Doctoral thesis

The reputational landscape of medical device companies: A hospital procurement managers' perspective

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Abstract

Corporate reputation is one of the key intangible assets of a company. Previous studies clarified that it has strategic economic value, provides a competitive advantage and supports the purchase decision of customers. This study explicates and applies the 'many reputations' approach which offers a definition for explaining reputation in a specific context: Corporate reputation is defined as a relatively stable representation of a company based on attribute-specific judgement by a stakeholder group.

There is only limited research about corporate reputation in the healthcare supply chain context, and the reputation of medical device companies has only been investigated in the patient stakeholder group. Thus, this thesis explains the reputational landscape from the perspective of hospital procurement managers, the most important customer group for medical device suppliers, for the first time.

Following a critical realist methodology, medical device company reputation is conceptualized as a structure with antecedents, attributes, consequences and mechanisms. In a first empirical phase, an initial concept was derived from academic and managerial literature. This concept was then discussed in two interview phases with one manager of a group purchasing organization and eleven hospital procurement managers in Germany, resulting in explanations about the individual constituents of reputation and their interactions.

In the eyes of hospital procurement managers, medical device company reputation consists of generalized attractiveness, products, safety, transparency, services, customer focus, innovation, financial stability and responsibility. The reputational impression is caused by the hospital

procurement managers' experience, by medical device company representatives, by procurement networks, regulations and company characteristics. The reputational impacts are advocacy, purchase decision and the suppliers' performance. The study also identified important reputation influencers from outside the reputation construct and major internal reputation agents.

The findings confirm the research direction and support the 'many reputations' approach, that reputations are designed by the representation of a specific industry among specific stakeholders in a defined region. Based on the refined concept, academics can further examine the evolutionary nature of reputation and the reputation of related industries, among similar stakeholders or in other countries. Managers of medical device companies benefit from having a concise composition available to use for measuring, analysing and managing their company's reputation.

Keywords: corporate reputation, critical realism, Germany, hospital procurement, medical device company, medical device industry

Declaration of original content

I declare that this doctoral 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.

Any views expressed in this doctoral thesis are those of the author and in no way represent those of the University of Gloucestershire.

Signed: Holger Minning

Month: January 2020

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List of abbreviations

3D	Three-attributional, e.g. 3D printing
App	Application
B2B	Business-to-business
BME	Bundesverband Materialwirtschaft, Einkauf und Logistik e.V. (German association of materials management, procurement and logistics; includes expert group for hospital procurement)
BVMed	Bundesvereinigung Medizintechnologie e.V. (German medical technology association)
CE	e.g. Communauté Européenne (Label for products to confirm that they conform with EU requirements)
CEO	Chief Executive Officer
Corp.	Corporation, e.g. Danaher Corp.
CRM	Customer relationship management
CSR	Corporate social responsibility
DAX	Most important stock index in Germany with the 30 largest listed companies (Deutscher AktienindeX)
DMC	Doctor of Media and Communication
DREIC	Description, retroduction, elimination, identification, contextualization (Research strategy scheme)
DRG	Diagnostics-related group (System to classify cases in 467 groups for hospital remuneration)
DRK	Deutsches Rotes Kreuz (German non-profit organization)

EU ..... European Union

EU MDR ..... Medical device regulation of the European Union
(New regulation with extended registration procedures for medical devices; becomes effective on May 26, 2021)

Eucomed..... European medical technology industry association

FDA ..... Food and Drug Administration
(US approval authority for healthcare products)

femak..... Fachverband für Einkäufer, Materialwirtschaftler und Logistiker im Krankenhaus e.V. (German association of procurement and logistic managers in hospitals)

FMAC ..... Fortune magazine's Most Admired Companies (ranking)

GDP..... Gross domestic product

GDPR ..... EU General data protection regulation that became effective on May 25, 2018, and aims to protect personal data and regulates their processing

GE ..... General Electric, e.g. GE Healthcare

GMDN..... Global Medical Devices Nomenclature (agency)

GPO ..... Group purchasing organization (of hospitals)

IT..... Information technology

MBA..... Master of Business Administration

mHealth..... Mobile health (applications)

MRSA ..... Multi-resistant staphylococcus aureus
(aggressive bacteria that cause infections, mainly in hospitals)

N/A ..... Not available

NGO ..... Non-governmental organization

NVivo 11 ..... Qualitative analysing software

PDF ..... Portable document format
(file format; independent of software, hardware, or operating system)

PESO ..... Paid, earned, shared and owned media
(communication management model)

Q ..... Question

Q-sort ..... Interview technique aiming a ranking of statements or variables printed on cards

RQ ..... Reputation quotient (reputation measurement model)

SME ..... Small and medium sized enterprises

SWOT ..... Strengths, weaknesses, opportunities, threats (business analysis model)

TCO ..... Total cost of ownership (procurement approach)

TV ..... Television

UK ..... United Kingdom

USA ..... United States of America

VW ..... Volkswagen

WHO ..... World Health Organization

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1. Introduction and background

> 'Today we are in an all-out war for reputation.
> Our companies are battling, to an unprecedented extent,
> for our most vital assets: our own identities.'
>
> Miles D. White, Chairman & CEO, Abbott Laboratories
> (Fombrun, 2012)
>
> ---------- ----- ----------

The business environment has changed at enormous speed in the first two decades of the twenty-first century. The development towards a global economy, the international financial crisis, accelerating technological innovation and the increasing awareness of businesses' contributions to society have led to a paradigm shift in the management of companies (Parmar et al., 2010; Sequeira, da Silva, Ramos, & Syed Alwi, 2015).

After experiencing profit-driven corporate scandals like the ones at Enron and Volkswagen, stakeholders are most sceptical about corporations. They expect attention to ethics and transparency as well as fast interaction on equal footing, thanks to the permanent interconnectedness driven by digital media (Parmar et al., 2010). In this demanding situation, companies cannot rely on their strong financial performances alone, they need to leverage intangible assets to support their performance in volatile business and opinion markets (Fombrun & Low, 2011).

At the same time, corporate reputation, one of the most important intangible assets of a company (Hall, 1993), has experienced an explosion of interest in the managerial and academic literature (Barnett & Pollock, 2012; Helm, 2007). There is strong agreement among scientists and

practitioners with the early research of Hall (1992) that reputation is a core strategic resource which represents a sustained superior competence of a company and that it is one of the most important contributors to company success (Lee & Roh, 2012; Shamma & Hassan, 2009).

This strategic economic value of reputation is illustrated in the next section. It is worthy of being discussed extensively by managers and academics (Fombrun, 1996), and sub-sections 1.1.1. and 1.1.2 summarize the existing discussions from the past three decades. They are followed by a background section about the research field of this doctoral thesis: The current status of the medical device industry and of hospital procurement is given, and existing corporate reputation approaches in the healthcare context are provided. The first chapter closes with a section that gives the rationale for why this research about corporate reputation of medical device companies was conducted. The last section includes the description about the original value and the introduction of the research questions, and it ends with an exploration on the remaining six chapters.

1.1. The value of corporate reputation

Reputation value can be best described as the consequences reputation has on a company's stakeholder groups (Fombrun & Shanley, 1990). Table 1 lists the advantages of a positive corporate reputation. Its strategic economic value is expected to be the sum of all these advantages which have been explored, challenged and confirmed by academics (Fombrun, 1996).

Because hospital procurement managers are customers of medical device companies, it is necessary to obtain a detailed view on customers' intentions and actions after perceiving a company's reputation. A strong corporate reputation signals that the products and services of a company

are of high quality (Cravens & Oliver, 2006). Reputation contributes to numerous stages of the purchase decision, such as attracting customers, increasing their confidence in the company's offers as well as enhancing their buying intentions (Brønn & Brønn, 2015; Dijkmans, Kerkhof, & Beukeboom, 2015).

