Lewin, 1996). Therefore, the decision-making unit of a German hospital needs to be analysed for the research project. The five identified

roles (user, buyer, influencer, decider and gatekeeper) of Webster and Wind (1972) could be applied with the focus on the intention of the individual roles.

Among the decision makers, differences in evaluation were recognised (Hutt & Speh, 2010; Leek & Christodoulides, 2011b), so it will be necessary to discover what the relevant evaluation criteria are for the buying unit of a German hospital and how important they are. Investigations should be conducted into the characteristics of the members, in regard to the rating of choice attributes and the motivations of each buying unit member.

The influence of branding in a buying decision could be also affected by the characteristics of the purchase situation. In the review of the literature, it was identified, that here, there are investigations regarding two parameters.

The first is the complexity of a buying situation and uncertainty, which was researched by Mudambi et al. (1997) with the result that the more complex a buying situation is and the more uncertainty there is within this situation, the more important branding is as an evaluation criterion. The second is the degree of risk perceived during a buying decision. This was investigated by Bengtsson and Servais (2005), Brown et al. (2011) and Homburg et al. (2010) with the result that the importance of branding also increases along with the degree of risk.

There is a growing evidence to suggest that organisational buying decisions are influenced by brands, but the knowledge of when brands matter most in the context B2B is still lacking (Zablah et al., 2010).

Whilst undertaking the review of the existing literature, it can be noticed that B2B branding is an important field of study, and a research gap is evident around awareness of brand sensitivity. Moreover, German hospitals' purchase behaviour patterns and methods when buying medical devices is a second gap where this research will add to knowledge.

With the knowledge of the existing literature, the following research objectives can be defined:

- 1) Identify who are key actors, the people who are part of the buying decision process in a German hospital and their roles in the buying unit, and explore the factors that have an influence on how the buying centre is composed.
- 2) Explore and analyse relevant parameters for decision making which could have an effect on brand sensitivity.
- 3) Identify how and why certain parameters have an influence on brand sensitivity and purchasing decisions.

With the research objectives in mind and the target to answer the research questions, the next section summarises very specifically the key learnings from the literature review in regards to the research questions. The following table shows the current existing knowledge of the buying unit, which includes that multiple participants are involved in the buying unit, the different influence factors on the buying centre composition, and the known roles and tasks of the buying unit participants. Furthermore, the previously explored influence factors on the decision-making of German hospitals are displayed, and in the last part shows the current available knowledge in regards to brand influence in decision-making.

RQ	Literature Results
1	<ul style="list-style-type: none"> • Multiple participants are involved in the organisational buying (Wind, 1978) • Influence factors for buying centre composition (Johnston & Lewin, 1996; Wind & Thomas, 1980): <ul style="list-style-type: none"> - Organisation - Buying situation and other individual characteristics - The importance of buying centre roles varies according to the buying process phase and the size of the organisation is an important factor - A difference in responses exists to promotional stimuli - Study approach • Tasks/Roles of the buying unit participants: <ul style="list-style-type: none"> - Bonoma (1982); Webster and Wind (1972) described general roles: <ul style="list-style-type: none"> - Users - Buyers - Influencers - Deciders - Gatekeepers - Initiators - Laczniak (1979); Webster and Wind (1972): <ul style="list-style-type: none"> - Decider → physicians

RQ	Literature Results
	<ul style="list-style-type: none"> - Liedes and Liimatainen (2010): <ul style="list-style-type: none"> - Purchases of a hospital are done from the purchase office - Need comes from the medical staff
2	<ul style="list-style-type: none"> • Influence factors for decision-making of German hospitals (Bendixen et al., 2004; Lambert et al., 1997; Liedes & Liimatainen, 2010): <ul style="list-style-type: none"> product reliability reagent stability stability of controls reagent sensitivity supplier adequately tests new products quality functional and technical qualities usability and adaptability functionality and simplicity connectivity reliability durability technical values and merits testing before purchase technology maintenance time of guarantee training price brand name size of the monitor language of the monitor criteria required by the unit itself experiences reliability of the supplier supplier replenishes defective lot supplier expedites emergency orders consistency of delivered product lead-time for emergency orders time of delivery delivery technical services: problem -solving supplier provides notice of product problems technical service: responsiveness technical service: accessibility supplier provides technical assistance free WATS line for technical service availability of quality control information sales force honesty sales force product knowledge technical service: product knowledge accuracy in filling orders

RQ	Literature Results
3	<p>Brand influence on decision-making:</p> <ul style="list-style-type: none"> • Brown et al. (2011); Homburg et al. (2010); Webster and Keller (2004): <ul style="list-style-type: none"> - perceived risk and uncertainty can have an influence on brand sensitivity • Zablah et al. (2010): <ul style="list-style-type: none"> - competitive intensity and the product type have an influence on brand sensitivity • Brown et al. (2011): <ul style="list-style-type: none"> - complex relationship between brand sensitivity and purchase risk - when the purchase risk is very high or very low, the brand sensitivity is high - brands function as choice simplification in situations with low purchase risk - in situations with high purchase risk brands reduce the risk - if there is a high competition, the brand sensitivity – purchase risk relationship is reduced, whereas a generally high level of brand sensitivity exists - the relationship of brand sensitivity and purchase risk might vary according to the type of risk • Brown et al. (2012): <ul style="list-style-type: none"> - purchase importance and purchase complexity have an influence on buying centre brand sensitivity

Table 5: Summary - results of existing literature regarding the research questions
(author's own illustration)

2.3.2 Conceptual Framework

Based on the findings from the review of the literature and the proposed research, a conceptual framework has been developed, as illustrated in the following diagram:

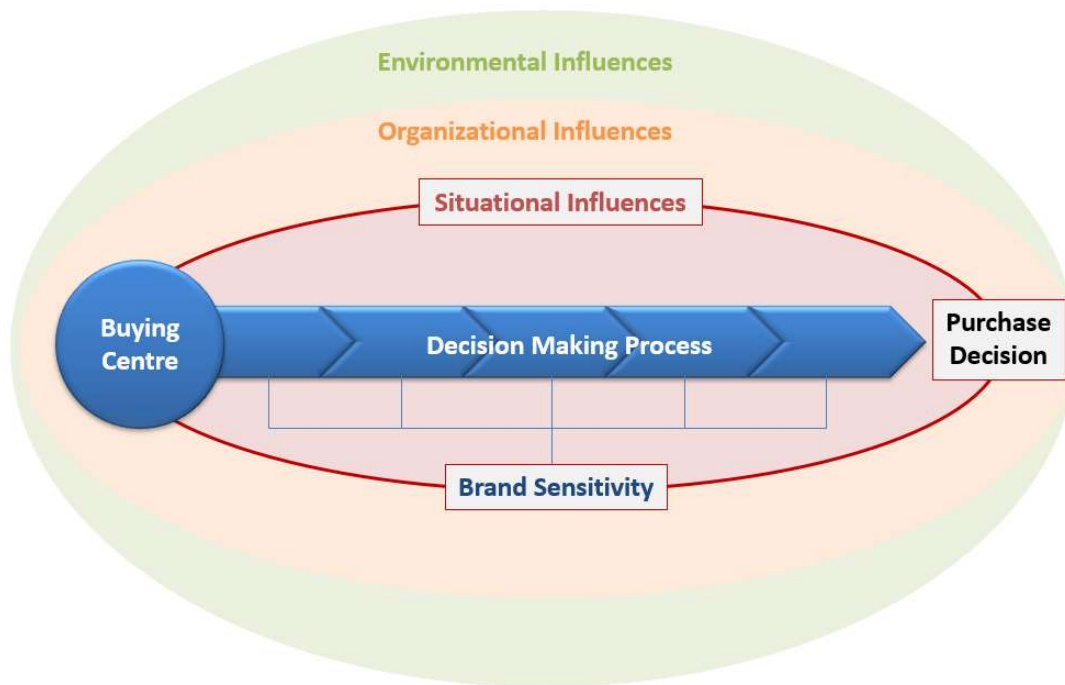


Figure 2: Conceptual Framework (author's own illustration)

The model starts with the buying centre of the hospital in order to identify who are key actors and who is part of the buying decision process in a German hospital. In the first step it is necessary to know who is in the buying centre of a hospital so that the people who are possibly influenced by a brand during the decision-making process are known.

The buying centre members go through a process to arrive in the end at the purchase decision, the process here named as the decision-making process. The individual steps of the decision-making process have to be evaluated for the specific case of German hospitals. The decision making is surrounded by influence factors. The model shows environmental, organisational and situational influences. The research will include only the situational influence factors because the sector of hospitals is already defined and the research is located within German hospitals. Therefore, the main interest is regarding the situational influences as the main

impact is expected to be there. The relevant influence parameters for decision making which could have an effect on brand sensitivity will be explored and analysed. There is expected to be a relationship between situational influences and the presence of brand sensitivity. As Brown et al. (2011) saw a relationship between the situational influence of purchase risk and brand sensitivity, there are expected to be additional situational influence factors, besides purchase risk. If the additional situational influence factors are determined, the next step is to identify how and why certain parameters have an influence on brand sensitivity and purchasing decisions.

To sum up, the constructed model can be completed with information, and new knowledge can be derived out of the completed model by answering the following research questions and following at the same time the associated research objectives.

Research Question	Research Objective
1) Who are the participants in the buying unit of a German hospital and how are the composition of the buying centre and the roles of the participants influenced?	1) Identify the key actors, the people who are part of the buying decision process in a German hospital and their roles in the buying unit, and explore the factors that have an influence on how the buying centre is composed.
2) What are the influence factors for decision making?	2) Explore and analyse relevant parameters for decision making which could have an effect on brand sensitivity.
3) How and why does a brand influence the decision making of a German hospital?	3) Identify how and why certain parameters have an influence on brand sensitivity and purchasing decisions.

Table 6: Overview of research questions and research objectives (author's own)

The literature review provided the theoretical foundation for the thesis, and displayed a picture of the existing literature and knowledge regarding B2B branding

and organisational buying behaviour. The chapter showed the research gaps and enabled the development of a conceptual framework as well as the definition of the research questions.

Chapter 3 Methodology

Based on the theoretical foundation of the literature review, chapter three builds on this and outlines the methodology and methods used in this thesis. The chapter on methodology is structured in six subsections. Firstly, the introduction gives the philosophical background which is necessary to define and justify the research design. In addition, it explains important terminologies such as ontology, epistemology and methodology. The second subsection describes the research philosophy applied for the research project. This means the applied ontological view, the selected epistemology and the research paradigm. After that, the possible research approaches are shown and the choice for the research project is defined. Subsequently, research methods in general are explained, an overview is given about which methods exist to generate data, and, based on that, the methods used for the research project are defined. Afterwards, the considerations on ethics are explained, and finally the section closes with the data analysis applied for the research.

3.1 Introduction

The foundation of research is characterised by philosophical issues and it is very important to understand the philosophical assumptions. Easterby-Smith, Thorpe, and Jackson (2012) stated that there are at least three reasons which underline the importance of this understanding. Firstly, support in clarifying the research design can be delivered. This includes the consideration of what evidence is necessary and how it could be collected, as well as the answers to basic questions which are examined in the research. Secondly, it can support the selection of design and deliver guidance during the research. It is possible to see which design will perform and which not. Thirdly, it can bring the researcher to the creation of designs which are new to him/her, and will deliver new experiences and the ability to adapt research designs to the requirements of different topics.

According to Saunders et al. (2009), it is necessary to display the issue underlying the choice of data collection technique and analysis procedures before answering the question of how to generate data and how to answer the research question. Guba and Lincoln (1994) say that it is not the question of research methods which is the most important, but the question of which paradigm is usable for the research

question. Guba and Lincoln (1994, p. 105) define paradigm as “the basic belief system or worldview that guides the investigator, not only in choices of method but in ontologically and epistemologically fundamental ways.”

Easterby-Smith et al. (2012) use a metaphor to explain the research process and, in the author’s opinion, it is very useful to give an overview about the place of philosophical issues within the research. The model of the metaphor is a tree and consists of the roots, trunk, branches, leaves and fruit. The roots stand for the research traditions and experiences from particular disciplines and fields of research. The tree draws up nutrients from the ground and analogy; ideas, perspectives and beliefs are absorbed in order to create the researcher’s ideas concerning design, methods and forms of analysis. The nutrients are transported up the trunk from the roots through the branches to the leaves and fruit. The trunk determines the strength and shape of the tree. The trunk is a central part because it explains the four main features of the research design. The inner ring is the core of the trunk and represents the ontology, the fundamental views of the researcher about the nature of reality. The second ring constitutes the epistemology, the different ways of researching into the nature of the world. The third ring stands for the methodology, the manner in which research techniques and methods are arranged to present a consistent picture. The outer most visible ring represents individual methods and techniques for data collection and analysis.

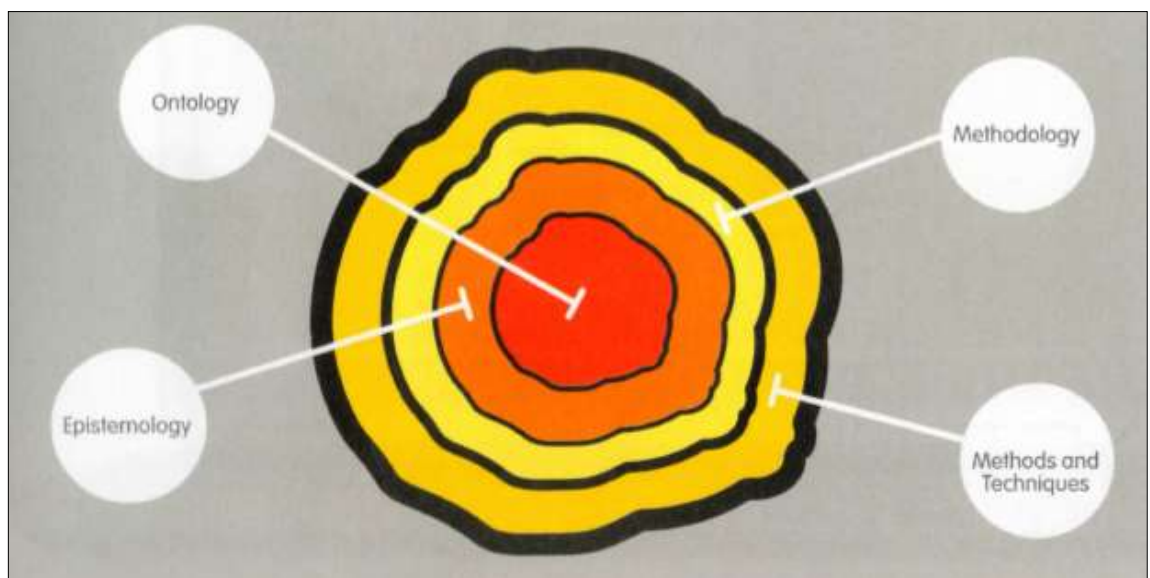


Figure 3: Research Process – foundation (Easterby-Smith et al. (2012, p. XV))

Moving along the branches, one will get to the leaves which absorb energy from the sun. In analogy within a research project it stands for the generation and analysis of data which inspire new ideas and facilitate the further development of existing theories. Based on the epistemology it distinguishes between three kinds of data. The differentiation is according to the kind of approach, if it is a positivist, constructionist or hybrid approach. The last part of the tree is the fruit, which stands for the way of writing and how it is communicated to third parties. It reflects the connection between the output of research and the ontology, epistemology, methodology and methods.

In the following section the author explains and discusses these terms in accordance to her research, by firstly describing the different terms, before applying her approach for the thesis.

Ontology

Ontology deals with the nature of reality and concerns questions affecting the view researchers have about the way the world works (Saunders et al., 2009). The basic question of ontology is “What is the nature of the knowable? Or what is the nature of reality?” (Guba, 1990, p. 18). There are four main ontological positions presented in the following table according to Easterby-Smith et al. (2012, p. 19).

Ontology	Realism	Internal Realism	Relativism	Nominalism
Truth	Single truth.	Truth exists, but is obscure.	There are many truths.	There is no truth.
Facts	Facts exist and can be revealed.	Facts are concrete, but cannot be accessed directly.	Facts depend on viewpoint of observer.	Facts are all human creations.

Table 7: Four different ontologies (Easterby-Smith et al., 2012, p. 19)

Epistemology

Epistemology concerns the different ways of researching into the nature of the world (Easterby-Smith et al., 2012). The basic question of epistemology is “What is the nature of the relationship between the knower (the inquirer) and the known (or

knowable)?”(Guba, 1990, p. 18). Bryman and Bell (2011, p. 15) state that it “concerns the question of what is (or should be) regarded as acceptable knowledge in a discipline.” A central issue there is the question of the possibility to study the social world according to the same principles, approaches and ethos as natural science (Bryman & Bell, 2011).

According to Easterby-Smith et al. (2012) there are two main views about the way of researching: positivism and social constructionism. The contrasting implications of positivism and social constructionism are shown in the following table.

	Positivism	Social Constructionism
The observer	must be independent	is part of what is being observed
Human interests	should be irrelevant	are the main drivers of science
Explanations	must demonstrate causality	aim to increase general understanding of the situation
Research progresses through	hypotheses and deductions	gathering rich data from which ideas are induced
Concepts	need to be defined so that they can be measured	should incorporate stakeholder perspectives
Units of analysis	should be reduced to simplest terms	may include the complexity of “whole” situations
Generalisation through	statistical probability	theoretical abstraction
Sampling requires	Large numbers selected randomly	Small numbers of cases chosen for specific reasons

Table 8: Contrasting implications of positivism and social constructionism (Easterby-Smith et al., 2012, p. 24)

Methodology

The basic question of methodology is “How should the inquirer go about finding out knowledge?”(Guba, 1990, p. 18).

The described ontologies and epistemologies could be linked and methods could also be derived. According to Easterby-Smith et al. (2012) positivism is linked to realist ontology and constructionism is linked to nominalism and relativism. In

addition, it also includes a stronger version of positivism and constructionism. The following table gives an overview of the methodologies which fit into the predominant four positions.

Ontologies	Realism	Internal Realism	Relativism	Nominalism
Epistemology	Strong Positivism	Positivism	Constructionism	Strong Constructionism
Methodology				
Aims	Discovery	Exposure	Convergence	Invention
Starting points	Hypotheses	Propositions	Questions	Critique
Designs	Experiment	Large surveys; multi-cases	Cases and surveys	Engagement and reflexivity
Data types	Numbers and facts	Numbers and words	Words and numbers	Discourse and experiences
Analysis/ interpretation	Verification/ falsification	Correlation and regression	Triangulation and comparison	Sense-making; understanding
Outcomes	Confirmation of theories	Theory testing and generation	Theory generation	New insights and testing

Table 9: Methodological implications of different epistemologies (Easterby-Smith et al., 2012, p. 25)

The following section will explain the research philosophy of this research project.

3.2 Research Philosophy

Based on the researcher's ontological stance on relativism and the epistemology stance on constructionism, the decision of a constructivist approach by doing a case study and conducting interviews appeared most suitable.

The constructivist approach was selected based on the definition of the research questions, which were:

- 1) Who are the participants in the buying unit of a German hospital and how are the composition of the buying centre and the roles of the participants influenced?

- 2) What are the influence factors for decision making?
- 3) How and why does a brand influence the decision making of a German hospital?

The Constructivist approach was seen as the best approach, because for a constructivist there is not only one truth, there are many. Scientific principles are created by people, they are not just there waiting to be discovered. People have different viewpoints and how well they are accepted depends on the status and past reputation of the people. Facts depend on the viewpoint of the observer (Easterby-Smith et al., 2012). The research project is really interested in discovering the different viewpoints and gaining insights into the different perspectives of the research problem. In addition, “for the constructivist, truth lies in the eyes of the observer, and in the constellation of power and force that supports that truth” (Moses & Knutsen, 2007, p. 11). The reality is socially constructed and an individual will perceive varying situations in different ways due to their own view of the world (Saunders et al., 2009). The socially constructed world does not exist as one clearly described social world, there are many and they are not naturally given, they are socially constructed by human beings (Moses & Knutsen, 2007). Moreover, reality is seen as highly context specific (Guba, 1990). Bryman and Bell (2011, p. 22) add that “social phenomena and categories... are in a constant state of revision.”

Due to the fact that a constructionist believes that there are different realities, it is necessary for the research project to work in order to understand different perspectives of the construct. This approach is very strong in looking at change processes over a period of time, in comprehending people’s meanings, in adjusting new subject matters and conceptions as they arise, and in adding knowledge to the development of new theories. The way of data generation is perceived as more natural than artificial (Easterby-Smith et al., 2012). The data generation was performed via interviews, because it is perceived to be more natural, it feels like a normal conversation. A large number of questions were asked to obtain a deep understanding and to uncover an experience of the individuals participating in the research. In contrast, in the realist approach, the realist would have the aim of measuring things and this seems to be more artificial because the question of why things happen will not be answered.

Concerning the planning of research, one should be aware, that the data generation in this case is very time consuming. Also, the analysis and interpretation of data could be very difficult. For qualitative studies, it is not easy to track their speed, progress and termination, and the credibility of qualitative studies, especially of policy makers, is not as high as for quantitative studies because the base of the study seems to be “subjective” to them (Easterby-Smith et al., 2012).

As a constructivist researcher, the interest is on individuals and how they deal with feelings. Therefore, it is necessary to identify first the key actors who are part of the buying decision process in a German hospital in order to know who the individuals are.

After that, relevant parameters for decision making of the buying unit members which could have an effect on brand sensitivity can be explored and analysed. In addition, the how and why certain parameters have an influence on brand sensitivity and purchasing decisions can then be identified.

In connection to the research question, the benefit of selecting this approach is seen in acquiring a very deep understanding of who is in the buying unit of a hospital, the factors influencing the decision-making process and how decision makers are influenced or seem to feel influenced by branding during this decision. The individuals are able to give an indication for potential starting points to improve branding in order to enable companies to do a more successful business.

The constructivist approach would not cause change in the purchasing process of a hospital because the influence of branding is not perceived by everyone. It is something that works subconsciously, which makes it necessary to acquire a deep understanding of the construct and gives the justification for the constructivist approach. It would be very important to ask the specific and detailed questions, to move as deeply as possible into the topic and into the mind of the protagonists.

Within this approach, the advantage for the research is seen in acquiring a deep understanding of the construct of branding in the buying process of a German

hospital. It is assumed that especially the connection between the elements and parameters could be understood with this approach. Within this approach, there is the possibility to integrate new learning and to adjust the research to new issues.

In summary, based on the research questions, the main reasons to use a constructivist approach were:

- The focus is on the different viewpoints of the constructs: buying unit, influence factors for decision-making and brand influence on decision-making.
- The individual perspectives of the purchasing organisation employees are of great interest, as reality is defined and perceived by the interviewees.
- It is possible to investigate the influence factors for decision-making and brand influence which can work subconsciously as a very deep understanding of the construct can be achieved with this approach.

On the other hand, it is necessary to be aware of the disadvantages a constructivist approach can possibly have. The data generation can be more time consuming than in the realist approach. This was taken into account for the time planning.

Also, the interpretation and analysis of the data could be more difficult. The researcher needs to deal with the possible lower credibility of qualitative data for decision makers because they might assume that the study is based on subjective opinions. This was avoided through the set-up of interviews. The interviews are built in a way that shows different perspectives on the construct and not subjective opinions. Moreover, it would be a challenge to measure the progress and also the point when the results are sufficient and the end of the study is reached. The question of how many interviews are needed to achieve data saturation must be addressed (Guest, Bunce, & Johnson, 2006). Data saturation is achieved when the study can be replicated based on sufficient information (O'reilly & Parker, 2013) and when no new information or topics can be find in the data (Guest et al., 2006). How data saturation will be defined for this research project will be discussed later in the section on sampling strategy (chapter 3.4.4).

Moreover, the role as a researcher is seen as being part of the research and being considered as subjective. With this in mind, the awareness is there that the

researcher can bias the research results. Especially during the data generation, the interviewer can bring their own beliefs and opinions via non-verbal communication, verbal comments on the response or tone of voice. The researcher's interpretation of responses can also create bias (Easterby-Smith et al., 2012). The role of a researcher and what is necessary to overcome the issue of bias will be discussed later, for the specific chosen method.

In the constructivist approach, reality needs to be interpreted by the researcher, and, as Bryman and Bell (2011) say, both the researcher's view of the world and the assumptions are a construction, which means that the researcher always constitutes a specific design of social reality. The researcher's own information of the social world is a construct. The researcher presents no definitive social reality, it "is viewed as indeterminate" (Bryman & Bell, 2011, p. 22). The study and also the results may be impacted by the researcher's worldview, his/her behaviour and interaction with the interviewed persons. The role of the researcher is explained in the section 3.4.3.

In the following, it is explained and critically discussed why other research approaches do not fit to the research project and are not in accordance with the research philosophy.

As the philosophy of the researcher is constructivist, the realist perspective feels like a contrast to what is believed because as Saunders et al. (2009, p. 114) explain "that what the senses show us as reality is the truth: that objects have an existence independent of the human mind." Realists think that there is a reality which is independent of the mind (Saunders et al., 2009). The existence of the Real World is independent of our experience (Moses & Knutsen, 2007).

The epistemology is positivism which assumes a scientific approach for the development of knowledge, which is reflected in the data generation and understanding of those data (Saunders et al., 2009). There are varieties of realism and they have different descriptions, including transcendental realist, relational realist, critical realist, empirical realist, but the most common name is scientific realist (Moses & Knutsen, 2007). Saunders et al. (2009) divide realism into two main parts direct realism and critical realism. Direct realism holds the view that "what you

see is what you get: what we experience through our senses portrays the world accurately" (Saunders et al., 2009, p. 114). Critical realists go one step further and say that what we experience are sensations, we do not experience the things directly, it is more a picture of these things (Saunders et al., 2009).

According to Wendt (1999), realists think that there are many layers of truth and, like the constructivist, they assume that the social world is rich in complexity. To uncover these layers, they think scientific approaches are the best way. Also, Bashkar (2011) states that we have to understand social structures if we want to understand the social world. What we experience and what we can see is just a piece of the bigger picture. In this point, the realist is very close to the constructivist. Shapiro (2009, pp. 8-9) says that "the world consists of causal mechanisms that exists independently of our study – or even awareness – of them, and that the methods of science hold out the best possibility of our grasping their true character". According to Sayer (2000), critical realism is compatible with a broad range of research methods. The methods should be chosen depending on the nature of the objects of study and what the learning objective is.

As a realist researcher, the facts are waiting to be discovered by the researcher, it is "just" necessary to see if branding influences the purchase decision, because "what the senses show us as reality is the truth"(Saunders et al., 2009, p. 114). The individual senses of, for example, seeing or hearing will show the truth because it will be obvious if there is an influence. It would be possible to verify or falsify the statement or to answer the question with yes or no.

The way questions are asked in the research project, e.g. the research questions, show that this is not the way the researcher is thinking. This approach requires a different way of asking.

A wording for the research question which better matches the realist approach would then be "is there an influence of branding in the purchase decision of a hospital?", instead of asking "how and why does a brand influence the decision making of a German hospital?"

The research questions are not formulated to be falsified or verified, which means that it will be not possible to answer with yes or no.

On the other hand, there are also disadvantages for this research project. If reasons and connections were understood, this approach would not be very effective. With this approach no deep knowledge about the interplay between branding and the purchase decision of a German hospital will be generated, this approach would deliver more general and more superficial results. This approach seems to be more inflexible than others are. It appears difficult to integrate new learning into the research. For example, if the questionnaire with the protagonists of the purchasing process in the hospital is finished and new questions occur or the same people would be questioned, this would be a challenge. Furthermore, the data refers to what is or what has been recently so that it will not be very easy for the decision makers in the company to derive actions and changes concerning the branding process.

In this approach the reality is out there and is waiting to be discovered, therefore the researcher is independent from the gathered data. There is no possibility for an interpretation of the data. The researcher is in this case more objective than in an interventionist or constructivist approach, because the researcher is not part of a construct, which is for me not the reality. I think as soon as you interact or you are putting yourself into a connection, the participation of the construct is given.

As a constructivist, the interventionist approach does also not feel right to apply to the research project. According to the name "interventionist", one can assume that within this approach a direct intervention is targeted in practice. The researcher is interested in solving a problem. It is a problem-oriented approach, in which your target is also to produce knowledge, as a researcher always wants to do with his/her research, but also the target is to initiate change. Within this approach, it does not matter so much if it is true or not, the most important thing is that it works for the situation. The truth only exists for the time in which the event is happening and it is relevant now in the particular moment, for this particular event. An active approach is very case specific, therefore you cannot generalise it. The ontology of this approach is relativist. In relativism, scientific laws are created by people and they

are not out there to be discovered (Easterby-Smith et al., 2012). The Epistemology is Interpretivist.

As an interventionist researcher is interested in solving a problem, the research question should also allow generating change and not only knowledge. This is not given with my research questions. An interventionist researcher would ask for example “how could the positive effects of branding on the purchase decision in a German hospital be reinforced?”

This section ends with one of Saunders’s view of ontology and therefore choice of research approach. He says,

it would be easy to fall into the trap of thinking that one research philosophy is better than another. This would miss the point. They are better at doing different things. As always, which is better depends on the research question(s) you are seeking to answer. (Saunders et al., 2009, pp. 108-109)

The constructivist paradigm is selected because it is seen as the best way of answering the research questions and because the aim of the research focuses on understanding when brand sensitivity appears during a buying decision of a German hospital’s buying centre and what the influencing factors are for that appearance.

3.3 Research Approach

The research approach could be either deductive or inductive. In a deductive approach, theory and hypothesis are developed and the research tests this theory or hypothesis. The target is to explain causal relationships of different variables (Saunders et al., 2009). To facilitate reproduction, the research with an deductive approach uses a very structured methodology (Gill & Johnson, 2010). The researcher is in an independent role to the observed issue and operationalisation of concepts is necessary to make a quantitative measurement possible. This comes along with the reduction of issues because it will be understood better when it is as simple as possible. Deductive approaches need to have a larger sample size to be able to generalise statistically (Saunders et al., 2009).

Another possibility of doing research is an inductive approach. Inductive approach means that data is generated in order to allow for data analysis in the development

of theory. The target here is to understand the issue and to know what is happening. By analysing the generated data, theory is formulated. With this approach, there is more possibility of producing alternative explanations of what is happening (Saunders et al., 2009). The sample size in this approach is smaller and a variety of qualitative methods to generate data are used to get different views and to understand the construct (Easterby-Smith et al., 2012).

For this research project, it was decided to use a more inductive than a deductive approach, which means that in the end a conclusion from a usual regularity to general is drawn. The reason for the decision is that the interest, as a constructivist, is to understand the construct and not to verify or falsify hypothesis. This belongs more to the positivist. As there is little known about the research problem and the research questions were formulated in a way that the target is to understand the issue and to know what is happening, the inductive approach was seen as more suitable.

Thus, the sample size would be a smaller one. The respondents are key decision makers in a hospital, with the aim of trying to find patterns with qualitative methodologies, such as deep interviews and their individual experience. In the following chapter the research methods and sampling strategy will be explained.

3.4 Purpose of the research design

The purpose of the research design is guided by the definition of the research questions, which were asked in the following manner:

- 1) Who are the participants in the buying unit of a German hospital and how are the composition of the buying centre and the roles of the participants influenced?
- 2) What are the influence factors for decision making?
- 3) How and why does a brand influence the decision making of a German hospital?

As the research questions have the target to gain deeper insights about the topic of interest and the questions start with 'How' and 'What', the study has an exploratory nature.

Saunders et al. (2019, p. 187) see an exploratory study as useful "if you clarify your understanding of an issue, problem or phenomenon, such as if you are unsure of its precise nature". With exploratory research mostly new and unexplored problems are investigated (Brown, 2006) and it can be seen as the initial research in order to create a basis for further research (Singh, 2007).

3.5 Research Methods

The following part will show the possible methods of obtaining data and types of data that will be generated. The implications for the research which are related to the choice of method will be outlined. Due to the researcher's research paradigm, the focus will be on qualitative data collection types and implications for the research, but also an overview of the possible quantitative research methods is given in order to justify the choice of methods.

Methods to obtain data are interviews, observations and documents as qualitative data and scales, tests, surveys, questionnaires and computers as quantitative (Easterby-Smith et al., 2012).

To filter out the possible data generation methods for my research topic, it is necessary to have a look on the research questions and the related research objective. This will be the basis to demonstrate which data collection method might deliver the right data to possibly answer the research question and therefore match the research objective in the best way.

Research topic: Business to Business (B2B) Brand Sensitivity - How do brands influence a German hospital's buying decision-making process.		
Research Question	Research Objective	Data Source / Method
1) Who are the participants in the buying unit of a German hospital and how are the composition of the buying centre and the roles of the participants influenced?	1) Identify the key actors, the people who are part of the buying decision process in a German hospital, and their roles in the buying unit, and explore the factors that have an influence on how the buying centre is composed.	<ul style="list-style-type: none"> - Observation - Secondary data - Questionnaires - Interviews - Focus groups
2) What are the influence factors for decision making?	2) Explore and analyse relevant parameters for decision making, which could have an effect on brand sensitivity.	<ul style="list-style-type: none"> - Observation - Secondary data - Questionnaires - Interviews - Focus groups
3) How and why does a brand influence the decision making of a German hospital?	3) Identify how and why certain parameters have an influence on brand sensitivity and purchasing decisions.	<ul style="list-style-type: none"> - Observation - Secondary data - Questionnaires - Interviews - Focus groups

Table 10: Overview of research questions and research objective (Source: Author's own work)

In the following an overview of the preselected methods, the data quality of the method and the implications for this research are presented.

3.5.1 Overview of data generation methods

Possible qualitative methods of obtaining data

Qualitative research is "an umbrella term covering an array of interpretive techniques which seek to describe, decode, translate and otherwise come to terms with the meaning not the frequency of certain more or less naturally occurring

phenomena in the social world”(Van Maanen, 1979, p. 520). According to Easterby-Smith et al. (2012) qualitative data generation could be differentiated into three categories: firstly, language data to get insights (the main method is in-depth interviews), secondly, data generated via observation (e.g. participant observation, non-participant observation), and thirdly, acquiring understanding through interaction (e.g. visual metaphors).

In the following section, different qualitative research methods are explored and the implications for the research topic are shown.

Interviews

An interview is a target oriented discussion with between two or more participants (Kahn & Cannell, 1957). There are several types of interviews. Saunders et al. (2009) differentiates them as:

- Structured interviews, which means using a standardised, identical set of questions for each interview. The questions are read out and the response is recorded in a standardised plan. This approach is more suitable to generate quantitative data and is therefore also known as quantitative research interviews.
- Semi-structured interviews, which means that the interviewer has a list of questions, which should be covered during the interview. The sequence of questions can be different from interview to interview and it is possible that the interviewer omits some questions or has to add questions in order to explore the research topic in the best way.
- Unstructured or in-depth interviews mean an informal interview, without defined schedule. An area in which the researcher is interested is explored in depth, also known as in-depth interviews. There is no defined list of questions to be asked, it is more to have a clear idea about the aspects you want to explore. It is permissible to talk freely about beliefs, events or behaviour.

Standardised interviews normally have the purpose to gather data which are mainly used for quantitative analysis. Therefore, the method is explained in the chapter on

quantitative methods. Non-standardised interviews (semi-structured or in-depth interviews) are used to gather data for qualitative analysis. The emphasis is on exploring the 'why'.

The following figure differentiates according to the form of interview, which is categorised according the way of interaction.

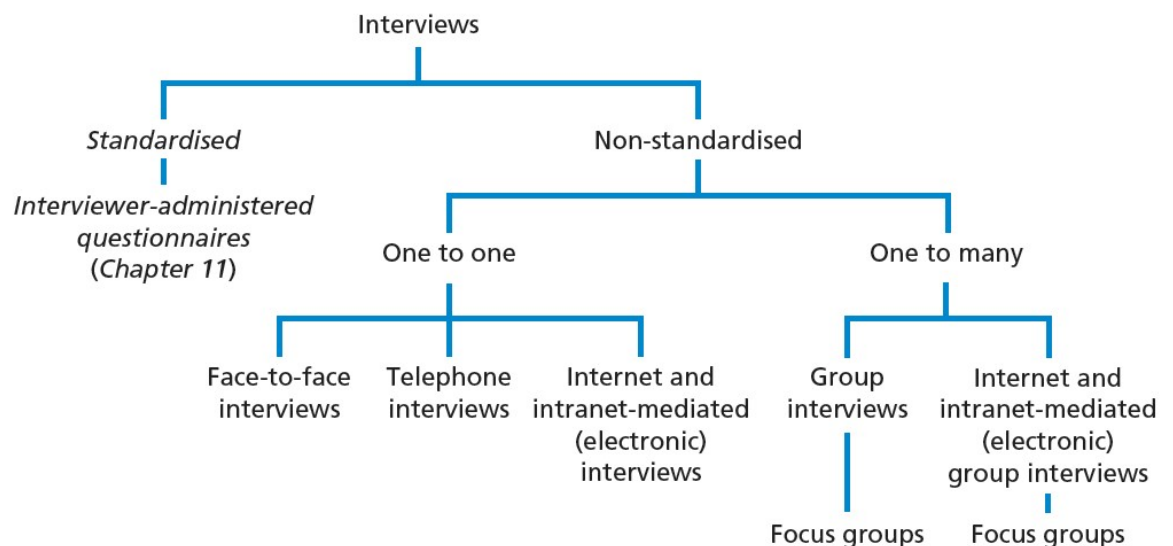


Figure 4: Form of interviews (Saunders et al., 2009, p. 321)

Non-standardised (qualitative) interviews are used in exploratory studies or if the study includes exploratory parts (Cooper, Schindler, & Sun, 2006), but it is also possible to use these interviews in an explanatory study if it is necessary to find causal connections between variables (Saunders et al., 2009).

There are different possibilities to obtain data through semi-structured or unstructured interviews in connection with my research topic.

For all three research questions one to one interviews or focus groups are possible. Interviewing hospital staff will help to identify who the key actors are and who is part of the buying decision process in a German hospital. One to one interviews and focus groups with the identified key actors will also help to explore and analyse relevant parameters for decision making, which could have an effect on brand

sensitivity. In addition, the methods will help to identify how and why certain parameters have an influence on brand sensitivity and purchasing decisions.

A focus group means a small, relatively homogeneous group of selected people (6 to 12 people), who are part of the target group. The interest is on the opinion of these people regarding a specific topic. A moderator collects the responses of the participants through predefined questions. The target is to obtain knowledge about their perceptions, ideas, attitudes and feelings regarding the specific topic (Vaughn, Schumm, & Sinagub, 1996).

Regarding the data quality of qualitative interviews, a researcher has to be aware of the data quality issues which can occur. There can be doubts referring to reliability as, because of the lack of standardisation, another researcher will not get exactly the same information (Silverman, 2007). Reliability can also be questioned because of the bias of the interviewer. For example, comments, tone of voice or non-verbal behaviour can influence the answer of the interviewees and also the interpretation of the answer may generate bias (Easterby-Smith et al., 2012).

In the case of this research, non-standardised, qualitative interviews will offer a possibility to acquire an in-depth understanding of the customer view and will help to generate new insights.

As mentioned above within the section on data quality, a strategy needs to be developed to overcome the data quality issues because bias can occur as the researcher is part of the construct which is observed. The role of the researcher will be explained in section 3.4.3.

Another possible qualitative method for data generation is observation, which will be explained in the following section.

Observation

If a researcher is interested in what people do, the natural way is to watch them. This is what observation means. The method of observation can be described as “systematic observation, recording, description, analysis and interpretation of

people's behaviour" (Saunders et al., 2009, p. 288). In the following, the method of participant observation is described, which is the qualitative method and later structured observation as the quantitative method.

Participant observation happens when

the researcher attempts to participate fully in the lives and activities of subjects and thus becomes a member of their group, organisation or community. This enables researchers to share their experience by not merely observing what is happening but also feeling it. (Gill & Johnson, 2002, p. 144)

In the case of this research, there are different possibilities to use observation for data generation. Regarding the first research question "What is in the buying unit of a German hospital?" different buying processes of hospitals could be observed and it can be noted who is a part of the buying unit. Regarding the second and third research question "What are the influence factors for decision making?" and "How and why does a brand influence the decision making of a German hospital?", it would be possible to observe the circumstance when the decision is for or against a brand. In addition, the communication between the buying unit members could be observed with the objective to find out more about the role of brand during decision making.

Concerning reliability of data, there will also be bias through the observer. According to Delbridge and Kirkpatrick (1994) the researcher is part of the social world, which is studied, so it is not possible to distance oneself from it.

In the case of discovering the influence of branding on the decision-making process of a German hospital, it could be very time consuming to observe the different purchase decisions and being part of the whole purchasing process will not be welcomed by the hospitals. Bias through the situation of observing is expected. Due to the fact that the research takes place in a hospital, it is necessary to inform them that they will be observed and, after that information, a different behaviour is anticipated. In addition, the access to different hospitals to observe the brand choice will be very difficult.

Secondary Data

Secondary data means already collected data for some other objective. It includes both raw data and published summaries, e.g. meeting minutes or payroll details of an organisation or official statistics of government departments. Secondary data can be qualitative or quantitative (Saunders et al., 2009).

There are two possibilities of using secondary data in this research. On the one hand, secondary data is used out of the literature review to get a basis for B2B brand sensitivity and the influence of brands on the buying decision of a German hospital.

On the other hand, secondary data could be used from Paul Hartmann AG. It is expected that sales representatives have notes regarding the composition of the buying unit of the hospitals because the hospitals are their customers and thus, they need to know who is the decision-making unit. The difficulty when using secondary data of the HARTMANN sales representatives is that it is very context specific. These data are only valid for a specific product category. For example, somebody in the hospital could be responsible for deciding which products will be bought for wound treatment. This is not necessarily the same person for the decision of for example hygiene or OR products.

Concerning the quality of data, it is very important to ensure that the data fits the research questions and this seems to be difficult to realise for my research project.

This method requires fewer resources, especially time and money (Ghuri & Grønhaug, 2005). In this research, previously written articles and books in the literature review are used to generate a basis. In situations where there is lack of time to collect data on your own in an appropriate way, the quality of the secondary data can be higher (Stewart & Kamins, 1993).

During the data generation for this research, it is necessary to be aware that secondary data have been generated for a specific objective, which differ from research questions of this research project. If the data are inappropriate, the search for other sources is necessary or to make the decision to generate the data. Moreover, secondary data may include the interpretation of the data producer.

Possible quantitative methods for obtaining data

The following section will describe possible quantitative methods used to obtain data for the research topic.

Questionnaire (including structured interviews)

There is a range of definitions for the term questionnaire in common usage (Oppenheim, 2000). Very narrowly defined, it is a questionnaire where the respondent answers the question exactly and records the answer. A wider definition also includes interviews (face to face or by telephone) (Saunders et al., 2009). In the following, the definition of De Vaus (2013) is used. He says that the term includes all techniques in which all respondents are asked the same set of questions in a pre-defined order. Structured interviews, telephone questionnaires and online questionnaires are therefore included.

In the case of this research, this method could be used in two ways. One possibility would be to get an initial impression of what the relevant parameters for decision making are and which could have an effect on brand sensitivity. After that, in-depth interviews could follow.

The other possibility could be the reverse order to have a pilot with in-depth interviews first and afterwards use questionnaires for a larger sample size.

With a questionnaire, there is just one way to run the survey. It is not possible to go back and change something. This is important to have in mind in order to ensure the quality of data. It needs to be ensured that precise data is collected so that the research questions are answered.

Due to the fact that all respondents are asked the same questions, this method will provide an efficient way of data collection from a larger sample. However, this information will be more superficial compared to in-depth interviews.

According to the researcher's philosophical stance of constructionism, the interest is in achieving an in depth understanding of the problem. Questionnaires with quantitative evaluation might bring not enough value for an in-depth understanding.

Thus, it was decided not to use this research method for one of my research questions.

Observation (structured)

Structured observation is, in comparison to participant observation, systematic and has a given structure. The target of this method is to quantify behaviour. This means that with this method it is possible to get information about how often things happen and not why they happen (Saunders et al., 2009).

Within this research, structured observation can be used for example to observe which parameters for decision making mostly had an effect on brand sensitivity. The result will be a ranking of the parameters.

Structured observation has its main threats to reliability. There can be a subject or time error and observer effects (Saunders et al., 2009). Subject error can be avoided by choosing 'normal' samples which means in my case for example not to choose a hospital in economic crisis. This hospital has its main focus on price and excludes other criteria. Time error occurs if no 'normal' time is chosen for the observation. In this case, if the observation is performed at the end of the year, the budget situation of the hospital affects the result. The focus could either be on high quality if there is too much budget left or on price if there is too little budget left. The observer effect appears due to the fact that the person who is observed is feeling conscious of being observed. Doing the observation in secret is ethically mostly not acceptable. Robson (2002) suggests two possibilities to overcome observer effects. The first is to minimize interaction between observer and the subjects as much as possible. The second possibility is to familiarise the subjects with the situation of being observed which means that several observation sessions will be necessary.

This method is on the one hand very time consuming, but also easy to use by anyone. Therefore, it could be delegated and the observation sessions could be completed in parallel in different locations. The replicability is also very high which also means a good reliability of data. One of the most important strengths of this method is that the data are collected in the 'natural setting' when it occurs. There is no interpretation of respondents and no data are missing due to the fact that

respondents ignore some information which seems to be irrelevant to them. However, the observer has to be in the situation, which will cause the described observer effect, and the results will be limited to obvious indicators which have to be used to make inferences.

Although the method has its benefits, it was decided not to use this research method for one of the research questions. As the interest is on “what” is happening and not how often something happens, other research methods might bring more value for my research questions.

Secondary data

In the section on qualitative data, the method of using secondary data has already been described. Secondary data could also be used as a quantitative method in order to quantify statements.

Within this research, just one case can be imagined in which secondary data can be used in a quantitative way: to quantify the importance of parameters for decision making which could have an effect on brand sensitivity.

Concerning the quality of data, it is also very important in this case to ensure that the data fit the research questions. As the research question does not currently request a quantification of statements, the use of secondary data as a quantitative method seems to be negligible.

3.5.2 Methods used for this Research: Expert interviews as the key method of data generation

In order to select the most suitable methods for this research topic, there is a summary provided of the most relevant advantages and disadvantages of the mentioned research methods for the purpose of this research in the table below:

Qualitative Methods	Advantage	Disadvantage
Interviews	<ul style="list-style-type: none">- will get an in depth understanding of customer view- generate new insights	<ul style="list-style-type: none">- lack of standardisation (another researcher will not get exactly the same information)- bias of interviewer

Qualitative Methods	Advantage	Disadvantage
Observation	<ul style="list-style-type: none"> - good method to see what is going on (social situations) - increase researcher's awareness of social processes - 'real' emotions can be observed 	<ul style="list-style-type: none"> - bias from the observer - bias of the situation of being observed - time consuming - role conflict (my role: researcher and employee of the supplier) - access to observing sessions (different hospitals) - ethical issues - observer role is a very challenging one - data collection is not easy for the researcher
Secondary data	<ul style="list-style-type: none"> - fewer resources are necessary - possible data collection in a short time period with higher quality - only possibility for longitudinal studies - possibility of comparative research if comparable methods were used (e.g. regional or international comparison) - can be used for data triangulation to compare own collected data - can assess the generalisability of own findings - re-analysing secondary data can lead to new results 	<ul style="list-style-type: none"> - fit to the research question is not always given - data may include the interpretation of producer - access is difficult or expensive - no control over data quality (careful evaluation) - purpose of data and way of presentation can be biased

Table 11: Advantages and disadvantages of selected qualitative methods (author's own work)

Quantitative Methods	Advantage	Disadvantage
Questionnaire	<ul style="list-style-type: none"> - efficient way of data collection from a larger sample size 	<ul style="list-style-type: none"> - just one possibility to run the survey (no changes possible) - more superficial than other methods (e.g. in-depth interviews)
Structured observation	<ul style="list-style-type: none"> - easy to use and thus can be delegated and run in different locations at the same time - easy to replicate - possibility to observe relationships between events - data collection in the natural setting when it occurs - secures data which might be irrelevant for the participants 	<ul style="list-style-type: none"> - observer has to be in the research setting - surface indicators can be observed and thus the observer has to make inferences - data collection is slow and expensive
Secondary data	see qualitative methods	

Table 12: Advantages and disadvantages of selected quantitative methods (author's own work)

Based on the identified advantages and disadvantages of the research methods, the methods used for this research project will now be explained.

The research method selected is qualitative semi-structured interviews in order to understand why and how the situation occurs (Guba & Lincoln, 2005). A semi-structured interview approach helps in achieving this (Bryman & Bell, 2015) because it gives a structure for the interview and enables at the same time flexibility to focus on interesting issues which were not apparent before. The interviews were conducted with employees of purchasing organizations for German hospitals because German hospital purchasing is dominated by purchasing organisations. Therefore, it was expected to get the deepest insights with this type of interviewees.

For each of the research questions and the connected objective behind the question a justification is given.

Research Question 1: What is in the buying unit of a German hospital?

Objective: The objective of the research question is to identify who are key actors and are part of the buying decision process (buying unit) in a German hospital.

This research question is the basis for research questions two and three. It is important to understand first who is involved in the decision process in order to know the participants of the construct.

Selected method: In order to answer the research question, qualitative, semi-structured interviews with employees of purchasing organisations for German hospitals were conducted.

Justification for selected method: The reason for the selected method of qualitative, semi-structured interviews was that a qualitative method could help to gain an in depth understanding of the buying centre composition. Semi-structured interviews allowed acting more freely, compared to observation or the usage of secondary data, which could also have been qualitative research methods for this research question. This flexibility might allow the generation of new insights and the interviewees could tell unknown information. Moreover, it would have been very difficult or even impossible to go into hospitals and observe the buying process, which is a very sensitive topic and information about the buying process is very often not shared freely. An additional reason for not using the observation method is that it is assumed that the participants would have been biased by the observation and would have behaved as is socially expected.

To conduct the interviews, the researcher had a list of themes and questions to be discussed but acted freely regarding order. The chance to omit some questions or ask additional questions if necessary was taken. The effort to conduct these interviews in person was necessary because at that stage there was no personal contact from the researcher to the employees of the purchasing organizations. With the approval of the participants, data recording was via audio recording.

Research Question 2: What are the influence factors for decision making?

Objective: With this research question the main target is to explore and analyse relevant parameters for decision making which could have an effect on brand sensitivity.

Selected method: In order to answer the research question, qualitative, semi-structured interviews with employees of different purchasing organizations were performed.

Justification for selected method: The reason for the selected method of qualitative, semi-structured interviews was that a qualitative method might help to find the relevant parameters for decision making and, in comparison to a quantitative method, not just quantify the already known parameters. Semi-structured interviews are the selected research method because exploration and analysis of the relevant parameters for decision making is necessary. In one to one interviews, more openness of the interviewees was expected compared to a focus group, because it was expected that most of the people would have the official opinion that they decide completely rationally and that they are not influenced by brands in some cases. With one to one interviews, it is hoped to prevent receiving opinions that are socially accepted or desired rather than exploring the reality. Observation might also bring less value to the research question because only what is visible could be observed, and analysing parameters for decision making which could have an effect on brand sensitivity is, from the perspective of the researcher, easier when the researcher can talk to the participants of the buying process and when questions can be asked. In addition, the way of semi-structured interviewing might be beneficial for getting a useful result because topics of interest can be defined in advance, but if new topics occur, the freedom was used to take the possibility and gain new insights.

Research Question 3: How and why does a brand influence the decision making of a German hospital?

Objective: Identify how and why certain parameters have an influence on brand sensitivity and purchasing decisions.

Selected method: In order to answer the research question qualitative semi-structured interviews with the employees of different purchasing organizations were conducted.

Justification for selected method: The formulation of the research question itself makes it clear that it is very likely that a quantitative method would not bring the expected result. The target is not to quantify brand influence in the decision making of a German hospital. The target is more to get an in depth understanding of how and why the parameters have an influence. The method of one to one interviews

was selected for the same reason as mentioned in research question two. More openness was expected in a one to one situation than in a group of people.

In a focus group, it was expected that most of the people would have the official opinion that their decisions are rational and not influenced by brands. With one to one interviews, the hope is to prevent receiving opinions that are socially accepted or desired rather than exploring the reality. Observation as a research method is rejected for that research question because the same situation as was mentioned for the second research question was expected. Only what is visible could be observed, and analysing brand influence is, from the perspective of the researcher, easier when the researcher can talk directly to participants of the buying process and when in depth questions can be asked. Influence of brand could hardly be observed from the outside perspective and it is necessary to speak with the interviewees about their thoughts and what is behind their behaviour.

The following figure summarises the research design, with the selected methods.

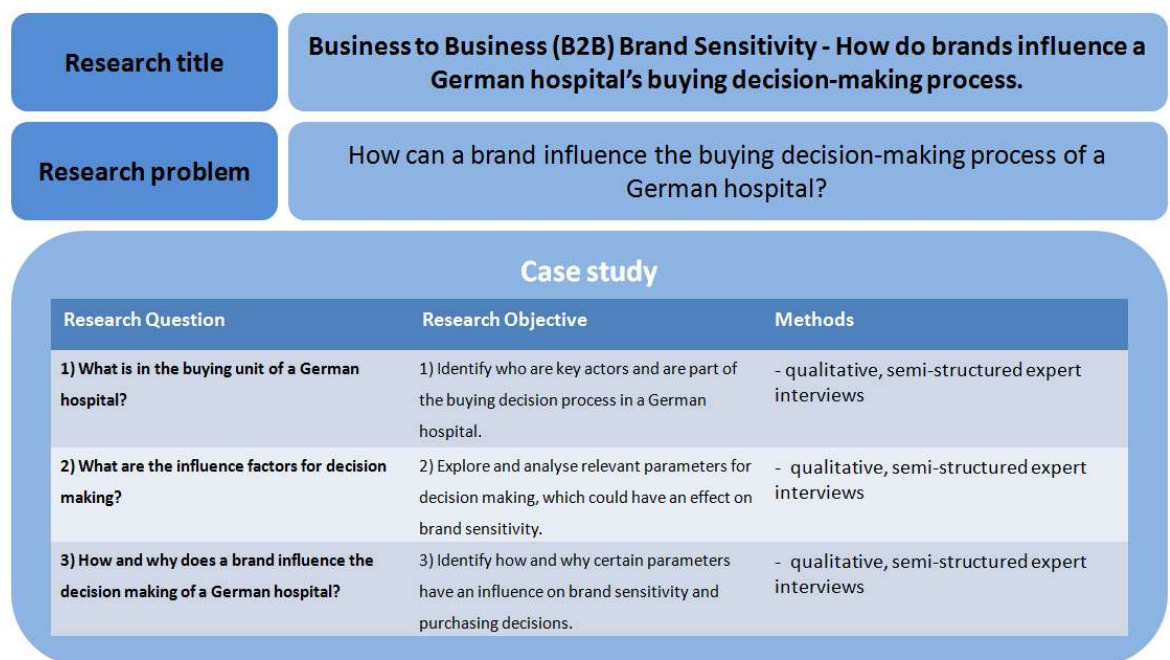


Figure 5: Research design (author's own work)

All interviews were planned to be conducted in person and were tape recorded. The personal contact was seen as important to be able to create a trustful atmosphere, as well as to see the reactions in gestures and mime. Tape recording was chosen

to be able to focus on the interview discussion and not to lose information due to speed of speech. To show interest and importance in what the interviewee said, short handwritten notes were also completed. Also, non-verbal communication was written down by hand. The market where the research takes place is Germany and thus the interview language is also German. German is the mother tongue of the researcher as well as of the interviewees. In order to avoid misunderstandings and to make the communication during the interview as clear as possible, German was selected as the language for the interviews. The tape recordings are transcribed and short drafts of key points are translated into English by the researcher. One example is translated in full in English and is attached to the appendix (Appendix 1).

3.5.3 Role of the researcher

During data generation the researcher has an important role. As already mentioned in the section on 'research philosophy', the researcher can bias the research results by bringing their own beliefs and opinions. The following section describes how researchers can avoid this bias.

First of all, the **appearance of the interviewer** can influence the interviewees' perception. This means the credibility of the interviewer can suffer or cause a loss of confidence. This bias can influence the data provided by the interviewee (Saunders et al., 2009). Thus, the appearance of the researcher should be appropriate. For Robson (2002), appropriate appearance means that the researcher's style of dress should be similar to what the interviewees wear.

When conducting the interviews for the research project, the advice of Robson (2002) was followed and a similar style of clothes to the employees of the purchasing organisations was worn.

In addition, it is very important how the researcher **opens the interview**. Especially when the researcher does not know the interviewee, the first minutes of conversation are decisive for the interview outcome. The result again depends on the researcher's credibility and the interviewee's confidence (Saunders et al., 2009). Taking the responsibility as a researcher to build a good start into the conversation, the research is explained to the interviewee in a structured, professional and well-prepared way. Saunders et al. (2009) found that during the beginning of an interview

the interviewee may be uncertain about sharing information and about how the shared information will be used later on. Therefore, the interviewees were pre-informed during the first call what the research is about and for what the data will be used. Additionally, the cover letter, non-disclosure agreement, illustration and short explanation of the researcher's conceptual framework and overarching questions were sent to the interviewee. During the interview itself, credibility, friendliness and a relaxed atmosphere were generated through reinforcing the voluntariness of the participation, that the interviewees have the right to refuse answers and to withdraw from statements, and explaining the research problem and current status of the research as well as the research aim in context to provided research questions. It was also important to explain the interview procedure and the subsequent analysis process and discuss issues of anonymity and confidentiality (if requested, it is possible to change the organisation's name, location, and name of interviewee). Further points were to talk about the confirmation about voice recording of the interview by the smart phone and to give information about the possibility of declining or leaving the session. At the end further questions and remarks were offered.

By **the way of questioning**, the scope for bias can also be reduced and the reliability of data gathered can be increased. The questions need to be clear and understandable and should be asked in an unbiased tone of voice (Saunders et al., 2009). Robson (2002) recommends avoiding long questions or questions which are built by two or more questions in order to collect for each aspect per question the information requested. Another important point is the use of jargon. As not everybody will have the same understanding of such terms, it should be avoided if possible. If it is necessary to use such terms, it needs to be ensured that the interviewee and the researcher have the same understanding of the term (Easterby-Smith et al., 2012). According to Easterby-Smith et al. (2012) open questions supported by probing questions can also prevent bias. Referring to real-life experience of the interviewees should also be preferred rather than asking about an abstract concept (Keaveney, 1995). To use the time during the interview to build trust in the researcher, it is better to ask sensitive questions in the last section of the interview (Healey & Rawlinson, 1994). For the interviews of this research project, a semi-structured questionnaire was prepared with clear questions and one question

per aspect was asked. Jargon was avoided and the questions referred to real life experiences. As sensitive questions were not part of the questionnaire, it is not necessary to respect the order according to criticality.

The extent of bias can also be reduced by the **appropriate behaviour of the interviewer during the interview**. This means that any verbal or non-verbal communication which shows the researcher's position or thinking needs to be avoided because it might influence the interviewee. Neutral behaviour while showing interest should be the target. The researcher's tone of voice and posture can also influence the flow of the interview. Enthusiasm and interest should be provided through the voice to create no negative signals (Saunders et al., 2009). These important aspects were considered in the way that the researcher behaved neutral but interested as described and was furthermore focused on listening.

In order to understand the meanings and explanations of the interviewee the researcher needs **listening skills** (Saunders et al., 2009). Meanings and explanations need to be probed and explored. At the same time, the interviewee needs to have enough time to respond (Easterby-Smith et al., 2012; Robson, 2002).

An additional important topic for the interview is the **test of the researcher's understanding**. By summarizing what the interviewee has said, the understanding can be tested. With this summary, the interviewee has the possibility of correcting or confirming the interpretation (Healey & Rawlinson, 1994). Another way to test the understanding is to ask the interviewee to have a look at the interview transcripts. If the interviewee is willing to read them through, the researcher's understanding will be tested and could probably be corrected or completed (Saunders et al., 2009). Both possibilities were used in this research project. For every topic section the researcher provided a summary and the interview transcript was sent to the interviewee.

Cultural differences can also be a reason for creating bias. Information can be misinterpreted based on cultural differences (Marshall & Rossman, 2014). As all participants, researcher and interviewees were part of the German culture, there was no further activity concerning that topic planned.

As described, the research can be impacted by the researcher's worldview, his/her behaviour and interaction with the interviewed persons. Reflexivity can help to increase the quality of research. Reflexivity means that the researcher understands his/her own position and how this influences all research steps (Primeau, 2003). This understanding is built by the researcher through a constant process of reflection on their own values, the behaviour of him/herself and of the participant, and preconceptions which can influence the interpretation of information (Parahoo, 2014). This helps to make the process transparent and open. Total detachment of the researcher from the research process is an unrealistic target that can hinder the qualitative process (Jootun, McGhee, & Marland, 2009). "The key to this process is to make the relationship between, and the influence of, the researcher and the participants explicit" (Jootun et al., 2009, p. 46).

3.5.4 Sampling Strategy

According to Mason (2017), sampling is an essential part of designing a qualitative research. For this section "the four-point approach to qualitative sampling" of Robinson (2014, pp. 25-26) is used as a basis. The four points consists of:

1. Setting a sample universe
2. Selecting a sample size
3. Devising a sample strategy
4. Sample sourcing

Step three and step four will be summarised in one step because sample strategy is very closely connected to the sourcing of the sample. In the following these four points will be defined for the research project.

1. Setting a sample universe

The sample universe, or also called target or study population "is the totality of persons from which cases may legitimately be sampled in an interview study" (Robinson, 2014, p. 26). A specification of inclusion and/or exclusion criteria must be defined in order to describe a sample universe (Luborsky & Rubinstein, 1995). Inclusion criteria means attributes that cases need to have in order to be qualified for the study and exclusion criteria means attributes which disqualify for the study. These criteria build the border for the sample universe (Robinson, 2014).

For this research project, the broader frame for the sample universe are German hospitals as defined by the research topic and the research questions. Furthermore, the inclusion criterion is defined as purchasing organisations. This criterion was selected because most of the German hospitals are part of a purchasing organisation. In Germany there were 1,942 hospitals in 2017 (Statista, 2018) and more than 90 percent of the institutions in the health care sector join a purchasing organisation (Future-Hospital-Purchasing, 2017). The reason for this is that German hospitals are currently faced with increasing cost pressure that forces them to optimise economic actions in order to respond successfully to competition. Sustainable solutions are required and this is what purchasing organisations want to provide when they act as a direct link between manufacturers and hospitals by consolidating volumes with other hospitals. With this, the general target is to decrease the material costs and, if possible, the overhead costs in the hospitals. The advantage for a hospital of joining a purchasing group instead of buying directly is that through the consolidation of the quantities of all member hospitals, significant price advantages can be achieved. The price advantage is possible to achieve because with one central negotiation the complete volume of one purchasing group can be assigned. In addition, hospitals cannot afford to negotiate every product directly with a high number of suppliers. This service is undertaken by the purchasing organisation. Moreover, the purchasing organisation pools expertise and consults the hospitals, which persuades a large number of hospitals to join a purchasing group (BME, 2016).

This means that hospital purchasing is dominated by purchasing organisations and employees of purchasing organisations are part of many more purchasing processes compared to hospital employees. Therefore, it was expected that employees of the purchasing group would have a much deeper knowledge of the purchasing process covering a large number of hospitals in Germany. Thus, it was decided to focus in the research project on purchasing organisations. After the sample universe is set the sample size can be selected and described in the next section.

2. Selecting a sample size

The number of cases and thus the number of interviews could not be finally defined in advance, it depended when the data saturation would be reached. As already mentioned, data saturation is achieved when no new information or topics can be found in the data (Guest et al., 2006) and when the study can be replicated based on sufficient information (O'reilly & Parker, 2013). In addition, data saturation is reached as soon as no further coding is possible (Guest et al., 2006). According to Burmeister and Aitken (2012), it is not the size of the sample which determines data saturation, it is more about the determination of the sample size and the depth of the data. However, without a temporary quantity at the stage of design, the required project resources and duration could not be identified. Therefore planning becomes difficult (Robinson, 2014).

With this in mind, four interviews are planned for the start. A number was defined to be able to plan the interviews and recruit the interviewees. The target was not to achieve generality and but to give additional insight into the medical device market and gain knowledge into the research gap. The number of four was selected because there are seven market leading purchasing organisation (see following table) (Future-Hospital-Purchasing, 2017). With four interviews, more than half of the market leading purchasing organisations were covered.

Purchasing organisations	Turnover in billions €	Institution
2017		
1. Prospitalia	2.2	1200
2. SANA	2.0	560
3. UNICO	1.4	12
4. clinicpartner	1.3	395
5. AGKAMED	1.1	330
6. GDEKK	1.1	75
7. PEG	0.9	2900

Table 13: Purchase organisations in Germany (Future-Hospital-Purchasing, 2017)

3. Selecting a Sample Strategy and Sourcing the Sample

If the sample universe is fixed and the number of samples is approximately defined, the next step is to determine how the cases for the sample are collected. In general, there are two different strategic possibilities. One possibility is random sampling, which “is the process of selecting cases from a list of all (or most) cases within the sample universe population using some kind of random selection process” (Robinson, 2014, p. 31). Convenience sampling is part of random sampling and looks at all convenient cases according to the defined criteria. Then the cases are selected according to the sequence of response, which means the first cases will be select first, until the requested number of cases is reached (Robinson, 2014).

In comparison to random sampling, the other overall strategic possibility to select cases is purposive sampling. It is a non-random strategy of making sure that specific categories of cases in a sample universe are present in a final sample. The reason for selecting a purposive sampling strategy is based on initial theoretical understanding of the study topic, that specific categories have specific knowledge which could be different from each other, unique or especially important. It needs to be ensured that these different categories are present in the sample. Patton (2015, p. 264) defines purposeful sampling, which is equal to purposive sampling for qualitative research as follows,

The logic and power of purposeful sampling lie in selecting information-rich cases for in-depth study. Information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the inquiry...Studying information-rich cases yields insights and in-depth understanding.

Gentles, Charles, Ploeg, and McKibbin (2015) see an inconsistency in what defines a purposeful sample. According to Yin (2015), for example, sampling like random sampling and snowball sampling differ from purposive sampling. In comparison to Merriam (2009), here snowball sampling is a form of purposeful sampling. Snowball sampling means a referral process, where participants are asked for recommendations of persons they know and might be qualified for participating in an interview (Robinson, 2014).

In this research project, the sample strategy is seen as 'which' cases are selected out of the sample universe and sourcing the sampling is seen as a recruitment strategy of 'how' the cases are selected. The example of snowball sampling shows that there is sometimes an overlap in this definition, because snowball sampling contains both the 'which' and 'how' cases are selected. These two points belong very closely together. Therefore as already mentioned, point three in the model of Robinson (2014) 'selecting a sample strategy' and point four 'sourcing the sample' were summarised.

For this research, a purposive sampling strategy was selected as sampling strategy, because the cases were selected out of hospital purchasing organisations. It was expected that buyers of these organisations would provide rich information in regard to the research questions, and, in addition, the market development goes clearly into the direction of purchasing organisations, as mentioned above.

For the sample sourcing, the last step in the sampling and the hands-on part, where the researcher sources the participants (Robinson, 2014), it was decided to use personal contacts, because the highest response rate and more willingness to participate in the interviews was expected. Based on the list of the most important purchasing organisations, a contact list of the buyers was created. The contact details were available on the homepages of each purchasing organisation.

3.5.5 Interview Preparation and Conduct

Regarding the semi-structured interviews, interview guidelines based on Saunders et al. (2019) were developed in order to prepare and conduct the interviews.

The interview guidelines started with personal information about the interviewee, e.g. name, title, profession, age, gender, address and phone number.

Then the guidelines were divided into four main parts:

- I) Preparation phase
- II) Aspects to be considered during conducting interviews
- III) The interview
- IV) Closing steps

The first phase of preparation included the initial personal call with the interviewee. In detail this means introduction about the researcher, the research topic and the planned interview. In addition, it included making an agreement on a face-to-face interview, audio-recording, the location (quiet place without interruptions), the date and time, length of time for interview and time of appointment. After the first call, the basic documents such as the non-disclosure agreement and research questions were sent to the interviewee. The third part of preparation is right before the interview. The interview guide contained a short checklist about appropriate dress code, completeness and readiness of work material (note pad, pen, smart phone for recording), completeness of documents (interview guide, interview protocol and non-disclosure agreement) and checking the location is quiet and suitable for conducting the interview without interruptions.

The second part of the preparation was based on the recommendations of Saunders et al. (2019). Important aspects to consider during the interview were listed in the interview guidelines. In order to make these aspects, which refer to the nature of questions and the method of questioning, clear right before the interview, the aspects have been listed in the interview guide in the following way:

- Conduct the interview in German
- Use open and non-leading questions: how, why, what do you think about? How have you experienced...? Please describe..., etc.
- Get the interviewee to tell you their background and training
- Ask what makes them tick or motivates them
- Ask the interviewee what the big issues are in the purchasing area
- How has it changed in recent times, how do they see the future
- Use only one thought per question, be specific in questioning, less generic
- Focus on analysability > can you use that from what is being answered?
- Keep your focus on the research questions => they need to be answered afterwards.
- Expect unclear responses and be prepared to clarify them and to question deeper
- Behave neutrally in gestures, posture, and tone of voice > preventing of any bias

- Attentive listening for building understanding > do not interrupt
- Summarise responses/test understanding > avoid a biased/incomplete interpretation
- Remain polite and not irritated > in cases where participants: respond with yes/no answers or repeated and non-focused responses, reverse the interview, criticise continuously, or become upset and behave improper.
- Use the note pad for immediate and occurring thoughts and connections of variables that the audio-recorder would not record
- Ensure that the location of the interview, the date and time, conditions of interview, informant background, and the individual impression of the interview are recorded directly at the interview or afterwards

The third part was guidelines for the interview itself. As the interview method was semi-structured, the list of questions gave a guidance, but not all questions may have been asked and also upcoming questions which are not on the list were asked. The structure for the interview was to start with own introductions and if suitable some small talk. Before the interview started, the following ethical topics and issues were clarified between the researcher and the interviewee:

- Voluntary nature of the participation
- Rights to refuse answers and to withdraw from statements
- Research problem and current status of the research
- Research aim in context to provided research questions
- Interview procedure and the subsequent analysis process
- Issues of anonymity and confidentiality (if requested, change organisation's name, location, and name of interviewee)
- Voice recording of the interview by the smart phone
- Possibility of declining or leaving the session
- Further questions and remarks
- Confirmation that the transcripts would be sent after the interview to the interviewee
- Possibility of changing the transcript if needed
- Confirmation to use the data/information

After having clarified these topics, the interview continued with general questions to assess the knowledge of the interviewees. During the interview, the following questions were asked by the researcher:

- What is your job title?
- What is your professional background?
- How did you move into the job?
- What is your job role?
- Can you please explain your profession in detail (daily tasks)?
- Are you involved in buying decisions?
- Which opportunities do you have?
- Which restrictions/limitations do you have?
- What are the big issues in the purchasing area?
- How has it changed in recent times?
- What do you see the future as?

Then the guidelines structured the main part of the interview, which was focused on obtaining answers to the research questions. The first part was about the buying unit of a German hospital and had the aim of identifying who the key actors are and are part of the buying decision process in a German hospital. The following questions were listed in the interview guidelines and have been asked during the interviews:

- Is there a buying unit in the hospital?
- Who is a member of the buying unit?
- Who selects the members of the buying unit?
- What are the selection criteria for the members of the buying unit?
- What are the tasks of the members?
- Are the same people always in the buying unit?
- When do the members differentiate?
- How do they work together?
- How is the responsibility shared?
- How does/or does not this have an impact on your job?
- Does it also affect the decision making?

The second part was about the influence factors for the decision making and the target was to explore and analyse relevant parameters for decision making which could have an effect on brand sensitivity. The following questions were listed in the interview guidelines and have been asked during the interviews:

- How does the buying unit come to a decision?
- Is it always the same process?
- What affects your decision?
- Are there different situations for the decision making?
- Are there different circumstances for the decision making?
- Why do you perceive these situations as different?
- Does that influence the way you decide?
- Which kind of products categories do you buy?
- Is the decision made for all categories in the same way?
- What other factors impact/or not on your job and decision making?
- How do the factors impact?
- Why do the factors impact?

The third part of the main interview was about how and why a brand influences the decision making of a German hospital. The aim was to identify how and why certain parameters have an influence on brand sensitivity and purchasing decisions. The following list of questions was part of the interview guide and was asked during the performed interviews in order to ensure the research question were answered:

- What role does a brand have from your perspective in the decision-making process?
- Why is a brand important/unimportant for you in the decision-making process?
- Why do you trust a brand more/to the same extent as/less than other unbranded products?
- What was the last brand you bought?
- Why did you buy this brand?
- How did you distinguish it from other brands?
- What other influences or factors impacted/or not?

After the core questions, there was the possibility offered for the interviewee to address other topics, suggestions or comments that were not covered but which they thought were important for the research. Also, the opportunity for recommendations for the next interview or other questions was given.

The interview guidelines ended with the closing steps, which included the explanation of the transcription process, the checking of interview protocol completeness, and signing the non-disclosure agreement.

The complete interview guidelines and the non-disclosure agreement are available in Appendices 5 and 6.

3.6 Considerations on ethics

The research followed the Handbook of Research Ethics of the University of Gloucestershire, which is outlined in detail in Appendix 7. The generated data will only be used for research purposes, and participants were informed about the study and asked if they were willing to be involved well in advance. It was made clear that they had the possibility of withdrawing at any time. Pseudonyms for identifiable information such as names of interviewees, location and name of organisation were used. To ensure the correctness of statements, a transcript of the interviews was reviewed by the participants. All data were kept securely and were destroyed after analysis.

The research was approached as an outside researcher in order to avoid any bias by being known, but with the awareness that “conducting research in another setting may mean that researchers have to spend more time and effort establishing rapport and learning new settings, But, this change may result in more objective observations” (Orb, Eisenhauer, & Wynaden, 2001, p. 96).

There was no conflict of interest recognised between the researcher and the interviewees as they work and act independently and without a relationship. The independence of the interviewees also helped to avoid as much as possible the possibility that participants would only say what is socially desired and expected. It was possible to create an open atmosphere during the interviews.

To minimize bias through questioning, open and non-leading questions were used. The researcher behaved neutrally in gestures, posture, and tone of voice in order to prevent any bias. Furthermore, attentive listening helped to build understanding of the interviewee's perspective. Responses were summarised and understanding was tested to avoid a biased and incomplete interpretation.

During the data analysis and the coding of the findings the researcher was aware that bias can occur by the selection of data to be coded, how the data is coded and how the data is interpreted. The selection of data was guided by the research questions as it is the main target of this research project to answer these questions.

The research is also ethically acceptable according to the key criteria defined by the WHO (World Health Organization, 2011, pp. 12-15):

- “Scientific design and conduct of the study
- Risk and potential benefits
- Selection of study population and recruitment of research participants
- Inducements, financial benefits, and financial costs
- Protection of research participants' privacy and confidentiality
- Informed consent process
- Community considerations”

The detailed description of the criteria defined by World Health Organization (2011) is shown in Appendix 8.

3.7 Data Analysis applied for this Research

The target of the data analysis was to bring compatible data from different interviewees together, in order to obtain a deeper understanding of the specific topic.

After having generated the data through semi-structured interviews, the data needs to be prepared for the data analysis. The interviews were audio-recorded and it was necessary to transcribe the audio files in order to have a written document. The written transcript was the basis for the data analysis.

For the transcripts, the audio-recorded interviews need to be transcribed literally (Sutton & Austin, 2015), but it is important to write down not only what was said by which person, but also to give an idea how it was said. This means the tone of voice, non-verbal communication and contextual information (Saunders et al., 2019). During the interviews, the researcher made handwritten notes when something specific was noticed which was not audible on the audio-records.

Due to the fact that transcribing an interview is very time consuming (Saunders et al., 2009), it was decided to pay a touch typist for the transcription. The transcripts were checked by the researcher to avoid errors, to include the notes regarding e.g. non-verbal communication and to become more familiar with the data.

Each interview was stored as a separate word file with an anonymised title to maintain confidentiality.

Based on the generated data, the process of data analysis started.

According to Saunders et al. (2019, pp. 213-214),

reliability refers to replication and consistency. If a researcher is able to replicate an earlier research design and achieve the same findings, then that research would be seen as being reliable. In essence, validity refers to the appropriateness of the measures used, accuracy of the analysis of the results and generalisability of the findings.

Easterby-Smith et al. (2012) provide a definition where a constructivist researcher needs to justify the quality of data with the following two questions:

- Data Reliability: Will the same conclusions be drawn by other constructionist researchers?
- Data Validity: Have an adequate number of perspectives been included?

In order to support reliability and validity of the data the data analysis approach is explained in more detail.

For the data analysis, thematic analysis, as one of the proposed approaches of Saunders et al. (2019) was used. "The essential purpose of this approach is to

search for themes or patterns, that occur across a data set (such as series of interviews...)" (Saunders et al., 2019, p. 651). According to Braun and Clarke (2006, p. 78),

thematic analysis should be seen as a foundational method for qualitative analysis. It is the first qualitative method of analysis that researchers should learn, as it provides core skills that will be useful for conducting many other forms of qualitative analysis.

Thematic analysis can be used for different epistemologies as well as for a range of different research questions (Nowell et al., 2017). The advantage of thematic analysis is seen mainly in the flexibility of the approach which can be adjusted for the requirements of different studies with complex and detailed data. Especially for first-time researcher, thematic analysis offers an accessible way of analysis because no detailed knowledge regarding theory and technology of different qualitative approaches is needed. As there is a low number of procedures and prescriptions, the method can be learned easily (Braun & Clarke, 2006). According to King (2004), thematic analysis is useful to analyse the viewpoints of various research participants, in addition to which similarities and differences can be highlighted and unexpected insights can be generated. Moreover, King (2004) argues that key features of large data sets can be summarised by thematic analysis because the researcher has to structure the data well in order to be able to handle the data and in order to develop an organised and clear report.

The disadvantages of thematic analysis compared to other qualitative research methods (e.g. grounded theory, phenomenology or ethnography) are that less literature is available and this can make a first-time researcher feel insecure about conducting a thorough thematic analysis. The flexibility of the method is on the one hand an advantage but on the other hand also a disadvantage because "the flexibility of the method - which allows for a wide range of analytic options - means that the potential range of things that can be said about your data is broad" (Braun & Clarke, 2006, p. 97). This can cause insecurity in the researcher in deciding which aspects of the data to focus on (Braun & Clarke, 2006). Braun and Clarke (2006, p. 97) have the overall opinion that "many of the disadvantages depend more on poorly conducted analyses or inappropriate research questions than on the method itself".

For the research project, the thematic approach was selected because the method offers the required flexibility. It can be used for the constructivist philosophy as well as for the inductive approach of this research and provided an accessible way of analysis.

The thematic analysis for the research project was completed according to the recommended phases of Braun and Clarke (2006), which are:

- 1) Becoming familiar with the data
- 2) Data coding
- 3) Looking for themes
- 4) Reviewing themes
- 5) Definition and naming of themes
- 6) Writing the report

In the following, the explanation of the stepwise approach developed by Braun and Clarke (2006) is explained and the application of the approach on the research project is shown:

1) Becoming familiar with the data

Saunders et al. (2019) suggest becoming familiar with the generated data through producing transcripts of the recorded data. For the research project, a touch-typist was paid to transcribe the audio-recorded data in order to accelerate the process. The familiarisation was completed as suggested by Lofgren (2013) through careful reading, line by line and first notes about impressions were made. In addition, a comparison of the audio-recordings and the received transcripts was made to avoid any mistakes.