Stakeholder group	Advantages of a positive corporate reputation
Customers	Satisfaction, loyalty, purchase intention, purchase decision, repurchase decision, willing to pay premium prices
Potential employees	Favourable job seeker decision, high-qualified applicants, low recruiting costs
Employees	Satisfaction, loyalty, strong morale, strong identification with company, motivation, productivity and efficiency, high retention rate
Investors	Easier access to investment capital and stock markets, low costs of capital, favourable agreements with banks, good stock market performance, favourable analyst ratings
Suppliers	Low contracting costs, bargaining power, loyalty
Local community	Neighbour of choice, favourable treatment by local media and authorities, respected corporate citizen
NGOs	Favourable evaluation of meeting the ethical and social standards, easier confirmation of legitimacy
Competitors	Competitive strength, differentiation, exclusivity, market barrier for competitors, easier defence of market position, low expansion costs
Public	Favourable perception of crisis issues, diminishment of crisis impact
All	Strong brand, stable financial performance (revenues and profitability)

Table 1: Advantages of a positive corporate reputation among different stakeholder groups. Source: Own compilation, based on Chun (2005), Dijkmans et al. (2015), Fombrun (2012), Keh and Xie (2009), Puncheva-Michelotti and Michelotti (2010), and Walsh, Beatty, and Holloway (2011).

It is suggested that the reputational impact is the greatest when potential customers intend to purchase an item for the first time with imperfect information, uncertainty and no supplier experience (Cravens & Oliver, 2006; Jeng, 2011; Shapiro, 1982). Dowling (2001) points to the advantage of reputational perceptions when customers need to choose between functionally similar products or services. A strong corporate reputation stimulates the purchase, because it simplifies the decision procedure (Chun, 2005), and consequently leads to more customers (Chun, 2005; Dijkmans et al., 2015).

A favourable corporate reputation not only attracts new customers, but also retains existing customers (Walsh et al., 2011). Academic research indicates that reputation can increase customer satisfaction and loyalty, with positive side effects such as positive recommendations and less price consciousness, and that it is a mobility barrier to the company's competitors (Chun, 2005; Fombrun, 2012; Helm, 2007). As a result, corporate reputation contributes to increased repurchases, cross-buying intentions and the perception as supplier of choice (Eberl & Schwaiger, 2005; Jeng, 2011).

The multiple advantages of a favourable corporate reputation contribute to its outstanding position as major intangible value of successful companies (Fombrun, 1996). Building a strong corporate reputation also means enhancing the tangible strength of a company and supporting its strong performance.

1.1.1. Managerial knowledge

Following a steep awareness curve in the corporate reputation concept in the past decades, the importance of reputation is reflected in the business world today (Fombrun & Low, 2011). For many board-level managers,

corporate reputation belongs to the most valuable assets of their company, contributing to the differentiation from competing firms (Diermeier, 2011).

Some managers in developed economies view a favourable reputation as a core asset, based on its role in sales and profitability, and see it as a precondition for their company's survival (Fombrun, 2012). In countries with emerging economies, such as Brazil, China, India, South Africa and Thailand, the concept of reputation is also increasingly considered as an important asset by management (Abratt & Kleyn, 2012; Fombrun, Ponzi, & Newburry, 2015; Srivoravilai, Melewar, Liu, & Yannopoulou, 2011).

A favourable reputation is recognized as a corporate competence that leads to a sustainable competitive advantage when the products and services offered are getting more and more similar (Forthmann, 2016; Walker, 2010). There are three reasons why board level managers are interested in reputation apart from the well-being of the company, and they are intertwined with each other: management responsibility, crisis preparedness and remuneration.

Several surveys have confirmed that about two thirds of the CEOs feel in charge and take the leadership role for managing reputation (Kitchen & Laurence, 2003; Van der Jagt, 2005). In the business world, they might delegate some of these responsibilities to other functions such as communication and marketing, but they remain the key reputation communicators for the stakeholders of their company (Kitchen & Laurence, 2003).

A majority of CEOs are concerned about threats to their company's reputation (Keh & Xie, 2009; Quinley, 2014), because they believe that a tarnished reputation needs three to eleven years to be restored (Burke, 2011; Hall, 1992). The need to anticipate consequences of poor reputation

has arisen since it has become clear that insurance companies rank reputation loss among the top ten corporate risks (Stier-Thompson & Stadthoewer, 2015). Particularly when it comes to a critical issue or crisis, during which the company has to be accountable to its stakeholders, a favourable reputation can act like a proof of credibility, and top management is extremely aware of this (Blagg, 2014).

Additionally, a good reputation contributes to the economic value of a company: professionals estimate this value between 28 (Knight & Ward, 2015) and 80 percent (Ethics-Research-Center, 2011; Fombrun & Low, 2011). The economic value is reflected in the job descriptions and bonus agreements of at least one-third of the board-level managers (Forthmann, 2016; Pharoah, 2003).

Kitchen and Laurence (2003) asked over 1,000 board level managers which stakeholders are the most important for being addressed by reputation management, documented in appendix 1. The executives rank customers by far first, and employees second, followed by print and digital media, shareholders, regulators and government, and other stakeholder groups. This is not at all surprising but shows that reputation management is highly regarded to influence the perceptions of customers.

The relevance of corporate reputation among board-level managers is well-documented, which is demonstrated by eight studies presented in appendix 2. But only half of the companies surveyed had implemented a reputation strategy. This gap between importance and strategy implementation was highlighted and rightly criticized by academics and practitioners (Forthmann, 2016; Kitchen & Laurence, 2003). Fombrun and Low (2011) emphasized that the superficial understanding of corporate reputation by board-level managers can not only be a significant risk for

their company's reputations but could also damage the company's performance and prospects.

Reputation measurement could help board-level managers and corporate specialists developing a reputation management strategy (Walsh & Wiedmann, 2004). There is a need for individual, meaningful and systematized measurement to set up a multi-faceted reputation strategy (Kitchen & Laurence, 2003). However, most managers often rely on unstructured, incomplete and informal stakeholder's feedback (Stier-Thompson & Stadthoewer, 2015), and on reputation rankings that are conducted and published by the media.

The Reputation Institute listed 183 published reputation rankings worldwide (Fombrun, 2007), a more recent estimate suggests up to 500 rankings (Renner, 2015). These published rankings cannot be compared with each other because they have been conducted differently, by different initiators, with one or more reputation attributes, various attribute items and questionnaire designs, surveyed among different or combined stakeholder groups (Dowling & Gardberg, 2012). Most of the rankings provide annual information about overall reputation or workplace quality, a few cover reputation attributes such as citizenship, performance, innovation, governance and product quality (Fombrun, 2007).

Ignoring these inconsistencies, the annual reputation rankings are well-recognized by managers, by multipliers such as media, analysts and consultants, as well as by other stakeholders. They are a welcome opportunity to constantly compare firms with their rivals and offer positioning for managing stakeholder perceptions and relationships (Fombrun et al., 2015). With these functions, rankings unmask companies with poor reputations and contribute to a further professionalization of

reputation management (Fombrun & Shanley, 1990). Also, it must be acknowledged that reputational rankings have multiplied the interest in reputation among practitioners.

However, this only obscures the lack of a specific reputation measurement that reflects the company's industry and main stakeholders in a defined business environment (Kitchen & Laurence, 2003). Measuring specific reputations has the potential to provide new discoveries about the reputation of a company, but the description of its characteristics exists in only few industries and stakeholder groups (Helm, 2007; Walsh & Beatty, 2007). This thesis aims to change this for the medical device industry, and to contribute to greater clarity among practitioners when systematizing their knowledge about reputation.

1.1.2. Academic knowledge

Corporate reputation has been acknowledged by researchers since the 1950s (Berens & van Riel, 2004). Its relevance for revenues, potential and existing employees, the stock market and the overall survival of a company can even be found in the early academic literature (Markham, 1972). However, reputation research has experienced rapid growth since the 1980s, following the increased recognition by the business media (Barnett, Jermier, & Lafferty, 2006; Fombrun, 2012).

Carroll (2013, p. 2) identified the investigation of Fortune's Most Admired Companies ranking by Fombrun and Shanley (1990) as the '... tipping point that made corporate reputation a central topic of engagement ...'. Fombrun, regarded as a groundbreaking author on corporate reputation (Wartick, 2002), published the volume *Reputation: Realizing value from the company image* in 1996. The book has been valued by scholars as a highly influential milestone in reputation research (Carroll, 2013). One year later,

Fombrun and van Riel launched the *Corporate Reputation Review*, an academic journal confined to interdisciplinary research on corporate reputation (Fombrun & van Riel, 1997; Gardberg, 2017; Pieczka & Zorn, 2013).