2) Data coding

“Coding is used to categorise data with similar meanings. Coding involves labelling each unit of data within a data item (such as a transcript or document) with a code that symbolises or summarises that extract’s meaning” (Saunders et al., 2019, p. 653). Coding the data is part of the data analysis process (Miles & Huberman, 1994) because the data will be organised into meaningful categories (Tuckett, 2005). The target of this process is that the data pieces of interest are available for the following

analysis. A code can be a word or a brief sentence. A unit of data can reach from a complete paragraph to only a number of words on the transcript. The unit of data is summarised by a particular code (Saunders et al., 2019). “The portion of data coded during first cycle coding process can range in magnitude from a single word to a full paragraph, an entire page of text or a stream of moving images” (Saldaña, 2016, p. 4).

Through the coding process, the researcher has the possibility of simplifying the data and focusing on specific data characteristics. Starting from unstructured data, the researcher moves through the coding process to idea development about the data (Richards & Morse, 2007).

Coding will, to some extent, depend on whether the themes are more ‘data-driven’ or ‘theory-driven’ - in the former, the themes will depend on the data, but in the latter, you might approach the data with specific questions in mind that you wish to code around. (Braun & Clarke, 2006, pp. 88-89)

For the research project, there was an intermediate step performed before assigning the codes to the units of data. To make the relevant parts of the transcripts visible, the relevant parts of the interview were highlighted in yellow. The highlighted parts could be only words, but also phrases, sentences or even complete sections. The content of the labels can be about processes, opinions, differences, actions, activities, concepts or whatever seems to be relevant. The selection of the relevant parts was done based on the fact that it was mentioned frequently, it was surprising, the interviewee said that it is important, the content was already known from already published articles or the part reminded the researcher of a concept or theory (Lofgren, 2013).

An extract of the colour marking method can be found in Appendix 2.

Having selected an inductive research approach, this would mean that all data was coded. However, as research questions were defined to guide the research project, the research questions were used as guidance for the selection of the data to be coded (Saunders et al., 2019).

For the first cycle of coding, structural coding was used. "Structural coding applies a content-based or conceptual phrase representing a topic of inquiry to a segment of data that relates to a specific research question used to frame the interview" (Kathleen & Mclellan-Lemal, 2008, p. 124). For the second cycle of coding, focused coding was used to categorize the data. The most significant or frequent codes were used to build categories (Saldaña, 2016).

The coding was done open-mindedly and everything which was evaluated as having relevance for the research questions was coded. To ensure unbiased coding, it was important to stay close to the data (Lofgren, 2013). In addition, the coding process followed the recommendation of Braun and Clarke (2006) to work through the whole data set systematically, considering each data item fully and equally and looking for possible themes based on important aspects within the data.

In order to use a consistent and systematic approach for the data coding, specific statements were analysed and categorised into themes which belong to the phenomenon of interest (Creswell, 2013). The selection of most important codes in regards to the research questions and the categorisation was completed. The focus was narrowed down and only the marked data was revised again. The codes that were still important, to answer the research questions, were grouped together and categories were created.

Therefore, the data of the transcripts was transformed in an unbiased way, one to one from the transcript, into an Excel file, to make it easier to group the data. An extract of the Excel file is shown in Appendix 3.

3) Looking for themes

When the data has been coded, the search for themes started. The target of this data analysis step was to narrow down the long list of codes to a short list of themes associated to the research questions. "This phase, which re-focuses the analysis at the broader level of themes, rather than codes, involves sorting the different codes into potential themes, and collating all the relevant coded data extracts within the identified themes" (Braun & Clarke, 2006, p. 89).

“A theme is a broad category incorporating several codes that appear to be related to one another and which indicates an idea that is important to the research question” (Saunders et al., 2019, p. 657). The identification of themes is done by bringing together aspects or single parts of experiences or ideas. When experiences or ideas are viewed alone, they are often meaningless (Aronson, 1995). To differentiate between coding and creating of themes the explanation of Saunders et al. (2019, p. 657) was used, “Data are organized by coding them while codes are organized by drawing them together as themes.” A theme is dependent on whether it contains something relevant for the research questions (Braun & Clarke, 2006). If the themes are identified, they link together substantial parts of the data and thus are significant concepts (DeSantis & Ugarriza, 2000).

4) Reviewing of themes

The last part of the analytical process focused on the refinement of themes (Saunders et al., 2019).

During this phase, it will become evident that some candidate themes are not really themes (e.g., if there are not enough data to support them, or the data are too diverse), while others might collapse into each other (e.g., two apparently separate themes might form one theme). Other themes might need to be broken down into separate themes. (Braun & Clarke, 2006, p. 91)

Patton (2015) provides a helpful guideline to judge categories. The recommendation is that there should be an identifiable and clear differentiation between themes, while within a theme, ideas need to cohere together meaningfully.

The themes have been reviewed in two steps following the recommendation of Braun and Clarke (2006). Firstly, the reviewing was completed based on the coded data extracts. All collated data extracts per theme were read and it was considered if the data extracts formed a coherent pattern. In cases where the initially suggested theme did not fit, it was considered if the theme was incorrect or if one of the data extracts did not fit into the theme. In that case, the theme was reworked, or a new theme was created, or the data extract which did not fit into the theme was moved to another theme, or the not fitting data extracts were removed from the analysis.

If the defined themes appeared to form a coherent pattern, the second step of reviewing the themes was completed. This included a similar process to the first step, but the review was completed in relation to the whole data set. The data set was read for two reasons. Firstly, “to ascertain whether the themes ‘work’ in relation to the data set” (Braun & Clarke, 2006, p. 91), and secondly, additional data which may have been missed for themes in the initial coding stages were coded.

5) Definition and naming of themes

In phase 5, the themes were defined and further refined for the presentation of the analysis through “identifying the ‘essence’ of what each theme is about (as well as the themes overall), and determining what aspects of the data each theme captures” (Braun & Clarke, 2006, p. 92). In this phase, the thinking about expressive names of the themes for the final analysis also started. The name should give the reader an idea of theme content.

6) Writing the report

The sixth phase included the final analysis and the writing of the report. “The task of the write-up of a thematic analysis,... is to tell the complicated story of your data in a way which convinces the reader of the merit and validity of your analysis” (Braun & Clarke, 2006, p. 93). Including direct quotes from interview participants as an essential part of the final report is suggested by King (2004) in order to support the understanding and show the themes’ prevalence.

For the research project, the results of the thematic analysis were described in a neutral voice and without interpretation according to Lofgren (2013) in chapter 4. The discussion of the results was conducted in chapter 5. This means that going beyond the data description and discussion, the results in relation to the research questions and in relation to the existing literature takes place in the discussion chapter.

3.7.1 Generalisation

The term ‘generalisation’ is described by different scholars. Easterby-Smith, Thorpe, Jackson, and Jaspersen (2018, p. 398) define generalisability as “the extent to which observations or theories derived in one context can be applicable to other

contexts” and summarise it in one simple question: Is the sample diverse enough to make conclusions to other contexts possible? Saunders et al. (2019, p. 804) have a very similar definition of generalisability, which is the “extent to which the findings of a research study are applicable to other settings”.

The result of the research, which will show what influence a brand has in the purchasing process of a German hospital, will not be generalisable for all hospitals in Germany because each hospital has its own organisational structure, and, in addition, different people are involved in the decision-making process. The selection of the interviewees helped to increase the generalisability for hospitals in general in Germany to a certain extent because the interviewees were employees of purchasing groups. Employees of purchasing groups buy products or consult in multiple purchase decisions for most German hospitals. This means that the selected interviewees did not have the perspective of only one German hospital, they had knowledge about multiple different hospitals. Furthermore, the interviewees were not all from the same purchasing group. In order to cover experiences with a larger number of hospitals, three different purchasing groups were selected.

Generalising the case of German hospitals directly to other countries or even other industries would not be possible without considering the different environment. This means if the results for a German hospital want to be translated to a for example Spanish hospital, the specific environment of Spanish hospitals needs to be considered. The same applies for using the results for German hospitals for other industries.

Following an inductive research approach, it was not the main aim to achieve statistical generalisation. The target of the research project was in line with the constructivist world view to understand the research problem and the circumstances. According to Yin (2015, p. 38),

a fatal flaw in doing case studies is to consider statistical generalisations to be the way of generalising the findings from your case study. This is because your case or cases are not ‘sampling units’ and also will be too small in

number to serve as an adequately sized sample to represent any larger population.

The following adapted figure of Creswell (2013) summarises at the end of the methodology and methods chapter the selected research setting, research methodology, research strategy and research methods.

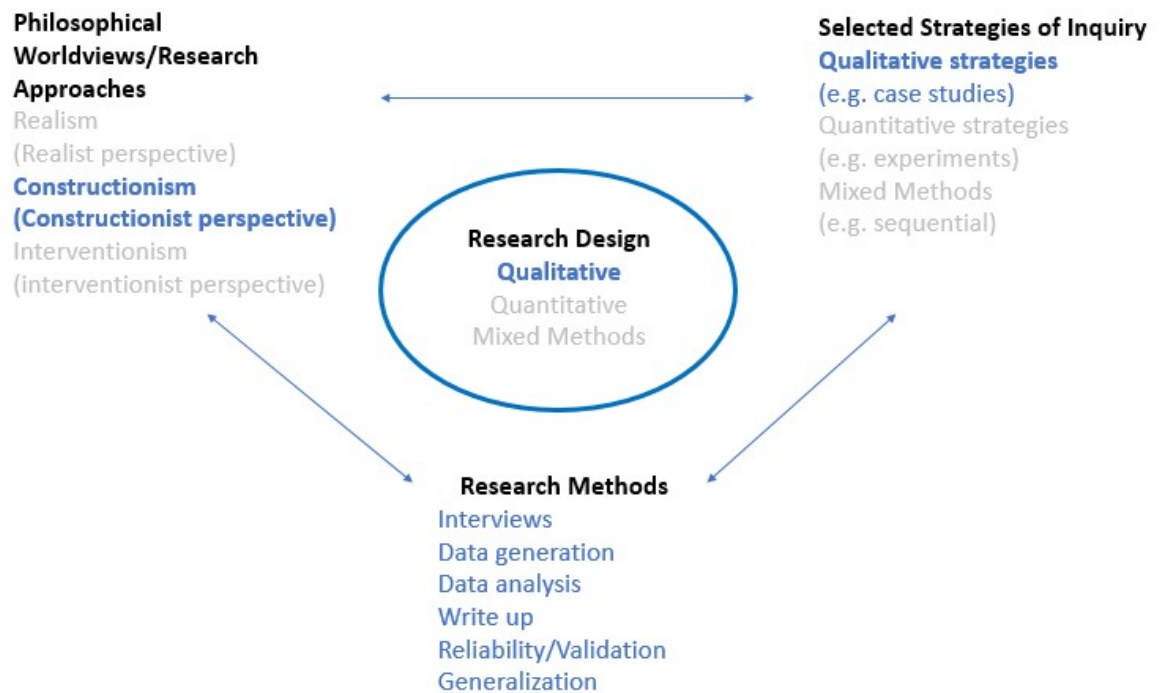


Figure 6: Interlinking of Worldview, strategies for inquiry and research methods, adapted from Creswell (2013)

The mapped qualitative research design gives an overview of the connections between worldview, research strategies and research methods. The constructivist worldview of the researcher led to a qualitative research strategy of a case study. An inductive approach was used to generate data from the field.

Inductive approach means that data is generated in order to link the data analysis with the development of theory. The target here is to understand the issue and to know what is happening. By analysing the generated data, theory is formulated. With this approach, there is more possibility of obtaining alternative explanations of what is happening (Saunders et al., 2009).

Purposive sampling strategy was applied and semi-structured interviews were used as research methods to generate the data. The data analysis was based on the importance of individual codes to make sense of the data.

3.7.2 Limitations

Although the proposed research strategy is justified, different methods may be used by other constructivist researchers. Other outcomes can be a result of having used different methods or sources. Therefore, a critical review of the main research limitations is summarised in the following.

Limited interviewees' availability

Nine possible interview candidates had been contacted to contribute to the research project, but only four were available and in one interview a second candidate joined so that in the end five perspectives on the research topic were included.

The focus of the interviews was, as suggested by Yin (2013) on quality and not a fixed number of interviews. Moreover, the data saturation was reached with the fourth interview, because no unknown topics emerged and no further coding was possible.

Sensitive research area

The area of how purchasing decisions are derived in a German hospital is a sensitive field and therefore the number of data sources could have been increased by selecting a less sensitive research field. However, as the interest of the researcher was specifically in this research field and the knowledge gap needed to be closed, the limitation was accepted by the researcher.

Limited time

As there is a time limit to finish the thesis, the generation of data also had to stop from a timing perspective. A longer time frame might have resulted in a higher number of data sources and would have increased the quality of the research project.

Skills of the researcher

The skills of the researcher, in terms of how the interviews were performed can be discussed and of course criticized, because the research was performed by a first-time researcher. Based on the selected research method of semi-structured interviews which results in an interactive conversation based on the open-ended interviews and the semi-structured design, the interviewees would have gone differently in case a more experienced researcher would have done the interview. To have the limitation with the lowest possible effect a proper preparation of each interview, which was described in the interview guide, was done.

In summary the methodology chapter provided the research approach and showed the methods applied to generate the data. The ethical issues were considered as well in this chapter and it was explained how the data was analysed in this research project, in order to provide the substance for the next chapter which will consider the findings of the research.

Chapter 4 Findings

In this chapter, the findings from the conducted semi-structured interviews are presented in a structured, objective and target-oriented way. According to Baxter and Jack (2008, p. 555), “it is the researcher’s responsibility to convert a complex phenomenon into a format that is readily understood by the reader”. Furthermore, Baxter and Jack (2008) state that there is no defined way of reporting a case study, but still there are proposed ways of possible reporting of the findings, such as writing a narrative story, or a chronological report or addressing the propositions.

The thematic analysis used for the research project resulted in the following coding categories. Following an inductive approach, the codes were not defined in advance. The codes emerged from the generated data, guided by the research questions that need to be answered. Therefore, the codes reflect the topics of purchasing process, influence factors for decision-making in the purchasing process, and topics around brand sensitivity.

Codes
Description of purchasing process
Tasks in the purchasing process
Participants in the purchasing process
Description of buying centre
Participants of buying centre
Tasks of the buying centre participants
Product influencing the decision-making
Person influencing the decision-making
Supplier influencing the decision-making
Situation influencing the decision making
General importance of a brand
Situations for brand sensitivity/insensitivity
Brand values
Company brand vs. Product brand

Table 14: Coding categories (author’s own work)

Based on the coded data, themes were derived for further analysis. As the interview guide was already structured along the research questions, the generated and coded data were also categorized along this structure.

The first theme concerns the description of the buying decision process. In order to describe and explain the buying decision process, it is necessary to explain both the purchasing process and the buying unit. Therefore, the coded data for the purchasing process, its participants and tasks, as well as the buying unit, its participants and tasks were connected in the first theme.

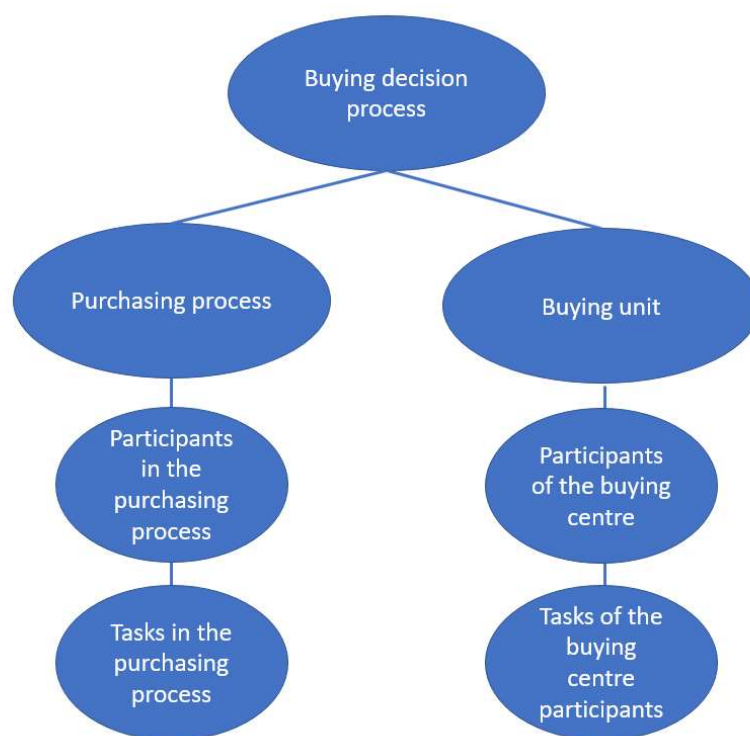


Figure 7: Theme - description of the buying decision process (author's own illustration)

Regarding the buying decision process, a sub-theme emerged regarding the buying centre composition. There are different factors influencing the composition. The coded data for the influence factors of product type, availability of participants, decision-making structure of the hospital and the personality of the hospital employees were summarised in the buying centre composition theme.

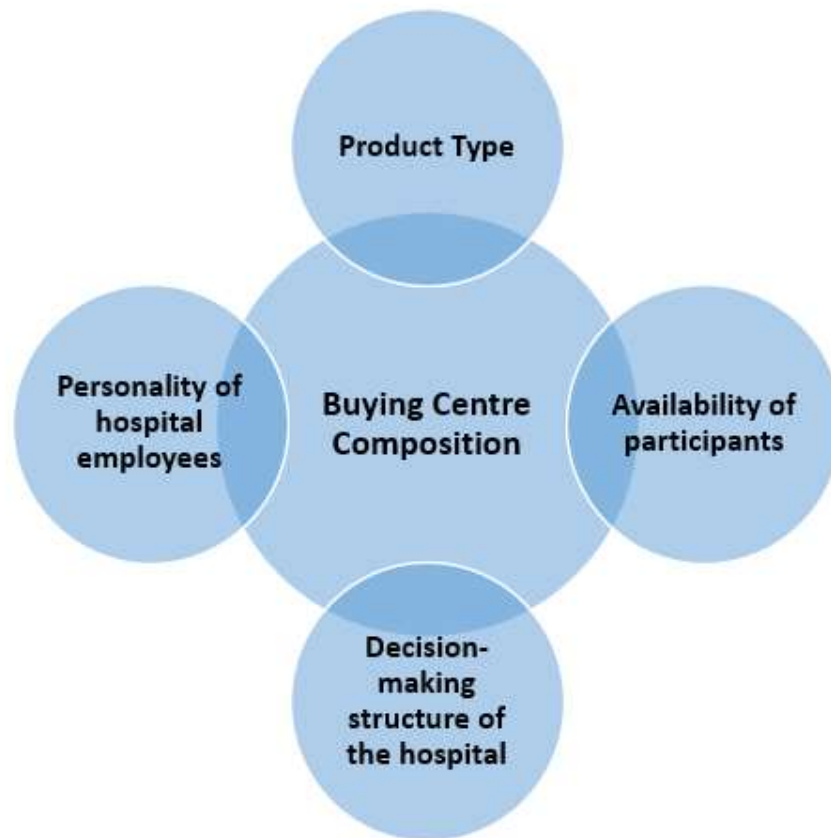


Figure 8: Influence factors on the buying centre composition of German hospitals (author's own illustration)

The second theme focuses on the influence factors for decision-making and consolidated the data regarding the influence that the product, the person, the situation and the supplier have on the decision-making. The theme appeared based on the emerged influence factors, which could be categorised as product, person, supplier and situation related factors.

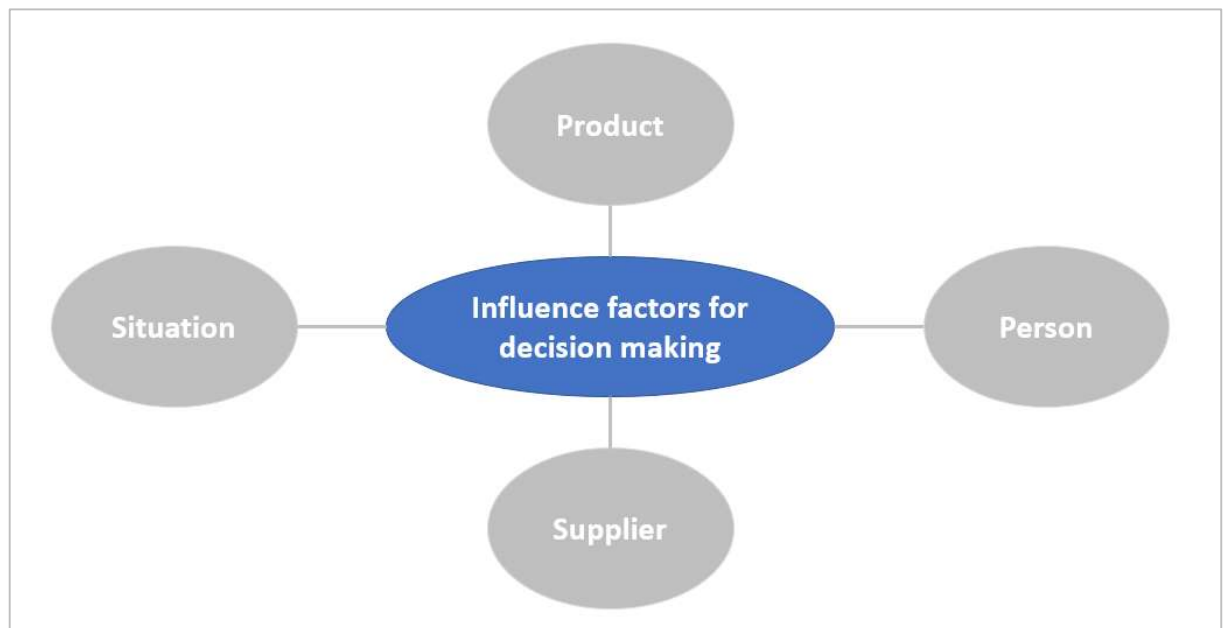


Figure 9: Influence factors for decision-making (author's own illustration)

The third theme consolidated the coded data regarding the brand in the decision-making process. The data regarding the general importance of a brand are connected to the theme as well as the situations for brand sensitivity or insensitivity. In addition, the coded data for brand values and the opinions about product brands in comparison to company brands are collated in this theme.

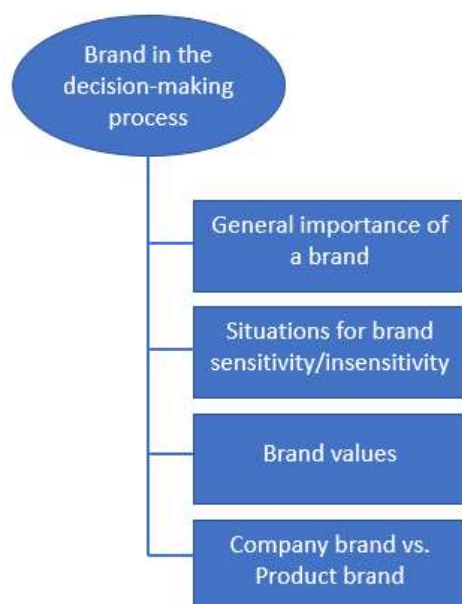


Figure 10: Brand in the decision-making process (author's own illustration)

In the following section, the findings are presented in a neutral voice and the intention of this chapter is not to interpret the meaning of the data. The interpretation of the data and the subsequent implications are part of the 'Discussion' chapter, The findings of this research project resulting from the four performed semi-structured interviews are structured according to the three main research questions. As the interviews were semi-structured, the courses of conversation were not exactly the same. Therefore, this structure makes it possible to summarise and compare the data generated in all four interviews. The low number of performed interviews can be justified by the high quality of interview participants. In section 4.1 introduction of interviewees, the high quality and great knowledge of the interviewees will become visible.

Thus, after a short introduction of the interviewees, the first section reports the meaning and experiences of the interviewees about the buying unit and key actors of the buying decision process of a German hospital. The next section is about the estimates of the respondents about the influence factors for decision making. The last section focuses on the respondents' opinions on how and why brands influence the decision making of a German hospital.

4.1 Introduction of interviewees

In this section, a short introduction of the interviewees is given, with the focus on the background of the interviewees and their special and high-quality knowledge of the decision-making process of German hospitals. The names of the interviewees have been anonymised due to ethical guidelines and the agreed non-disclosure agreement. The names are substituted by 'Interviewee' and numbering (e.g. Interviewee 1).

Interviewee 1:

Interviewee 1 is the Managing Director of one of the biggest purchasing groups for hospitals in Germany. She has experience regarding the purchasing and decision-making process of a German hospital from different perspectives. She worked in her former jobs in different positions in the care sector of hospitals, which means that she understands very well the user perspective in the decision-making process. Experience in her current job as managing director of one of the largest purchasing

groups for hospitals gives her a great knowledge about the actors in the decision-making process of German hospitals as well as the influence factors on decision making.

Interviewee 2:

Interviewee 2 started his career as a nurse and worked in different positions in the care sector of a hospital. He also worked for different companies as a sales representative of a supplier for medical devices. Today he is the Product Area Director for a big purchasing group and mainly negotiates the purchase conditions for hospitals. The expert knowledge of Interviewee 2 is versatile, ranging from a good understanding of the user group in the hospitals to in depth knowledge about the purchasing and decision-making process. He stated explicitly “I know how a hospital works very well”. In addition, he has experience from the perspective of a supplier for medical devices as part of the purchasing process.

Interviewee 3:

Interviewee 3 is the Area Manager in a large German purchasing group. He focuses on the daily business with hospitals and sees himself, as well as the purchasing group, as the “problem solver” of the hospitals. He invited a colleague to join the interview because she has worked in different administrative departments in the hospital with the main focus on the purchasing department of the hospital. The experiences and opinions of both were summarised. The knowledge extends from the tasks and processes of a purchasing group to the hospital in the decision-making process. The key actors of the decision-making process are well known and the influence factors are experienced from a hospital as well as from a purchasing group perspective.

Interviewee 4:

Interviewee 4 is a Business Development Manager of a large German purchasing group. She has two key roles: firstly, dealing with the main tasks of purchasing negotiations with suppliers of hospitals, and secondly in a consulting role for hospitals in for example controlling topics. The interviewee worked in her former job for a supplier of medical devices. Therefore, she is able to evaluate the decision-

making process, its actors and influence factors from two perspectives, the supplier perspective as well as the purchasing group perspective.

The four interviewees with their different backgrounds provided valuable data which were transcribed and afterwards coded as explained in chapter 3.

4.2 Findings regarding the buying unit and key actors in the buying decision process

This section summarises the results from the interviews about the buying unit of a German hospital and has the main aim of identifying the key actors who are part of the buying decision process in a German hospital. During the interviews, different topics emerged relate to the overall question of who the buying unit participants or key actors of the buying decision process are. The interviewees explained the overall purchasing process as a framework for the buying unit and the buying decision process. The explanation included the participants of the overall purchasing process and their tasks. After that, the interviews focused on the buying centre itself, the participants of the buying centre and their tasks.

4.2.1 Background to hospital purchasing and purchasing process

In order to identify the key actors and their role in the buying process, it was necessary to understand the buying process. As there was no literature available on what the buying process of a German hospital looks like, it was also necessary to generate this data through the interviews as the question about the key actors in this process built on that.

In addition, the interviewees provided information about topics which concern hospital purchasing today. It was seen as important to summarise this information very briefly as an introduction to this chapter because these general concerns might influence or be related to the answers given by the interviewees later on. After the introduction, the findings from the interviews about the buying process are described.

Interviewee 1 saw today's hospital purchasing as very operative, which means very focused on daily tasks and not very future oriented. "Purchasing is not oriented

enough at the hospital”, was one of her statements. In addition, she saw a big challenge in getting human resource competences for the hospital. The lack of resources was also described by Interviewee 2 and he pointed out especially the high costs of resources which concern hospital purchasing. He especially saw the lack of nursing hospital staff as a problem.

Interviewee 2 also saw proper logistics and suitable delivery as concerns of hospital purchasing, as well as topics like revenue relevance, process and process optimisation, standardisation, supplier standardisation, product standardisation, standardisation of the ordering process, warehousing and the closing of low revenue departments. Also, from his perspective, the administrative work in the hospital has changed, and controlling has become more and more important.

In the following section, the generated information about the overall purchasing process is summarised. The overarching parties in the buying process were described by Interviewee 4 mainly as: manufacturer, purchasing group and hospital as customer, whereby the manufacturers produce and sell products which are needed by the hospital. Furthermore, Interviewee 4 described the purchasing group as a link between the manufacturers and the hospitals. The purchasing group has different hospitals which are members of the purchasing group.

Interviewee 4 also described the core tasks of the overarching parties in the purchasing process. The main task of the hospital was seen as requesting the needs at the purchasing group. Interviewee 3 added that the hospital is getting a member of a purchasing group to bundle products and to create potentials to achieve better prices. The core task of the purchasing group was seen by Interviewee 3 in negotiating the prices and conditions with the manufacturer and to make an offer to the hospital.

Interviewee 3 further described the role of the purchasing group and the relationship of the purchasing group to the hospitals. Interviewee 3 stated:

the purchasing group is a problem solver and the purchaser of the hospital can contact the purchasing group about all relevant purchasing topics. Or

rather, when topics are not manageable or problems occur, the purchasing group is contacted by the purchaser.

Interviewee 4 summarised his perspective thus “The purchasing group is the extended arm of hospital purchasing”.

Interviewee 2 also saw the main task of the purchasing group as being to negotiate prices for the hospitals, but he further added that the negotiated conditions are not always accepted by the hospital. Interviewee 2 described an additional task of the purchasing group as that of market orientation, which means analysing available products in the market and possible suppliers who can deliver the products. Moreover, Interviewee 2 saw the definition of the required products which are aligned with the users as a task of the purchasing group.

Interviewee 3 saw the takeover of complex purchases as one important task of the purchasing group.

Interviewee 1 emphasised the driving force and more active role of a purchasing group with the statement that the strategic purchaser of the purchasing group needs to offer the products to the hospital, because he/she knows the market as well as the changes in the market. Furthermore, Interviewee 1 stated that task sharing between the operative purchaser of the hospital and strategic purchaser of the purchasing group depended on the hospital structure.

She said,

If things go well, the purchasing group makes the offer to the hospital, because hopefully the strategic purchaser is so close to the industry that he/she knows how the portfolio changes and where new products are launched. This is how it should work. Especially in innovative areas like heart medicine or endoprosthesis, the strategic purchaser knows the portfolio very well.

Comparing the statement of Interviewee 1 with the statement of Interviewee 3, Interviewee 3 described the role of the purchasing group as more reactive with the explanation that only when the hospital purchaser places a request to the purchasing group does the purchasing group search for the best offer among their

partner suppliers. He further described the preselection of possible products to be purchased as being done in a more cooperative way. It was done by the purchasing group together with the economic and user part of the hospital.

An additional task of the purchasing group was seen by Interviewee 1 in the establishment of a commitment from the purchasing group to the industry with decisions about portfolios. This means in her opinion that not every purchasing decision has to be done from scratch. A large number of the portfolios which are purchased and used are defined in advance and the user has to work with it. Portfolios are ascribed to a supplier for a time period and thus a commitment is established. In addition, the operative purchasing of the hospital does not decide anything about these portfolios.

A different perspective on that topic was provided by Interviewee 2, who also talked about the commitments which are necessary to achieve better prices. He explained that these commitments are based on distribution agreements such as delivery time or delivery volumes. From his perspective, delivery commitments with hospitals can only be built in cooperation with the hospitals and if the hospitals are involved.

There are different purchasing groups available in Germany and according to Interviewee 1 the purchasing groups differ in their portfolios. She said, "The purchasing groups differ massively in what they do, there is no one process, it is a complete portfolio that is offered, ranging from negotiation to a consulting offer". She mentioned examples such as IT services, competence development programmes or controlling functions.

Interviewee 3 described how the purchasing group as a first contact with the hospital introduces the system or programme of the purchasing group to the purchasing manager or the management of the hospital in a meeting.

Interviewee 3 provided the steps from the selection of products to information generation for decision-making:

- **Preselection of possible products** to be purchased by purchasing group and hospital
- Definition of **evaluation criteria**
- **Selection of Suppliers** who are allowed to offer (How many suppliers are allowed to offer is dependent on the product category. The more complex and the more expensive a product is, the fewer suppliers are allowed to offer.)
- Submission of offers by selected **suppliers** with a cost guarantee
- Testing of **products**
- Invitation to suppliers to present their products

Interviewee 2 added additional information to this topic. The evaluation criteria need to be defined in a way that no supplier has an advantage or disadvantage. He also stated that if a supplier cannot fulfill the criteria, the supplier is excluded and the offer is not taken into account.

It was mainly Interviewee 3 who highlighted the fact that the purchasing process is not always the same. There are criteria which might change the process. He cited an example of when the required budget for the purchase and the patient risk related to the product are high or low. The main difference in the purchasing process was seen in how much effort the process required, especially if the involved participants in the decision changed and if a purchasing group was consulted to develop an equivalent list of possible products. Furthermore, it would differ according to whether or not the product was tested in advance.

Interviewee 3 also pointed out that the preference of a specific supplier or brand, based on name recognition, a superior benchmark result, outperforming customer care or special personal relationship level, can be a criterion which might change the process. Interviewee 3 described how the process is prolonged because the specific product needs to be tested, which requires time.

The following figure summarises the overall key players in the buying process of a German hospital and their main functions in the process. Mainly a manufacturer, a purchasing group and a hospital are involved in the purchasing process. The

hospital is a member of the purchasing group and places their needs and requests with the purchasing group. The purchasing group negotiates the prices with the manufacturer and presents the offer to the hospital.

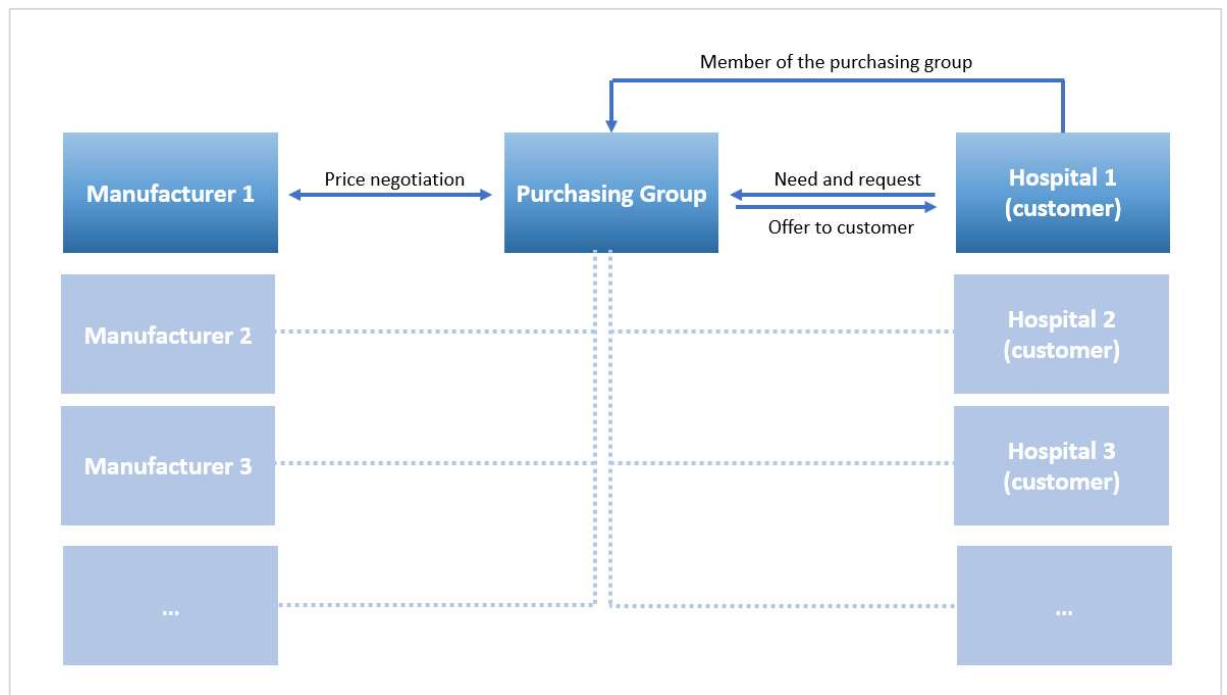


Figure 11: Overview – buying process of a German hospital (author's own illustration)

4.2.2 Findings related to the buying unit and the key actors of the buying decision process

In this section, the findings which focused on the first research question are summarised. The focus was on the buying unit and key actors of the buying decision process. The generated information was structured in two categories: (1) the participants of the buying centre and (2) the tasks of the buying centre.

(1) Participants of the buying centre:

Regarding the participants of the buying centre, the interviewees provided a very consistent picture, which is shown in the following table. The professional titles differed but the meaning was the same.

Participants of the buying center			
Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4
	Managing director of the hospital	Manager of the hospital	Managing director of the hospital
Purchaser of the hospital	Purchaser or purchasing manager	Purchasing manager of the hospital	Purchaser of the hospital
User representative	User like chief physician	(Chief) Physician	Chief Physician (or another user representative)
		Further participants e.g. specialists for specific topics	

Table 15: Interviewees responses regarding the participants of the buying centre (author's own illustration)

Based on the answers of Interviewees 2, 3, and 4, the managing director of the hospital, the purchaser or purchasing manager and the chief physician or another user representative are part of the buying centre. Only Interviewee 3 mentioned an additional participant in the buying centre. He stated that further participants of the buying centre depended on the division the product belonged to. For example, if the product relates to medical technology the director of technology is involved or if the product belongs to the hygiene division, the hygiene specialist is part of the buying centre. Another distinction was that Interviewee 1 did not mention the managing director as part of the buying centre.

The summarised view of the participants of a buying centre is a generalised view. A deeper analysis of the buying centre participants showed there were situations mentioned by the interviewees where the composition of the buying unit would be different.

The influence factors on the buying centre composition emerged as a sub-theme to the buying decision process.

The following graphic shows the four influence factors that emerged during the interviews which could have an influence on the buying centre composition of a German hospital.



Figure 8: Influence factors on the buying centre composition of German hospitals (author's own illustration)

The interviewees pointed out that the product category, the availability of buying centre participants, the decision-making structure of the hospital and the personality of the hospital employees could all have an effect on the buying centre composition. In the following section, the findings for these four categories are presented in more detail.

Product type

Interviewee 4 underlined that the user representative in the buying centre depends strongly on the product type, and in the words of Interviewee 3, “The composition depends on the product category as well as the application area we are talking about.”

Interviewee 1 talked about three product categories according to which the participants of the buying unit are defined. She defined the first category by saying, “The performance sensitive products are clearly categorised and the decision is made with medical specialist groups”. She described the second product category as product categories where the care department and users are consulted, but the decision is still made by the purchaser. The third product category was described as a product category where only the purchaser makes the decision. “For syringes, you do not need to ask the users about their opinion,” she mentioned as an example. A similar description was given by Interviewee 4. She said that for product categories with non-critical products, the purchaser of the hospital drives the decision without any need of explanation and without influence on the performance, but, from her perspective, the purchaser has a short agreement with the users.

Interviewee 3 stated that no buying centre is involved at all in the decision for consumable supplies. Interviewee 3 added to this perspective, “It always depends on how big the thing is”, which means that the buying centre composition is dependent on the necessary budget for the purchase as well and on how demanding the product is. From his perspective, if the purchase is expensive, there will be a buying centre involved in the decision, and for products with a higher investment and higher importance, the manager of the hospital will also be involved. From his perspective, the medical and economic parts need to be involved in the decision, and cooperation between the medical and economical parts is necessary to come to a decision.

There was also a case described by Interviewee 3 when it does not matter which brand is selected, for example if the quality of the products does not differentiate and the user does not have a preference for a specific product. In this situation the purchaser makes the selection without the advice of the user group.

Interviewee 2 commented on that topic that for critical products specialist groups of users are built and involved in the decision making. This is not the case for simple items, where the purchaser can make a clear suggestion for the product which should be purchased.