This, along with the launch of an international corporate reputation conference, expanded interest in the topic (Barnett et al., 2006; Carroll, 2013). In the 2000s, the number of academic corporate reputation articles grew exponentially, and the scope of corporate reputation widened (Ali, Lynch, Melewar, & Jin, 2015; Gardberg, 2017; Lange, Lee, & Dai, 2011). Appendix 3 illustrates article numbers and journal relevance as evaluated by Pieczka and Zorn (2013), figure 1 shows the author's counting of article numbers over the past 30 years. Today, the academic interest in corporate reputation is still growing, emphasizing its value contribution for companies (Barnett et al., 2006; Ponzi, Fombrun, & Gardberg, 2011).

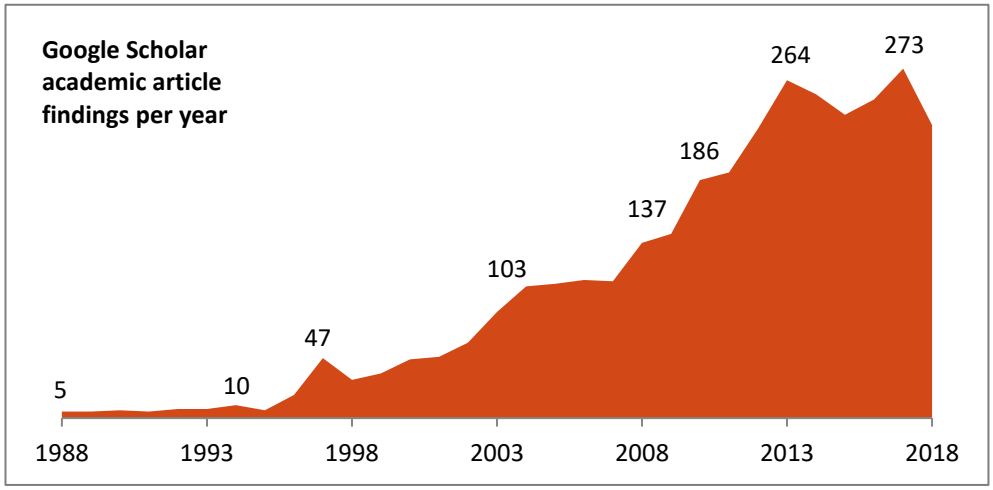

Figure 1: Number of academic corporate reputation articles displayed in Google Scholar per year since 1988. Note: Search terms include corporate reputation, organisational reputation, organizational reputation, firm reputation and company reputation. The reduced article number in 2018 demonstrates rather a delay of processing articles in databases than a negative trend. It is of high possibility that this number has increased in the course of the year 2019. Source: Google Scholar as of June 9, 2019.

Mahon (2002, p. 438) gives one of the clearest reasons why corporate reputation is so popular among researchers: 'Reputation is one of those rare subject matters that cuts across several disciplines and can be put through different analytical frames to produce research that is exciting, path-breaking, of interest to academicians and practitioners, and incomplete.' This description implicates several issues that need to be discussed in detail.

First, researchers from many different disciplines have been approaching the topic of corporate reputation and its related constructs. The relevant disciplines include accounting, corporate communications, economics, marketing, organizational behaviour, sociology and strategic management (Chun, 2005; Fombrun & van Riel, 1997). The variety of disciplines leads to many different perspectives and definitions of corporate reputation (Walker, 2010).

Academic reviewers often criticized this lack of a consistent definition of corporate reputation (Barnett et al., 2006; Lange et al., 2011; Walker, 2010). However, there are two schools of thought here, one postulating that there is a strong implication for an integrative view (Gotsi & Wilson, 2001; Walker, 2010), and one identifying the need to clarify the reputation definition individually based on industry, stakeholder group and research environment (Jensen, Kim, & Kim, 2012; Wartick, 2002). This doctoral study follows the school of specific reputations, defining and describing medical device company reputation from a strong industry perspective. Why this school of thought has been chosen, is further explained in the second chapter.

Second, reputation research can produce exciting, path-breaking results and can support decisions in the business world. The answers to the early research questions, once collected by Fombrun and van Riel (1997, p. 11),

are still valuable for businesses: ‘How do reputations develop? How valuable are reputations? How do reputations affect corporate performance? How do reputations have other favourable and unfavourable consequences? How should reputations be managed in good times and bad times?’ Academic reputation research is part of the managerial knowledge base, providing theory-based guidance on how firms can manage their reputations (Pieczka & Zorn, 2013).

Third, the research about reputation is still incomplete. The phenomenon of corporate reputation has a surprisingly complex structure (Lange et al., 2011), and needs to be ‘... defined, separated, taken apart, and reassembled’ (Helm, 2011, p. 4). There is much room for concepts, interpretations, detailing and individualization. The reputation topic has just started to become lively, evolving and specializing in individual industries, leaving many aspects for potential further research (Walker, 2010). An example for the richness of the topic is delivered by this doctoral study that aims to provide reputational insights in the healthcare sector that is introduced in the next section.

1.2. The field of research

The healthcare sector in the EU has been determined by two major developments since the start of the twenty-first century: the demographic change in the developed countries and the impact of information technology on healthcare products and services, also referred to as digital health (Fenske, Barbella, & Brusco, 2019; Maresova, Penhaker, Selamat, & Kuca, 2015).

There are two demographic shifts that influence the health markets in aging developed nations. First, increased life expectancy requires more medical support for diagnostics and treatments of illnesses that are

particularly prevalent among senior citizens, such as cardiovascular diseases, cancer, diabetes, osteoarthritis and cataracts (Atun, Shah, & Bosanquet, 2002; Eucomed, 2016; Roberts, 2017). Second, baby boomers, born between 1946 and 1964, are reaching retirement age expecting to have a longer and more active life with better health conditions than any generation before them (Campbell, 2014). In addition to pharmaceuticals, medical devices can assist to enhance their quality of life, keeping in mind that 80 percent of retired people in Europe already have at least one chronic disease (Campbell, 2014; Maresova et al., 2015).

On average, European countries spend one tenth of their GDP on healthcare expenditures, and the aging population causes a constant growth in this share (Feilberg, 2014; Maresova et al., 2015; Roberts, 2017). Medical device expenditures in Europe vary between three and ten percent of the total expenditures on healthcare (Graves, 2011; Maresova et al., 2015; Zapiain, 2016). In Germany, over five million people work in the healthcare industry, that makes one in seven jobs (Wiltz, 2014) and positions healthcare as a significant player in the German economy (Maresova et al., 2015).

Moreover, the increased use of information technology will change the healthcare sector dramatically. The rise of digital health products and services, ranging from fitness apps to post-surgical monitoring, will cause the understanding of healthcare and the communication with medical staff and patients to evolve (Stephani, Busse, & Geissler, 2019). With the support of the healthcare customer base, disease prevention is likely to be prioritized to promote people's health consciousness. Additionally, healthcare professionals will continue to digitalize their processes and patient data to save documentation time in favour of patient treatment (Campbell, 2014; Fenske et al., 2019; Hübner et al., 2019; Rahman, 2014).

The following sub-sections introduce the research field of this study within the healthcare environment. It starts with an overview of the market and trends in the medical device industry, followed by a sub-section about the role of hospital procurement managers. Afterwards, existing corporate reputation studies in healthcare will be reviewed and discussed for their relevance to this thesis.

1.2.1. Medical device industry

Medical device companies provide products and services that save and prolong lives as well as enhance the quality of life (Quinley, 2014). With over 500,000 products and services, the medical device market is split into numerous segments such as surgical instruments, disposables and implants, electromedical devices, imaging, dental products, in-vitro diagnostics and digital health products (Atun et al., 2002; Eucomed, 2016; Feilberg, 2014). The Global Medical Devices Nomenclature (GMDN) Agency determined 16 classifications of medical devices that are listed in appendix 4.

Although the collections of segments and classifications of medical devices are helpful, they do not provide a consistent understanding of what a medical device is. The WHO defines it as an 'article, instrument, apparatus or machine' (Zapiain, 2016, p. 7) and excludes all software applications with this constraint. According to the WHO, a medical device '... is used in the prevention, diagnosis or treatment of illness or disease, or for detecting, measuring, restoring, correcting or modifying the structure or function of the body for some health purpose' (Zapiain, 2016, p. 7). Furthermore, the purpose of the medical device 'is not achieved by pharmacological, immunological or metabolic means' (Zapiain, 2016, p. 7). This strict approach excludes all medical devices that are combined with

medications, such as infusion systems with pharmaceuticals. Challenging the WHO definition is not meant to criticize it – generally the WHO definition is widely accepted – but to show how complicated it is to define the highly fragmented medical device sector.

Since this doctoral thesis is assigned to Germany, it follows the EU definition of medical devices as stated in the medical device directive of 1993 (93/42/EEC, 1993). The definition is presented and commented on in table 2 and demonstrates a more flexible approach than the WHO definition. Digital health applications can be included as well as combinations of more than one device, and those used together with pharmaceuticals. Furthermore, the target group of humans and more specified purposes of medical devices are added. In this flexibility, the EU definition reflects the approach of the European and German medical device industry that understands itself as an innovation-driven medical technology – or medtech – industry (Beeres, 2016; Eucomed, 2016), investing about eight percent of its revenues in research and development (De Gooijer, 2013; Eucomed, 2016).

According to analysts, the global medical device market was worth about 335 billion euros in 2015, and is estimated to grow four to five percent annually, reaching over 400 billion euros in 2020 (Beeres, 2016; Feilberg, 2014; Maresova et al., 2015). Drivers are the aging population in the developed countries and the rising demand for medical devices in emerging countries, particularly in China. Only behind USA and Japan, Germany is the third-largest medical device market with an estimated capacity of 25 to 30 billion euros (Beeres, 2014, 2019; Zapiain, 2016), representing about 40 percent of the entire EU market and twice as big as the French market (Zapiain, 2016).

EU definition	Comments
... any instrument, apparatus, appliance, material or other article,	Specification of device, includes digital health applications by phrase 'other article'
whether used alone or in combination,	Combination of more than one device possible
including the software necessary for its proper application intended by the manufacturer	Combination with software possible
to be used for human beings	Specification of target group
for the purpose of ▪ diagnosis, prevention, monitoring, treatment or alleviation of disease, ▪ diagnosis, monitoring, treatment, alleviation of or compensation for an injury or handicap, ▪ investigation, replacement or modification of the anatomy or of a physiological process, ▪ control of conception,	Purpose of the medical device
and which does not achieve its principal intended action in or on the human body by pharmacological, immunological or metabolic means, but which may be assisted in its function by such means;	Combination with pharmaceuticals possible

Table 2: EU definition of a medical device. Note: Comments have been added by the author of this thesis. Source: 93/42/EEC (1993, p. 2).

The German market is served by a few large German medical device companies, such as Siemens Healthineers, B. Braun and Fresenius, as well as by 12,300 SMEs and start-ups, employing altogether more than 200,000 people (Beeres, 2019; Zapiain, 2016). The market share of the German manufacturers in Germany is about 25 percent (Zapiain, 2016). Numerous large globally operating medical device companies import their products and services to Germany. Moreover, Germany is considered to be the most

important market for US medical device manufacturers, which have a 20 to 22 percent market share (Zapiain, 2016). Appendix 5 lists the top 20 medical device companies worldwide, 11 of them are headquartered in the USA, three in Germany, two in Japan, one each in France, Ireland, the Netherlands and Switzerland. These companies make up approximately 225 billion euros in revenue, more than half of the total medical device industry.

According to recent surveys conducted by a medical device analyst corporation with nearly 4,000 professionals, 75 to 83 percent of the respondents had a 'very positive' or 'somewhat positive' impression about the industry's outlook (Nace, 2014). Moreover, expert forecasts suggest further opportunities, that medical technology could fundamentally transform healthcare through innovation, having an average time from idea to market of only 18 months (Maresova et al., 2015).

The optimism is based on numerous trends that drive new ideas and provide sales opportunities. These trends, identified in business articles between 2013 and 2018, include (1) mHealth, (2) big data, (3) miniaturization, and (4) patient empowerment. Since most of these trends are relevant for the reputational evaluation of medical device companies, they will be introduced in the next paragraphs.

(1) mHealth. The rise of mobile health is projected to change the medical device market rapidly (Boyle, 2013). It is based on the popularity of mobile devices such as tablets, smartphones, smartwatches, wristbands and other wearables. Approximately 500 million smartphone users are familiar with health-related apps, and most of these 100,000 apps are not approved by regulators and do not target medical staff, but end-users (Pfahnl, 2015). Most clinicians are comfortable with health apps because they can improve patient health management (Ghaffary, 2015; Weeks, 2015). Mobile health

will influence future product development, due to its disruptive potential to bring innovation to market that is not perfectly professional in its first iteration (Boyle, 2013; Weeks, 2015). Additionally, it is expected that technology companies such as Amazon, Apple or Google will dramatically increase their market share in mobile health, competing with traditional global medical device players that are forced to add apps to their product portfolios (Weeks, 2016).

(2) Big data. One major advantage of new technologies is the automatic generation of health data. Collecting data with medical devices is strongly connected with mobile health but includes much more: the digitalization of all medical processes and patient data in healthcare. Leveraging data can improve fitness, diagnostics, treatment and the monitoring of patients (Bernstein, 2015; Buntz, 2016). Although it is so advantageous, this automatic data generation also comes with a cybersecurity discussion and the fear that hospital IT systems could be hacked and patients' lives could be threatened (Densford, 2017). These concerns need to be addressed, but the advantages of using big data for healthcare institutions certainly outweigh the investments that need to be done in cybersecurity.

(3) Miniaturization. Nanotechnology drives the trend of miniaturization of electromedical equipment. Especially in the German medical community, new technologies at an atomic and molecular scale are being discussed to further improve sensors and micro electronical systems that create microscopic innovations for numerous medical applications in many medical areas (Boyle, 2013; Zapiain, 2016).

(4) Patient empowerment. The technological developments have also led to a change of patient mindset. It started with health-related websites that continue to be a source for patients to prepare for a consultation at the doctor. The doctor's role is increasingly perceived as a consultant or

advisor, not as a decision maker for a treatment or therapy (Minning, 2009). With the rise of mobile health devices, patients have become the primary user of medical devices and apps, actively monitoring their health or disease (Pfahnl, 2015; Weeks, 2015). The medical device industry contributes to this development by evolving product development and marketing strategies towards general health, diagnostics and monitoring. However, the doctors and healthcare staff have the medical competence when an unusual event occurs, and consult in further diagnostics, treatment and therapy options.

Doctors remain one of the most important stakeholder groups for medical device companies, and one reason for this are the partnerships in research and development. They contribute to medical device innovation by sharing their own ideas and experiences with medical device manufacturers in order to improve scientific achievement (Weigel, 2011). Nevertheless, their role as purchasing decision makers is declining. More doctors have become employees of healthcare providers and as a result, they have less influence on the purchasing process (Boyle, 2013; Finn, 2015; Rebhan, Kunst, Chaturvedi, Plantevin, & Di Filippo, 2016).

Particularly in hospitals, procurement managers have been established to source medications, devices and services from the perspective of a general value-based approach that supports the hospital as a whole organization (Finn, 2015). Since medical device companies generate at least one third of their revenues with hospitals (Schwanke et al., 2011), hospital procurement managers have become one of their major stakeholder groups (Pinkney, 2015; Saine & Williams, 2015).

1.2.2. The role of hospital procurement managers

Accompanying the increased pressure for cost efficiency, procurement management in German hospitals has changed significantly since the start of the new millennium. Once a service function for the administration of purchases, procurement management has become a strategically relevant and value creating task (Berg & Burdach, 2012; Sontheimer, 2015). Today, procurement is often positioned in or just below the management of a hospital or hospital group (Berg & Burdach, 2012). Hospital procurement managers usually have a centralized responsibility for one-time investments, operative and strategic procurement as well as for logistic processes (Berg & Burdach, 2012).