Interviewee 1 compared the frequency of the product categories and her conclusion was that the part where the medical users decide is the smallest.

In general Interviewee 2 emphasised the importance of involving the user. It is so important because for example a lot of trouble in the hospital can be avoided. He commented,

I create more silence in the hospital if the users have a right to a say as if I decide something in the headquarter and the users are not agreeing with it.

That will get you nowhere or actually it leads to trouble.

He particularly mentioned the standardisation of assortments. This is from his perspective only possible with the involvement of the user. Also, Interviewee 4 stated, "You can make a lot of mistakes if you don't involve the user".

Availability of participants and available time

In addition to the product type, the availability of the buying centre participants was mentioned as a determining factor for the buying centre composition. Interviewees 4 and 3 pointed out that especially the chief physician as a participant of the buying centre as well other employees of the hospital are not always available and, in that case, the unavailable person will be represented by someone else. For example, the chief physician could be represented by an employee of the specific department the chief physician is responsible for.

Interviewee 3 stated,

How it works in the hospital depends on how much time is left and the employees work on call. The available people discuss the topic, but it is always difficult to get everyone at one table, including the chief physician. This is always a problem.

According to the statement of Interviewee 3, the buying centre composition and how many people are involved is also dependent on the available time of the responsible people.

Decision making structure of the hospital and individual responsibilities

Interviewees 2 and 3 explained that the members of the buying centre are selected according to responsibilities. Interviewee 3 added that for each larger area there is one responsible person and for the buying centre composition, “It matters who has the assigned competencies”. This means for example who has the professional competencies for the products, who has the responsibility to decide and who has the responsibility for the budget. This can be different for each hospital. Interviewee 4 summarised it in the individual decision-making structure of the hospital, which is an additional parameter which can influence the buying centre composition. Interviewee 1 also had the opinion that, the decision-making structure depends on the governance of the hospital”.

Personality of hospital employees

Who is involved from a user perspective “depends strongly on the different personalities”, was stated by Interviewee 4. She said that, “Normally one could assume that the chief physician is the strongest person with the strongest character, but it could happen that in the team of the chief physician there is a stronger character influencing the chief physician.” Thus, the real decision maker is not the chief physician.

(2) tasks of the buying centre

In the previous section, the usual participants of the buying centre were expressed by the interviewees as managing director, purchaser and chief physician/user representative. The following part summarises the findings about the tasks the participants of the buying unit have in regard to the decision-making process.

Interviewee 2 explained the main task of the **managing director** of the hospital. From his perspective, the main role of the managing director is to lead the hospital profitably.

According to Interviewee 4, the task of the **purchaser** is to focus on efficiency. Interviewee 3 pointed out that the purchaser of the hospital needs to have control of the financial aspects and budget for the purchase. In addition, the purchaser needs to know which product is required and what the product requirements are. According to Interviewee 2, the purchaser and the purchasing manager in consultation with the managing director approve the requested products by the user. The purchaser focuses on cost reduction, but to avoid an increase of material consumption, the user needs to be involved and the process needs to be analysed. The purchaser has the task of balancing expenses and savings.

As already stated in the section on the participants of the buying centre, the **chief physician** can be substituted by other users or grouped together with other users in a specialist group. Therefore, the findings for all the mentioned participants are summarised in this paragraph. According to Interviewees 2 and 4, the task of the chief physician or user is to define the required products. From the perspective of Interviewee 2, the user is the final decision maker. Interviewees 1 and 3 stated that the user evaluates the products from a functional perspective.

The following table summarises the tasks of the buying centre participants.

Managing Director	Purchaser/Purchasing Manager	Chief Physician/User
- Leading the hospital profitably	- Focusing on efficiency	- Defining required products
- Approving the requested products by the user together with the purchaser	- Controlling the financial aspects and budget for the purchase	- Performing the practical product evaluation
	- Knowing which product is required and what the product requirements are	- Can be final decision-maker
	- Approving the requested products by the user	
	- Focusing on cost reduction	
	- Avoiding an increase of material consumption	
	- Balancing expenses and savings	

Table 16: Tasks of the buying centre related to the decision-making process (author's own illustration)

4.3 Findings relating to the influence factors for decision making

In order to explore brand sensitivity in the purchasing process, it is necessary to understand the relevant parameters for decision making which have an effect on brand sensitivity. In this section, the findings which are focused on the second research question are summarised. The focus is on the influence factors for decision making.

During the conducted interviews, different questions regarding potential influence on decision-making were asked and the interviewees responded with several factors

that can have an influence. Not all factors were mentioned by all interviewees, but as soon as one interviewee mentioned an influence factor, the factor were included in the result. No influence factor was excluded because all factors were seen as relevant and of importance in evaluating the influence that can appear during decision-making. Furthermore, all mentioned factions were evaluated with the same weight regardless of how often they were mentioned. As the interviews were of a qualitative rather than a quantitative nature, the focus was not on the frequency of mentioned factors, the focus was on obtaining in depth knowledge and understanding the different perspectives of the interviewees. In total 23 influence factors were stated.

The information generated with the interviews were structured in four main categories (1) product, (2) person, (3) supplier and (4) situation. The following table shows the categorisation of the interview results.

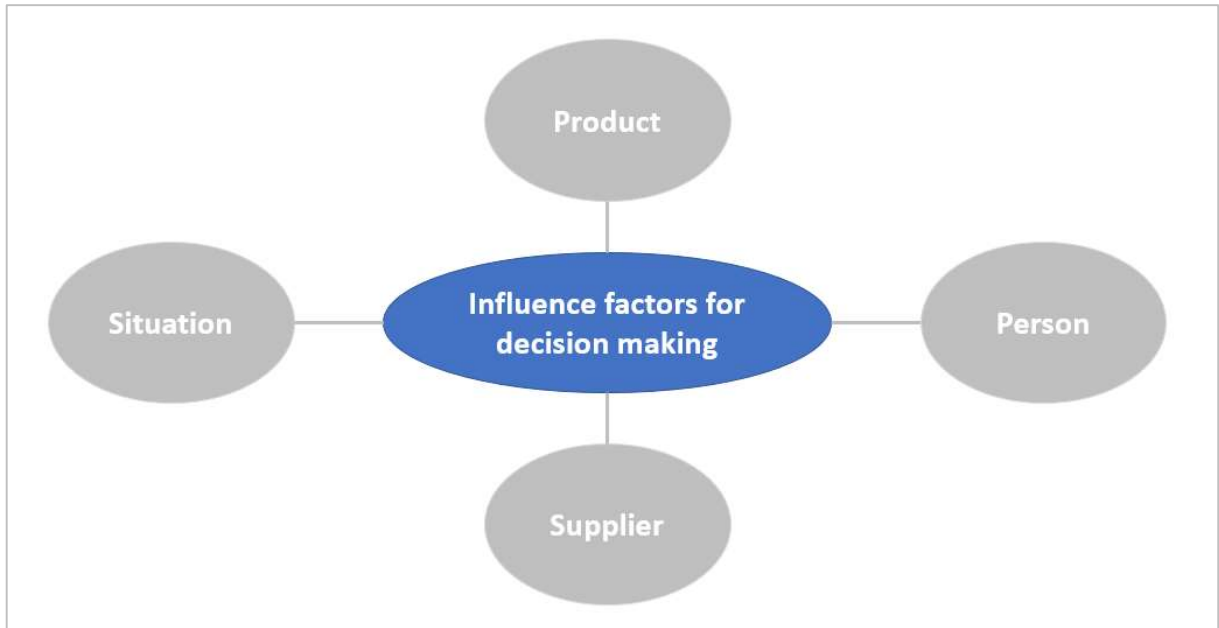


Figure 9: Influence factors for decision making (author’s own illustration)

The influence factors for decision making have been categorised in product related parameters, personal factors, supplier related factors and parameters which belong to a specific situation. In the next section, the findings for each category are summarised.

(1) Product

During the interviews, product related influence factors were highlighted by all four interviewees.

The influence of the **product category** was previously mentioned in the section on buying centre composition. Interviewee 4 stated that the product category influences who is involved in the decision-making process. This means that for product categories with critical products which need a lot of explanation and are performance sensitive, the user is more involved in the decision-making. On the other hand, she said that for product categories with non-critical products, without any need of explanation and without influence on the performance, the purchaser of the hospital drives the decision. Interviewee 1 explained that based on the quality and risk evaluation the product is categorised into a simple or difficult product category, which influences the decision-making process. She sees, in a similar way to Interviewee 4, the influence on the involved decision-maker and also on the length and complexity of the decision-making process. Product categories with simpler products have a shorter and less complex decision-making process, compared to products which are categorised as difficult. Interviewee 2 saw products with a high need of explanation as more critical in the decision making because the user plays an important role and needs to be involved. This means that the decision-making needs more time and effort for products with a high need of explanation as more participants are involved and mostly the users want to test the products of interest. Moreover, Interviewee 3 added that the product type determines the evaluation criteria for decision making. For each product type, different criteria are of more or less importance, and according to this importance, the criteria are defined.

Interviewee 1 mentioned as product related influence factors for decision-making the **quality**, **handling** and **efficiency** of the product, “whereby quality is measured by handling and the process... as well as by the available evidence”. From her perspective, if products have equal quality, the efficiency is decisive for the decision. Interviewee 3 also underlined product quality as an influence factor for decision making. The chief physician in particular has the focus on ease of use, which is related to quality. Interviewee 2 also underlined that handling and change in handling have an influence on decision-making.

In addition, Interviewees 2 and 3 saw the **service** as influential for decision making. Interviewee 2 added that the service is especially key for products with high need of explanation, an important decision-making criterion. Interviewee 3 stated that if the quality and the price are good, an even higher price will be accepted. Also, Interviewee 2 has the opinion that if the decisive criteria are given, a higher price will be paid. Interviewee 3 argued that the required service depends on the product category. He further detailed that the more interchangeable a product is, the more important the service and additional support are.

There was a consensus by all Interviewees that the **price** also influences the decision making and that there is a weighting between price and quality for the decision making of the buying unit. According to Interviewees 2 and 4, the weighting of price and quality is equal. However, Interviewee 2 commented that for commodity products with standard quality the focus is more on price. Commodity products do not differentiate in their quality, features or handling. For example, examination gloves or gauze compresses are commodity products.

Interviewee 2 underlined that quality is evaluated based on “practical user evaluation” and the price is evaluated based on the offer. From his perspective, evaluation based on price only is not enough for a purchase decision. The practical user evaluation needs to be done as well. This is also called “test”. For the test, “There is a defined period of time and defined volumes. There are assessment sheets which are filled out and which result in an evaluation”. He explained that the evaluation is based on defined criteria. The defined testing criteria refer to the product. From his experience, the product with the highest score wins the test. The evaluation criteria need to be defined to get a useful selection of possibilities. Evaluation criteria are defined to exclude some suppliers in order to get a narrower selection and to minimise the efforts for product testing.

The **interchangeability of a product** influences the decision-making in terms of how difficult the decision itself can be. Interviewee 3 emphasised that the more interchangeable a product is, the more difficult a decision can be because the more equal products are, the more difficult it is to compare them, and also many more

criteria will be assessed compared to products which differentiate from each other. On the other hand, products with a high interchangeability can be exchanged from a process and effort perspective more easily because every product change means additional effort in the hospital for training on handling and in the beginning more time is needed for changes in the process until the users know the new handling.

The opinion of Interviewee 1 was that if products are converted, dependent on the product category, criteria such as life cycle, process, employee orientation and switching costs are influence factors for decision-making as well.

Order frequency was mentioned as an influential factor for decision making by Interviewee 3. If products are ordered with a high frequency, the service and the order process are of much higher importance for the decision. In addition, if a product is, for example, only needed once a year (e.g. implant), the focus is less on the required effort for the order process. The shelf life and the maintenance are then more important.

(2) Person

During the interviews, person-related influence factors were pointed out by **all** interviewees.

Interviewees 1, 2, 3 and 4 believed that **personal preferences** and **personal philosophy** influence decision-making, which means that depending on the persons involved in the decision-making, the decision for or against a specific product or supplier may be different based on the individual preferences and habits. Interviewee 3 explained, "No physician can get along with everyone". So for example if a decision-maker does not get along with the sales representative of a supplier, the decision can be against the product of the supplier. Rather than being based on insufficient quality or other reasons, the reason in that case is the interpersonal relationship between the decision maker and the sales representative. Another example of Interviewee 3 was,

A chief physician working only with one medical device supplier will only work with this specific supplier in the future. The situation looks different when a chief physician who is open-minded towards a product change and willing to take the lead.

Interviewee 2 further stated that the interpersonal relationship between the suppliers' employees and the network of suppliers' employees in the hospitals has an influence on decision making. Interviewee 4 and 1 added that the selection and weighting of the decision-making criteria also depends on the specific person, because each person includes different criteria which are of importance and which they are focusing on.

(3) Supplier

The supplier related influence factors mentioned during the interviews are summarised in the following section.

From the perspective of Interviewee 4, if the supplier is a **system supplier**, which means that the supplier can offer not only a single product category but multiple product categories, this is an influence factor for decision-making. If a supplier is able to offer several product categories, the supplier can be preferred in the decision-making, because better prices over all product ranges can be achieved and the number of suppliers in total can be reduced, which leads to more efficient processes. This also goes in line with the comment of Interviewees 2 and 3, who said that the assortment of the supplier and the range of products have an influence on decision making. Interviewee 3 explained that the more supplier standardisation can be done, the better for the purchaser because the reductions of suppliers reduces expenses and time and increases bonus payments.

Interviewee 4 said,

Is there among the suppliers one who is able to be a system supplier? It would be interesting to know how cooperation would look for other departments. For example, if you only looked at the single product category of cardiac pacemaker, you would decide differently compared to if you looked at how many departments the supplier represented. For instance, if the decision was for Medtronic, this medical device supplier would be represented in many other departments, which would result in a different bonus level. It could be that if you already worked with this supplier, you would have the advantage of for example less procedural effort and therefore the

decision is made for a big supplier and not the supplier who would have been awarded the contract based on the single product category.

Interviewee 3 added another factor as an additional supplier-related influence for decision-making which was the **reputation** of the supplier and who else the supplier delivers products to, such as **reference customers**. If a supplier has a very good reputation, the supplier will be preferred in the decision-making, and if the supplier has reference customers who it is possible to get in contact with or at least it shows that the product is already used in other hospitals, this is also beneficial for this supplier in the decision-making process. Moreover, Interviewee 3 described the **terms of delivery** as influence factors for decision-making. This means, from his perspective, firstly, the reliability of delivery, and, secondly, delivery possibilities within the meaning of short-term deliveries. He explained, "Especially in orthopaedics or the category of implants we had deliveries overnight with night express. It is important to know if this is possible". He also added the **service** a supplier offers as an influence factor for decision-making, which is closely connected to the additional mentioned factor **sales manager** of the supplier. He explained that it is important for the decision if the employees of the hospital can get along well with the sales manager of the supplier. Interviewee 2 added to this perspective that it is important that the sales manager ensures the involvement of all participants in decision-making. From his perspective, the availability of **qualified personnel** of the supplier influences the decision-making because a lot of training and effort is required for a product change, and therefore the supplier has to offer the qualified capacities of personnel.

(4) Situation

In the interviews there were influence factors mentioned which relate to a situation. The summary of the situational influence factors on decision-making is given in the following section.

Interviewee 3 agreed that the **required effort to come to a purchasing decision** influences the decision-making in regard to the number of suppliers allowed to offer. If the effort for decision-making is high, which can mean for example a lot of information and product criteria need to be evaluated or a lot of participants need to

be involved, the number of suppliers allowed to offer will be as low as possible. The more suppliers offer, and the more information is available, the more difficult a decision becomes. He further stated that the more detailed or **complex** the **product criteria** are, the easier it can become because only a few suppliers will fit the request and be able to offer. So, the decision-making will be influenced regarding the number of available options for the decision. In the end, he concluded that it is difficult to say if the decision-making process is becoming easier or not, because complex product criteria can lead to a smaller number of possible suppliers to offer, but on the other hand if the criteria are too complex, it can become difficult to find even one supplier who is able to deliver everything.

Interviewee 3 also saw the **risk level** of a decision as an influence factor for decision making. In a situation with a high-risk level, the buying centre involves more participants and especially the managing director. If more people are involved in the decision-making, it can take longer until a decision is derived. Also, a more detailed evaluation process can be a result of a decision with a higher risk. In addition, he pointed out that decision-making is influenced by the **allocation of the decision-making power**.

He said,

At the moment, the decision-making power is moving more and more from the physician to the purchaser. Of course, it should still be decided in cooperation with the physician and the purchaser, but often the purchaser and the managing director define the specification and what will be standardized.

In this case, if standardisation is required over several hospitals, not every requirement of the user can be fulfilled. Interviewee 2 described further that there are cases where eighty percent of the decisions are made by the purchasing group and twenty percent are decided by the user (physician).

Interviewee 3 also mentioned the **limited time** of hospital employees as an influence factor for decision-making, because the limited time does not allow the alignment of all participants and the pursued cooperation for decision-making cannot take place. A consensus of all involved participants is therefore difficult to achieve, because not all participants are available at the same time.

Time pressure was seen by Interviewee 3 as having an influence on decision-making.

If an important device fails, a new device needs to be purchased immediately, or if a new chief physician starts working in the hospital and he is used to working with Smith and Nephew (medical device supplier), but the hospital has always worked with a different supplier, the supplier needs to be changed immediately.

In this case, the decision-making process will be very quick and not all options will be evaluated. What can be available in time is purchased, or if a specific device is requested, this product is purchased without any additional evaluation. For Interviewee 3, time pressure is also connected to the service a supplier offers. From his perspective, if a product needs to be changed quickly, only the suppliers who can offer the service of a fast product switch will be contacted.

The graphical summary of the explained findings is shown in the following and includes the theme for the influence factors for decision making as well as the connected codes.

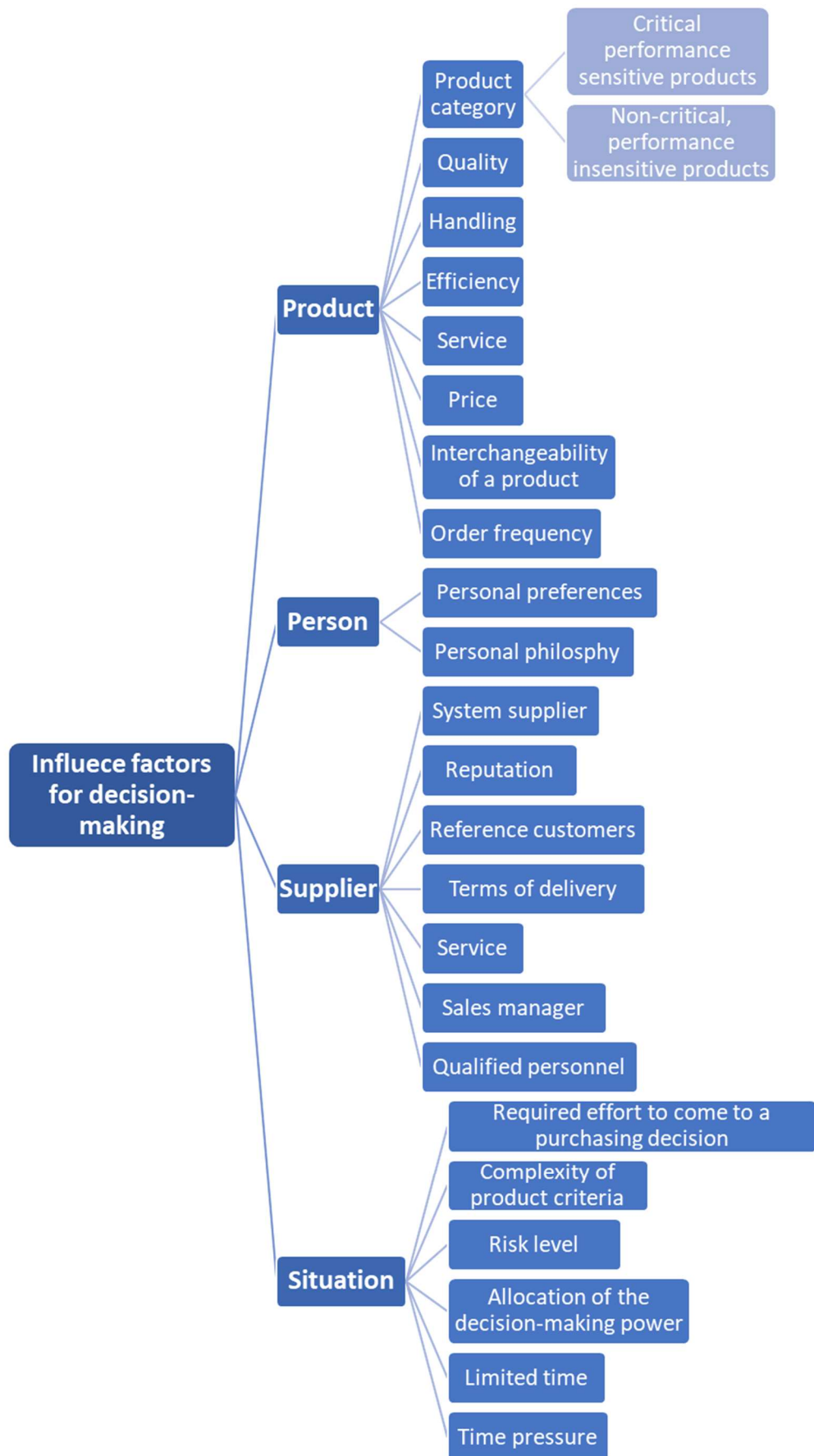


Figure 12: Detailed view of influence factors for decision-making (author's own)

4.4 Findings relating to how and why brands influence the decision-making

Following the summary of the findings on the influence factors for decision-making, the purpose of this section is to identify how and why certain parameters have an influence on brand sensitivity and purchasing decisions.

There are different perspectives of the interviewees regarding the **general importance of brands** in the purchasing process of a German hospital. Interviewee 1 had the opinion that a brand has increasingly less importance. She thought that the decrease in brand importance was due to the changing hospital environment. The product changes are much higher compared to the past and products are becoming increasingly equal in quality. She was convinced that in the future brands would only be important for high end products; the rest would be unlabelled. She believed that brand awareness had changed and in the future it would disappear.

Interviewee 2 had the opinion that a brand has a significant role in the decision-making process because the focus for evaluation is primarily on the known brands. The known brands are the benchmark for the other products and the other products are checked against it. He said, "From my perspective, a brand is important to draw a comparison." The opinion of Interviewee 3 was divided. On the one hand he saw the brand as important because values are connected to it, but on the other hand a product brand was seen as less important because the connected values are more related to the supplier of the product. Overall Interviewee 3 stated that brands are important because it remains embedded in the memory, brands are needed for recognition and he saw brands as important to build associations.

Interviewee 4 stated that a brand is of high importance. In addition, she said, "If the brand is related to product quality criteria and this is learned, one would tend to take the brand rather than the low-price product". Interviewee 4 further explained that if a brand and the related experiences and communication are credible, it can influence decision making.

To summarise, in general all interviewees saw the importance of brands in the decision-making process of a German hospital.

During the interviews three other categories of information regarding how and why a brand influences decision-making emerged. The categories related to (1) specific situations when brand sensitivity or insensitivity was recognized, (2) values which are connected to a brand and therefore increase the brand sensitivity, and, (3) sensitivity towards product brands in comparison to company brands. The following section is structured according to these three categories.

(1) Situations for brand sensitivity or insensitivity

During the interviews there were different situations described for brand sensitivity or brand insensitivity in the decision-making process. The emerged themes were summarised subsequently.

Interviewee 4 described the situation of **patient risk level**.

She said,

The higher the risk for the patient, the more likely it is that a brand is bought.

The less influence a brand has on the daily working procedure and on the patient, the higher the probability that a non-branded product will be bought.

So, from her perspective a higher patient risk results in higher brand sensitivity.

Interviewee 3 and 4 also saw soft factors as having an influence on brand sensitivity in the decision-making process. Interviewee 4 mentioned the **personal relationship to the employees of the manufacturer**. If the personal relationship to the employees of the manufacturer is very good, the brand sensitivity for a specific brand is rated higher. Interviewee 3 rated that effect very highly. From his perspective, it's about "twenty percent factual level and eighty percent relationship level". According to Interviewee 3, a purely objective evaluation of products is undertaken more by the purchasing group. For the hospital, he saw a different situation. He pointed out that the personal relationship is of great importance and is also related to the brand. From his perspective, the relationship level between purchaser and sales representative of the supplier is decisive for trust and therefore he underlined that the sales representative needs to be reliable. He argued further that it is important how the sales representative behaves because employees of the supplier reflect the brand. The importance of service has already been mentioned, and Interviewee 3 saw the person who cares about the hospital as a key factor for

service. He emphasised that brand selection would be according to the sales representative that a decision maker prefers.

Whether or not the **processes around the product** are working has an influence on the decision for a brand, from the perspective of Interviewee 4. This means that the offer as well as the product (e.g. service) has an influence on the decision for a brand. On the other hand, she had the opinion that in cases where the complete offer of a manufacturer of a non-branded product is better it is possible that the decision may be made for the non-branded product.

According to Interviewee 4 the **personal targets** of the hospital purchaser have an influence on the decision for a brand.

She said,

If the purchaser has an annual personal target to increase profitability of the area, this could result in buying a non-branded product. But if the purchaser has a target to work economically, then the process costs which could be saved also play a role, and the purchaser will more likely buy a branded product because more service and process optimisation will be provided in addition to the product.

The importance of brands was seen as lower by Interviewees 3 and 4 for **commodity products** compared to other products. Interviewee 4 said, “Especially for commodity products, which are exchangeable... the decision is made more quickly for a simple product”. This means that the brand sensitivity from her perspective is considered lower for commodity products. The price is seen as the main decisive factor for the decision in the category of commodity products and how price focused the decision is depends on the hospital. Interviewee 3 added that, on the one hand, if products have no differences and a lot of brands are available, the cheapest one and the one which will bring additional bonus payments will be bought. On the other hand, during the daily work in the hospital of the users, the user selects the product and brand they know for the treatment, especially in cases when products are not differentiating.

In summary the brand sensitivity of commodities is not higher for the purchase decision, but for the decision of product selection for usage.

Interviewee 1 had a different opinion on brand sensitivity for commodity products. From her perspective, a well-known brand and proven product is selected for commodity products to play it safe and take no risks. This means that she saw higher brand sensitivity for the decision-making of commodity products. She talked about the example of examination gloves, a very simple product without differentiation. For such products, the purchasing group will select a brand.

Time pressure does not increase brand sensitivity from the perspective of Interviewee 3. He said, “If a product is needed urgently, the focus is on quality and that the requirements are fulfilled, and if the quality is good, the product can be purchased”. He further explained that if the service quality of a non-branded product is very good, it is also considered when there is time pressure. In his opinion, when there is time pressure, reliability, the service of the supplier and meeting deadlines are decisive, not the brand.

Interviewee 3 stated that a brand has an important role if it is **visible for the patient**, if the patient knows the brand and if the brand is established. He explained, “If the patient receives an implant, the patient does not know if the implant is a brand or not”. From his perspective, the patient focuses on quality and service when receiving treatment. However, for products where the brand is known by the patients, the brand is of higher importance. Baby food was mentioned as an example by Interviewee 3. To his mind, hospitals select for example Hipp and Nestlé because the brand suggests security to the patient. He pointed out that there are areas where the patient knows and recognises brands. This could be recognised especially in paediatrics with the previously mentioned example of Hipp or Milupa or Pampers. To summarise the opinion of Interviewee 3, brand sensitivity is higher if the patient knows and recognises the brand.

Interviewee 3 described a **familiar situation** where the purchaser already knows the brand or has already purchased the brand or even knows that the brand is

working as expected and that the brand is risk resistant. This familiar situation increases brand sensitivity for a specific brand in the opinion of Interviewee 3.

For Interviewee 2, there is general brand sensitivity and not specifically for a situation, because he thought that the focus for each decision-making and preceding evaluation was primarily on known brands. The known brands are the benchmark for other products and other products are checked against them. Later, the brands are differentiated between each other primarily according to haptics and optics, and subsequently in a practical test. If a brand is established in a hospital only if there were bad experiences with a brand, the focus will be on other, new products. If that is not the case, the focus stays on the known brands.

(2) Brand values influencing brand sensitivity

The interviewees described specific brand values which increase brand sensitivity. This means that brand values influence the decision making of a decision maker regarding a purchase.

In general, Interviewee 4 saw that different values are connected to a brand.

Interviewee 4 thinks that brands are preferred because by buying a brand, **security** is also bought. She further explained that by buying a brand, the risk is reduced and the security increased. She said, "If you purchase from a brand manufacturer, you don't take any risks... and you know that you are not making a mistake". With a non-branded product, the buyer has the benefit of paying a cheaper price, but definitely has a higher risk. From her perspective, the main reason for selecting a brand is because of security and risk avoidance. Interviewee 3 added another perspective of the value of 'security'. He pointed out that a brand can also be used to give the patient more security, if the patient knows the brand. Interviewee 3 also stated that the target is to reduce the risk especially for products with higher risk and therefore a brand has more importance for these products. From his perspective, a brand reduces the risk because quality is related to brand.

Interviewee 3 saw **trust** as an important brand value which influences brand selection. In his opinion, the trust of the purchaser towards a brand is related to the

person "behind" the brand. Interviewee 1 saw brand trust as connected to perceived security and quality. From her perspective, security and quality are the reasons why a brand is trusted. She underlined that a brand delivers predictability. She used an example from the consumer area as an explanation:

I experience Motel One as a brand... What do I get from Motel One? If I go there, I experience consistent quality, I know what to expect when I go to my room... and a good price-performance ratio. The brand makes it predictable.

Habits have an influence on the decision for a brand from the perspective of Interviewees 2, 3 and 4. Interviewee 4 very often perceived the situation that the decision was made for a specific brand only because the hospital was used to it. Interviewee 3 shared the same experience and saw the habit mainly in knowing the use of a product and that the use is deeply-rooted. Interviewee 2 emphasised that users do not want to change their working routine, and therefore if brands differentiate in their use, the users stick to the brand which they know how to use.

Familiarity with a brand is of importance from the perspective of Interviewees 2 and 3. Interviewee 2 explained that a brand is trusted more because one has experience with it and the background of the products is known. Interviewee 3 argued, "If the conditions are the same, the one I know will be selected". Interviewee 2 added that if there is an unknown brand or company, the decision maker will not trust the brand or company. This means that familiarity with a brand is important for the trust of a brand.

Interviewee 3 stated that, especially in the health care sector, **quality** is related to a brand, which means primarily security, but, from his perspective, the ease of use is also important. He also related **better delivery times** to a brand. Furthermore, Interviewee 3 associated a certain **price level** with a brand, whereas Interviewee 1 thought that **brand appearance** was important for brand influence and the brand appearance needed to fit present times.

(3) Sensitivity towards product brands and company brands

Interviewee 1 explained that the brand is not only perceived through the product. Branding and the brand as company (culture, appearance, seriousness,

cooperation) are decisive factors. From her perspective, perceiving the whole company and the company values as a brand is especially important in the healthcare sector because there is a higher share and importance of emotions. Interviewee 2 also thought that the image of a company influences decision-making.

Interviewee 4 had the opinion that the company brand had a higher relevance than the product brand. She said additionally that “The trust is built in a company, but this can be different for different companies”. If a company is trusted, the company brand has more relevance. However, from her perspective, it is not generalisable for all companies. The perspective of Interviewee 3 is that the supplier or the company brand is more important than the product brand. He felt that in the hospitals the question is “Do I want to have a product from a specific medical device supplier?”.

Interviewee 1 explained that especially for high risk products the brand importance is based on vendors and not on product brands. No bad products exist in this category, only products with more or less evidence regarding effectiveness. For this category, no unknown vendor will be used. However, in general, her opinion was that brand importance is more connected in the hospital field to the company brand which builds trust. She underlined that the company brand is much stronger than the product brand.

The findings about brand influence, which have been explained in this chapter are summarised in the following graphic.

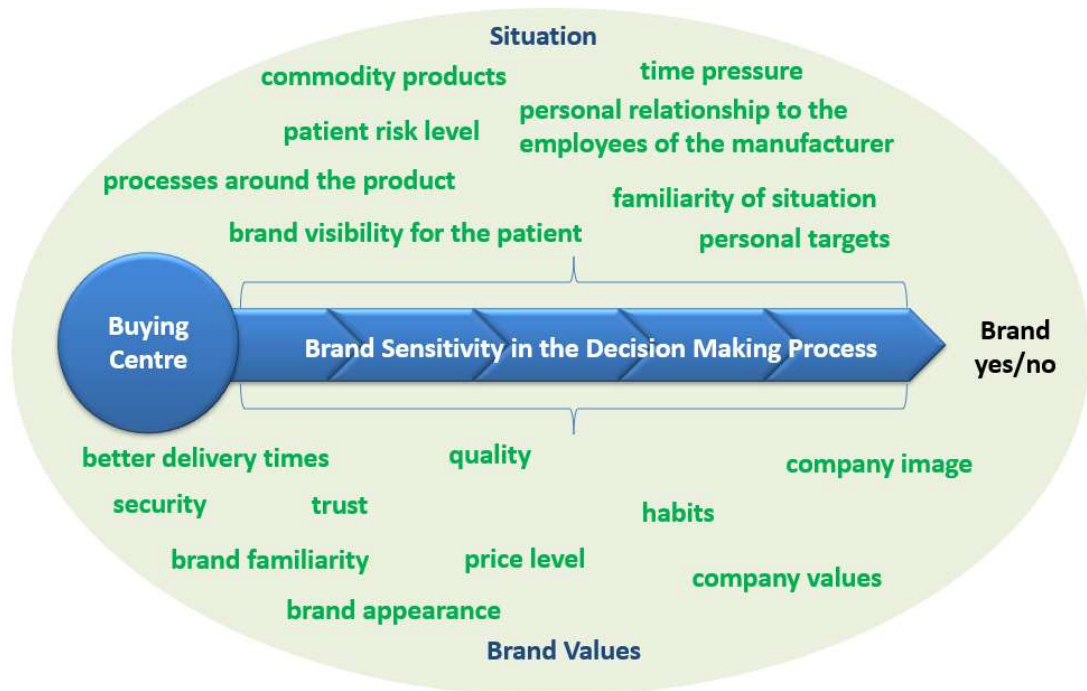


Figure 13: Brand influence on the decision-making (author's own work)

In conclusion, chapter four has presented the findings resulting from the interview data analysis. The findings comprised the introduction of the interviewees to show their qualified competencies as well as the high quality of the interviews. The chapter included findings regarding the buying unit and key actors in the buying decision process, which included the background for hospital purchasing and purchasing process and the findings related to the buying unit and the key actors in the buying decision process. Moreover, findings related to the influence factors for decision making and findings related to how and why brands influence the decision-making have been shown.

Chapter 5 Discussion

In the fifth chapter of the thesis, the findings presented in chapter four will be discussed, analysed and interpreted. The findings will also be linked back to the literature, and theoretical, managerial and practical implications will be derived.

The discussion chapter is structured in a similar way to the findings chapter according to the following three research questions:

- 1) What is in the buying unit of a German hospital?
- 2) What are the influence factors for decision making?
- 3) How and why does a brand influence the decision making of a German hospital?

In order to provide answers to the research questions, this chapter evaluates the findings from the expert interviews (see table 16: Summary of findings) and compares the results with the existing literature, which was summarised in chapter two (see table 17: Summary - results of existing literature regarding the research questions)

RQ	Findings
1	<ul style="list-style-type: none">• Different participants in the buying unit of a German hospital• Influence factors for buying centre composition<ol style="list-style-type: none">a) Product typeb) Availability of participantsc) Decision-making structure of the hospitald) Personality of hospital employees
2	<p>Influence factors for decision making</p> <ul style="list-style-type: none">• Product related• Person related• Supplier related• Situation related
3	Parameters that have an influence on brand sensitivity

Table 17: Summary of findings (author's own illustration)

RQ	Literature Results
1	<ul style="list-style-type: none"> • Multiple participants are involved in the organisational buying (Wind, 1978) • Influence factors for buying centre composition (Johnston & Lewin, 1996; Wind & Thomas, 1980): <ul style="list-style-type: none"> - Organisation - Buying situation and other individual characteristics - The importance of buying centre roles varies according to the buying process phase and the size of the organisation is an important factor - A difference in responses exists to promotional stimuli - Study approach • Tasks/Roles of the buying unit participants: <ul style="list-style-type: none"> - Bonoma (1982); Webster and Wind (1972) described general roles: <ul style="list-style-type: none"> - Users - Buyers - Influencers - Deciders - Gatekeepers - Initiators - Laczniak (1979); Webster and Wind (1972): <ul style="list-style-type: none"> - Decider → physicians - Liedes and Liimatainen (2010): <ul style="list-style-type: none"> - Purchases of a hospital are done from the purchase office - Need comes from the medical staff
2	<ul style="list-style-type: none"> • Influence factors for decision-making of German hospitals (Bendixen et al., 2004; Lambert et al., 1997; Liedes & Liimatainen, 2010): <ul style="list-style-type: none"> product reliability reagent stability stability of controls reagent sensitivity supplier adequately tests new products quality functional and technical qualities usability and adaptability functionality and simplicity connectivity reliability durability technical values and merits testing before purchase technology maintenance time of guarantee training price brand name size of the monitor

RQ	Literature Results
	<p>language of the monitor criteria required by the unit itself experiences reliability of the supplier supplier replenishes defective lot supplier expedites emergency orders consistency of delivered product lead-time for emergency orders time of delivery delivery technical services: problem -solving supplier provides notice of product problems technical service: responsiveness technical service: accessibility supplier provides technical assistance free WATS line for technical service availability of quality control information sales force honesty sales force product knowledge technical service: product knowledge accuracy in filling orders</p>
3	<p>Brand influence on decision-making:</p> <ul style="list-style-type: none"> • Brown et al. (2011); Homburg et al. (2010); Webster and Keller (2004): <ul style="list-style-type: none"> - perceived risk and uncertainty can have an influence on brand sensitivity • Zablah et al. (2010): <ul style="list-style-type: none"> - competitive intensity and the product type have an influence on brand sensitivity • Brown et al. (2011): <ul style="list-style-type: none"> - complex relationship between brand sensitivity and purchase risk - when the purchase risk is very high or very low, the brand sensitivity is high - brands function as choice simplification in situations with low purchase risk - in situations with high purchase risk brands reduce the risk - if there is a high competition, the brand sensitivity – purchase risk relationship is reduced, whereas a generally high level of brand sensitivity exists - the relationship of brand sensitivity and purchase risk might vary according to the type of risk • Brown et al. (2012): <ul style="list-style-type: none"> - purchase importance and purchase complexity have an influence on buying centre brand sensitivity

Table 5: Summary - results of existing literature regarding the research questions (author's own illustration)

Chapter five continues with the derivation of practical and managerial implications in order to show the meaning of the results in practice and to give recommendations for management decisions.

5.1 The buying unit of a German hospital

Section 5.1 discusses the first main part of the research investigations, which focused on the buying unit of a German hospital, its participants, how the composition of the buying centre is influenced and the tasks of the buying unit participants.

5.1.1 Buying unit members

All the interviewees had a very similar picture about the participants of a German hospital's buying unit (see following table). The function of the described persons was the same, only the name of the function was slightly different.

Participants of the buying center			
Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4
	Managing director of the hospital	Manager of the hospital	Managing director of the hospital
Purchaser of the hospital	Purchaser or purchasing manager	Purchasing manager of the hospital	Purchaser of the hospital
User representative	User like chief physician	(Chief) Physician	Chief Physician (or another user representative)
		Further participants e.g. specialists for specific topics	

Table 15: Interviewees' responses regarding the participants of the buying centre (author's own illustration)

The result shows that there are different participants in the buying unit of German hospitals, which implies that the participants need to be addressed differently by a medical devices supplier. As the participants have different professions and tasks in their job, it can be concluded that they have individual needs based on their work area. These needs need to be addressed by medical device suppliers individually and tailored for the respective participant.

The findings comply with the agreement in the literature that in general multiple participants are involved in organisational buying (Wind, 1978) and this is also true for the decision-making unit of German hospitals.

5.1.2 Influence factors for buying centre composition

The research showed further that there are situations where the composition of the buying unit is different.

The theme of the influence factors for buying centre composition was not unexpected because, based on the literature review, it could be assumed that factors that influence the buying centre composition must also exist for the sector of German hospitals. The emergence of the theme leads to the conclusion that there is no constant and similar buying centre composition in German hospitals.

Four influence factors emerged during the interviews, which change the composition of the buying centre.

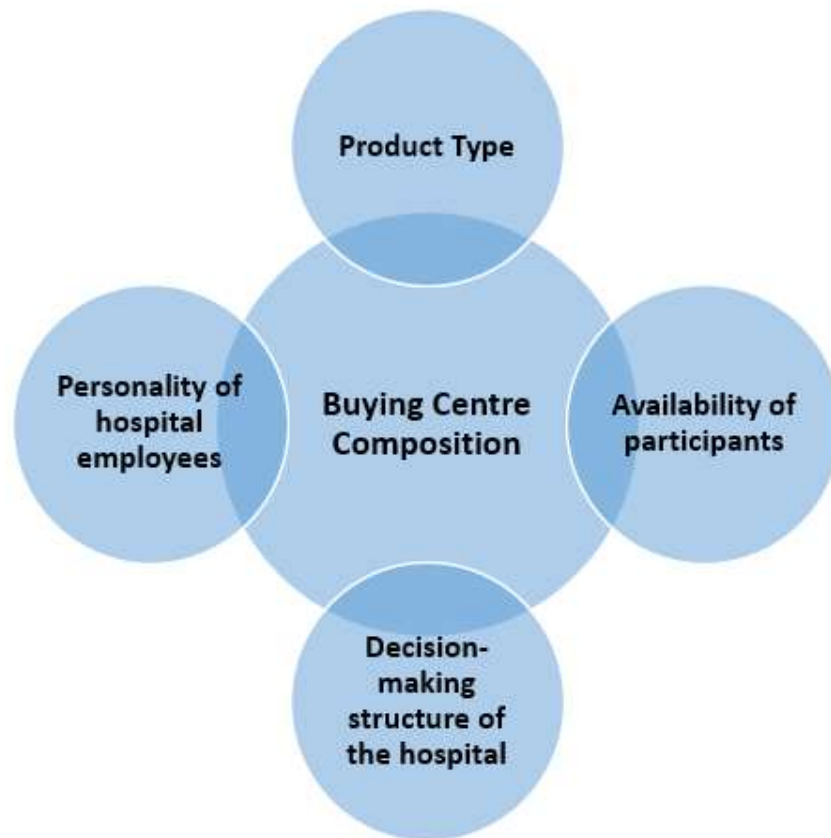


Figure 8: Influence factors on the buying centre composition of a German hospital (author's own illustration)

The product type, the availability of buying centre participants, the decision-making structure of the hospital and the personality of the hospital employees were all referred to by the interviewees as influence factors for the buying centre composition (details see chapter 4.2.3).

In the literature, there is little knowledge of the buying centre composition, the factors influencing the buying centre composition, changes in the buying centre, or influences among its participants (Wind & Thomas, 1980).

The existing literature (Johnston & Lewin, 1996; Wind & Thomas, 1980) about buying centre composition pointed out the following influence factors:

- Organisation
- Buying situation and other individual characteristics

- The fact that the importance of **buying centre roles** varies according to the buying process phase and the size of the organisation is an important factor
- A difference in responses exists to promotional stimuli
- Study approach

Comparing the research results with the existing literature, the research results are more detailed in the description of the influence factor. For example, the fact that the organisation influences the buying centre composition can mean different things. Is it, for example, the type, the size, or the structure of the organisation that influences the buying centre composition? The same applies for the buying situation and the previously mentioned other individual characteristics. Moreover, the research results specify the influence factors for German hospitals' buying centres, which might also be the reason why a more detailed description of the influence factors was possible. That raises another key point that the type of industry will determine what the influence factors for buying centre composition look like.

To be more specific, it can be concluded, based on the research results, that in German hospitals the buying centre composition can be specified according to the product type to be bought. The three product categories described in chapter 4.3.2 can give a guidance for practitioners to evaluate their products in order to improve their buying centre analysis. Of course, there is always an individual interpretation for the product category characteristics. For example, how critical a product is can be differently defined from hospital to hospital. This needs to be verified individually.

In addition, the buying centre analysis can be improved by the consideration of the other influence factors that resulted from the research. Having the availability of buying centre participants, the decision-making structure of the hospital and the personality of the hospital employees in mind will improve the buying centre analysis of medical device suppliers.

To sum up the influence factors for the buying centre composition and their meaning for the application of the buying centre concept in German hospitals, the result is that the identified buying centre participants can give guidance for the buying centre

analysis of a German hospital, but they need to be assessed individually for each hospital and each purchase in order to address all relevant aspects.

The knowledge of buying centre structure and process is particularly important for sales people (Kemmerling & Herbst, 2015) because buying centre members not only vary in functional belonging, but also have different objectives and therefore they have different intentions (Sheth, 1973; Webster & Wind, 1972). To date, the different tasks and intentions of the buying centres of German hospitals have not been stated in the literature.

5.1.3 Tasks of the buying unit participants

The following table summarises the tasks of the buying centre participants.

	Managing Director	Purchaser/Purchasing Manager	Chief Physician/User
Tasks in the decision-making process	Approving the requested products by the user together with the purchaser	<ul style="list-style-type: none"> - Controlling the financial aspects and budget for the purchase - Knowing which product is required and what the product requirements are - Approving the products requested by the user 	<ul style="list-style-type: none"> - Defining the required products - Performing the practical product evaluation - Can be final decision-maker
Main intention:	Leading the hospital profitably	<ul style="list-style-type: none"> - Focusing on cost reduction - Avoiding an increase in material consumption - Balancing expenses and savings 	<ul style="list-style-type: none"> - Good workflow - Ease of product use - No change in habits

Table 18: Tasks and intentions of the buying centre related to the decision-making process (author's own illustration)

As already mentioned, as different professions are involved in the buying centre, they need to be addressed specifically by medical device supplier, according to the topics they are interested in and focused on. This is even more emphasised by the different tasks and intentions of the buying centre participants shown in the results.

The following five roles in the decision-making unit were identified by Webster and Wind (1972) and an additional sixth role was identified by Bonoma (1982):

- 1) Users
- 2) Buyers
- 3) Influencers
- 4) Deciders
- 5) Gatekeepers
- 6) Initiators

These roles have not been explicitly tagged by the interviewees to a specific job title, but based on the described buying centre participants' tasks, intentions and the roles, the subsequent allocation can be derived.

The role differed mainly according to the product category that the product to be purchased is in. The product category has been explained as an influence factor for the buying centre composition. In addition, the product category influences the roles of the decision-making unit. This shows how important it is for buying centre analysis of the defined product category in order to derive the buying centre roles. In the following, the defined roles based on Bonoma (1982) and Webster and Wind (1972) were applied to the analysed findings and the summary is shown in the following table.

Role	Product Category 1 - performance sensitive - critical products - high importance - high investment	Product Category 2 - without influence on the performance - non-critical products - without need of explanation	Product Category 3 - consumable supplies - non-critical products - without need of explanation - without influence on the performance - no quality differences among different products - no user preferences
Users	- (chief) physician - nursing care	- (chief) physician - nursing care	- (chief) physician - nursing care
Buyers	- purchasing manager	- purchasing manager	- purchasing manager
Influencers	- (chief) physician - nursing care - purchasing manager	- (chief) physician - nursing care - purchasing manager	
Deciders	- user representative (chief) physician - purchasing manager - managing director	- purchasing manager - user representative (chief) physician	- purchasing manager
Gatekeepers	- purchasing group - (chief) physician	- purchasing group - (chief) physician	
Initiator	user representative (chief) physician	user representative (chief) physician	purchasing manager

Table 19: Roles in the decision-making unit of German hospitals (author's own illustration)

The results of the buying centre participants and the existence of the different roles comply in general with the results of Webster and Wind (1972). Although the research of Webster and Wind (1972) is a while ago, it is still the case and, in addition, in German hospitals it is possible that one role may be occupied by several individuals or several roles could be occupied by one person.

In the following, the roles that exist in German hospitals and that have been shown in table 19 are described in more detail.

The **user role** in German hospitals for medical device products is assigned to the chief physician, physician and the nursing care for all three product categories. These employees of the hospitals use the purchased medical device products, independent of product criticality, performance relevance, amount of investment or need for product explanation. In the literature, nothing has been written so far explicitly about the user role in the buying centre of a German hospital, but it is very clear that the person who uses the product has the user role. The user role does not differentiate according to the three defined product categories, but the main user will differentiate according to the product type itself. For example, a scalpel will be used mainly by a physician and not by the nurse, and a dressing for a wound will be used more often by a nurse. This means that for the user role it is important to look also at the product type and who is using the product.

The **influencer role** is designated for the first and second product category to the chief physician, physician and the nursing care because they are directly or indirectly influencing the decision process by delivering information about the usage of the products. The purchasing manager also influences the purchase decision by delivering information about product portfolios and economical aspects of the products. For products allocated in the third product category, there is no influencer role. In the literature, the influencer role in German hospitals has so far not been discussed.

The **buyer role** is assigned to the purchasing manager for all three product categories because the purchasing manager of German hospitals is formally responsible and has the authority to close the deal with a supplier. A study by Liedes

and Liimatainen (2010) in the Finnish market examined the buying decision process of hospitals, its participants and the criteria used. One result of their study was that most of the purchases of a hospital are completed from the purchase office. The findings of this research project agree with what Liedes and Liimatainen (2010) found for the Finnish market. For all three product categories, the purchasing manager is formally responsible and has the authority to close the deal with a supplier.

The **decider role** is differentiated according to the products category. For the first category, the performance sensitive and critical products, as well as the products of high importance which require a high investment, a common decision is derived from several participants. The chief physician or physician, the purchasing manager and the managing director are able due to their authority to choose between other possible buying actions. Purchases for products allocated in the second category are decided by the purchasing manager, together with a user representative such as the chief physician or the physician. Due to the lower level of investment, the managing director does not decide for this product category. Purchases for products relating to the third product category are only decided by the purchaser because the products do not influence the performance of the treatment, the products are non-critical, there are no differences in quality among different products and the user has no preferences.

Based on the model of Webster and Wind (1972), Laczniaak (1979) conducted a qualitative study in the United States, where the procurement was analysed by monitoring the equipment of hospitals. The main conclusion of the study was that the most influential deciders in the decision-making unit were the physicians, and during the buying decision process they were also the most active participants. This study was conducted more than forty years ago and the framework conditions of hospital buying have changed since then. According to the research results, the responsibilities and importance of decision unit members have changed. The findings showed the sole decision power of physicians has since then been shared, dependent on the product category, with the managing director and/or with the purchasing manager. For product category three, the physician no longer has any decision power.

This can be a result of the general trend to increase the profitability of German hospitals. The managing director; whose aim is to lead the hospital profitably; and the purchasing manager; whose aim is to balance expenses and savings, to focus on cost reduction and to avoid an increase of material consumption; are now part of decision-making in order to reflect a more economical perspective.

The **gatekeeper role** can be allocated to the purchaser in the purchasing group, the chief physician or the physician. These persons control the information flow (and materials) into the buying centre. So far, the gatekeeper role in German hospitals has not been discussed in the literature.

The **initiator role** can be assigned for product categories one and two to the chief physician, physician or the purchasing manager. These persons can initiate the buying process; by recognising a need for a product, the buying process is triggered. The study by Liedes and Liimatainen (2010) in the Finnish market examined the buying decision process of hospitals, its participants and the criteria used. According to their results, most of the purchases of a hospital are completed from the purchase office, but they also found that the need comes from medical staff. This means that from their perspective the initiator role is assigned to the medical staff.

The results of this research partially agree with the results of Liedes and Liimatainen (2010), but differentiate between the product categories. The results are similar in the fact that the need comes from the initiator for product category one and two, but the disagreement is in product category three. Here the need is initiated by the purchasing manager. The reason for that can be that more and more processes, and especially the ordering process as mentioned by the interviewees, are going to be standardised, and thus if a standard assortment is defined, which is easier for products in product category three than for product category one, it is not necessary that the medical staff are bothered with re-ordering products.

To summarise, especially the role of the decider varies according to the product category. The decider role is a central function in the decision-making process and is responsible for ensuring that the product is purchased. Evaluating which product

category the product is in which needs to be purchased can help the buying centre analysis.

For product category three, the roles differed regarding the initiator, gatekeeper and influencer. Whereas for product category one and two, the medical staff (e.g. [chief] physician, nursing care) initiate the buying process by notifying the needs, it is the purchasing manager who initiates the purchasing process for products in product category three.

The influencer role and the gatekeeper role are not assigned for the purchase of a product in product category three.

So far, the literature has not discussed the assignment of buying centre roles for German hospitals and moreover the differentiation according to product categories has so far not been found in the literature. The thesis adds to the existing knowledge the application of known buying centre roles to the field of German hospitals.

5.2 Influence factors for decision-making of German hospitals

In order to explore brand sensitivity in the purchasing process, it is necessary to understand the relevant parameters for decision making which have an effect on brand sensitivity. In this section, the influence factors for decision making are discussed.

The findings resulted in four main categories of factors which influence the decision-making of German hospitals. The influence factors for decision making have been categorised into product related parameters, personal factors, supplier related factors, and parameters which belong to a specific situation. The categories are shown in the following table.

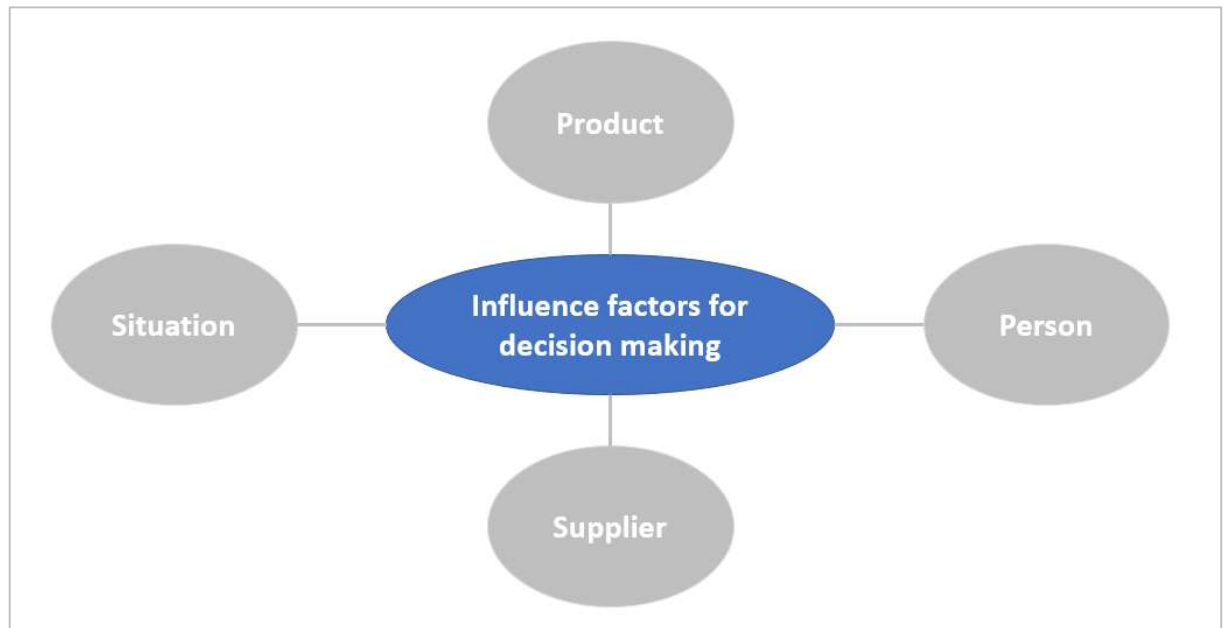


Figure 9: Influence factors for decision making (author's own illustration)

The summary of all relevant factors influencing decision-making is shown in the next table and a detailed description can be found in chapter 4.2.2.

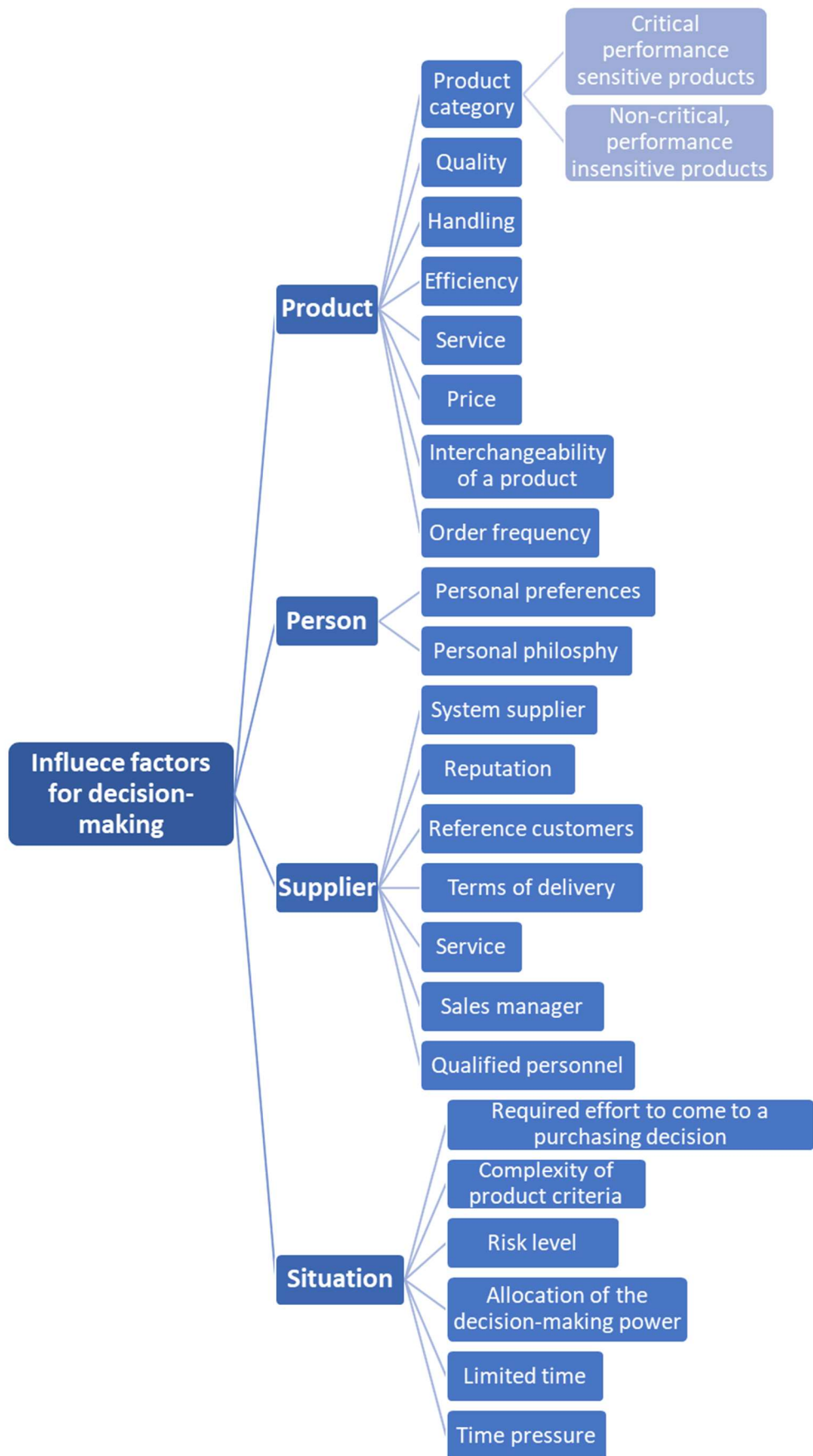


Figure 12: Detailed view of influence factors for decision-making (author's own)

So far there has been little written about the influence factors for decision making in the existing literature. Lambert et al. (1997) carried out a study on supplier evaluation criteria of decision-making units of hospitals in the United States. The first part of the study gathered the selection criteria of a supplier with a mail survey.

The main difference between the study of Lambert et al. (1997) and this research project is the research question. Lambert et al. (1997) investigated specifically the selection criteria for a supplier and the research question of this research project focused on the influence factors for the decision-making of the hospital buying unit. The research question of this research project covers much broader themes, not only supplier related factors that influence the decision. Therefore, the interviews of this research project resulted in influence factors for decision-making covering supplier related influence factors, product related and person related influence factors, as well as influence factors related to a specific situation. Unfortunately, not all seventy-nine attributes of Lambert et al. (1997) were published. Only the criteria which were evaluated in the second part of the study as most important were published in the article. The different focus of questioning explains why the focus of Lambert et al. (1997) is more on the supplier related criteria and why they are analysed in more detail. Comparing the published attributes of Lambert et al. (1997) with the supplier related factors of this research project, the following table summarise the differences and the similarities.

	Kristin Kaminski (2020)	Lambert et al. (1997)
Supplier related	System supplier	
	Reputation	
	Reference customers	
	Terms of delivery	-Supplier replenishes defective lot -Supplier expedites emergency orders -Consistency of delivered product -Leadtime for emergency orders
	Service	-Technical services: problem -solving -Supplier provides notice of product problems -Technical service: responsiveness -Technical service: accessibility -Supplier provides technical assistance -Free WATS line for technical service -Availability of quality control information
	Sales manager	-Sales force honesty -Sales force product knowledge
	Qualified personnel	-Technical service: product knowledge -Accuracy in filling orders
Product related	product category	
	product quality handling efficiency	-Product reliability -Reagent stability -Stability of controls -Reagent sensitivity -Supplier adequately tests new products
	service	
	price	
	interchangeability of products	
	order frequency of a product	
Person related	personal preference	
	personal philosophy	
situation related	Required effort to come to a purchasing decision	
	Complexity of product criteria	
	Risk level	
	Allocation of the decision-making power	
	Limited time	
	Time pressure	

Table 20: Comparison of influence factors for decision-making 1 (author's own illustration)

In the comparison of influence factors for decision-making, it became apparent that regarding the supplier related factors, which Lambert et al. (1997) had the focus on, not all factors were consistent. The importance that the supplier is a system supplier, which means that the supplier is able to deliver different product portfolios, was not mentioned by Lambert et al. (1997). It can be assumed that in 1997 when the study of Lambert et al. (1997) was performed the cost pressure was not as high as it is today. This could be the reason why nowadays it is important that a supplier is a system supplier with different product portfolios, which enables customers to streamline their number of suppliers, and save effort and process costs.

The reputation of the supplier and the relevance of suppliers' reference customers was also not shown by Lambert et al. (1997). The access to information about suppliers and their evaluation has increased over recent years due to digital media. This can be the reason why today the reputation and the suppliers' reference customers are much more present than in 1997.

On the other hand the terms of delivery were analysed by Lambert et al. (1997), as well as the service in more detail, due to the setup of the study.

In summary, the overall result of the Lambert et al. (1997)'s study was that, despite the pressure of cost reduction exerted by the government, low price was not the driving force for the selection of a supplier, and it was not becoming a more important criterion. The high criticality of product quality in the healthcare sector leads to a higher rating of product quality, delivery and service.

Compared to the results of this research, the situation has changed. According to the interviewees, it is neither the product quality, delivery and service nor the prices which is the most important criterion. According to the interviewees, the importance of price and quality is the same. The fact that the importance of price has changed from 1997, when the study of Lambert et al. (1997) took place, to nowadays can be based on the main trend of German hospitals to be more economical. In addition, the buying centre analysis in the previous section has shown that the purchasing manager and the managing director are more involved in the decision-making

process than before. These functions have their focus more on economic efficiency and therefore the importance of price could have been increased.

In general, the research results agree with the results of Lambert et al. (1997) in the fact that the price, product quality, delivery and service are factors influencing the decision-making, but there is an extension of the results of Lambert et al. (1997). There are far more factors influencing decision-making, already shown in figure 11 'influence factors for decision-making'. Based on the research results, it could be assumed that there are not only supplier related factors which are decisive for the decision. It is a combination of much more detailed information of product, situation and person.

Another study was carried out by Liedes and Liimatainen (2010) for Philips Healthcare in the Finish market, which examined the buying decision process of hospitals, its participants and the criteria used. According to their results, most of the purchases of a hospital are done from the purchase office, but the need comes from medical staff. From their perspective, technical criteria such as easy to use and connectivity were the most important criteria, followed by economic criteria such as purchase price, price/performance ratio and costs during the life cycle. In the study of Liedes and Liimatainen (2010), there is also a general agreement that the mentioned factors of technical criteria (easy to use and connectivity) and economic criteria (purchase price, price/performance ratio and costs during the life cycle) are factors influencing the decision-making, but based on the information given by the interviewees, there are more factors.

The questioning of Liedes and Liimatainen (2010, p. 41), "In your opinion, which criteria affect the purchase decision?" was very similar to this research project. Although the general questioning of Liedes and Liimatainen (2010) is very similar to this research project, a difference in the type of purchase can be recognised. The study of Liedes and Liimatainen (2010) was performed for Philips Healthcare and the defined decision-making choice criteria, such as size of monitor screen or language of monitor screen, or the connectivity lead to the assumption that the type of purchase was narrowed down specifically to the product assortment of Philips

Healthcare. In comparison, this research project had no specific product type or specific supplier in preference for the analysis.

	Kristin Kaminski (2020)	Liedes and Liimatainen (2010)
Product related	product category	
	product quality handling efficiency	quality functional and technical qualities usability and adaptability functionality and simplicity connectivity reliability durability technical values and merits testing before purchase
	service	maintenance time of guarantee training
	price	price
	interchangeability of products	
	order frequency of a product	
		size of the monitor language of the monitor criteria required by the unit itself
Person related	personal preference	
	personal philosophy	
situation related	required effort to come to a purchasing decision	
	complexity of product criteria	
	risk level	
	allocation of the decision-making power	
	limited time	
	time pressure	
Supplier related	system supplier	
	reputation	experiences reliability of the supplier
	reference customers	
	terms of delivery	time of delivery
	service	
	sales manager	
	qualified personnel	

Table 21: Comparison of influence factors for decision-making 2 (author's own illustration)

The comparison showed that in the study of Liedes and Liimatainen (2010) there is agreement regarding the product related factors. Product quality, handling and efficiency were described as well, just different and detailed terminologies were used. There is also agreement regarding the service and price.

For the category of product related factors, this research project added to the defined criteria of Liedes and Liimatainen (2010) the important influence factors of product category, interchangeability of products and order frequency of a product. As was already discussed in chapter 5.1, the product category mainly influences the buying centre composition and thus also the decision-making. In the study of Liedes and Liimatainen (2010), this criterion was not able to appear, as the study was dedicated to one specific product and not several product categories.

The second criterion which was added by this research project to the study was the interchangeability of a product, which influences the decision-making in that the more interchangeable a product is, the more difficult a decision can be, because the more equal products are, the more difficult it is to compare them, and also many more criteria will be assessed compared to products which differentiate from each other. On the other hand, products with high interchangeability can be exchanged from a process and effort perspective more easily, because every product change means additional effort in the hospital for training on handling and in the beginning more time is needed for changes in the process until the users know the new handling. The reason why this factor can be added to the results of Liedes and Liimatainen (2010) is the same as above. The study of Liedes and Liimatainen (2010) focused specifically on one product and therefore the comparison of different product categories is missing.

On the other hand Liedes and Liimatainen (2010) pointed out the size of the monitor, the language of the monitor and the criteria required by the unit itself, which were not mentioned in the interviews of this research project. The reason for this difference is seen in the narrowed down focus of Liedes and Liimatainen (2010) on Philipps Healthcare and their product portfolio.

In addition, this research project added the completely new category of influence factors 'person related criteria' to the study of Liedes and Liimatainen (2010). In the study of Liedes and Liimatainen (2010), no person related criteria were pointed out.

Personal preference and personal philosophy were seen by the interviewees of this research project as criteria influencing decision-making. This means that depending on the persons involved in the decision-making, the decision for or against a specific product or supplier may be different based on the individual preferences and habits. Also, interpersonal relationships between the decision-makers and the sales representative can influence the decision-making. Moreover, the selection and weighting of the decision-making criteria also depends on the specific person, because each person includes different criteria which are of importance and which they are focusing on. The reason for the difference referring to the person related factor can be explained by the selection of interview participants. Liedes and Liimatainen (2010) asked employees of the hospitals who participate purchase decisions directly. The probability is seen as very low that the participants of the buying process would say about themselves that they influence personally with their preferences and their personal philosophy what is going to be purchased. It is more likely that they talk about rational criteria, as has been shown.

For this research project, employees of purchasing organisations have been interviewed. These interviewees are part of the decision-making process but not the decision-makers and thus can have a more reflective view on the influence criteria for the purchase decision. In addition, it is easier to judge somebody else objectively and realise that not only rational but also emotional criteria, such as personal preferences or philosophy, influence decision-making.

The same applies to the situation related criteria. The results of Liedes and Liimatainen (2010) do not include any criteria based on a specific situation such as time pressure or risk level that influence decision-making. The reason for that is seen in the same fact of the different sample selection of the two studies. It is also seen as unlikely that in the study of Liedes and Liimatainen (2010) the interviewees who are participants of the decision-making process would describe themselves as being influenced by the situation they are in. They would stick to an explanation of

objective decision making based on rational facts, rather than that they are influenced by for example time pressure or risk level.

Regarding supplier related factors, there was an accordance between the study of Liedes and Liimatainen (2010) and this research project. The accordance involves the terms of delivery and the reputation of the supplier, which was slightly differently described by Liedes and Liimatainen (2010).

Another study regarding influence factors for decision-making was performed by Bendixen et al. (2004). Bendixen et al. (2004) looked at the DMU and how important the attributes of the members are in comparison to the brand. The study was performed with members of the decision-making unit purchasing electrical equipment in South Africa in two steps. First, the attributes were generated with qualitative in-depth interviews and second, the attributes were rated according to their importance through a conjoint analysis.

Comparing the attributes of Bendixen et al. (2004) with the generated influence factors of this research project the following table summarise the differences and the similarities.

	Kristin Kaminski (2020)	Bendixen et al. (2004)
Product related	product category	
	product quality handling efficiency	technology
	service	
	price	price
	interchangeability of products	
	order frequency of a product	
		brand name
Person related	personal preference	
	personal philosophy	
situation related	required effort to come to a purchasing decision	
	complexity of product criteria	
	risk level	
	allocation of the decision-making power	

	Kristin Kaminski (2020)	Bendixen et al. (2004)
	limited time	
	time pressure	
Supplier related	system supplier	
	reputation	
	reference customers	
	terms of delivery	delivery
	service	
	sales manager	
	qualified personnel	

Table 22: Comparison of influence factors for decision-making 3 (author's own illustration)

The comparison showed that there is agreement between the study of Bendixen et al. (2004) and this research project regarding product related factors that influence decision-making. The price was highlighted by both studies. In addition, Bendixen et al. (2004) named technology, which is very similar to product quality and handling, which was pointed out in this research project. Only one criterion is listed by Bendixen et al. (2004) additionally, which was the brand. The reason for that might be the focus of the Bendixen et al. (2004) study. The investigation focus was on the brand and its importance relevant to other purchase criteria. In the study it was not apparent if the brand was a predefined and set criterion or if it was named by the interviewees.

Regarding supplier related factors, Bendixen et al. (2004) only mentioned delivery. It might be due to the different type of industry where the study has taken place that the factors of system supplier, reputation, reference customers, service, sales manager and qualified personal of the supplier were not seen as relevant.

In general, the result of the study was that price was the most important criterion for all roles, and only technical specialists ranked the brand name with the price as the most important criteria. For the users, only the brand name was the most important criterion. For the buyer, the price was the most important criterion, followed by the brand name.

Comparing the results of Bendixen et al. (2004) to this research, the main difference is that the study of Bendixen et al. (2004) was done in a completely different setting compared to German hospitals. The investigation subjects of Bendixen et al. (2004) were members of the decision making unit purchasing electrical equipment in South Africa. This explains the higher importance of the price compared to the hospital setting of this research. The interviewees rated the overall quality of the product with the same importance as the price. It was already explained by Lambert et al. (1997) that there is a high criticality of product quality in the healthcare sector, which leads to a higher rating of product quality compared to other industries. The fact that the evaluation of the price is equal and not higher than the product quality is related to the specific requirements of the hospital sector. The product quality needs to be sufficient that the treatment of the patients can be guaranteed and no patient life or patients' health is in danger due to lack of quality.

Already in the literature review, the comparison of the studies of Walley et al. (2007) and Sinclair and Seward (1988) resulted in the conclusion that it is critical in which industry the decision making process has taken place. If farmers and farm contractors think about buying a tractor, research shows that the brand name is the most important factor compared to the price, dealer and service quality attributes (Walley et al., 2007). Compared to the farming industry, another situation occurs in the wood industry. The research of Sinclair and Seward (1988) showed that there is relatively weak brand awareness of manufacturer brands in this sector. In the hospital sector, where this research takes place, the brand name was not even mentioned as a factor influencing decision-making.

The following table shows the summary of influence factors mentioned in the literature in comparison to the findings of this research project.

	Kristin Kaminski (2020)	Summary of Lambert et al. (1997), Lienes and Liimatainen (2010) and Bendixen et al. (2004)
Product related	product category	
	product quality handling efficiency	product reliability reagent stability stability of controls reagent sensitivity supplier adequately tests new products quality functional and technical qualities usability and adaptability functionality and simplicity connectivity reliability durability technical values and merits testing before purchase technology
	service	maintenance time of guarantee training
	price	price
	interchangeability of products	
	order frequency of a product	
		brand name
		size of the monitor language of the monitor criteria required by the unit itself
Person related	personal preference	
	personal philosophy	
situation related	required effort to come to a purchasing decision	
	complexity of product criteria	
	risk level	
	allocation of the decision-making power	
	limited time	
	time pressure	
Supplier related	system supplier	
	reputation	experiences reliability of the supplier
	reference customers	
	terms of delivery	supplier replenishes defective lot supplier expedites emergency orders consistency of delivered product lead-time for emergency orders time of delivery delivery
	service	technical services: problem -solving supplier provides notice of product problems technical service: responsiveness technical service: accessibility supplier provides technical assistance free WATS line for technical service availability of quality control information
	sales manager	sales force honesty sales force product knowledge
	qualified personnel	technical service: product knowledge accuracy in filling orders

Table 23: Comparison of influence factors for decision-making based on the literature (author's own illustration)

The table was created by the author to show the contribution regarding new influence factors on the decision-making of German hospitals that have emerged in this research project:

- Regarding product related influence factors, product category, interchangeability of products and order frequency of a product have not so far been investigated.
- The two categories of person related and situation related factors have not found consideration in the currently available literature.
- Regarding the supplier related factors, the new, contributed factors are that the supplier is a system supplier and that the supplier has reference customers.

All the mentioned factors need to be evaluated and considered by suppliers, when they want to sell medical device to hospitals as the factors influence purchasing decisions.

5.3 Brand influence on the decision-making of a German hospital

The findings identified how and why certain parameters have an influence on brand sensitivity and purchasing decisions of a German hospital.

Two categories of influence factors were identified in general. Firstly, there were specific situations for brand sensitivity or insensitivity recognised. Secondly, specific brand values emerged which increase brand sensitivity and thus influence the decision making of a decision maker regarding a purchase. A summary of all situation and brand value related influence factors for brand sensitivity which have an effect on the decision-making process is shown in the following illustration.

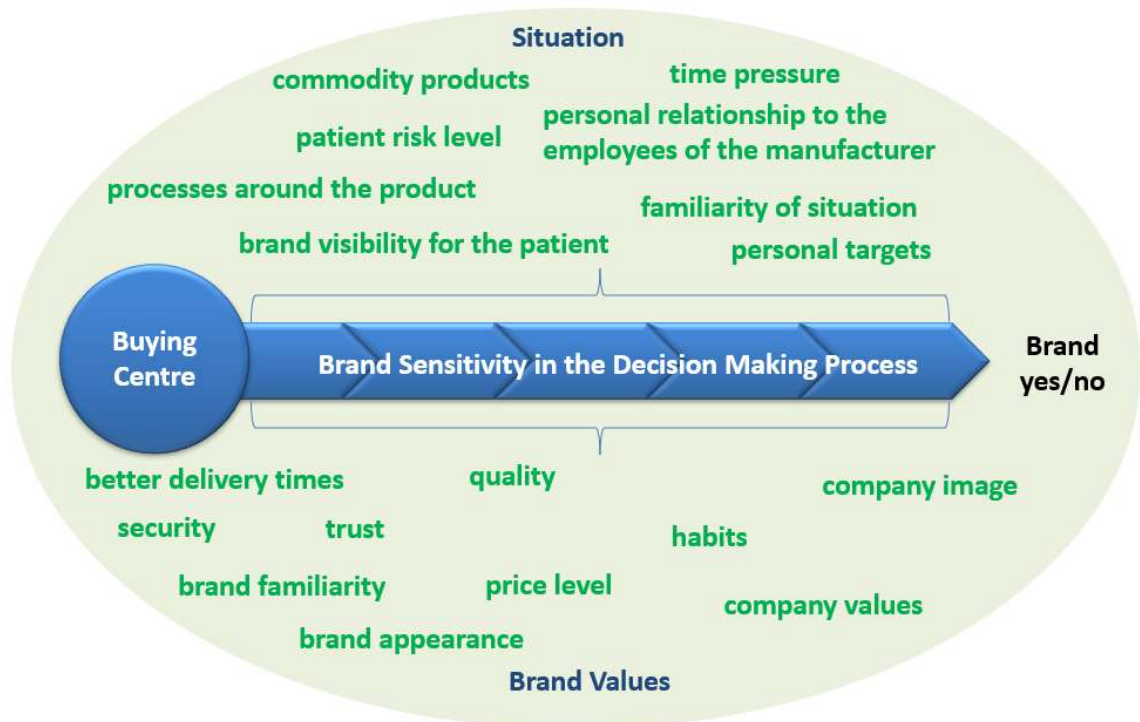


Figure 13: Brand influence on decision-making (author's own work)

In the literature, it was agreed that in some cases "buying groups are likely to be more sensitive to brand information than in others" (Brown et al., 2012, p. 509). Studies (Homburg et al., 2010; Webster & Keller, 2004) have established that also in business markets brands influence decision making. Nevertheless, they show little insight about when the brand's influence is greatest.

As B2B brands may not be equally important in different situations, e.g. the brand may not be equally important to all buyers, all sellers or in all buying situations, the lack of knowledge about when and to whom brands are most influential is an important omission (Brown et al., 2012). Brand sensitivity is defined in the literature as the extent of active consideration a brand receives during organisational buying deliberations (Hutton, 1997a; Kapferer & Laurent, 1988; Zablah et al., 2010). Brown et al. (2012) see brand sensitivity as the most likely key outcome variable seen when brands influence the buying process of organisations.

Other brand constructs, for example brand loyalty, brand image or brand equity, which are often used, do not necessarily completely show the extent of the influence that brand information has on the process of decision making (Zablah et al., 2010).

Homburg et al. (2010); Webster and Keller (2004) emphasised that organisations and individuals try to decrease elevated risk and to minimise existing uncertainty. In such situations, strong B2B brands can be of special value in buying contexts. In an earlier work, McQuiston (1989) stated that buying centre members become more uncertain regarding the purchase decision the higher the complexity of the purchase situation is. Regarding complexity in industrial buying, there are two areas in which research takes place, the complexity of the product itself and the complexity of the situation in which the purchase takes place. The complexity of the purchase situation is defined by McQuiston (1989, p. 70) as “how much information the organisation must gather to make an accurate evaluation of the product”.