However, often they identify a need for change management and process optimization within the hospital to reach their goal of value creation. In most cases, the change begins with a definition of the procurement role in the decision-making for purchases, and an implementation of a procurement guideline (Berg & Burdach, 2012). This requires strong negotiation skills, especially in discussion with the head doctors who have been accustomed to make buying decisions for therapies, pharmaceuticals and medical devices mainly on the base of the medical requirements (Berg & Burdach, 2012; Rebhan et al., 2016). The knowledge of medical professionals is still essential, because procurement managers are no experts in evaluating the medical advantages or disadvantages of an investment (Graves, 2011; Medina, 2016). Therefore, the management of the medical and nursing departments is usually involved in the decision-making, especially when investing in expensive medical technology solutions (Pinkney, 2015).

At the same time, the competencies of a procurement manager should include a strong strategic and long-term approach, when negotiating with

both the medical suppliers and internal stakeholders that are influenced by a procurement decision. In many cases, such decisions are connected with re-structuring or process optimization of medical or supporting units such as logistics and IT, leading to long-term efficiency and value creation (Berg & Burdach, 2012; Sontheimer, 2015). Therefore, the procurement manager often acts as an in-house consultant who is directly involved and highly influential in the decision-making for medical devices and services (Berg & Burdach, 2012; Kruetten, Rautenberg, & Liefner, 2005).

This new and demanding role cannot be generalized as it varies strongly in its different specifications, according to hospital type and the individual procurement structure of the hospital. Therefore, it is necessary to introduce the German hospital market with its different hospital types and the development of group purchasing organizations (GPO) being involved in the procurement system.

In 2017, Germany had 1,942 hospitals with 497,182 beds (Bölt, 2019). Since 2005, the number of hospitals has decreased by 9.2 percent due to a reduced number of inpatient days and an economically challenging environment. The number of inpatient cases has increased from 16.5 to 19.4 million, but the average length of stay has been reduced from 8.7 to 7.3 days (Bölt, 2019; destatis, 2016). In Germany, there are three different groups of hospital owners: (1) the public owners including almost all university hospitals, (2) the non-profit owners such as Marienhaus, Agaplesion and DRK, and (3) private owners such as Helios, Asklepios and Sana.

The three hospital types have different structures, as figure 2 illustrates. Whereas a few public hospitals offer a high bed capacity, the private hospitals have lower bed numbers. The non-profit hospitals range between the other two. The development in recent years indicates that the number

of private hospitals and beds will increase, and the number of public hospitals and beds will decrease; the numbers of non-profit hospitals and beds will not change (Sontheimer, 2015). For sampling purposes research should include all hospital types, since the reputational perception could vary between them.

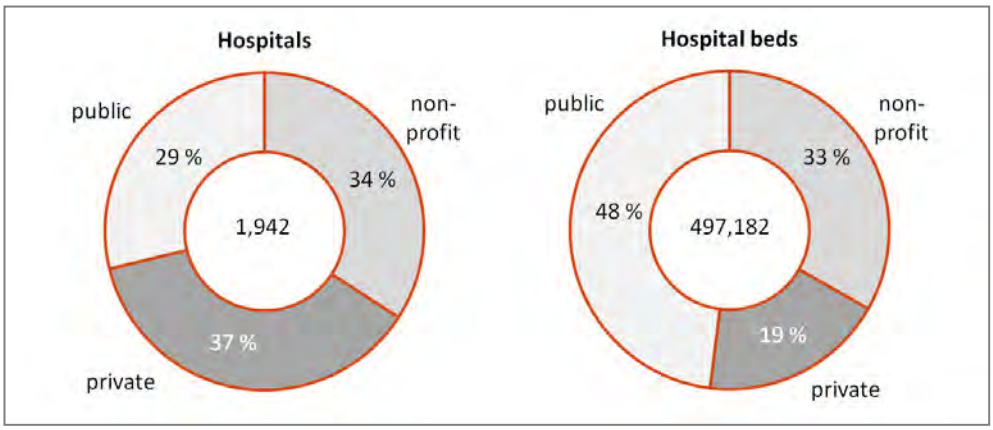

Figure 2: Comparison of the number of hospitals and hospital beds per hospital type in 2017. Source: Bölt (2019).

In 2015, most of the hospitals increased their revenues and resisted the cost pressure and fierce competition. About 70 percent of the hospitals were able to cover costs or even record surpluses (Haghani, Robeck, & Magunia, 2016). One reason for these positive results is the pooling of regularly bought goods in group purchasing organizations (GPOs), which convey benefits by generating price discounts und favourable conditions by negotiating large scale buying and long contracts with suppliers (Berg & Burdach, 2012; Kruetten et al., 2005; Weinstein, 2006).

A GPO is an intermediary between hospitals and suppliers such as medical device companies (Weinstein, 2006). The main goal of GPOs is to generate cost reductions for their hospital members, though some GPOs also consult in process efficiency in the hospitals that are combined with strategic purchases (Berg & Burdach, 2012).

In Germany, three out of four hospitals are GPO members. After generating enormous cost savings in the German hospital market, particularly in the purchasing of medical devices, GPOs are now focusing more on hospital process standardization and providing administrative functions for procurement departments (Berg & Burdach, 2012; Sontheimer, 2015).

Cost pressure, process standardization and support for therapy optimization remain the most relevant challenges for hospital procurement managers (Medina, 2016; Parmar, 2016). One of the many initiatives to address these challenges is the total cost of ownership (TCO) approach. With a TCO perspective, managers evaluate decisions and processes according to their impact on total cost, not only on their initial price (Berg & Burdach, 2012; Graves, 2011). This approach ensures that products and services with high initial costs, but with long-term benefits such as accuracy, robustness, power savings, time savings and reduced maintenance costs, will not be ignored in the procurement process (Graves, 2011; Sontheimer, 2015). The TCO approach values mainly high-quality and innovative medical solutions that contribute to process optimizations and lower long-term spend in the hospital.

The critical objective of hospital procurement managers is the steering of the decision-making process in the hospital. Sarkis and Talluri (2002) summarized this as '[...] obtaining the product at the right cost in the right quantity with the right quality at the right time from the right source' (p. 18). Strategic factors, such as service, reliability, concurrent design, dedicated capacity, flexibility, supplier relationship and economic stability (Lamoureux & Mitchell, 2015; Saine & Williams, 2015; Sarkis & Talluri, 2002), contribute to this decision-making.

The literature indicates that long-term relationships between hospital procurement managers and medical device suppliers are highly relevant

(Kruetten et al., 2005). Hospitals can benefit from long-term cost savings, whereas medical device suppliers enhance their own value as trusted partner and generate long-term revenues (Hsu, Su, & Liao, 2010). Besides a long-term relationship, many other factors from medical device suppliers that contribute to favourable decision-making by hospital procurement managers can be found in the literature. These factors are trust, culture, commitment, integrity, openness, esteem, credibility, corporate sustainability, knowledge, and reputation of the supplier (Chao & Cheng, 2012; Hsu et al., 2010; Lamoureux & Mitchell, 2015).

Hsu et al. (2010) were among the first to recognize reputation as the most influential factor in relationships between hospitals and medical suppliers. In supply chain research, the connections of supplier reputation with trust, business relationship and customer decision-making has been subject to research by numerous academics (Chao & Cheng, 2012; Doney & Cannon, 1997; Lamoureux & Mitchell, 2015; Lienland, Baumgartner, & Knubben, 2013).

Unfortunately, the term reputation has been only vaguely defined in these articles. Suh and Houston (2010) concluded that '... it is important to practice and theory that marketing scholars further develop our understandings of the unique nature and relative impact of supplier reputation – not only trust' (p. 749). Lienland et al. (2013) criticized that the supplier's corporate reputation is '... often neglected by selection models. This disregard of reputation contradicts with articles ..., in which strong-brand suppliers would be better off than no-name suppliers' (p. 84).

The study of Suh and Houston (2010) is a positive exception here, and shows the impact of corporate reputation on B2B relationships. They found '... that supplier reputation was consistently a significant and positive antecedent to a buyer's affective commitment to a relationship and to that

buyer's willingness to invest in the future of the relationship' (Suh & Houston, 2010, p. 747). Thus, corporate reputation is discussed as part of the supplier selection process in B2B relationships, and should be defined and explained in more detail from the perspective of hospital procurement managers (Quinley, 2014).