The statements of Homburg et al. (2010), Brown et al. (2011); Webster and Keller (2004) and McQuiston (1989) lead to the assumption that the perceived risk or uncertainty could have an influence on brand sensitivity. The findings of this research project confirmed the assumptions and showed that with buying a brand **risk is reduced and security increased**. Interviewee 4 emphasised this view with the following statement: “if you purchase from a brand manufacturer, you don’t take any risk... and you know that you are not making a mistake”. The interviewees saw it as target to reduce the risk especially for products with higher risk, and therefore a brand has more importance for these products. A brand reduces the risk because the quality is related to the brand. Especially in the hospital sector where the research took place, risk avoidance has an important role to increase patient security. The conclusion was that higher patient risk results in higher brand sensitivity and can be emphasised with the statement of Interviewee 4:

The higher the risk for the patient, the more likely it is that a brand is bought.

The less influence a brand has on daily working procedure and on the patient, the more likely it is to buy a non-branded product.

Another aspect of security in relation to brand sensitivity was pointed out, which has so far not been mentioned in the B2B literature. A brand can also be used to give the patient more security, in cases where the patient knows the brand. Brand sensitivity is therefore higher if the patient knows and recognises the brand, because the known brand name is connected to quality and positive values, and the patient draws the conclusion that the hospital has a high-quality standard.

Zablah et al. (2010) investigated “the relative importance of brands in modified rebuy situations” (Zablah et al., 2010, p. 248). The proposed model of brand hierarchy and hypotheses were tested in a quantitative field survey with business managers from an online business panel in the US. In the study, the general influence of brands on organisational buyers’ decision-making was confirmed, but the influence was seen as secondary and limited compared to other factors such as pricing, logistics and service. The authors of the study reinforced the need for the development of a better understanding of conditions and drivers which influence the level of brand importance. In general, the study focused on the sequence and relationship between brand consciousness, brand preference, brand sensitivity and brand importance, which is not the focus of this research project. However, some parts of the results are important for this research project.

One result regarding brand sensitivity was that **competitive intensity and product type** influence the relationship between brand consciousness and brand sensitivity. This means that competitive intensity and product type have an influence on brand sensitivity. The findings of this research project could partially confirm that competitive intensity has an influence on brand sensitivity and it can be agreed that product type influences brand sensitivity. As explained in the previous section, especially products with higher risk brands have a higher importance in order to reduce the risk with the expected quality a brand suggests.

The differentiation in product types could be recognised in this research project regarding commodity and non-commodity products, and, if it is assumed that for commodity products the competitive intensity is higher, the result of Zablah et al. (2010) that competitive intensity has an influence on brand sensitivity can also be seen in this research project. Furthermore, the product category of commodity products can influence the brand sensitivity in two directions. Firstly, the importance of brands was seen as lower by the interviewees for **commodity products** compared to other products. Interviewee 4 said, “Especially for commodity products, which are exchangeable... the decision is made more quickly for a simple product”. This means that brand sensitivity is considered lower for commodity products. The price is seen as the main decisive factor for the decision in the category of commodity products, and how price focused the decision is depends on the hospital.

Secondly, a well-known brand and proven product is selected for commodity products for security and to take no risks. This means that higher brand sensitivity was seen in the decision-making of commodity products. So, in both ways, a higher and a lower brand sensitivity is possible for commodity products.

Brown et al. (2011, p. 195) investigated in a quantitative scenario-based field study with business managers from the US the relationship between the level of **purchase risk** and brand sensitivity in the decision making of organisational buyers. The outcome was that there is a complex relationship between brand sensitivity and purchase risk, in more detail “The relationship between the buying centre’s brand sensitivity and purchase risk is U-shaped”. When purchase risk is very high or very low, brand sensitivity is high. This means that brands function as choice simplification in situations with low purchase risk. In situations with high purchase risk, brands reduce the risk. Further outcomes of Brown et al. (2011, p. 195)’s study were that the relationship of purchase risk to brand sensitivity is “moderated by the competitive intensity of the environment”. This means if there is high competition, the brand sensitivity – purchase risk relationship is reduced, whereas a generally high level of brand sensitivity exists. If there is a highly competitive intensity, this relationship is not as strong as in other situations. This means that if there is a highly competitive environment, the risk level does not influence the brand sensitivity of the purchaser as it is in a low competitive environment.

Another finding was that the relationship of brand sensitivity to purchase risk might vary according to the type of risk. The results showed that different types of risks (e.g. financial, social or performance) could be more relevant in a decision-making situation under various types of conditions (Brown et al., 2011, p. 195).

In a quantitative field survey for business managers in the US, Brown et al. (2012, p. 508) further investigated brand sensitivity and sought to answer the research question of “What factors determine the extent to which brand information influences organisational buying deliberations?”. They built a conceptual model which shows the relationship between brand sensitivity and two critical purchase criteria. The purchase criteria are purchase complexity and purchase importance. In addition, the model includes the influence of key environmental (end-customer demand, brand

presence), product (tangibility) and organisation (contractual ties, organisation size) factors.

The result of the study was that **purchase importance and purchase complexity** have an influence on buying centre brand sensitivity. “Brand sensitivity increases as a function of purchase importance over the low to moderate purchase importance range, then decreases as purchase importance moves from moderate to high levels” (Brown et al., 2012, p. 516).

Brown et al. (2012, p. 516) also concluded that “purchase complexity and brand sensitivity remain generally unrelated over the entire purchase complexity range”. However, if product tangibility and buyer firm size are considered, the relationship between purchase complexity and brand sensitivity emerges.

The findings of this research project did not directly show the same results as Brown et al. (2012) have found. Purchase importance and purchase complexity as influence factors for brand sensitivity can be seen as connected or composed of factors that have been found in this research project. For example, it can be assumed that if the patient risk level is high, the importance of the purchase is also high.

So far, the literature has not given much insight into how and why certain parameters have an influence on brand sensitivity and purchasing decisions. Therefore, this research project provides a contribution to knowledge by detecting new parameters that influence brand sensitivity. In the following, the newly explored parameters and their influence on brand sensitivity is shown.

	Parameter	Influence on brand sensitivity
brand sensitivity in general	Patient risk level	<ul style="list-style-type: none"> -The higher the risk for the patient, the more likely it is that a brand is bought. -The less influence a brand has on daily working procedure and on the

	Parameter	Influence on brand sensitivity
		patient, the more likely it is to buy a non-branded product.
	Personal targets	<p>-The personal targets of the buyer can influence brand sensitivity in both directions.</p> <p>-If the personal target is to increase annual profitability, the focus will be on a cheap product.</p> <p>-If the personal target is to work economically, the focus will be a branded product with service and process optimisation.</p>
	Commodity products	- Brand sensitivity for buying commodity products can be either higher or lower, depending on the buyer.
	Time pressure	<p>- No influence on brand sensitivity.</p> <p>-Reliability, service of the supplier and meeting the deadlines are decisive, not the brand.</p>
	Brand visibility for the patient	-Brand sensitivity is higher, in cases where patient knows and recognises the brand.
brand sensitivity for a specific brand	Security	-In cases when security needs to be increased and risk needs to be avoided, brand sensitivity is higher.
	Trust	-When predictability is needed, brand sensitivity is higher.
	Personal relationship to the employees of the manufacturer	-In case where the personal relationship to the employees of the manufacturer is very good, brand sensitivity for a specific brand is rated higher.

	Parameter	Influence on brand sensitivity
	Processes around the product	-If smooth and good processes around the product are needed, brand sensitivity is higher.
	Familiarity of the situation	-The familiar situation (the purchaser already knows the brand or has already purchased the brand or knows that the brand works as expected and that the brand is risk resistant) increases the brand sensitivity for a specific brand.
	Habits	-Habits of working with a specific brand can increase brand sensitivity for this specific brand but decrease brand sensitivity for other brands.
	Brand familiarity	-Brand sensitivity for a specific brand is higher in cases where the decider is familiar with the brands.
	Quality	-Connected brand attributes like quality, better delivery times, price level, brand appearance help increase brand sensitivity for a specific brand.
	Better delivery times	
	Price level	
	Brand appearance	
	Company values	-Company values and image help increase brand sensitivity for a specific brand.
	Company image	

Table 24: Influence on brand sensitivity (author's own research)

In the findings, the parameters were arranged according to a specific situation and to brand values. What can be seen is that brand sensitivity can be related to the selection of a specific brand among other brands, and products as well as brand sensitivity can occur in general, which means that there are specific circumstances which increase the consideration of brands compared to non-branded products. Based on this awareness, the emerged parameters from the findings are

categorised according to parameters that influence brand sensitivity in general and parameters that influence brand sensitivity for a specific brand.

The next section explains the implications of the newly generated parameters that influence brand sensitivity.

Regarding **patient risk**, brand sensitivity is higher, the higher the risk for the patient. The same applies the other way around. The less influence a brand has on daily working procedure and thus on the patient, the higher the probability buying a non-branded product. Firstly, this implies that marketeers for medical device products need to be aware of the patient risk potential that the respective product has in the hospital to decide if it is worth investing in building a brand. Secondly, medical device marketeers should emphasise in communication with the buying centre which risk can occur if the product fails as well as how the risk can be minimised or avoided by buying the respective brand.

The **personal targets** of the buyer can influence brand sensitivity in both directions. If the personal target is to increase annual profitability, the focus will be on a cheap product with the focus on price. If the personal target is to work economically, the focus will be a branded product which includes additional services and process optimisations. This implies that it is very important for the sales representative to acquire knowledge about the personal targets of the buyer in order to decide if it is worth entering the sales process and investing resources. A second aspect is that in cases where a company has possibilities in the portfolio to select between branded and non-branded products, the knowledge about the personal targets of the buyer will help to make the appropriate choice.

The brand sensitivity for **commodity products** can be influenced in two directions. Firstly, if products are interchangeable, without difference, and a large number of brands are available, the focus is on the price or additional bonus payments which can be achieved. This means that brand sensitivity is considered lower for commodity products. Secondly, a well-known brand and proven product can be the preferred selection for commodity products for security and to take no risks. This means that higher brand sensitivity is expected in the decision-making of commodity

products. Overall, brand sensitivity for buying commodity products can be either higher or lower, depending on the buyer. This implies that it is dependent on the buyer and the buying unit if brand information is considered for commodity products.

Time pressure during the decision-making process did not show an effect on brand sensitivity. Other criteria like reliability, the service of the supplier and meeting deadlines are more important. This means that a company with branded products cannot benefit from urgent purchase situations.

When there is **brand visibility for the patient**, the brand sensitivity of the buying centre is higher. This means if the patient can recognise brands during the treatment and further if the patient knows the brands, the buying centre is more open to brand information during the decision-making process because the suggested quality of the treatment can be enriched by visible and known brands. For marketeers, this implies that the branding strategy should also include the patient and the brand should also be established for the patient target group, in cases where the brand is visible during treatment.

When the buying centre needs to increase **security** and risk needs to be avoided, brand sensitivity is higher. Especially if the target is to reduce the risk, mostly relevant for products with higher risk, a brand has more importance for these products. A brand reduces the risk because quality is related to brand.

As previously mentioned, a brand can also be used to give the patient more security, if the patient recognises and knows the brand. This suggests that marketeers should ensure brand awareness in order that the brand is considered by the buying centre for high-risk products or high-risk situations. Moreover, marketing communication should highlight the uncertainty while simultaneously offering a solution.

A factor which belongs closely to security and quality is **trust**. In a situation when it needs to be predictable and trust towards a brand is required, brand sensitivity is higher. Especially for the person “behind” the brand, which means primarily the sales representative of the supplier, security and quality were the main reasons why a brand is trusted. As, in the hospital sector, risk needs to be avoided and predictability needs to be increased in order to ensure proper treatment of the

patient, building trust towards a brand is a crucial factor, which should be established by suppliers of medical device for their brands to benefit the specific situation a hospital is in. Personal support by the sales representative for the hospital must be a key element that a medical device supplier focuses on, as well as the quality and security of the products.

Where the **personal relationship with employees of the manufacturer** is very good, brand sensitivity for the specific brand is rated higher. As already described in the previous paragraph, this factor links very closely to the trust towards a brand. This factor was rated highly important as the decision is based on “20 percent factual level and 80 percent relationship level” (Interviewee 3). In addition, the person who cares about the hospital is a key factor for service and the brand selection will be according to the sales representative that a decision maker prefers. This indicates that it is of great benefit for a medical device supplier to work on a good relationship between the sales representative and the hospital buyer to increase reliability and trust. Moreover, service quality and brand preference can be ensured by this good relationship.

If smooth and good **processes around the product** are needed, brand sensitivity was evaluated as higher. This means that not only are the brand and service important to the customer, but also processes like how easy it is to order and which additional services are provided. For marketeers, it is beneficial to think about the customer journey and evaluate the different touchpoints a customer has with the brand and the supplier. Simplifying the customer journey and making life easier for the buying centre members can increase brand sensitivity for a specific brand when facilitations are of relevance.

The **familiarity of a situation** increases brand sensitivity for a specific brand. A situation was seen as familiar if the purchaser already knows the brand or has already purchased the brand or knows that the brand works as expected and that the brand is risk resistant. This suggests that medical device companies should avoid unnecessary changes and focus on consistency to create a familiar environment around the brand.

Habits of working with a specific brand increase brand sensitivity for a specific brand but decrease brand sensitivity for other brands. When users are used to a specific procedure of a brand, a change in this procedure and habit causes extra effort and more time to get used to the new procedure and to change established habits. As German hospitals are faced with a lack of caregivers, timesaving is always an important topic. This must lead medical device suppliers again to avoid unnecessary changes of the treatment process, which would cause additional time spending of the hospital employees. Only changes which simplify the procedure and save time should be considered.

Brand sensitivity for a specific brand is higher in cases where the decider is **familiar with the brands**. This means that a brand is trusted more because one has experience with it and the backgrounds of the products are known. “If the conditions are the same, the one I know will be selected” (Interviewee 3). In addition, the focus for each decision-making and preceding evaluation is primarily on the known brands. The known brands are the benchmark for the other products and the other products are checked against it. If a brand is established in a hospital, only if there are bad experiences with a brand will the focus be on other, new products. If that is not the case, the focus stays on the known brands. This implies for marketers of medical device suppliers that it is first of all important to create and ensure brand awareness in order that the brands are taken into consideration for the decision-making process. Furthermore, familiarity with the brand needs to be created. If a brand is new on the market, this can be achieved via supported test periods in hospitals, in order to familiarise the hospital employees with the brand. An additional suggestion could be that investment in long term customer relationships is beneficial because once the customer is used to the brand and does not have any bad experiences, the brand will not be changed very easily.

Connected brand attributes like quality, better delivery times, price level, and brand appearance help to increase brand sensitivity for a specific brand. For medical device suppliers, it is important to have these attributes in focus. Also, company values and image help increase brand sensitivity for a specific brand and are thus important. Especially in the healthcare sector, emotions play an important role and therefore the values and image of a company behind the brand are even more

important. It was also recognised that the company brand can have greater importance than the product brand. It can be assumed that due to the close relationship between hospital employees and employees of the medical device supplier, the company brand is more in focus. This suggests for medical device suppliers that they should strengthen the company brand as well and moreover consciously select the company values that strengthen their image.

5.4 Theoretical Implications

5.4.1 Implications for buying behaviour

The theoretical implications for buying behaviour have various aspects. Referring to the composition of the **buying centre**, the research in general agrees with the core aspect of the literature (Wind, 1978) that multiple participants are involved in the buying centre. What can be added to the existing knowledge of buying behaviour is that the type and number of participants are different in different industry sectors. This means that when a buying centre analysis is performed, the industry sector needs to be considered. The research showed various aspects that influence the buying centre composition and the aspects or the influence of the aspects can vary among different industries.

Moreover, the composition of the buying centre can change over time. For example, when the focus of the industry sector changes over time. For the hospital sector, the focus has changed during recent years to more economical aspects which concluded in more prominence and importance of the hospital buyer. This means for theoretical buying centre models and buying centre analysis that the time in which it was performed also needs to be considered. A performed buying centre analysis can change over time and needs to be revised and reviewed before application. This can be supported by the comparison of the former research of Laczniak (1979) and Liedes and Liimatainen (2010) to the results of this research.

Laczniak (1979) concluded that the most influential deciders in the decision-making unit were the physicians, and, during the buying decision process, they were also the most active participants. Compared to the results of this research, which have been conducted almost forty years later, the findings showed a changed picture over the time. The sole decision power of physicians is now shared with the managing

director and the purchasing manager dependent on the product category, and for some product categories the physician no longer has any decision power.

The more recent study of Liedes and Liimatainen (2010) also showed a change over time. The results of Liedes and Liimatainen (2010) are more in line with the results of this research. According to Liedes and Liimatainen (2010), most of the purchases of a hospital are done from the purchase office, but the need comes from medical staff, which partially is in line with the results of this research.

A further implication for buying behaviour, derived from the research results, is that for buying situations, the product type and the relevant product criteria need to be investigated to see the influence on the buying centre composition. Chapter 5.1.2 showed the central importance of the product type and the product criteria for the buying centre composition. For existing buying centre models, this means that, especially for the hospital sector, the product type and the product criteria need to be considered and need to be added to further development of these models. In general, there was a tendency visible that, for higher investments and high-risk purchasing situations, the hierarchy levels of the buying centre participants are higher and the number of participants increases. In summary, the integration of influence factors in buying centre analysis models will help to improve the accuracy of the outcome.

It appeared that not only the type and number of participants can be influenced by specific factors, but also the roles of the buying centre participants can change if specific influence factors appear. For German hospitals, it is especially the product category that influences the roles of the buying centre participants. For models of the buying centre analysis, this means that it is important to evaluate the product type and the influence it has on the buying centre participants roles in order to assign the roles correctly. Moreover, this research showed that for a buying centre of German hospitals no additional roles appeared compared to the existing roles in the literature (Bonoma, 1982; Laczniak, 1979; Liedes & Liimatainen, 2010; Webster & Wind, 1972), but it also became clear that the role cannot be fixed once it has been identified. The role itself or the weighting of roles can change based on the identified

influence factors and therefore it is also recommended to integrate the influence factors in the existing models for the analysis of buying centre roles.

Besides theoretical implications for the buying centre analysis as a sub topic of buying behaviour, there were also implications of the research on the **decision-making of organisational buying**. The research added to the existing knowledge new factors that influence decision-making, especially of German hospitals (see table 23: Comparison of influence factors for decision-making based on the literature). Two completely new categories of influence factors, 'person related' and 'situation related' factors, emerged which have not been considered so far in the existing literature. What can be assumed about why these factors have been neglected so far is that the factors included in these categories, such as personal preferences, personal philosophy, risk or time pressure question the rational decision-making which is associated with organisational buying. Only the latest developments in research focus on the emotional aspects of decision-making in organisational buying. This research project further emphasises the latest knowledge and increases the necessity of integrating emotional aspects into organisational buying behaviour.

5.4.2 Implications for B2B branding

In addition to the implications on buying behaviour, the research also affected B2B branding, especially the area of brand sensitivity. The literature agreed that B2B brands may not be equally important in different situations, e.g. the brand may not be equally important to all buyers, all sellers or in all buying situations. This lack of knowledge about when and to whom brands are most influential is an important omission (Brown et al., 2012).

The research implies that there are several factors related to brand values that influence B2B brand sensitivity (see figure 12: Brand influence on decision-making) as well as specific situations in which brand sensitivity could be on the one hand increased or on the other hand lowered. So far this has not been considered in the literature. These factors and respective situations need to be added to existing models and future investigations in order to give managers the possibility of making well informed branding decisions.

5.5 Managerial and Practical Implications

The research showed several findings regarding buying behaviour and B2B branding which also have practical and managerial implications. The fact that the buying centre consists of multiple participants implies for the practice that different participants need to be addressed differently. Different participants have individual needs and areas which they are focused on because the results showed that the buying centre members have different tasks and intentions in the decision-making process (see chapter 5.1.3 table 18: Tasks and intentions of the buying centre related to the decision-making process). For managers of medical device suppliers, this means that the marketing and branding strategy, as well as the sales concept, have to address multiple requirements and needs in a targeted way, which means that only the recipient who is interested in a specific topic receives the information.

In practice it is essential to find the right buying centre members in order to avoid the waste of resources around taking care of people who will not be in the buying centre. As the results showed that the type and category of a product mainly determine the composition of the buying centre, it is in practice additionally important to evaluate the product to be sold carefully. It is important to know if specific categories exist with specific characteristics which determine the participants of the buying centre. Additional factors like performance sensitivity, criticality and importance of a product, as well as the investment size, need to be considered for the buying centre analysis.

It also became obvious that in German hospitals the buying centre is not constantly the same and not composed of the similar participants, as the results of the thesis showed that there are factors influencing and changing the buying centre composition. This results for sales and marketing managers in the need to review and revise the buying centre analysis for every purchase decision. In addition, the roles can vary between the different participants which emphasises the importance of the reassessment of the buying centre analysis.

As well as practical and managerial implications on the buying centre analysis as a sub topic of buying behaviour, there were also implications of the research for the **decision-making of organisational buying**. The existence of influence factors for

the decision-making of German hospitals means for medical device suppliers in general that they can have an influence on the decision-making. Indeed, medical device suppliers have the aim of influencing the decision-making towards their products in order to maximise sales. However, from the perspective of the researcher, not all factors can be equal influences. There are some factors which allow a more active influence of the medical device supplier and there are factors on which the medical device supplier has no influence. The assessment of the influences factors prior to the purchasing process is of great importance, as the results of the research showed that these factors can have influence on the decision for or against a purchase decision. The assessment should also include situation related and personal related factors that have not so far been considered in the literature (see table 23: Comparison of influence factors for decision-making based on the literature). Further, the assessment should ask the question if and which factors are possible to influence. If there is no possibility to influence the factors, no further resources should be invested. The assessment should also include how the factors can be influenced by the medical device supplier in order to increase the possibility of winning the deal.

The research further brought up practical and managerial implications regarding **B2B brand sensitivity**. The factors to increase brand sensitivity can be used by medical device suppliers to improve the sensitivity of buying centres to brand information. Furthermore, by the evaluation of brand sensitivity influence factors, managers of medical device brands are in the future able to make more informed branding decisions, because they can acquire knowledge about when a brand is important to buyers.

Table 24: Influence on brand sensitivity, showed how the factors can influence B2B brand sensitivity. Based on this table, guidelines can be derived for managers of medical device brands on how the factors can be used to increase brand sensitivity, as well as guidance regarding in which situations brand investment does make sense. Only if brand sensitivity occurs is the recipient open for brand information. If that is not the case, the investment of the medical device supplier should not be focused on the branding strategy as it will not succeed.

Factor	Brand Sensitivity (↑: increased) (↓: decreased) (↑↓: increase or decrease possible) (-: no influence)	How to increase brand sensitivity
Patient risk level	↑	<ul style="list-style-type: none"> - check if there is influence of the product on daily working routine and patient safety - if the influence is there, highlight these aspects in communication towards the customer
Personal targets	↑↓	<ul style="list-style-type: none"> - get information about the personal targets of the hospital buyer or the overall targets of the hospital which can give guidance for the personal targets of the buyer - dependent on the target, if it is profitability or economy and thus the focus on a cheap or branded product, the decision for investing further in the purchasing decision can be made by the supplier.
Commodity products	↑↓	<ul style="list-style-type: none"> - if the respective product is a commodity product, it is recommended to strengthen the brand and to achieve brand superiority so that when the customer has to select a product in this commodity product category exactly this brand comes in mind and will be selected without further investigations to avoid extra efforts.
Time pressure	-	<ul style="list-style-type: none"> - as time pressure has no influence on brands sensitivity there is no possibility to take influence for a medical device supplier - in cases of time pressure, reliability and service should be the focus of communication
Brand visibility for the patient	↑	<ul style="list-style-type: none"> - when the brand is visible for the patient during treatment, it is important to include the patient as stakeholder in the branding strategy

Factor	Brand Sensitivity (↑: increased) (↓: decreased) (↑↓: increase or decrease possible) (-: no influence)	How to increase brand sensitivity
		- increase the brand awareness of the patient
Security	↑	- check if the product can increase security or can avoid any risk - highlight these aspects in the brand communication
Trust	↑	- the branding strategy should also focus on reliability and predictability (with constant product quality, usability, service and brand appearance)
Personal relationship to the employees of the manufacturer	↑	- investing in the personal relationship with the customer, reflected mainly through the sales representative will increase brand sensitivity - avoid unnecessary changes of sales representatives and thus in the customer relationship
Process around the product	↑	- ensure good and smooth processes - analysis of customer journey can help to improve the processes around the product and the customer
Familiarity of the situation	↑	- creating brand familiarity - avoid unnecessary product and process changes - offer product tests to increase familiarity
Habits	↑	- if the brand is already established as the customer, product, process changes which are not necessary should be avoided - if the brand is not yet used by the customer and they are used to another product, an added value needs to be offered to encourage the changes in habit
Brand familiarity	↑	- creating brand familiarity - avoid unnecessary changes

Factor	Brand Sensitivity (↑: increased) (↓: decreased) (↑↓: increase or decrease possible) (-: no influence)	How to increase brand sensitivity
		- offer product tests to increase familiarity
Quality	↑	- good quality, better delivery times, good price level and attractive and modern brand appearance need to be ensured
Better delivery times		
Price level		
Brand appearance		
Company values	↑	- besides the product brands, also focus on company values and image that fit into today's times and the values a hospital incorporates
Company image		

Table 25: Guidelines on how brand sensitivity can be increased (authors own research)

In summary, chapter five has discussed, analysed and interpreted the findings presented in chapter four. The findings have been linked back to what the literature said, and theoretical as well as managerial and practical implications have been derived. The discussion referred to the buying unit of a German hospital, the influence factors for decision-making of German hospitals and the brand influence on the decision-making of a German hospital.

Chapter 6 Conclusion

Having discussed the findings in comparison to the literature and derived implications for practice and for theory, the conclusion chapter now gives an overview of the whole research journey and future prospects. This chapter starts with a conclusion on the research set up, which means looking back to where the research started, with the original research problem, the derived research questions and objectives. It gives an overview of the main outcomes of the literature and the research methodology. The limitations of the research are shown and the conclusion of the findings is summarised.

The main part of this chapter is to re-emphasise the contributions made by this research project. This is achieved by returning to the research questions and reviewing if they have been answered or what remained unanswered.

Based on the achieved knowledge, recommendations for practice as well as for theory have been derived. The chapter ends with a reflection on the personal development of the researcher and future prospects for new research possibilities.

6.1 Conclusion on research findings

The author set out to investigate business to business brand sensitivity. It was of special interest for the author how brands influence a German hospital's buying decision-making process. This investigation was started because in their practice they noticed that medical device suppliers invest a great deal of money in building brands without knowing the effect or the framework conditions to achieve the maximum effect of branding.

Therefore, the author developed the following research objectives:

- 1) Identify who are the key actors that are part of the buying decision process in a German hospital.
- 2) Explore and analyse relevant parameters for decision making which could have an effect on brand sensitivity.
- 3) Identify how and why certain parameters have an influence on brand sensitivity and purchasing decisions.

With these research objectives, the following research questions were to be answered through the research project:

- 1) What is in the buying unit of a German hospital?
- 2) What are the influence factors for decision making?
- 3) How and why does a brand influence the decision making of a German hospital?

The literature review around the topic revealed the following main points:

- Multiple participants involved in the organisational buying
- Influence factors for buying centre composition
- Tasks and roles of the buying unit participants
- Influence factors for decision-making of German hospitals
- Brand influence on the decision-making

It also became obvious in the literature review that a great deal of information for the specifically defined research problem and research questions is missing. This influenced the methodology and design of the research to investigate further with a qualitative approach in order to understand the problem in more depth and to generate the missing information. The summary of the research design is shown in the following figure.

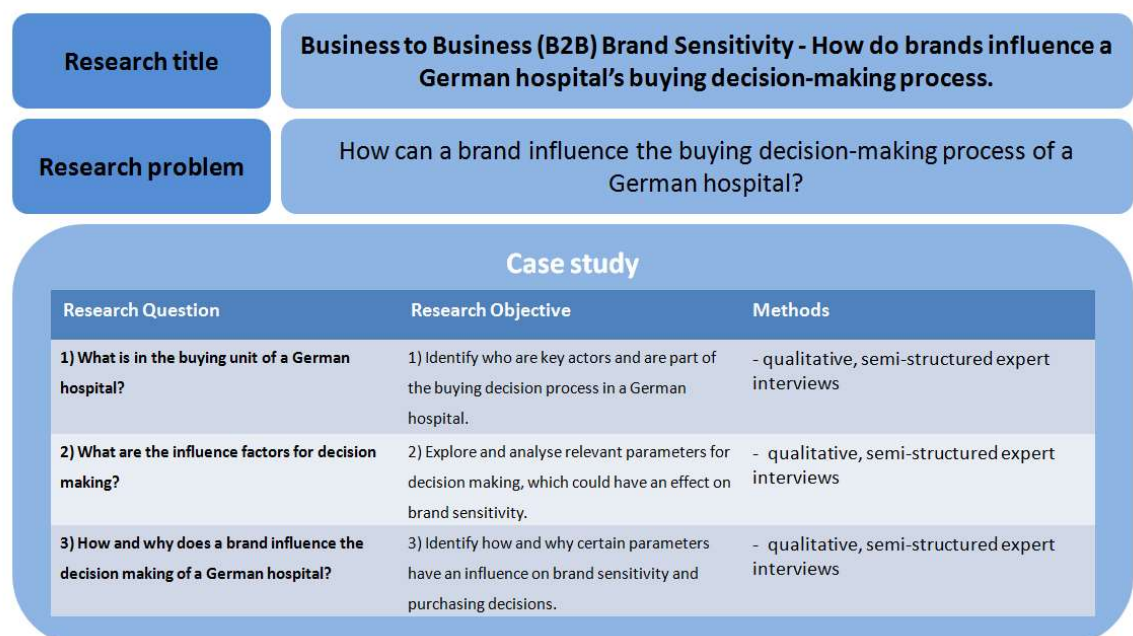


Figure 5: Research design (author's own work)

At this stage, ethical dilemmas or challenges emerged and reflected the limitations of the research. The limitations of the research are described in more detail in the following section.

6.2 Limitations of the research

This research project has contributed important knowledge to B2B brand sensitivity and buying behaviour, but nevertheless has its limitations. This research investigated the sector of German hospitals and the data was generated qualitatively through the purchasing groups which dominate the German hospital market. The research project is limited firstly to German hospitals, which means that for hospitals in other countries the findings and contributions provided can be used as a starting point, but cannot be generalised for all hospitals independent of the country where the hospitals are located.

Secondly, the research is limited to the information provided by the employees of the purchasing groups. This target group was selected for the qualitative interviews because they have in-depth knowledge about the buying centre and the decision-making of a great number of German hospitals because they advise a great number of purchase decisions of hospitals. To generalise the findings and contributions of the research, it is recommended to test the results quantitatively with a large sample size of German hospital buying centre participants.

In addition, the research is limited by the problem of reliance on indirect measurement in comparison to direct measurement of behaviour. A great deal of management research has that problem that it is difficult to measure attitudes and relate that to actual behaviour. In this research project, it helped that the interviewees did not have to talk about their own attitudes and behaviours, but they explained how they perceived the attitudes and behaviours of the hospital employees.

A further limitation of the research might be seen in the size of the sample. It could be argued that the size is too small, but the samples were considered as sufficient because of the following reasons:

- As the research topic is very special and complex, in-depth knowledge was demanded. The interviews conducted were of very high quality as the interviewees had a very good, comprehensive and in-depth knowledge of the topic.
- As the interviewees were from hospital purchasing groups, they had the knowledge of buying situations of several hospitals, which increases the relevance of their statements.
- As the research topic is a very sensitive topic where it is difficult to get information, a few times possible interviewees refused the participation.

Another topic is the cross-disciplinary character of the research. This means that it is difficult to place the research in one academic category. The research affects the two categories of B2B branding and organisational buying behaviour. This could be considered as a strength of the research, as it reflects practice, but to others it could be considered as a limitation.

In addition to the previously mentioned aspects, there were some ethical aspects that affect the limitations of the research.

The research topic affects a sensitive area, the purchasing of medical device products which are used to maintain and restore health. There are economic interests of German hospitals which might cause an ethical dilemma in answering the questions of the interview. The interviewees might tend to provide answers that are socially desired and expected.

Although using open and non-leading questions, the researcher's neutral behaviour in gestures, posture, and tone of voice, the bias of the researcher, could have limited the research. Attentive listening helped to build understanding of the interviewee's perspective. Responses have been summarized and understanding was tested to avoid a biased and incomplete interpretation. Even though the bias of the researcher during the data analysis and the coding of the findings was minimised as much as possible by guiding the selection of data with the research questions as it is the main target of this research project to answer these questions, the research also has its limitations in this area.

6.3 Conclusion on findings

After having shown the awareness of the research limitations, the main findings revealed, based on the generated data, are now listed in the following:

- Different participants in the buying unit of a German hospital
- Influence factors for buying centre composition
 - a) Product type
 - b) Availability of participants
 - c) Decision-making structure of the hospital
 - d) Personality of hospital employees
- Influence factors for decision making
 - Product related
 - Person related
 - Supplier related
 - Situation related
- Parameters that have an influence on brand sensitivity

The analysis of the findings and linking it back to what had been known already in the research community and published literature confirmed that multiple participants are part of a buying centre and some of the influence factors for decision making could also be confirmed, but also new findings regarding influence factors emerged. Table 23 showed the comparison of influence factors for decision-making between the literature and the findings.

As well as aspects that could have been confirmed, the subsequent new findings emerged:

- Influence factors for decision making
 - Product related
 - Person related
 - Supplier related
 - Situation related

- Parameters that have an influence on brand sensitivity

6.4 Answering of research questions

Returning to the initial aim, the main target of the research project was to answer the following three research questions:

- 1) What is in the buying unit of a German hospital?
- 2) What are the influence factors for decision making?
- 3) How and why does a brand influence the decision making of a German hospital?

By answering the research questions, the research contributed to theory as well as to practice. This section summarises what parts of the research questions have been answered, as well as which parts remained unanswered. The detailed contributions to theory and practice are outlined in the following section 6.5.

In order to show which parts of the research questions have been answered and which parts remain unanswered, the following section goes step by step through each research question, starting with the first research question:

RQ1: Who are the participants in the buying unit of a German hospital and how are the composition of the buying centre and the roles of the participants influenced?

The target of the first research question was to investigate the buying unit of a German hospital to identify who the key actors are that are part of the buying decision process in a German hospital. The research succeeded in finding out who is a member of the buying unit of a German hospital. The functions were named and therefore give a clear guidance for the focus of the buying centre analysis.

It was also possible to generate additional new insights which are of great importance when analysing the buying unit of a German hospital. The additional new insights relate to the factors that influence the composition of a German hospital's buying unit. The influence factors related to product, person, availability of participants as well as the decision-making structure of the hospital, which extended the answering of the first research question to the dimension of variability.

This means that how the first research question is formulated was too one-dimensional to reflect the reality of the buying unit participants. The formulated question suggests that there might be one fixed group of people acting in the buying unit for decision-making. The reality showed that there are different factors that influence the composition of the buying unit and the participants are not always the same.

The investigations regarding the first research question made it possible to gain as well insight about the tasks of the buying centre participants as well as the main intention they have. These insights extended as well the initial target of answering research question one, but the insights were evaluated as important and valuable for buying centre analysis. Also, the derived buying centre roles were seen as great benefit for theory as well as for practice and were therefore included in the answering of the first research question.

To sum up, research question one has been answered in regards to the key actors of the buying process and due to new learnings and findings extended to the aspects of influence factors of the buying centre composition, as well as the tasks, main intention and roles of the buying centre participants.

The next part of this section evaluates the answering of research question two:

RQ2: What are the influence factors for decision making?

The main target of the second research question was to explore and analyse relevant parameters for decision making which could have an effect on brand sensitivity. The research was successful in showing the parameters which are relevant for decision-making from different aspects. Various factors emerged that relate to product, person, supplier and situation and answered therefore the research question. When critically reviewing the answering of the second research question, it can be said that the answering was more focused on the factors that influence the decision for or against a specific product. The results showed that these influence factors do not affect aspects that influence brand sensitivity. So, at that stage the influence on brand sensitivity was not yet answered. Only influence factors on decision-making were answered. While critically considering how the

second research question was formulated, it must be admitted that there is an overlap with research question three which made a consistent allocation of answers more difficult.

The research showed that the influence factors for decision-making are different compared to the influence factors on brand sensitivity and therefore the initial target for research question two to explore and analyse relevant parameters for decision making which could have an effect on brand sensitivity is met, as the decision-making influence factors do not have an influence on brand sensitivity.

In the following paragraph the answering of research question three is evaluated:

RQ3: How and why does a brand influence the decision making of a German hospital?

The main target of research question three was to identify how and why certain parameters have an influence on brand sensitivity and purchasing decisions. The research successfully answered the third research question by showing specific situations as well as brand values that influence brand sensitivity in the decision-making process. Moreover, it was shown how these factors influence brand sensitivity. This means if brand sensitivity is increased or decreased when one of the influence factors appears. While answering the research questions, there were two dimensions of brand sensitivity and brand influence in the decision-making process. Firstly, the results referred to brand sensitivity in general compared to a non-branded product, and secondly, the results referred to brand influence on the decision for a specific brand compared to other brands. Of course, both insights are of great value for answering the research question, but when looking critically on the research question and target for the research question with the knowledge of today, the researcher would have formulated the research question and the target for the research question more specifically.

6.5 Contributions to theoretical and practical knowledge

After having summarised to what extent the research questions have been answered, the contributions of the research to theory and practice are now shown. The contributions of the research add knowledge to two subordinate fields of knowledge. Firstly, the field of buying behaviour is enriched, and secondly knowledge was added to the field of B2B branding.

6.5.1 Theoretical contributions to buying behaviour

The theoretical contributions to buying behaviour improved the buying centre analysis. There was additional knowledge generated about the character of buying units in German hospitals:

- type and number of participants are different in different industry sectors
- the composition of the buying centre can change over time
- the product type and the relevant product criteria need to be investigated to see the influence on the buying centre composition
- the product category influences the roles of the buying centre participants
- the buying centre roles or the weighting of roles can change based on the identified influence factors

In addition to improving the buying centre analysis, the research also added to the existing knowledge new aspects to decision-making of organisational buying:

- New factors have been added that influence decision-making, especially of German hospitals (see table 23: Comparison of influence factors for decision-making based on the literature)
- Two completely new categories of influence factors 'person related' and 'situation related' factors emerged that haven't been considered so far in the existing literature

6.5.2 Theoretical contributions to B2B branding

As well as contributing to buying behaviour, the research further added knowledge to the theoretical field of B2B branding. By adding further insights to B2B branding, the research improves the knowledge about B2B brand sensitivity and provided the following aspects that need to be considered when investigating B2B brand sensitivity:

- The research contributed several factors related to the brand values that influence B2B brand sensitivity (see figure 12: Brand influence on decision-making) as well as specific situations in which brand sensitivity could be on the one hand increased or on the other hand lowered.
- The influence factors for B2B brand sensitivity that have been pointed out by the research will help to make better decisions on B2B branding.

As well as the theoretical contributions, the research provided practical and managerial contributions that will help managers of medical device products make their decisions and inform how they act regarding B2B brands in the decision-making process. The following section summarises the practical and managerial contributions of the research.

6.5.3 Practical contributions regarding buying behaviour

The practical contributions regarding buying behaviour affect firstly the buying centre and will help to improve the outcome of a practical performed **buying centre** analysis by for example sales managers. In particular, finding the right buying centre participants and how to address them is improved by the following contributions:

- The buying centre of a German hospital consists of multiple participants.
- The various participants have individual needs and a different focus.
- The marketing and branding strategy, as well as the sales concept, have to address multiple requirements and needs in a targeted way.
- Only the recipient who is interested in a specific topic receives the information of interest.
- It is necessary for the buying centre analysis to evaluate the product to be sold carefully: do specific product categories exist that have specific characteristics and influence the determination of the participants of the buying centre?
- It is necessary for the buying centre analysis to evaluate additional factors like performance sensitivity, criticality and importance of a product, as well as the investment size
- It is necessary to review and revise the buying centre analysis for every purchase decision as the buying centre of a German hospital is not

constantly the same, it is not composed of the same participants, and the roles can vary between the different participants.

In addition to the practical contributions to buying centre analysis, the research also contributed practically to the **decision-making of organisational buying**:

- The existence of influence factors for the decision-making of German hospitals showed that medical device suppliers can have an influence on it.
- Not all factors can be equal influences: some factors allow more active influence of the medical device supplier and there are factors on which the medical device supplier has no influence.
- It is important to conduct an influences factor assessment prior to the purchasing process.
- It is necessary also to include situation related and personal related factors that haven't so far not been considered in the literature.
- Included in the assessment should be the influence possibility of the factors and how the factors can be influenced by the medical device supplier.

In addition to the practical contributions regarding buying behaviour, the research also contributed practically to B2B branding. The contributions regarding B2B branding are summarised in the following section.

6.5.4 Practical contributions regarding B2B branding

The contributions to B2B branding affect B2B brand sensitivity and will help managers of medical device brands to make more informed branding and brand investment decisions. The contributions are:

- Influence factors for B2B brand sensitivity
- A guideline for managers of medical device brands on how to use the B2B brand sensitivity influence factors to increase brand sensitivity, as well as guidance regarding in which situations brand investment does make sense.

After having shown the contributions for the discipline organisational buying behaviour and B2B branding separately, the puzzle pieces are put together in order to show the complete picture regarding the research problem. The three research

questions affected both areas of knowledge, and, to sum up, the generated knowledge is merged into one picture and the gained knowledge is connected in order to give an answer to the initial research problem of ‘how can a brand influence the buying decision-making process of a German hospital?’.

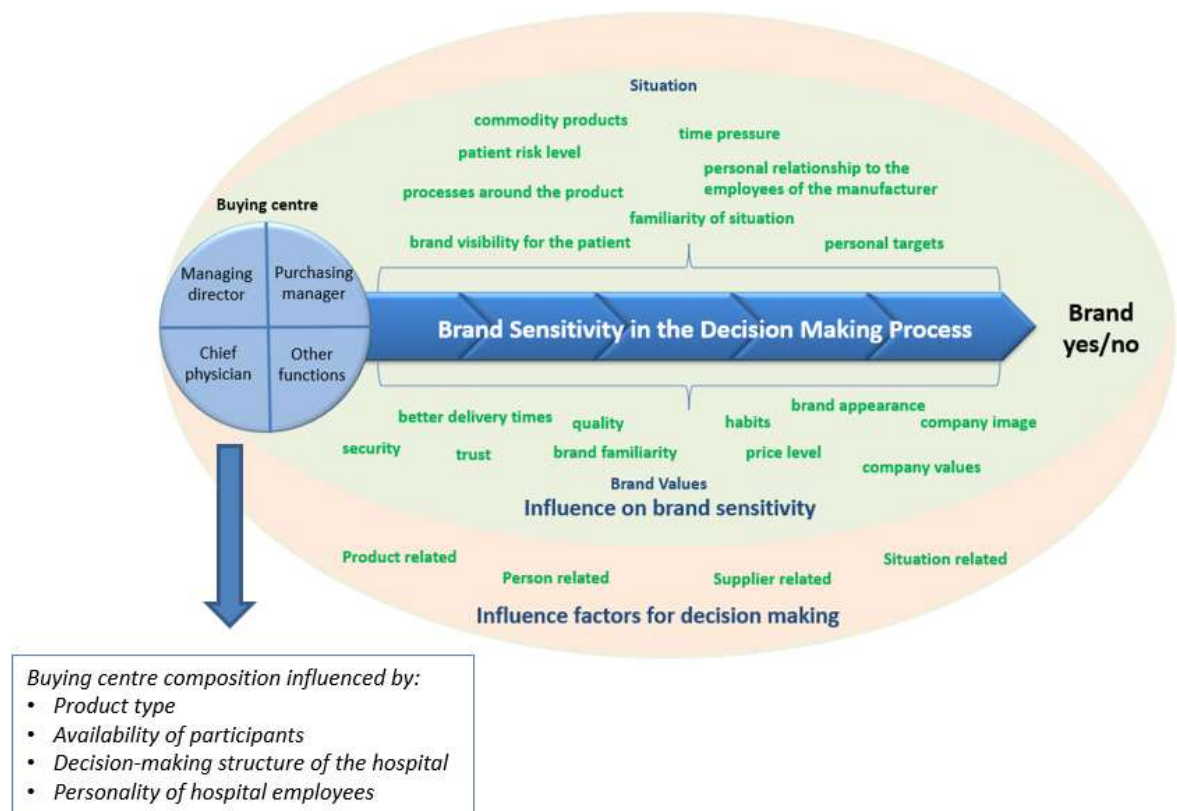


Figure 14: Brand influence in the buying decision process of German hospitals (author's own illustration)

Figure 14 summarises the overall contributions of the research, starting with the composition of the buying centre and how the composition can be influenced. Analysing the composition of the buying centre is the first step when looking at the decision-making of German hospitals in order to know who is participating in the decision-making process, who is making the decision, who will be influenced in decision-making and who will later on be more or less sensitive to brand information. Having defined the participants of the buying centre, the research further contributes with the factors (situation, person, supplier and product related) that influence the decision-making for or against a specific product, without the necessity that it needs to be a brand. Referring then specifically to the importance of brands in the decision-

making process, the research contributes by demonstrating the factors that increase or decrease brand sensitivity in the decision-making process. Prior analysis of the buying centre, the influence factors on decision-making for a product and B2B brand sensitivity will give managers of medical device brands guidance about:

- If it is worth investigating in the sales process (chances for winning the deal)
- If it is worth further investment in branding strategy
- Selecting the right audience and right content for marketing communication

6.6 Theoretical, managerial and practical recommendations

After having shown the theoretical and practical contributions of the research, the following chapter will sum up the recommendations drawn from the theoretical and practical implications which have been described in chapters 5.4 and 5.5. This chapter will go beyond recommendations and will show how the research has contributed to knowledge in theory and in practice.

Theoretical recommendations buying centre analysis
<ul style="list-style-type: none"> • Consider the industry sector when performing a buying centre analysis.
<ul style="list-style-type: none"> • Consider the time in which theoretical buying centre models and buying centre analysis was performed and note that a performed buying centre analysis need to be revised and reviewed before application as it can change over time.
<ul style="list-style-type: none"> • Take into account the product type and the product criteria and add it to further development of existing buying centre models.
<ul style="list-style-type: none"> • Investigate influence factors on buying centred and integrate the influence factors in buying centre analysis models to improve the accuracy of the outcome.
<ul style="list-style-type: none"> • In order to assign the buying centre roles correctly, it is important for the buying centre analysis to evaluate the product type and the influence it has on the buying centre participants' roles.
<ul style="list-style-type: none"> • The recommendation is to integrate the influence factors in the existing models for the analysis of buying centre roles as the roles themselves or the weighting of roles can change based on the identified influence factors.

Theoretical recommendations decision-making of organisational buying
<ul style="list-style-type: none"> Besides the existing rational influence factors for decision-making of organisational buying, also consider influence factors that are related to person and situation. Integrate emotional aspects into organisational buying behaviour.
Theoretical recommendations for B2B branding
<ul style="list-style-type: none"> The research implies for B2B brand sensitivity several factors related to brand values that influence B2B brand sensitivity (see figure 12: Brand influence on decision-making) as well as specific situations in which brand sensitivity could be on the one hand increased or on the other hand lowered. Add the factors and respective situations to existing models and future investigations in order to give managers the possibility of making well-informed branding decisions.
Managerial and practical recommendations - buying centre analysis
<ul style="list-style-type: none"> Address in the marketing and branding strategy, and in the sales concept, multiple requirements and needs in a targeted way, so that only the recipient who is interested in a specific topic receives the information. Evaluate the product to be sold carefully: obtain knowledge about the existence of specific product categories and if and how the categories determine the participants of the buying centre. Consider additional factors for buying centre analysis such as performance sensitivity, criticality and importance of a product, as well as the investment size. Review and revise the buying centre analysis for every purchase decision because in German hospitals the buying centre is not constantly the same and not composed of the same participants, in addition to which the roles can vary between the different participants.
Managerial and practical recommendations - decision-making of organisational buying
<ul style="list-style-type: none"> Assess the influences factors for the decision-making of German hospitals prior to the purchasing process in order to influence the decision-making and also include situation related and personal related factors. Assess further if and which factors are able to influence.

<ul style="list-style-type: none"> • If there is no possibility of influencing the factors, no further resources should be invested. • Include the assessment of how the factors can be influenced by the medical device supplier in order to increase the possibility of winning the deal.
Managerial and practical recommendations – B2B brand sensitivity
<ul style="list-style-type: none"> • Use the influence factors to increase brand sensitivity to improve the sensitivity of buying centres to brand information (see table 25: Guideline on how brand sensitivity can be increased).
<ul style="list-style-type: none"> • It is recommended that managers of medical device brands evaluate the brand sensitivity influence factors to be able to make more informed branding decisions in the future because they will acquire knowledge about when a brand is important to buyers.
<ul style="list-style-type: none"> • Consider the guidelines on how brand sensitivity can be increased (see table 25) to evaluate how the influence factors can be used to increase brand sensitivity, as well as getting information about in which situations brand investment does make sense.

Table 26: Recommendations of the research (author's own illustration)

6.7 Review Research Journey: Reflection and Learnings

The following section of chapter six is the penultimate section of the thesis and deals with the critical reflection of the researcher's personal development as a researcher and recalls important learnings that improved the researcher's knowledge as a practitioner. The learnings described in this section refer mainly to the exchange with the supervisors during the research journey, as well as the experiences with the action learning set performed with the DBA fellow students. As it reflects the personal journey of the researcher, the next chapter is written from the perspective of the researcher.

Personal development

Through the whole journey, there were many situations when I realised that I was personally developing continuously, but there were three prominent examples reflecting the personal development that I would like to share.

1) Developing professional expertise:

Half way through the journey, I was promoted to do sales marketing for a medical device supplier in the hospital sales channel. With this additional challenge, my interest in theory and practice around the topic increased simultaneously. Developing myself into a professional expert on that topic helped me to handle upcoming issues with more self-confidence.

2) Development of research skills:

The second example I would like to share where for me personal development became obvious was more at the end of the research journey. It reflects the development of my research skills. I was invited to take a position in product management of the same medical device supplier. It was a newly created function to investigate new innovative product opportunities for wound management products. I was invited to this position due to my research skills as the main task was to undertake research of the market segment and to define the strategy for the company. This incident showed me that the acquired research skills are also visible for the outside world.

3) Development of own worldview and understanding other views:

Learning about different world views enriched my personal knowledge a great deal and opened up new vistas for me. The fact that I personally prefer the constructivist worldview became clear to me very quickly as it is always my first aim to understand problems in depth by asking questions and speaking to the people part of the construct. However, learning about other world views and connected approaches to problems helped me to understand other views and approaches better, and that very often different requirements for understanding and solving a problem are based on different world views.

Development into a reflective practitioner

One key element of the research is the development into a reflective practitioner. According to Schön (1938), reflective practice is defined as practice where the awareness of the implicit knowledge base of professionals is created and professionals can learn from what they experience.

Relating to development as a researcher, I have learned to reflect on information and situations critically, which has enriched my personal knowledge. Reflecting critically was necessary in different dimensions; firstly, in the literature review, while observing different ongoing developments in the field of knowledge, and secondly, during the generation of data from selected experts.

Furthermore, regular action learning sets with my fellow DBA students, where the current status of the thesis was shared, analysed and reviewed supported the critical reflection as well.

In addition, the regularly planned Skype meetings with my supervisors were very helpful to focus on the right aspects of the research, as well as to avoid losing track. Their recommendations and comments have been appreciated greatly, as well as their critical reflections and contributions regarding selected procedures. This helped me to further my skills further in regards to examining different and contradictory perspectives.

The following sections will highlight the reflective practitioner's most important milestones:

Topic of the thesis:

The topic for the research was finally set with the RD1 and had its basis in a question I was asking myself during my daily life at work. Dealing with medical device brands, and, on the one hand knowing the marketing budget that a medical device supplier is investing to develop a brand, and, on the other hand, having the feeling that the target group in the hospital was only aware of selected brands, I wanted to know more about the role of the brand in the decision-making process of German hospitals.

The reflection skills have been trained by taking a practical problem and bringing it to an academic world.

Literature Review:

For the literature review, I focused on two main academic categories, B2B branding and organisational buying behaviour. Unexpectedly, the literature review showed only a few materials which were of interest for my research topic. Current research

especially was very rare, as in B2B practice the learnings from B2C research are taken without reviewing by research and taking the B2B specifics into account. On the one hand, this situation was very beneficial as there was enough room for contribution to knowledge, but, on the other hand, it made me doubt if I had found all relevant literature. Especially finding up to date literature was very difficult. Putting a literature alert in place with the relevant search terms, the constant revision and extension of search terms and the identification of key authors and their constant reoccurrence, as well as the exchange with the supervisors on the available literature, helped in getting security that the literature review showed a sound picture of the existing knowledge. The literature review prepared well for the development of a conceptual framework. The lacking of current literature was a reason to decide to design the qualitative interviews as semi-structured to leave enough room for so far uncovered topics.

The literature review trained the reflective skills by requiring critical analysis of the available literature, and the constant and ongoing search for new sources of knowledge.

Methodology and Findings:

The methodology and findings chapter were one of the most challenging chapters. Being aware of my own research philosophy, developing a reproducible research strategy was very demanding. The following phase of conducting interviews required effort from myself. I had to ask highly qualified people with tough working days and who were completely unknown to me for help. I was impressed that there was the willingness to spend time and to share their expertise knowledge with me, without no personal benefit. The post-processing phase of transcribing the interviews, coding the data and making sense of it was very ambitious. However, through this process, I learned a great deal about how to make valid and reliable conclusions out of the generated data by the acquired knowledge of methods and the principles behind them.

As the greatest efforts also result in great contributions to knowledge, this was also the case for my personal development. These two chapters were the most demanding, but also the ones that contributed the most to my personal development.

In particular, the reflection of the interviewees' neutral voice, and the process of bringing together the different meanings and perspectives of the interviewees trained my skills of critical thinking.

Discussion and Conclusion:

The discussion chapter required evaluating and interpreting the findings, as well as setting the results in reference to the existing literature. By evaluating the results independently and drawing my own conclusions, I had to learn to change the perspective. My own evaluation came to the fore, and the skills of critical reflection were further trained by the consideration of all perspectives of findings and literature. The main development in the discussion and conclusion chapter was completed through the buying centre analysis of German hospitals, analysing influence factors for decision-making, and showing influence factors on brand sensitivity.

Very often I asked myself if I would be able to provide a contribution to knowledge, but not after the analysed and discussed findings made the contribution to organisational buying behaviour and B2B branding clear.

The skills of critical reflection were mainly trained by the consideration and discussion of all perspectives of findings and literature.

Finally, the whole journey through all chapters of the thesis developed my skills so that I am able to answer a research problem based on findings, created based on evidence and not on meanings or feelings.

Coming to the last chapter of the thesis, ideas and challenges for future research will be described in the last section.

6.8 Ideas and Challenges for Future Research

The thesis developed existing literature and continued to answer the main and important questions of how a brand influences purchase decisions of German hospitals; whether there is an influence, and if so, who or what is influenced, and when or if brand sensitivity occurs. Also, theoretical and managerial implications were shown.

On the one hand, the research provided answers, but, on the other hand, new and further questions arose at the same time.

As the research was dedicated to the industry sector of German hospitals, one of the main questions is whether the composition of the buying centre, the influence factors for decision making and the influence factors on brand sensitivity are the same for hospitals in all countries. The same applies to the industry sector. As the generated knowledge is of interest for managers of all industry sectors and not only for the medical device industry, it would be of great interest if the results from the research apply to other businesses as well.

Another interesting and important question arose by the consideration of the generated influence factors for decision-making of German hospitals, as well as the consideration of brands sensitivity. As it was agreed during the research that a brand has influence in the decision-making process, because brand sensitivity exists, it was surprising why the brand did not play an important role in the influence factors for decision-making. This could be a result of the still predominant conviction that purchasing decisions are based on rational facts, or it could be that brand was not mentioned specifically as an influence factor because brands are perceived by other criteria - criteria that have been mentioned by the interviewees as influence factors for decision-making. Clarifying this question in future research would be of interest.

The research showed factors that influence decision-making of German hospitals, as well as factors that influence brand sensitivity. For both, it would be of great interest to acquire knowledge about which factors influence most and which the least. Getting information about this will help managers to focus their efforts for having influence.

Also belonging to the factors that influence decision-making and brand sensitivity, is the question of whether the influence factors are important to the same extent to all members of the buying unit or whether there are differences. Based on the different roles and different focus of the buying unit members, it could be assumed that the factors also have different importance to them. Gaining knowledge about

this topic will help managers to further target their efforts on influence. A more behavioural approach could help to answer this question.

The link between buying behaviour and B2B branding provides a large area for future research and in many aspects academic research is behind the practice of the industry. The future potential in the topic can be seen in the rising investment of industrial companies in B2B branding over recent years because the investments proved to be beneficial as the results improved. Nevertheless, the full advantage of B2B branding has still not been taken.

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Appendix

APPENDIX 1: Translated interview transcript

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I: Uhm, exactly, just put it down there. (.) Yes. So uhm yes, it would also be quite interesting for me to get some information on your background, how you got your job, what exactly you are doing now. #00:00:18-2#

B: Mhm. Well, that's relatively simple. The question is, as usual, where to start. Do you start at the end, er, or at the beginning? Uhm er, in terms of my profession er, in principle, I'm from the hospital sector and the care sector, as a nurse, i.e. Operating room management, as a specialist nurse. Uhm er/ er specialist nurse er, surgery, then uhm er further training at the (Agnes Karl? (unintelligible) care services. I am a teacher for nursing professions at the Catholic Academy for care professions and in principle and only found my way to business administration studies via some detours. So my motivation is primarily hospital, very close to the patient. I then work in the sector for five years and via working in the sector, I then went to HELIOS and er from a hospital in private ownership to/ to/ a distributor as CEO, for another year. That was with Private Equity, I did not find that particularly thrilling. And then I would say that I came to (Sana?) more by chance, hence that was no longer my intention. I would have stayed in freelance/ er/ er freelance work then. Incidentally, I had a link with HARTMANN at one time. #00:01:28-2#

I: // Yes? #00:01:28-8#

B: I applied for a job as// OP nurse at HARTMANN, they did not take me at that time (laughs). #00:01:32-4#

I: (laughs) That would probably also be different today. #00:01:35-2#

B: So also funny. That is a really interesting/ yes the job market was completely different then. Then they were real specialist nurses, care, those positions were very rare. These were real exceptional posts. So this is how, in principle, I got into procurement, er hospital integration, highly medical background er, of course there

has been a lot of development via er/ er HELIOS er, via the specialised group operatives. I believe, also co/ co/ co-developed here as a market leader. Uhm yes and now for the past four years with/ with (Sana?) as GR for the area, as general/ er representative. But you also have the card for the area uhm. #00:02:25-3#

I: Yes, thank you. #00:02:26-5#

B: Procurement and logistics with the bracket once around the topic of purchasing partnership and there, all around operative procurement, storage, logistics, internal, external, for own hospitals, but also general hospital supply business as an offering for the cooperation partners. This is also an ever-increasing trend, which we are expanding. #00:02:45-5#

I: Mhm. OK (.) exciting. #00:02:48-8#

B: // Mhm. #00:02:49-6#

I: Interesting. // And what is your view today er on hospital procurement? #00:02:54-6#

B: (...) Well, this question you could now/ how is hospital procurement viewed today, I'd say, what does hospital procurement mean today, with the view, what are you looking for, at strategic procurement er, at operative procurement, uhm at the strategic development er. I would say, highly operational, little future-oriented uhm, or too little forward-looking, too little oriented towards hospitals. Uhm (..) big er/ big challenge er to get personnel skills for the hospitals on board. Not very attractive uhm, as one notices, when advertises jobs. Many people are not actually aware how attractive and interesting the sector is and somehow that's a pity. #00:03:49-1#

I: Yes, absolutely. #00:03:50-2#

B: Yes. #00:03:50-9#

I: Yes. Yes. (.) Uhm also generally/ i.e. the/ the first major question, which arose is actually, how does hospital procurement work, how does it work in partnership, such a purchasing group, the whole process? #00:04:12-2#

B: Uhm I'd say to explain the entire er/ er process right now uhm that/ that would be wide-ranging/ that would now be a wide-ranging concept, because uhm/ I need to have a look here, whether I still have some documentation (4) mhm (affirmative) about a purchasing partnership. (unintelligible) I don't have anything here anymore. No, if I had known about this, I would have had some documentation for you/ (10) but I can send them to you. #00:04:58-1#

I: That would be great, yes. #00:04:59-7#

B: Purchasing partnerships actually vary uhm/ uhm massively in what they do uhm. They don't have one process, in principle, they have, similar to the industrial sector uhm, er a complete portfolio, in what they are offering, and the portfolio in principle ranges from offer of negotiations to advisory service to IT services uhm/ uhm er competency development programme uhm/ er networks er to further development uhm. This is a er/ I'd say a/ a/ an enormous/ er consulting service on revenue. Today we again had a lot on the topic er we offer proceeds barometers uhm, catalogues of knowledge, we have a network, Controlling, (.) there is a part/ a component is to negotiate terms and conditions and to implement conditions with packages and commitment in the operating business. Do you have your/ I must quickly check to make sure that I get this right #00:06:01-7#

I: // Oh yes, I have my address. #00:06:03-1#

B; the address. // Ah no, it's in here, zack. No, there it is. So I can send you a package / #00:06:10-0#

I: (You can?) also just leave it here for me. #00:06:12-1#

B: Files, documents, framework rules, network, (unintelligible), presi, IT, review, documentation, proceeds barometers. (..) pass on. Zack. (.) Let's have a look again

if there's not/ mhm (affirmative) no these are all annual brochure, quality report, (12) (unintelligible). (12) Such as (5) documentation (Sana, EKK?). (...) I have ... (spoken?) a whole one for you. (8) So zack. (...) Zack. I have written a whole/ a whole package for you er/ sent/ sent from the network brochures. Why do we have networks, what are strategic networks, what are medical expert networks, what is the purpose of the regional networks? The proceeds barometer. What do we do (..) so that we don't only consider the cost side? How does the revenue side change in the (DLGs?) annually in the (unintelligible)? What does this in turn mean for the hospitals? Behind the networks, there are network rules er within the meaning of uhm not only Compliance, but also Governance, because, I'd say these networks, they get somewhere, they all talk to each other, uhm and in the end, you ask yourself, what was that? In can be a one-time network, a two-time network, but there must be another structure behind it. A quality report, which is much more developed. The (Sana Cross Check?) as 360 degrees feedback, an annual brochure and (what is Sana?) IT? I am just looking from the/ I think it is the large project (HCDP?) from the dialogue, what we are doing from (Christoph?) (unintelligible) in the same way. I have sent that to you before. #00:09:08-8#

I: Great, thank you. #00:09:10-2#

B: So that/ that is (..)/ such as a purchasing partnership at (Sana?) is a massive package of products, services and processes and always strongly focussed on the client, hospital. And client, hospital means patient/ always patient, hospital, staff, economic efficiency. #00:09:38-8#

I: Yes, so I am a long way from distribution, but what I have experienced, from the hospital perspective, is actually that the user reports uhm a requirement uhm or any product or would need it and with that, he then goes to his er purchasing agent. And he then finally deals with it by way of a tender. Or depending on how the establishment is structured, to procure the product. #00:10:10-1#

B: Mhm. #00:10:10-6#

I: And er does the purchasing agent then go via the/ if/ if this is an establishment, which is collaborating with him, does the purchasing agent pass this directly uhm to the (Sana?)? #00:10:22-4#

B: Well the process is normally a little different. I'd say if it/ if it goes well, the purchasing partnership is the one that is bringing the offerings to the client uhm, because hopefully the strategic purchasing agent is also so close to the sector that he knows ho the portfolio is changing, where new products are coming from. So it has to be/ has to be this way and, when you get to the innovative er areas uhm, in particular, I'd say, in heart medicine uhm er 3D-printing er/ er/ er/ in/ in Endoprosthetics. This is were often the strategic purchasing agents the high end strategic purchasing agents are, who/ who really know the portfolio really well. #00:11:09-8#

I: Mhm. OK, and who ultimately makes the decisions? Is it the strategic purchasing agent with er a team in the hospital in the background? #00:11:21-1#

B: It/ it er/ it depends. This depends again on the decision-making structure and the Governance of the/ the respective client. At (Sana?) we have a decision uhm er/ er/ er/ a/ a decision-making algorithm, which means there are three product categories. Some are the performance-sensitive ones. They are clearly categorised and decided upon by groups of medical experts. Then there are those, where advisory organisations, care are involved. But the decisions are still made by procurement. And then there is portfolio, which is only decided by procurement. For syringes you do not need a user. And the smallest proportion by now, one must say/ is the medically decisive proportion, which is becoming increasingly larger in the hospitals due to the commodities in this area. In (Gastroenterology?), even in Endoprosthetics, eighty percent of the products are standard products. Thus products, which have been established in the product lifecycle already for twenty, thirty years. (...) Thus sometimes one has a false impression as to how high the proportion of innovation is. #00:12:31-1#

I: Mhm. Yeah, yeah. Uhm I believe that we indeed have many questions. (...) Well uhm and of the responsibilities in the procurement decision-making uhm, what is

uhm the/ the breakdown between the operative procurement and strategic procurement and the users? #00:12:58-6#

B: Mhm. There is again a question of the/ of the structure, the hospital, a hospital partnership or a corporate group. In operative procurement, in principle at (Sana?), decisions are no longer made, because the products are defined as the portfolio in resolutions or in procurement. If there is a larger choice, by saying I now have three (guides?) in interventional cardiology and I can now select one, either for my portfolio or also, because I need various products to carry out an intervention, then you can do this. But it is not the case that the decision has to be made again from scratch in the hospital. Then, a purchasing partnership would also, I'd say, do a bad job, because part of the task, the part of the/ of the purchasing partnership is also to ensure the commitment to the sector, that is an important part. And this can / can only be made via resolutions, via a commitment, via commitment slots, this is what it is called at (Sana?). Where the hospitals then provide a clear commitment or, as said before, at (Sana?) - there are also others, whether that is a (BBT?) or also other hospital - where they say OK, this is the portfolio and that is it, dear user, this is available to you. #00:14:30-4#

I: Mhm. OK and these test runs uhm, which we know with the users uhm, they only take place with new product ranges// ? #00:14:41-3#

B: Exactly. // They only take place with new product ranges and there you must always think about what sort of product is this in the classification and which objective and questions do you want to use to assess a product? And depending on what you do, you also need different methods. If you put a (unintelligible) on the market today, then you can implant the thing and you can say, now I know what the visibility is like. But that's all. You don't have a single statement on evidence, on revascularisation or anything. This means that there are always questions you have to deal with properly. This is not always done, nor everywhere. So in Germany we have I'd say, despite all criticism/ when you watch hard but fair, this show, the understanding, how do medicinal products get onto the market, there is a lot according to the motto the proof of the pudding is in the eating. But not within the meaning of a responsibility of a/ of a responsible method, hypothesis or approach

of products on the patient. (..) So there we are still a long way to go/ er there we still have plenty/ how do you say now in neo-German? To do these/ the thing/ the things potentially more patient-oriented and safer. #00:16:01-3#

I: Yes. (.) Yes. (.) Uhm (...) when uhm such a purchasing decision uhm is made uhm, what are the factors influencing this? #00:16:18-2#

B: (...) When/ so, when uhm/ am I understanding the question correctly, what influences the purchasing decision// itself? #00:16:26-7#

I: Precisely. // #00:16:26-9#

B: Well in the end uhm that depends on the philosophy, one must say now, from the philosophy or from the criteria of the user or the decision-maker in Governance, for example in the purchasing partnership. Well, with us it is relatively simple. You always have the question of quality, (what is the ?) hardest evidence, plus economic efficiency. And, if you have comparable products, then the economic efficiency is the decisive factor. Of course, now, depending on which product we are talking about, the question of lifecycle, process flow, staff orientation, switching costs/ these are all issues which of course are also considered when talking about product change. #00:17:12-8#

I: Mhm. Yes, okay. (.) Uhm (.) Exactly the next question, whether there are different situations during the decision-making uhm finding, I already picked up uhm the issue of switching costs? // Uhm. #00:17:29-6#

B: Precisely. // And also, as I mentioned, depending on the product. Is it a simple portfolio. I need to have a quick look, if it uhm/ if/ if it was included (..) with what I sent. (8) (intelligible) (...) (That is the Sana Cross Check?). Here you again you have/ in the (Sana Cross Check?) there again is the/ (.) an overall philosophy, as to what is the concept, what does it mean? And the activity fields are in principle uhm the packages for the individual portfolios, which are behind it for the client. (.) That can be done quite well there I believe/ (unintelligible) (I am looking for a/ but that is/?) (13) no all/ but one brochure is missing here. As mentioned, the/ the/ the question

what it is influenced by, these are the issues as I already said. On the one hand the portfolio itself, but also many questions, of course. For example of course, if you have a capital good, then you must look at the complete issue of lifecycle, also at the issue of investment plus consumables. That is also a deciding factor. So there is/ there is/ that is also depending on the product group, depending on product or portfolio. Incidentally also, if you look at your products, it is of course of enormous relevance in the post-hospital area. If you have products in the post-hospital area, whether/ whether regarding the issue of incontinence, whether urinary incontinence, whether it is (unintelligible) care, whether it uhm is specific wound care uhm, these are indeed products which must be used I'd say as a rule sustainably, post-hospital. Otherwise you always have the issue of the revolving door effect and then you don't need to bother. So again and again (..) / #00:19:36-4#

I: Precisely. // #00:19:38-1#

B: Really? #00:19:38-6#

I: Mhm. #00:19:39-2#

B: (...) . Yes. #00:19:43-4#

I: Yes and so/ You said that there is a simpler or a/ a yes/ a difficult/ or yes how should one say, more complicated product range uhm, how is this determined? Well you already touched upon the issue of commodities and I would assume, the risk for a patient, in other words, what can happen if a product fails #00:20:08-9#

B: // Precisely. // #00:20:10-5#

I: in the extreme case// to the patient? #00:20:12-5#

B: Yes exactly. That/ still er/ er happens. So I determine it with er products, uhm er, which are being used in the area where you are. A, let's say, conventional dressing is a simple product, specific wound care is either in area two or three. Depending on what we are talking about. Uhm hydrocolloid I now would rather place into two

and then there are, however, products, which are more to be placed in three. (..) There is/there is a uhm/ a/ an allocation we made, which we made for (Sana?) also considering evidence, there are points given, quality, risks. This results in a number and this provides an allocation. And this allocation was again, I'd say, readjusted manually by looking at it again and saying, can this be correct or not? Where one said, it is mathematically correct, but it does not work. #00:21:14-5#

I: I mean logical, // it is, yes/ #00:21:15-5#

B: Really? Mhm. // Exactly. #00:21:16-0#

I: Mhm. Okay. (5) Mhm. We also got that. (..) Are there uhm/ can you think of other factors uhm, which influence the decision? #00:21:32-8#

B: (...) Er which influence the decision eh for/ eh for what? For the use of a product or/? #00:21:42-2#

I: For the procurement and the subsequent use. #00:21:45-4#

B: Well but as/ as I have said. So these are uhm er quality, handling, so all the points I have mentioned (...) right to/ to the economic efficiency. And quality is of course also measured in terms of handling / er at/ at/ at the/ at/ er at the handling, the process. And depending on the product, there is also a question (..) in terms of er of evidence, does it matter? These are the minority of products. For the minority of medicinal products there are/ going more in the area of implants, otherwise they are more/ they are criteria of quality, created according to DIN standards or on future er uhm/ er approved er/ er in the MDR area er or further approval studies. #00:22:38-4#

I: Yes and from your perspective what role does the brand uhm play? Well I have/ I'd say the hard facts, such as er quality, such as handling, such as price uhm, such as the uhm/ yes ultimately economic efficiency. And uhm also, if you think about the issue of commodities, capital goods, what/ what role does the brand play? #00:23:04-8#

B: I believe that the brand is playing an increasingly er more minor role and this is due to er changed framework conditions in the hospitals er. With division of work, employees are spending significantly less time in the hospital. The product changes er are higher from the past and from the heterogeneity. Uhm er in the past er/ er, everyone knew what/ what Fixomull is or certain (brands?) er, I'd say also in wound care uhm. The products are becoming more comparable in terms of quality and therefore the brand itself is of less importance in this area. I'd even say that in ten, twenty years, medical professional will actually know products that are not high end and there will be many more unbranded/ I'd say unbranded goods. #00:23:54-2#

I: OK, would you also say that it applies to the case when the strategic purchaser, for example, decides on commodity products and he, for example, has the choice of three similar ones. That, because he is ultimately not the user, he is more likely to say, I'd rather play it safe and buy the product uhm, (.) with the brand I know? #00:24:21-1#

B: So the prudent purchaser or the purchasing partnership er will er/ will do this. Also, if they, let's say have a simple glove, simple within the meaning of commodity in the terms of an examination glove, when they rather go for the er/ for the/ for the/ they will rather go for the brand er, because they simply say er, this is a product that has been proven for many years. Unless they know that meanwhile, the unbranded/ unbranded packaging or uhm er, let's say contains a product that was also produced by the brand. Er, because it / by now it is also transparent, especially with gloves for example, how many gloves are coming out of a machine er/ er and often only the packaging is different. (.) But it is correct, if in doubt, they are more likely to depend on this and say, know, look at this, this is a tried-and-tested product er, syringe uhm er (.) a/ a dressing, the quality is right uhm er and is good. But as mentioned before, this will disappear within the next few years. I am fairly sure/ even more. It is already/ it is already quite/ it has already changed a lot, the brand awareness. #00:25:30-7#

I: And this also applies to high risk products? Because I could also imagine in this area, that a purchaser says, I'd rather play it safe and uhm/ e.g. in the case of a commodity. I don't want to deal uhm for (hundred?) in detail #00:25:47-6#

B: // Mhm. #00:25:48-4#

I: with this, save my time. And on the other hand, in the case of high-risk products, say, I rather play it safe. #00:25:55-6#

B: Mhm. Uhm in that area er, you are usually working less according to brands, but according to creditors. In other words, where the creditors are in principle the brand. So let's say, if you are dealing with pacemakers, you are dealing with / with/ you are dealing with the major ones, you are dealing with Medtronic, with Boston, with Biotronik or what they are all called uhm. (..) There, you can/ there/ there actually are/ there are no bad products. There are few/ there are products with more evidence and with less evidence. But not different. Now, one can argue about the topic (MDR?). It could also have a positive effect, that there will be another healthy selection. Namely, that everything where you say it is really no longer needed is removed. (.) I hardly think that/ at least that the German mentality, I'd say/ that in the areas of (..) / uses a completely unknown foreign creditor, who (.) let's say was on the market in Japan, and who is offering the pacemaker for half the price, (.) that a hospital says, yes, I do this, (.) / if, of course, the same is providing studies, approval, CE, then it will become difficult. They have to/ then it could be the case that someone says, well (.) these are the hard facts, but no, this is not yet the case in (.) / I would not perceive this to be the case in our market at the moment. #00:27:33-1#

I: Mhm. OK, uhm where do you see the importance or insignificance of a brand in the decision-making process? #00:27:42-7#

B: (6) Well, what is a brand ultimately? Ultimately, a brand yes uhm/ uhm is supposed to give confidence uhm. I'd say the biggest brand we have on the market/ we ourselves have worked for Beiersdorf. If you think of/ of (BSN?), of Nivea, no you still can't get this off the market today, the brand (.) uhm. It is well-known by everyone, everyone knows what it is and trusts the quality. But there are (..) / there are few / brands which/ where the product is the brand in the hospital sector. (...) There are brand manufacturers. (.) There are brand manufacturers uhm. If you now

stay with/ with HARTMANN, I believe, everyone would say with HARTMANN we associate emphasis on wound care, also as brand manufacturer and incontinence (..) I believe many would not be able to name many products with a brand, no longer. #00:28:57-5#

I: Mhm. (.) Well this is/ yes this is exciting. This is also reflected by literature in the entire B2B, i.e. in the business sector, that the corporate brands uhm are the/ the strong brands. #00:29:09-8#

B: Mhm. #00:29:10-3#

I: (And less so the individual products?) and that therefore from the point of view of the company and marketing the investments are also worthwhile er to strengthen the umbrella brand. #00:29:19-6#

B: //Yes . #00:29:20-0#

I: So// in our case, to er push HARTMANN and less the individual product brands. #00:29:25-8#

B: Ab/ absolutely. Absolutely. Yes. #00:23:29-2#

I: Yes. Uhm from your perspective, why do you trust a brand or perhaps another brand less? #00:29:36-7#

B: (7) Why I trust a brand? Well, there the issue of safety er/ er safety and/ and er safety er and consistent uhm er (.) quality. I'll give you a/ an example uhm, I think, for instance, that Motel One is by now a brand, and established very quickly in Germany. What assurance does Motel One give me? I go there, I always enjoy consistent quality. I know what to expect when I go to the room. I know that when I go to reception/ er and a good er/ er cost-performance ration. And (...) makes it calculable. A brand makes (..) / makes it calculable and predictable. #00:30:26-8#

I: Mhm. Yes (..) uhm (..) are there other factors for you uhm, that influence a brand?
#00:30:43-1#

B: (5) Other factors that influence a brand? #00:30:51-6#

I: Well the visual appearance of a brand? #00:30:55-2#

B: (Telephone rings) (I must check?). (6) (on the phone) Can I call you back, I am still in a meeting. (..) Yes, I will call, yes all clear, talk to you soon Jens, bye. (7) Well, clearly, uhm the visual appearance is an important part and if you look how/ it is quite funny, if you look how Nivea er/ er has changed. One thinks/ one always thinks that the visual appearance you see today, is that of twenty years ago. And when you look at it, it has changed at least fifty times and, if you look at the old one, you hardly recognise it. You think if it looked like that, you would no longer buy it. So the visual appearance is connected to the times in which we live, in terms of design and style. And it must also (..) fit into the era. For instance I do believe that this is an important (..) aspect. And of course there are products, (..) if you think about the white series of/ of Aldi, you simply recognise it only, because you recognise it. (..) Whether it is nice, I would not say. It probably doesn't need to be, because what it contains somehow does not need good, nice packaging, the filter papers. (..) Yes (...) but visual appearance is er uhm (...) is crucial or/ or/ or does something to/ to/ to the buyer or the person who trust a brand. (..) And you keep on recognising it, I mean it is/ by the way, hospitals have never managed this, this/ this idea that/ that patients uhm I'd say HELIOS has many hospitals in Germany and at some point there was this idea that one recognises a hospital and says one goes into a HELIOS clinic, like Aldi (..) like (...) / I was going to say the Cafés to Go, Starbucks and whatever they are all called. #00:33:07-0#

I: Yes Franchise. #00:33:08-0#

B: We know/ we know them all and we don't just go to any coffee shop, we go to Starbucks or yes, who likes to drink a coffee. And in the medical field (..) most people only know that this is clinic ABC, but who the responsible body is, (..) they have no

idea. They have no/ the brand awareness in this area (..) / does not exist. #00:33:36-7#

I: What/ what do you think is the reason for this? 00:33:40-1#

B: (5|) I don't know whether this is purely a question of marketing, whether it is a matter of er/ er selling the product health, er hospital requiring different marketing. I could imagine that this could be successful. But this about financing again. I believe it would be necessary/ to/ to invest differently. #00:34:10-1#