1.2.3. Existing reputational studies in healthcare

The academic and business literature has provided only a few reputation studies in the healthcare sector, and an overview of nine studies is presented in table 3. Studies that do not focus on the construct of corporate reputation itself, but on its impact on a company's brand strategy are not in the list (Chen, 2011; Peny, 2016), including communication activities (Wæraas & Sataøen, 2014), individual services (Elbeck, 1988) and risk management (Quinley, 2014). Although they contribute to specific aspects of reputation management, they do not focus primarily on the perception of stakeholders outside the company.

The nine listed studies introduce reputation models of medical device companies, pharmaceutical or biotechnology companies as well as hospitals, and evaluate the perspectives of the general public, patients, patient group members, doctors or pharmacists.

Three findings can be derived from the table: First, recognizing the large samples, the list consists of quantitative studies (the case study of Grupp and Gaines-Ross is the only exception). Some of the measurement scales have been evaluated and verified in qualitative approaches (Renner, 2011; Wright & Fill, 2001), the rest of the studies was based on existing measurement models.

Study cited in	Study participants	Research field	Evaluation of reputation
Wright and Fill (2001)	104 general practitioners and 263 pharmacists (UK)	8 pharmaceutical companies (international)	5 attributes
Grupp and Gaines-Ross (2002)	No participants	1 biotechnology company as case study	5 determinants
Şatir (2006)	300 patients (Turkey)	18 clinics in one hospital (Turkey)	32 aspects in 4 attributes
Ponzi et al. (2011)	about 350 doctors (Canada)	1 well-known pharmaceutical company (Europe)	4 emotional attributes (RepTrak Pulse™)
Renner (2011)	404 doctors and 201 patient group members (Germany, France, Italy, Spain)	8 largest pharmaceutical companies (international)	59 aspects in 9 attributes
Srivoravilai et al. (2011)	416 customers & 90 managers of private hospitals (Thailand)	346 hospitals (Thailand)	11 attributes, including antecedents and consequences
Reputation-Institute (2015)	20,789 people of general public (15 largest economies worldwide)	12 largest pharma companies (international)	7 attributes (RepTrak®)
Heintze and Forthmann (2016)	1,200 people of general public, 400 of them from Frankfurt area (Germany)	20 hospitals from Frankfurt area (Germany)	5 attributes
PatientView (2017)	513 patient group members (international)	39 medical device companies (international)	7 attributes

Table 3: Overview of existing corporate reputation studies in the healthcare sector. Note: The studies are sorted by publishing year. Source: Own compilation.

Second, the locations of the studies vary substantially, ranging from single country evaluations to an international survey in 67 countries (PatientView, 2017). The scope of the research field also differs significantly, covering only one hospital (Şatir, 2006) or hospitals in a small region (Heintze & Forthmann, 2016) as well as international pharmaceutical companies (Renner, 2011; Reputation-Institute, 2015; Wright & Fill, 2001). And third, medical device companies are only addressed once. This study does not reflect the perspective of hospital procurement managers, but the perspective of patient group members (PatientView, 2017).

However, all the studies explain corporate reputation as a construct that includes several attributes and their aspects. Table 4 ranks all 17 attributes that have been found in the studies.

The dominance of the products and service attribute reflects its high relevance in the healthcare sector: In eight of nine studies this attribute has been included. The nineth study (Ponzi et al., 2011) focused on emotional reputation attributes towards a company, which explains the absence of the products and services attribute here. Furthermore, this list reveals four findings that relate to the healthcare business: (1) the role of the relationship to representatives, (2) the role of generalized attractiveness, (3) the interaction with trust, and (4) patient's safety as part of corporate reputation.

(1) Half of the studies included the relationship to representatives, although this attribute has not been defined by general reputation studies. This leads to the conclusion that personal relationships are particularly important for explaining corporate reputation in the healthcare sector (PatientView, 2017; Renner, 2011; Wright & Fill, 2001). In supplier-customer relationships like the one between hospital procurement managers and medical device companies representatives, the quality of

Attribute	Wright and Fill (2001)	Grupp and Gaines-Ross (2002)	Şatir (2006)	Ponzi et al. (2011)	Renner (2011)	Srivoravilai et al. (2011)	Reputation-Institute (2015)	Heintze and Forthmann (2016)	PatientView (2017)	Sum
Products and services	✓	✓	✓		✓	✓	✓	✓	✓	8
Relationship with representative	✓	✓			✓	✓			✓	5
Innovation	✓	✓			✓		✓			4
Leadership		✓			✓		✓	✓		4
Sustainability / CSR			✓		✓		✓	✓		4
Ethical behaviour					✓		✓		✓	3
Financial performance					✓		✓	✓		3
Workplace					✓		✓	✓		3
Communication			✓						✓	2
Overall reputation / emotional appeal				✓		✓				2
Transparency					✓				✓	2
Trust			✓	✓						2
Efforts to train staff	✓									1
Good feeling				✓						1
Management		✓								1
Patient centricity									✓	1
Patient safety									✓	1
Respect				✓						1

Table 4: Ranked attributes in reputation studies in the healthcare sector. Note: Similar reputation attributes have been bundled. Source: Own compilation.

personal interaction is promising as an aspect for explaining corporate reputation (Chao & Cheng, 2012; Hsu et al., 2010). However, it rather characterizes the access to the customer, and could be included in a customer focus attribute.

(2) According to Ponzi et al. (2011) and Srivoravilai et al. (2011), the overall emotional appeal of a company can be significant to determining corporate reputation. The development of the additional emotional measurement scale of RepTrak® Pulse™ implies this (Ponzi et al., 2011), and leads to the question, if the emotional attribute should be evaluated separately (Ponzi et al., 2011) or if it should be included in the overall explanation of corporate reputation (Srivoravilai et al., 2011).

(3) It is remarkable that the construct of trust is treated as an attribute in corporate reputation scales (Ponzi et al., 2011; Şatir, 2006). Trust, initially a criterion for describing supply chain relationships in general (Chen, Yen, Rajkumar, & Tomochko, 2011), has also been classified as a whole conceptual stream of corporate reputation (Berens & van Riel, 2004). Renner (2011) even defined trust as the most importance consequence of corporate reputation. The interdependency and differentiation between corporate reputation and trust will be clarified in sub-section 2.3.3. to avoid misinterpretations throughout this doctoral study.

(4) It is obvious that patient safety should play a role when explaining the corporate reputation of medical device companies (PatientView, 2017). Presuming that the safety-based trends in the healthcare sector will accelerate, the topic of safety should be highlighted rather than ignored, but should include not just the patients, but the medical device users such as doctors and nurses as well.

Interestingly, only Srivoravilai et al. (2011) mentioned the antecedents and consequences of corporate reputation, and this reflects their limited coverage in the overall academic reputation literature. Srivoravilai et al. (2011) suggested the company's size, marketing capabilities, impression management and organizational legitimacy as antecedents and customer support as a consequence.

The healthcare-related studies about corporate reputation are not based on one set of attributes, even when researching the perspectives of the same stakeholder group or covering an identical industry. Because of this, it is necessary to develop a concept that explains the hospital procurement manager's perspective on corporate reputation of medical device companies.

1.3. Significance of this doctoral thesis

After clarifying the value of the research topic reputation and the specification of the research field, this section gives reasons for why this doctoral thesis has been conducted. The thesis aims to explain the landscape of medical device company reputation by mapping its attributes, structure, antecedents, consequences and mechanisms from the perspective of procurement managers in German hospitals. What this means in detail is outlined in the following sub-sections that include the discussion about the original value and the research questions of this doctoral study, as well as an introduction to its structure.

1.3.1. Original value

The academic reputation literature offers a rich field of inquiry for further research. Numerous authors from different disciplines have appealed for clarity in both reputational definition and in-depth research in reputation

characteristics (Fombrun, 2012; Suh & Houston, 2010; Walsh & Beatty, 2007; Wartick, 2002). Five relevant directions for research, presented in figure 3, have been identified as leading to the topic and structure of this doctoral research.