I: Mhm. So in what form//? #00:34:12-7#

B: The issue// / that/ for example have a look whether this uhm/ what/ what er happened with quality management. An enormous amount is happening there, a lot of money has gone in/ money, effort, medicine in hard quality management, result quality in Germany. IQM and everything that is happening. Are the patients perceiving this? How does marketing happen? The patient leaves the hospital and says you can go there. For example, what one/ the/ this Motel One has created in recent years, in Germany/ (..) or for example, you can say, where there is such a brand, felt, I'd say, in clinics, for example in the ENDO clinic. The ENDO clinic in Hamburg, that's a brand. #00:34:59-2#

I: (..) But perhaps it is also the/ especially the visual appearance, because each er Motel One is designed similarly. #00:35:06-2#

B: All similar. // All the same. #00:35:07-5#

I: I uhm// I know the methods and don't see this with hospitals. #00:35:10-6#

B: (laughs). #00:35:11-8#

I: Each/ well and perhaps that is not at all feasible. #00:35:14-1#

B: // Well, no. #00:35:14-8#

I: To redesign// them all and that is/ uhm that would be unrealistic. #00:35:18-1#

B: But that's correct, if you would build such a chain from new, and it would somehow look the same/ this is absolutely right. (Are you looking?), this would/I am quite sure that this would have a great impact.(.) Mhm. #00:35:28-1#

I: Mhm. Exactly, we would be back to the issue of visual appearance. #00:35:30-0#

B: Yeah. #00:35:30-4#

I: And the perception of the brand// (unintelligible). #00:35:32-8#

B: Mhm. // It's exciting. #00:35:34-4#

I: Well, is there anything important in your opinion, what I should now, in respect of decision-making process in a hospital and the role the brand is playing there? #00:35:44-9#

B: (7) Well I believe that what you have just said, that er the/ the brand in the product (..) in the clinic (...) is not what is eh/ perceived. But rather (.) the brand identity, that the brand as a company is crucial. And the overall picture is shaped by products, culture, appearance, handling and integrity. Thus many, many issues, which go far beyond the product. There are companies that have good products, but they do not have a good/ have a good/ are not a good brand. And there the products are being purchased perhaps because one has to buy them. And when you don't have to buy them, you don't buy them. #00:36:45-1#

I: Yes. #00:36:45-9#

B: (...) This, I believe, in the health sector, which is very/ which is already largely characterised by emotions, which in other industries, I would say, is not so strong, I believe (..) / does play an important role. #00:37:09-3#

I: And emotions due to the fact that it is about patients? #00:37:13-4#

B: Mhm. #00:37:14-2#

I: About health, about/ about/ often yes, about life? #00:37:17-3#

B: Yes and where uhm/ uhm I'd say, where also uhm/ go into a hospital and somehow there are a thousand people working together every day. (4). Plainly this is the service sector, not a small practice. A service sector, where many people (.) are dealing with health or with seriously ill people, that cannot be compared to er the service provided by Lufthansa, although one likes to make comparisons. It is a different matter when I walk through the aircraft in the evening, perhaps there are a couple of tired passengers, er but no terminally ill passengers. This is indeed a difference. And I believe that it is misjudged and that, in our health system per se, it is still (..) also about a commodity (..) where it is about heart and soul (laughs) (..). That's how it is, isn't it? #00:38:22-4#

I: Mhm. Yes. (..) Yes, it is. Yes (..) On my part I am done with my questions. Unless you still have// something (still open?) #00:38:39-4#

B: And I'd say that the focus// of your work is now (.) / is/ is again/ is/ or rather from the approach, is now what? #00:38:47-2#

I: The B2B brand sensibility #00:38:49-7#

B: // Yes, okay. #00:38:50-5#

I: In respect of// uhm German hospitals. So in which uhm situations/ to show on the one hand, what is the er structure, how do German hospitals procure, uhm and in which situations do I have a special er brand sensibility, in which situations er maybe less? We already had the topic with// commodity with/ #00:39:13-4#

B: (phone rings). // (Sorry?) (...). (on the phone) Hello Mr (Burkhard?) can I call you back in fifteen minutes? (..) Alright, pleasure, yes, speak to you soon, no thank you. Bye. #00:39:30-2#

I: (5) Exactly, brand sensibility in relation to the uhm decision-making process (.) we already spoke about this, difference uhm between commodity and capital good, that I have a variation in brand sensibility uhm. The topic of high-risk product versus uhm product with lower uhm risk, that these already are parameters. #00:39:58-6#

B: Mhm. #00:39:59-0#

I: Uhm precisely. The topic of umbrella brand. #00:40:04-0#

B: // Mhm. #00:40:04-7#

I: Corporate brand// uhm as decisive #00:40:06-7#

B: // Is/ mhm (affirmative). #00:40:07-8#

I: uhm// factor. And I generally believe, what is also an important point connected to the corporate brand, that brand perception is decreasing, and I am looking at this of course from a company perspective and as someone who is working in the area of marketing by a medical device manufacturer uhm. That it is less profitable to uhm invest in individual brands, #00:40:32-2#

B: //Yes . #00:40:32-9#

I: than uhm// in the/ in the umbrella brand. #00:40:35-0#

B: Yes. #00:40:35-5#

I: And uhm, and when I consider our marketing at (unintelligible), we are doing exactly the opposite, for instance uhm. We are trying to establish blockbusters er brands. With (unintelligible), with (unintelligible). #00:40:48-2#

B: // Mhm. #00:40:49-1#

I: With (unintelligible) // now in the area #00:40:49-6#

B: Mhm. #00:40:49-9#

I: uhm wound and we are trying to dock on to the commodity products. However, our divisions uhm incontinence, wound management, personal health care uhm and risk prevention are running completely detached from each other. So, even if I think in terms of corporate structures, marketing of the individual areas should also be more uhm interlinked. In our local markets we/or in Germany at least we try to follow the trend a bit, because this is such a nice marketing word, the customer journey laughs). #00:41:26-3#

B: Mhm. #00:41:27-1#

I: So the client now buys, for example, not only wound products, but he also potentially deals with incontinence, with uhm the topic of risk prevention. #00:41:36-1#

B: Mhm. #00:41:36-4#

I: When I now think of hospital, it does not make a lot of sense er to direct it into channels like this. #00:41:45-2#

B: Uhm I believe er/ er do you have a/ a er/ or I would divide the/ the perception like/ like this. However, this is also because distribution is organised with reference to the product. #00:42:01-5#

I: Precisely. // #00:42:02-1#

B: And there are few holistic approaches in marketing. This, for example, is important to me in procurement. Our portfolio is one, but I have/ it is a concept and

this concept is a solution, which must be understood and sold. This does not mean that everyone takes everything, but the brand (Sana?) procurement and logistics, from one provider and hand in hand. This is a complete product that's what has to be lived and networked with culture and with other/ I'd also say, er uhm by/ by/ by people. Incidentally, I believe er, that HARTMANN er as far as I can see, the/ the brand is actually weak. The company/ corporate brand. HARTMANN is associated with swabs, compresses and abdominal wipes. I am just saying it. And a few wound care products and a little bit of incontinence, but not as a company, what/ that I would choose the company. (..) So as a strategic starting point for alignment (.), I would absolutely divide it. #00:43:16-1#

I: Yes, and we are already taking small steps in this respect. Well, if I consider, a few years ago, even the sub uhm segments were even still separated. So I advertised the (unintelligible) specially then um the (unintelligible) for example, the fusing. Uhm, and that was my previous project with (Juliane Diessner and Ingo Meissner?) together, when we said that we have to offer the wound portfolio as a whole, with a strong message, to avoid the revolving door effect. And I mean, we have that with the concept of hydrotherapy, with er two products, a simple uhm concept, which is easy to apply in hospital and also uhm in the outpatient sector even for the non-specialist uhm. Yes, a/ a good basis, exactly. #00:44:09-2#

B: Mhm. #00:44:09-7#

I: And yes, but I just have the feeling that, as a company, we are currently making small steps. #00:44:16-3#

B: Well, it is difficult, when you consider er uhm the style er/ I still saw it in the/ your er party er/ if you consider the development, it is/it comes from one product, it originates very clearly from one product, and I'd say, from the expansion of the portfolio. #00:44:34-1#

I: Precisely. // #00:44:34-4#

B: Uhm (...) (unintelligible) / and that's true (unintelligible) / these are/ it also became clear to me, as in/ as in your questioning uhm, I find/ I also find an interesting approach to deal with this again and incidentally, uhm probably even more with medium-sized company. I'd say the giant companies, the Johnsons of this world, the Medtronics uhm, they are set up. They are set up (.) so. (..) If you don't deal with it, you become replaceable or you are also more replaceable. #00:45:10-9#

I: Precisely (..) yes. #00:45:13-7#

B: An interesting thought. #00:45:14-9#

I: Mhm. So there are/ in the consumer sector there are companies, who define especially this brand value, that is to say a/ a brand personality for the entire brand, and recruit their staff precisely in accordance with this brand personality, i.e. what values, what characteristics does the brand have. #00:45:33-9#

B: // Mhm. #00:45:34-6#

I: Thus// simply all around these values right up to the client. #00:45:38-5#

B: // Mhm. #00:45:39-2#

I: er to define uhm and to experience. This is the/ the #00:45:42-6#

B: // Mhm. #00:45:43-3#

I: extreme// form simply of/ of brand value, visual appearance uhm, what am I conveying and yes/? #00:45:49-9#

B: Mhm. #00:45:51-2#

I: And in this respect, I believe, we are simply still very heterogeneous. #00:45:54-3#

B: Yes (.) now who is/ (I have to say?) / is uhm/ #00:45:59-1#

I: Mr (Jüle?)? #00:45:59-6#

B: He is here// or is he gone? #00:46:01-1#

I: No, he was// er dismissed in/ er December. #00:46:04-1#

B: Mhm. #00:46:04-6#

I: And now we have the Britta (Fünfstück?) er. A lady is now running our corporation.
#00:46:11-4#

B: (unintelligible). #00:48:12-6#

I: Precisely. // #00:46:12-8#

B: Okay. #00:46:13-1#

I: Yes, and she has been here since January. #00:46:16-1#

B: Mhm. #00:46:17-4#

I: And yes, we are all curious. #00:46:20-5#

B: And which area does she come from? #00:46:22-3#

I: Uhm, from the healthcare sector. She previously was uhm, if memory serves, with Siemens and uhm she has already held various management positions there. I don't remember exactly which area this was precisely. #00:46:39-4#

B: Mhm. #00:46:40-1#

I: Has also temporarily worked in management consultancies. So she is/ has a very fast pace, very structured. What you simply #00:46:53-2#

B: // Mhm. #00:46:53-8#

I: uhm also hear now from the// first strategy meetings and uhm apparently also super quick in comprehension. Because when you've been in a management consultancy too, then/ #00:47:04-0#

B: Mhm. #00:47:04-7#

I: Then you've simply got what the ability to quickly understand, structure and realign information. And we are curious as to where the new direction/ whether there will be one. #00:47:15-4#

B: Mhm. #00:47:15-7#

I: And what it will look like// yes. #00:47:17-3#

B: Mhm. // These are always exciting processes. #00:47:19-5#

I: // Yes, totally. #00:47:20-6#

B: (unintelligible). // Times of change, yes. But this won't stop in the coming years. You have that too er/ we have er what we always do, I'd say illustrated on this colourful wallpaper. Thus, a uhm/ a change matrix, which has been continuously developed since 2015, getting new packages each year. Now it is being newly developed. Hopefully, the new wallpaper is arriving this month uhm (laughs), but structured a bit differently, as put together in 2015, 2016, 2017 and 2018 and in 2019 just uhm start up again. And actually, in 2020 the program, which we once planned, must be completed as a foundation, uhm er, but then of course in order to constantly, every year, develop the thing further, right? But these are change processes, they take five to ten years until they have been well established. That is/ #00:48:16-7#

I: (..) Yes. Yes and Mr (Jüle?) has already heralded quite a big change here uhm. #00:48:24-6#

B: Yes. #00:48:24-9#

I: Uhm one has to say so. There yes, the corporate culture in particular is changing a lot and now of course everyone is also a bit/ uhm yes waiting, in which direction are we going now? Are we going back to the old ways or is it a middle way or uhm yes how/ how are they shaping the corporate culture? #00:48:48-1#

B: Well, hopefully one, that uhm er goes into a direction where the er orientation stays the same. It is always difficult, if there are er/ er/ er too frequent changes and if they are also very contrary, yes. It is always a bit of a shame and that is the downside uhm, of management changes, where for one thing er the turnover is too high. I always say that anything less than five years does not work at all. And actually, you need/ for big changes, you need five to eight years. (...) Thus (..) but er often CEOs or those in leadership positions and management, depending on profits expectations, are not given such time, this is always a great pity (unintelligible). #00:49:40-7#

I: Yes, that's true. Yes. (..) Good. #00:49:46-5#

B: And how/ how many interviews are you holding now? #00:49:49-1#

I: Mhm (thinking) I got four planned. #00:49:51-9#

B: Yes. #00:49:52-2#

I: This uhm today was the second and uhm then with a qualitative analysis, it is always encoding, the data, that's what it is called later, and uhm at the point when no further information is coming in, the analysis is completed. #00:50:09-1#

B: Okay. #00:50:09-4#

I: So it is not the same as with a quantitative analysis. #00:50:12-5#

B: Mhm. #00:50:12-9#

I: That I can say this is the total amount, I need a random sample x, so that it is uhm valid. #00:50:18-5#

B: Mhm. #00:50:19-1#

I: And this does not apply to a qualitative analysis. #00:50:22-1#

B: // Mhm. #00:50:22-7#

I: And// that is why you take such a number and say #00:50:25-1#

B: // Mhm. #00:50:25-7#

I: then// I still do one more interview and look until I get no more new information. #00:50:30-4#

B: Yes. #00:50:31-3#

I: And then uhm yes/ and that is also a bit of a repetitive #00:50:34-4#

B: // Mhm. #00:50:35-3#

I: Process, // because each time you receive a bit more information again, depending on the questions, #00:50:41-1#

B: // Mhm. #00:50:41-8#

I: has new// information, which/ yes, which initiate new thoughts uhm #00:50:45-7#

B: // Mhm #00:50:46-5#

I: // and exactly/ #00:50:48-3#

B: Mhm. #00:50:48-9#

I: Yes. #00:50:50-1#

B: But in terms of method, a very good/ a very good approach. I uhm also like to do this in new organisations, with new staff and as a rule, after twenty or thirty good meetings, it is also possible for me. And I also do it like this, I also structure it like this, you only need to cluster it. I'd say, pull out everything and cluster. #00:51:11-7#

I: Precisely. // #00:51:12-5#

B: Er/ er so that you have operationalised it and then go from the operationalisation to the quantity. Eventually, you see where it doubles up, I'd say horizontally and vertically. I always find it exciting to er/ evaluated it. I always used to do this at Bonn University, er, with a team of employees. And eventually, there are no longer any new findings. #00:51:34-4#

B: // Precisely. // #00:51:35-4#

B: There it is. // Yes. But that is quite good in terms of method. Mhm. #00:51:38-3#

I: Called the data saturation point. #00:51:40-3#

B: //Yes . #00:51:41-3#

I: Around the// uhm saturation #00:51:42-7#

B: //Yes . #00:51:43-1#

I: of the// / the data, yes. But it is also exciting. So that uhm/ for the first time in my life I dealt with the topic world view and philosophy and/ because the methods depend on the uhm world view. So, when I chose a methodology, it is normally the case that I think that the/ the truth and the/ the world is simply a construct uhm, everyone has his own perspective on this er construct, but there is no true or false.
#00:52:11-2#

B: Mhm. #00:52:11-9#

I: And people who are rather thinking that there is a true or false will make a quantitative analysis and say it is black or white. #00:52:20-6#

B: But that is er the exciting part. This is also er the case in uhm the medical sector. This absolute operationalising, this absolute measuring, er, exists er, I don't know, I think an Austrian, who has this/ this belief/ I think this book is called meaningless competitors. He has described it very well, this/ this/ belief in measuring and eventually we measure ourselves to death. Uhm (...) and then again this personal confidence, yes it has something to do with world view. And it is interesting, now that you are saying this, I think there were times when I was orientated more quantitatively er/ er when I said that must be exactly right (laughs). Uhm and when I turn thing the/ the/ the way that it also/ I'd say that you can easily calculate it and ultimately it is, however, not very useful. This is why by now I am with the employee/ we now have made such a (Sana Cross Check?) with question. I say, don't get obsessed about it. List the five questions posed by the patient when he is looking at a product and close your eyes, and simply list the five points. And if you ask one, two, three, four, five persons, then the five points correspond and don't really change. And I believe I have the confidence er, to work with this. But it is true, this also has to do with competence, with experience and then also with er/ with/ with trust er. Perhaps also, that one thing or another lines up will during the process. Also the fact (..), that you can er/ that you can actually tackle it again repetitively, right?
#00:53:55-1#

I: Yes. Yes, and I also believe that our educational system is characterised this way.
#00:53:58-6#

B: // Mhm. #00:53:59-4#

I: Then, if// I can measure it, it is correct and/ #00:54:00-8#

B: German. #00:54:01-2#

I: Yes exactly and #00:54:02-7#

B: // Grades. #00:54:03-2#

I: because// / when you were saying it like this, you #00:54:04-7#

B: (unintelligible). #00:54:05-0#

I: used to be quantitative. That applies/ applies to me as well. #00:54:10-3#

B: // Mhm. #00:54:10-7#

I: Actually// until I really got to grips with the subject. But I simply believe, because we are taught this way. #00:54:16-5#

B: Yeah. #00:54:17-1#

I: And, if you don't question it, I think, #00:54:19-5#

B: //Yes . #00:54:20-4#

I: you won't// change it. #00:54:20-8#

B: Er/ they come to the clinics and say, I have a top medical quality. I say this is not a top medical quality. Your patients are saying that they are not satisfied. They don't go home well taken care of, (unintelligible) happens and you still say the numbers

are right. What sort of quality measurement is this? Yet we say that we have measured everything correctly. #00:54:42-1#

I: Yes exactly. #00:54:42-4#

B: So. #00:54:42-9#

I: But we have not even questioned it. #00:54:45-0#

B: Yes. #00:54:45-4#

I: And er yes/ yes. #00:54:48-3#

B: Good. No, it's an er/ interesting/ interesting approach. #00:54:51-6#

I: Yes. Yes and I have also understood why (unintelligible) talking at cross purposes. Thus also in/ in discussions uhm, also professionally in general, when discussing topics, where you just notice that I cannot convince the person, perhaps because I simply do not have the factually measurable numbers. He wants to have black and white measured. #00:55:14-7#

B: Mhm. #00:55:15-3#

I: And I explain to him uhm, what white looks like, and this is how you simply have different views. #00:55:21-9#

B: Mhm. #00:55:22-7#

I: And, I you have a little knowledge of what makes people tick, you just have to adjust a little (laughs). #00:55:29-6#

B: Well, a crucial point uhm, er/ er, why discussions with medical professionals er on products often don't work. When a medical professional does not use a product. And I try to face this argumentation with objectivity, this may work if, in fact, the

factual reason is a factual reason uhm. There may be a completely different reason, the reason can be that I am just in a bad mood, that the field worker has annoyed me, that I experienced a problem with a product and that I am just afraid to use this product here, that it is a little/ hence there are totally different reasons causing this, I must also treat them differently, I first must understand what/ what is causing it. And this talking at cross purposes, sometimes I think, my God, people first try to understand the other person. When you have understood him or her, then you also have the answer and then/ then it is also easier to deal with the matter. So you know, if someone says I want to deal with the field worker, because you are now taking him away from me and then there is another product, I just don't want that now. I say, you know, now we are dealing with a totally different subject. (If I have?) understood who to deal with it, is another matter, but the solution is something different. This can only be another one. And I believe that talking about it takes you at least one step forward. So okay, (..) another cause. (..) Yes? But this is often/ is often underestimated. This is also this/ we also have this in the study programme here as main or subject, which we have initiated. The subject of changing perspectives, which is understood by others, to master changes well in or/ in/ in everyday hospital routines. This is the main problem. I say, sit down/ I always tell my colleagues. Sit in the other person's place, try to understand him or her, then it will be easier to find a solution. (..) At least to understand the solution/ the cause. You don't always find a solution. Perhaps it can sometimes be helpful when you can't find a solution. (...) Because if one of them insists that this is the case, then one can say, now we can argue, now there is perhaps, er, a governance in which I can expect them to do so. Or we find the compromise, that I say, now you do it. Perhaps next time you have/ uhm, er, you are the winner. There are/these are all, as you say, er agreements you can make. #00:57:49-2#

I: Precisely, yes. #00:57:51-3#

B: But this is uhm/ this is management and this also applies to products. #00:57:56-4#

I: Mhm. (.) Yes (...) good. Then, in any case, thank you very much. #00:58:06-1#

B: You are welcome. #00:58:07-2#

I: Pleasure. #00:58:08-1#

B: I am curious at the result (laughs). #00:58:11-1#

I: // Thank you. #00:58:12-3#

B: Wishing you// wishing you all the best. #00:58:15-4#

I: Yes, thank you. #00:58:16-3#

B: Much pleasure. Sounds interesting what you are doing. #00:58:18-3#

I: It is/ (.) yes, well, I am curious. It is always a step-by-step process, where you are a bit unclear what/what is coming. And uhm, when the data have been collected and the/ the analysis. So what are the results in general? What kind of conclusions do you come to when you superimpose the data on top of each other and er I'm looking forward to that now. #00:58:41-9#

B: Good luck. #00:58:43-6#

I: Yes, thank you. #00:58:44-7#

B: And above all, enjoy your work. #00:58:45-9#

I: Yes. #00:58:46-6#

B: That is important. #00:58:47-7#

I: Of course. #00:58:48-9#

APPENDIX 2: Colour labelling of transcripts

B: Well the process is normally a little different. I'd say if it/ if it goes well, the purchasing partnership is the one that is bringing the offerings to the client uhm, because hopefully the strategic purchasing agent is also so close to the sector that he knows how the portfolio is changing, where new products are coming from. So, it has to be/ has to be this way and, when you get to the innovative er areas uhm, in particular, I'd say, in heart medicine uhm er 3D-printing er/ er/ er/ in/ in Endoprosthetics. This is were often the strategic purchasing agents the high-end strategic purchasing agents are, who/ who really know the portfolio really well. #00:11:09-8#



Kristin

The strategic purchaser of the purchasing group needs to offer the products to the hospital, because he/she knows the market and the changes

Kristin

Tasks in the purchasing process

Kristin

Purchasing process

APPENDIX 3: Extract of data coding

A	B	C	D	E
RQ2:	Influence factors on decision-making			
Codes:	Product	Person	Supplier	Situation
Interview PS080219	Price influences the decision making	Personal preferences and philosophy	To whom else the supplier delivers products influence the decision making	The more suppliers offer, and the more information is available the more difficult a decision become
Interview PS080219	Product quality		The reputation of the supplier has an influence on the decision making	The more detailed/complex the product criteria are the easier it can become, because only a few suppliers will fit to the request and are able to offer
Interview PS080219	If the product quality and the service is good a higher price will be accepted		Reliability of delivery	If the decision-making process is easy or not is very individual
Interview PS080219	The required service depends on the product category		Delivery possibilities (short term)	Different situations for decision making are based on risk level, financial difference, the involvement and the available information
Interview PS080219	The more interchangeable a product is, the more important is the service and the additional support		service	How the decision-making power is allocated
Interview	The more interchangeable a product is		Sales manager of the supplier	Problem for alignment of all

APPENDIX 4: Description of first approach to the interviewees and cover letter

- The potential research participants were phoned by the researcher to establish an initial contact.
- The researcher introduced herself by name and explained the current situation of writing a doctoral thesis.
- The aims of the research were explained in the following way: The overall aim is to gain knowledge about how a brand can influence the buying decision-making process of a German hospital. Furthermore, information will to be generated about three topics. (1) what is in the buying unit of a German hospital, with the objective of identifying the key actors and the persons who are part of the buying decision process in a German hospital. (2) the influence factors on decision making, with the objective of exploring and analysing relevant parameters for decision making, which could have an effect on brand sensitivity. (3) insights into how and why brands influence the decision making of a German hospital, with the objective of identifying how and why certain parameters have an influence on brand sensitivity and purchasing decisions.
- After the agreement of participation, an appointment was arranged for the interview.
- With the invitation to the interview, a cover letter was sent to the interviewees, which is shown in the following.

Cover Letter

Dear Sir or Madam...,

Thank you very much for the pleasant telephone conversation and your agreement to support my research work regarding 'Business to Business (B2B) Brand Sensitivity - How do brands influence a German hospital's buying decision-making process.'

The expert interview with you will be the basis for my research and will deal with the following three main questions.

Research Question	Research Aim
<p>1) What is in the buying unit of a German hospital?</p> <p>Example Questions:</p> <ul style="list-style-type: none"> • Is there a buying unit in the hospital? • Who is a member of the buying unit? • Who selects the members of the buying unit? • What are the selection criteria for the members of the buying unit? • What are the tasks of the members? • Are the same people always in the buying unit? • When do the members differentiate? • How do they work together? • How is the responsibility shared? • How does/does not this have an impact on your job? • Does it also affect the decision making? 	<p>1) Identify who are the key actors who are part of the buying decision process in a German hospital.</p>
<p>2) What are the influence factors for decision making?</p> <p>Example Questions:</p> <ul style="list-style-type: none"> • How does the buying unit come to a decision? • Is it always the same process? • What affects your decision? • Are there different situations for the decision making? • Are there different circumstances for the decision making? • Why do you perceive these situations as different? • Does that influence the way that you decide? • Which kind of product categories do you buy? • Is the decision made for all categories in the same way? • What other factors impact/or not on your job and decision making? 	<p>2) Explore and analyse relevant parameters for decision making, which could have an effect on brand sensitivity.</p>

<ul style="list-style-type: none"> • How do the factors impact? • Why do the factors impact? 	
3) How and why does a brand influence the decision making of a German hospital?	3) Identify how and why certain parameters have an influence on brand sensitivity and purchasing decisions.
<p>Example Questions:</p> <ul style="list-style-type: none"> • What role does a brand have from your perspective in the decision-making process? • Why is a brand important/unimportant for you in the decision-making process? • Why do you trust a brand more than/as much as/less than other unbranded products? • What was the last brand you bought? • Why did you buy this brand? • How did you distinguish it from other brands? • What other influences or factors impact/or not? 	

As discussed, the participation in the interview is voluntary and you can end the interview at any point of time.

To ensure your anonymity, the confidentiality of your data and the declaration of consent regarding the process sequence, you can find the non-disclosure agreement in the attachment of the e-mail.

If you agree, I will bring the document with me to the interview and ask you for your signature. If there is any need to change anything, please let me know.

I am looking forward to the interview with you very much and I am extremely interested in your consideration of the topics from your perspective.

Kind regards,

Kristin Kaminski

APPENDIX 5: Non-disclosure agreement

During the pre-interview appointment, the interviewees were again informed in person about the goal and purpose of the research, the voluntary participation, the interview process and data analysis, the confidentiality and anonymity. The following non-disclosure agreement was signed by both parties.

Non-disclosure agreement

1. Goal and purpose of the research

- The interviewee has been informed about the goal of the research. Questions, objectives and research problems have been explicitly communicated.
- The purpose of the research has been communicated sufficiently.

2. Voluntary participation

- The interviewee has been informed by the researcher that the participation in this research is voluntary. It has also been explained that at any time the interviewee can request the termination of the interview.

3. Interview process and data analysis

The researcher is permitted to apply the following research steps:

- Interview: voice recording of the interview is permitted.
- Transcription: the researcher is permitted to transcribe collected data in respect to point 4 and 5 of this agreement.
- Transcription approval: the researcher is permitted to use the research transcript for the next process steps and for the data analysis to produce conclusions.

4. Confidentiality

- All data concerning the research, in any form, is stored on a dedicated, password secured external hard drive. Access is only possible for the researcher.
- After finishing the research, the data will be kept confidential on the same hard drive in a secure location.

5. Anonymity

- At no time will names or clues to participants be stated in any official document (e.g. paper, doctoral thesis). The anonymity of the participants is of the utmost concern for the researcher.

6. Information regarding data protection

Under Data Protection legislation you have the following rights:

- to request access to, and copies of, the personal data that we hold about you;
- to request that we cease processing your personal data;
- to request that we do not send you any marketing communications;
- to request us to correct the personal data we hold about you if it is incorrect;
- to request that we erase your personal data;
- to request that we restrict our data processing activities (and, where our processing is based on your consent, you may withdraw that consent, without affecting the lawfulness of our processing based on consent before its withdrawal);
- to receive from us the personal data you have provided to us, in a reasonable format specified by you, to another data controller;
- to object, on grounds relating to your particular situation, to any of our particular processing activities where you feel this has a disproportionate impact on your rights and freedoms.

Interviewee:

Date: _____ Name: _____

Signature: _____

Researcher:

Date: _____ Name: _____

Signature: _____

APPENDIX 6: Interview guideline

Interview guide for semi-structured interviews

(Based on Saunders, et al, 2016)

Interviewee:

_____	_____	_____
Name	Title	Profession

Age		
_____	_____	_____
Gender	Address	Phone number

I. Preparation Phase: (5P's > prior planning prevents poor performance, Saunders, et al., 2016)

- Initial personal call/meeting with the interviewee ☐
 - Introduction about the researcher, the research topic and the planned interview
 - Make an agreement on a face-to-face interview, audio-recording, the location (quiet place without interruptions), the date and time, length of time for interview and time of appointment
- Send basic documents and research questions to the interviewee ☐
 - Cover letter
 - Non-disclosure agreement
 - Illustration and short explanation of the researcher's conceptual framework
 - Overarching questions
- Checklist before the interview ☐
 - Is your dress code appropriate for the interview?
 - Is your note pad and pen packed and is the pen working?
 - Is your smart phone fully charged and working to record the interview?
 - Do you have your interview guide prepared and available?
 - Are the documents DBAIP (Interview protocol) and DBANDA (non-disclosure agreement) ready and prepared?
 - Quiet and suitable location to conduct interview without interruptions.

II. Aspects to be considered during conducting interviews

- Nature of questions, method of questioning, language
 - Conduct the interview in German
 - Use open and non-leading questions: how, why, what do you think about? How have you experienced...? Please describe..., etc.
 - Get the interviewee to tell you their background and training.
 - Ask what makes them tick or motivates them
 - Ask the interviewee what are the big issues in the purchasing area
 - How has it changed in recent times what do they see the future as
 - Use only one thought per question, be specific in questioning, less generic
 - Focus on analysability > can you use that from what is being answered?
 - Keep your focus on the research questions => they need to be answered afterwards.
 - Expect unclear responses and be prepared to clarify them and to question more deeply
 - Behave neutrally in gestures, posture, and tone of voice > preventing any bias
 - Attentive listening for building understanding > do not interrupt
 - Summarise responses/ test understanding > avoid a biased/incomplete interpretation
 - Remain polite and not irritated > in cases where a participant: responds with yes/no answers or with repeated and non-focused responses, reverses the interview, criticises continuously, or becomes upset and impolite
 - Use the note pad for immediate and arising thoughts and connections of variables that the audio-recorder would not record
 - Ensure that the location of the interview, the date and time, conditions of interview, informant background, and the individual impression of the interview are recorded directly at the interview or afterwards

III. The interview

(1) Introduction of each other, small talk, etc. ☐

(2) Points and ethical issues to be clarified before the interviews with the interviewee:

- Voluntariness of the participation ☐
- Right to refuse answers and to withdraw from statements ☐
- Research problem and current status of the research ☐
- Research aim in context of provided research questions ☐
- Interview procedure and the subsequent analysis process ☐
- Issues of anonymity and confidentiality ☐

(if requested, change organisation's name, location, and name of interviewee)

- Confirmation about voice recording of the interview by smart phone ☐
- Briefing about the possibility to decline or leave the session ☐
- Further questions and remarks ☐
- Transcripts to be sent after the interview to the interviewee ☐
- Transcript changed if needed ☐
- Confirmation to use the data/information ☐

(3) General questions to assess the knowledge of the interviewees

- What is your job title?
- What is your professional background?
- How did you move into the job?
- What is your job role?
- Can you please explain your profession in detail (daily tasks)?
- Are you involved in buying decisions?
- What opportunities do you have?
- What restrictions/limitations do you have?
- What are the big issues in the purchasing area?
- How has it changed in recent times?
- How do you see the future?

A) Buying unit of a German hospital

Target: Identify who the key actors are that are part of the buying decision process in a German hospital.

- Is there a buying unit in the hospital?
- Who is a member of the buying unit?
- Who selects the members of the buying unit?
- What are the selection criteria for the members of the buying unit?
- What are the tasks of the members?
- Are the same people always in the buying unit?
- When do the members differentiate?
- How do they work together?
- How is the responsibility shared?
- How does/does not this have an impact on your job?
- Does it also affect the decision making?

B) Influence factors for decision making

Target: Explore and analyse relevant parameters for decision making, which could have an effect on brand sensitivity.

- How does the buying unit come to a decision?
- Is it always the same process?
- What affects your decision?
- Are there different situations for the decision making?
- Are there different circumstances for the decision making?
- Why do you perceive these situations as different?
- Does that influence the way that you decide?
- Which kind of products categories do you buy?
- Is the decision made for all categories in the same way?
- What other factors impact/or not on your job and decision making?
- How do the factors impact?
- Why do the factors impact?

C) How and why does a brand influence the decision making of a German hospital?

Target: Identify how and why certain parameters have an influence on brand sensitivity and purchasing decisions.

- What role does a brand have from your perspective in the decision-making process?
- Why is a brand important/unimportant for you in the decision-making process?
- Why do you trust a brand more than/as much as/less than other unbranded products?
- What was the last brand you bought?
- Why did you buy this brand?
- How did you distinguish it from other brands?
- What other influences or factors impact/or not?

(4) Any other topics, remarks, or comments

- Do you have any other topics, remarks, or comments that were not covered but you think are of importance for the research?
- What would you recommend for my next interview?
- Any further remarks or comments for the study?
- Do you have any questions you would like to ask me?

(5) Thank you for your time and answers.

IV. Closing steps

- Transcription process follows the interview ☐
- Complete the document DBAIP (Interview protocol) ☐
- Sign document DBANDA (non-disclosure agreement) ☐

APPENDIX 7: University principles

(<https://www.glos.ac.uk/research/pages/research-ethics.aspx>)

1. Primary responsibility for the conduct of ethical research lies with the researcher.

Where applicable, professional codes of conduct of external organisations take precedence over the university's expectations and requirements for the conduct of research, although in most cases final approval of research projects remains with the REC.

2. Researchers have responsibilities:

- towards research participants (including themselves): to ensure as far as possible that their physical, social and psychological well-being is not detrimentally affected;
- towards other researchers: to avoid, wherever possible, actions which may have deleterious consequences for other researchers or which might undermine the reputation of their discipline.

3. Research should be based, as far as possible and practicable, on the freely given informed consent of those under study.

The researcher should:

- explain to participants the aims, nature, conduct, funding, duration, purpose and consequences of research, and how results will be disseminated;
- give due consideration to the power imbalance between researcher and researched, and the right of participants to refuse participation at any time;
- explain to participants the extent to which they will be afforded anonymity and confidentiality, and their option to reject data-gathering devices such as audio recorders etc;
- discuss potential uses of data with participants and obtain their agreement;
- give due consideration to the interests of any 'gatekeepers' where access is gained via a 'gatekeeper';
- where research participants are young children or other vulnerable groups, consult relevant professionals, parents/guardians and relatives, and attempt to obtain informed consent of participants, their parents and those who are *in loco parentis*;
- anticipate and guard against any possible harmful consequences of research for participants.

4. Researchers should endeavour, wherever possible and practicable, to avoid the use of deception.

Any researcher considering deceptive methods must seek approval from the Research Ethics Committee. Covert research should be a last resort.

5. The anonymity and privacy of participants should be respected and personal information should be kept confidential and secure.

Researchers must comply with the provision of relevant Data Protection legislation. While taking every practicable measure to ensure confidentiality and anonymity, they should also take care not to give unrealistic assurances or guarantees.

6. Specific approval from the Research Ethics Committee is required for:

- research which involves biomedical or clinical intervention;
- deceptive research where the investigator actively sets out to misrepresent themselves;
- certain classes of covert research;
- all research where participants are under 18;
- research into sensitive topics;
- research involving vulnerable groups.

research ethics form

7. University of Gloucestershire 'Clinical Trials' Insurance

The following research conducted within the United Kingdom is automatically covered:

- questionnaires;
- venepuncture;
- measurements of physiological processes;
- collections of body secretions by non-invasive methods;
- intake of foods or nutrients or variation of diet (other than administration of drugs);
- psychological activity.

APPENDIX 8: Standards and Operational Guidance for Ethics Review of Health-Related Research with Human Participants

(<https://www.who.int/ethics/publications/9789241502948/en/>)

1. Scientific design and conduct of the study

Research is ethically acceptable only if it relies on valid scientific methods. Research that is not scientifically valid exposes research participants or their communities to risks of harm without any possibility of benefit. RECs should have documentation from a prior scientific review, or should themselves determine that the research methods are scientifically sound, and should examine the ethical implications of the chosen research design or strategy. Unless already determined by a prior scientific review, RECs should also assess how the study will be conducted, the qualifications of the researcher(s), the adequacy of provisions made for monitoring and auditing, as well as the adequacy of the study site (e.g. availability of qualified staff and appropriate infrastructures).

2. Risks and potential benefits

In ethically acceptable research, risks have been minimized (both by preventing potential harms and minimizing their negative impacts should they occur) and are reasonable in relation to the potential benefits of the study. The nature of the risks may differ according to the type of research to be conducted. REC members should be aware that risks may occur in different dimensions (e.g. physical, social, financial, or psychological), all of which require serious consideration. Further, harm may occur either at an individual level or at the family or population level.

3. Selection of study population and recruitment of research participants

Ethically acceptable research ensures that no group or class of persons bears more than its fair share of the burdens of participation in research. Similarly, no group should be deprived of its fair share of the benefits of research; these benefits include the direct benefits of participation (if any) as well as the new knowledge that the research is designed to yield. Thus, one question for research ethics review to consider is whether the population that will bear the risks of participating in the research is likely to benefit from the knowledge derived from the research. In addition, ethically acceptable research includes recruitment strategies that are balanced and objectively describe the purpose of the research, the risks and potential benefits of participating in the research, and other relevant details.

4. Inducements, financial benefits, and financial costs

It is considered ethically acceptable and appropriate to reimburse individuals for any costs associated with participation in research, including transportation, child care, or lost wages. Many RECs also believe that it is ethically acceptable to compensate participants for their time. However, payments should not be so large, or free medical care or other forms of compensation so extensive, as to induce prospective participants to consent to participate in the research against their better judgement or to compromise their understanding of the research.

5. Protection of research participants' privacy and confidentiality

Invasions of privacy and breaches of confidentiality are disrespectful to participants and can lead to feelings of loss of control or embarrassment, as well as tangible harms such as social stigma, rejection by families or communities, or lost

opportunities such as employment or housing. RECs should therefore examine the precautions taken to safeguard participants' privacy and confidentiality.

6. Informed consent process

The ethical foundation of informed consent is the principle of respect for persons. Competent individuals are entitled to choose freely whether to participate in research, and to make decisions based on an adequate understanding of what the research entails. Decisions for children or adults who lack the mental capacity to provide informed consent should be made by an authorized surrogate decision-maker.

RECs should examine the process through which informed consent will occur, as well as the information that will be provided. RECs may waive the requirement of informed consent only when doing so is consistent with international guidelines and national standards.

While informed consent to research is important, the fact that a participant or surrogate may be willing to consent to research does not, in itself, mean that the research is ethically acceptable.

7. Community considerations

Research has impacts not only on the individuals who participate, but also on the communities where the research occurs and/or to whom findings can be linked. Duties to respect and protect communities require examining by the REC and, as far as possible, are aimed at minimizing any negative effects on communities such as stigma or draining of local capacity, and promoting, as relevant, positive effects on communities, including those related to health effects or capacity development. Researchers should actively engage with communities in decision-making about the design and conduct of research (including the informed consent process), while being sensitive to and respecting the communities' cultural, traditional and religious practices.