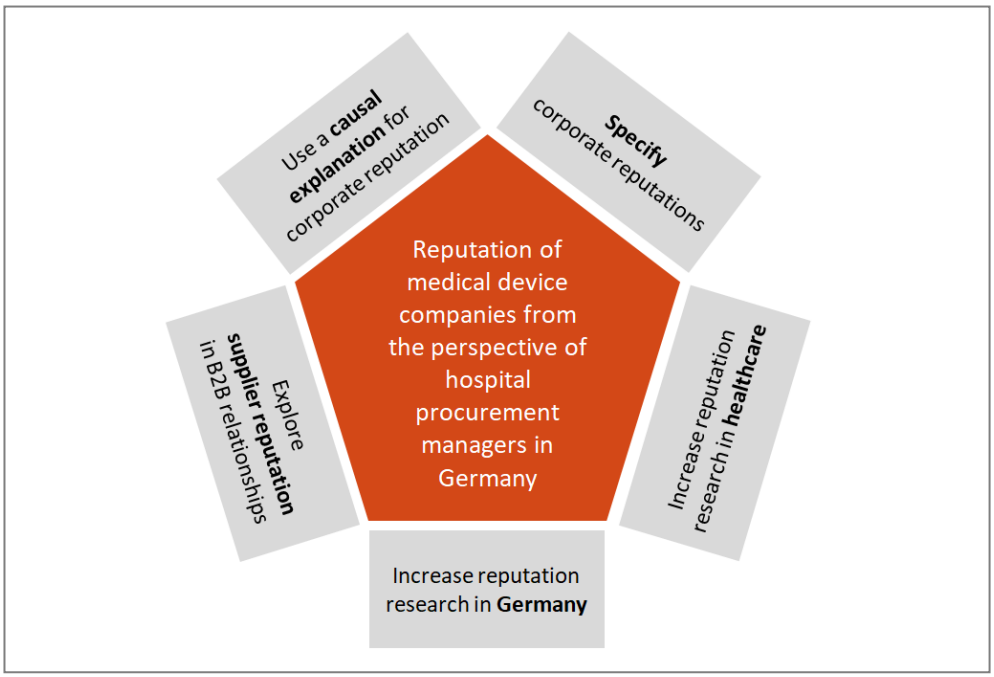

Figure 3: The identified directions for research leading to this doctoral thesis. Source: Own compilation.

First, the corporate reputation construct should be explained as a phenomenon with causal relations. After being involved in the academic discussion for over 20 years (Fombrun & Shanley, 1990), Fombrun (2012) recommended re-focusing on the major questions of reputation: What corporate reputations are, where they come from and what effects they have. He called for additional research to better understand antecedents and consequences of reputation and emphasized that scholars and practitioners should collaborate with each other. Other authors, who provided some research in causal mechanisms, expressed similar

recommendations about the sources, formation, micro foundations, multiple attributes, causal interactions, and impacts of corporate reputation (Barron & Rolfe, 2012; Lange et al., 2011; Money & Hillenbrand, 2006; Walsh & Beatty, 2007; Walsh, Mitchell, Jackson, & Beatty, 2009).

Second, there is common agreement among reputation scholars that corporate reputation characteristics, causes and consequences depend on stakeholders' perception of companies as well as the industry of the perceived companies (Helm, 2011; Puncheva-Michelotti & Michelotti, 2010; Walsh & Beatty, 2007). This implies that the reputation construct needs a detailed exploration across different industries and among different stakeholder groups (Dowling & Gardberg, 2012; Helm, 2007; Puncheva-Michelotti & Michelotti, 2010; Walsh & Beatty, 2007).

Third, the previous sub-section has demonstrated how little research has been conducted in the healthcare sector to specify reputation attributes. A reputational specification of medical device company reputation has only been provided for patient group members thus far (PatientView, 2017), not for the important stakeholder group of hospital procurement managers. The introduction and explanation of a specific reputation model will increase the knowledge base of the characteristics and interactions related to medical device company reputation.

Fourth, reputation research is mainly focused on companies in the USA, and only few studies have been conducted in Germany. Walsh and Wiedmann (2004) posited to increase the academic reputation research in Germany due to its relevance as largest EU market, having one of the highest GDPs and being one of the largest exporting economies in the world. Since then, little has been improved: In a compilation from 2007, only 2% of the reputation rankings were surveyed in Germany, compared with 33% surveyed in the USA, and outnumbered by Australia,

Brazil, Canada, France, India, Norway and South Africa (Fombrun, 2007). In a collection of reputation studies from 2015, only 5% represented Germany, compared with 47% that represented the USA (Ali et al., 2015).

And fifth, supplier reputation has become a field of research in B2B supply chain relationships (Morgan & Hunt, 1994). As sub-section 1.2.2. demonstrated, marketing scholars identified a lack of research in corporate reputation and postulated to understand its characteristics and causal interactions (Lienland et al., 2013; Suh & Houston, 2010). To explain the multiple attributes of the construct as well as its antecedents and consequences, it is beneficial to monitor the customer perceptions in order to understand the suppliers' reputation (Bar-Isaac & Tadelis, 2008).

Summing up these research directions, it becomes evident that the relevance of corporate reputation in general, and for supply-chain relationships in particular, has increased substantially. Reputation has been identified by Hsu et al. (2010) as one of most influential differentiators for medical device companies to build long-term relationships with their customers. Existing studies have not reflected this importance from the perspective of hospital procurement managers.

This doctoral thesis aims to close the research gap. It is the first study to explain the specific reputation characteristics, antecedents and consequences of medical device companies from the perspective of hospital procurement managers. The desired result is a map of the reputational landscape of medical device companies that not only contributes to academic knowledge, but is also a fruitful source for practitioners to effectively manage the reputations of their companies (Fombrun, 1996; Wartick, 2002).

1.3.2. Research questions

To develop and explain a map of corporate reputation, it is necessary to answer research questions that point to its constituents. Figure 4 gives an overview of the four research questions. When discussing these questions, they are limited to the perception of corporate reputation by hospital procurement managers in Germany only. In general, this study differentiates between the three constructs of corporate reputation, its antecedents and its consequences, which is explained further in section 4.1. The description of constituents, the building of a reputation structure and the explanation of relationships and mechanisms is based on the research philosophy of critical realism, and thus the research questions are based on a critical realist terminology.

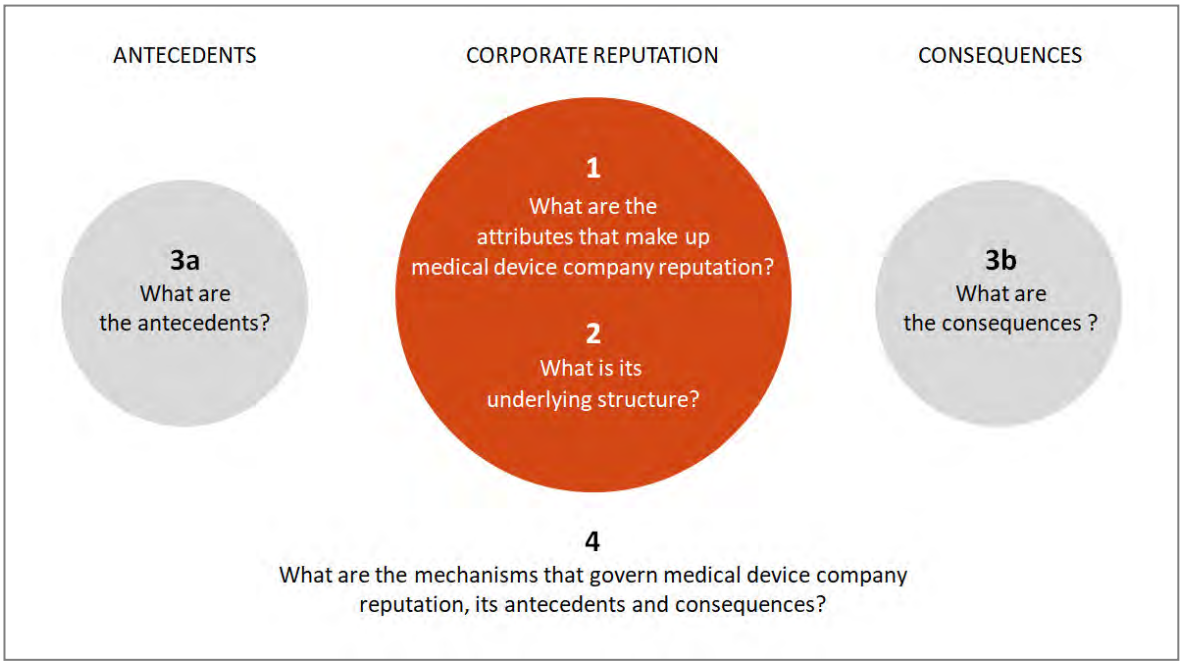

Figure 4: Research questions of this doctoral study. Source: Own compilation.

Q1: What are the attributes that make up medical device company reputation? The question follows the aforementioned academic assumptions, that there are specific characteristics for the corporate

reputation of medical device companies. The characteristics in major reputation measurement models are hierarchically structured in attributes and aspects (Fombrun et al., 2015; Renner, 2011; Walsh, Beatty, & Shiu, 2009). When described as normative construct, corporate reputation consists of a number of attributes that include two or more aspects each (Renner, 2011; Srivoravilai et al., 2011). The research objective of the first question is to uncover the attributes and aspects that are relevant for medical device company reputation and match them to each other. The intended result will be a set of attributes that makes up the reputation of medical device companies.

Q2: What is the underlying structure of medical device company reputation? This research question aims to identify the weights and interdependencies within the corporate reputation construct. Following the approach of Lange et al. (2011), this means not only explaining the internal structure of attributes in an understanding of normative reputation, but also the ties to other categories of corporate reputation such as generalized attractiveness. The intended result is a comprehensive map of the medical device company reputation construct.

Q3: What are the antecedents and consequences of medical device company reputation? Unlike the corporate reputation construct itself, the characteristics of antecedents and consequences have been determined to a smaller extent in the literature (Fombrun, 2012; Money & Hillenbrand, 2006). Therefore, this question points to a hierarchical explanation of antecedents and consequences as well as their respective aspects. The intended result is an explanation of how hospital procurement managers perceive the causal embedding of corporate reputation.

Q4: What are the mechanisms that govern medical device company reputation, its antecedents and consequences? The answer should explain

the major mechanisms that are instigated in the reputational construct with its antecedents and consequences or by phenomena from outside the construct. What leads to what, what is influenced by what? The intended result is a selection of the major causal mechanisms and the way they change and shape medical device company reputation.

These research questions are the focus of interest in this study, and large parts of the results in chapters 4 to 6 will provide detailed information dealing with these questions. In the conclusion chapter, the research questions will be addressed again, and explicit answers are given that contribute to academic and professional knowledge.

1.3.3. Structure of the doctoral thesis

This sub-section marks the end of the introductory background chapter that is designed to introduce the corporate reputation topic, the research field and significance of this study. It has provided the path for the following chapters illustrated in figure 5.

Chapters 2 and 3 prepare the research by reviewing the reputation definition and explaining research methodology and methods. Following the assertions of reputation academics (Dowling & Gardberg, 2012; Fombrun, 2012; Wartick, 2002), the literature review in chapter 2 clarifies the reputational definition of this research from an expanded discussion of the reputation construct. It starts with a presentation of reputation perspectives from different academic disciplines that are relevant for the upcoming research. Furthermore, it informs the reader which literature strongly influenced this research.

Section 2.2., the heart of the literature review, develops a theoretical foundation, covers the significant academic debate about specific

reputations and explains why there is a need for a specific definition of medical device company reputation. After these sections, which define what corporate reputation is, the last section describes what corporate reputation is not. It distinguishes corporate reputation from neighbouring constructs such as corporate identity, corporate image, corporate brand, corporate trust, and others, because the constructs are often used interchangeably (Barnett & Pollock, 2012; Dowling, 2001).

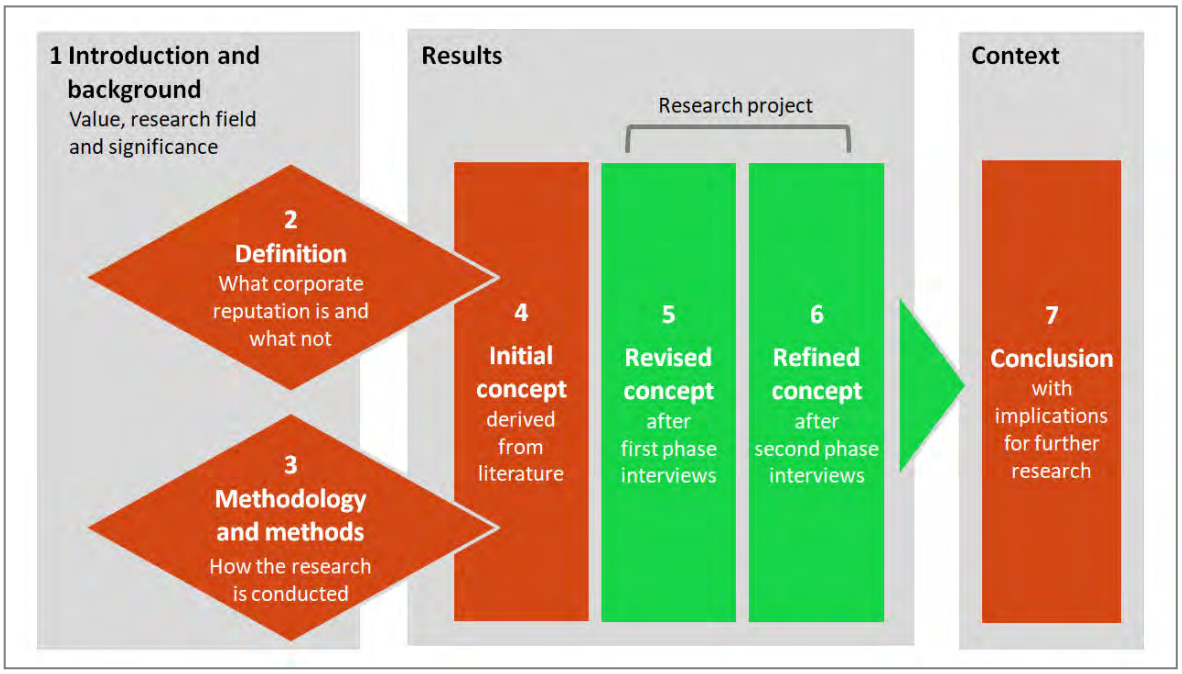

Figure 5: Structure of this doctoral thesis. Note: Numbers refer to chapter numeration. Source: Own compilation.

Chapter 3 positions the research paradigm in the philosophical continuum as critical realism, which supports the concept development of medical device company reputation. The ontological and epistemological implications of critical realism are explained by discussing the corporate reputation construct in the three domain levels defined by Bhaskar (2008). The chosen retroductive research approach is introduced and leads to section 3.2., which clarifies research methods and design. This includes sub-sections about the different research steps, particularly about

the qualitative interviews, the access to study participants as well as an overview of data collection and data analysis.

In chapters 4 to 6, the results of the doctoral research are compiled, analysed and critically examined. In chapter 4, the basic causal reputation model is explained, which is then further outlined to an initial concept of medical device company reputation with specific industry background extracted from the academic and business literature. By collecting and selecting attributes and aspects of medical device company reputation as well as its antecedents and consequences, an initial hierarchical and causal structure is developed and discussed. Although chapter 4 could also be seen as a literature review such as chapter 2, it represents a first theoretical result, following the conceptual epistemology of critical realism. As such, it constitutes the first part of the research project, which is needed to move on to the interview parts.

Chapters 5 and 6 present the fieldwork results of the research project by analysing, interpreting and evaluating qualitative interviews with hospital procurement managers. The interviews were conducted in two phases: Chapter 5 describes the confirmations and changes in the concept made after the seven interviews in the first phase; chapter 6 explains the refined concept after the five second phase interviews. At the end, the attributes and aspects of medical device company reputation as well as those of the antecedents and consequences are verified. The weights of the attributes and major causal mechanisms are explained.

In the final chapter, the findings are discussed in the light of the research context. The landscape of medical device company reputation, its antecedents and consequences are presented and its role in further academic research and practical reputation management is highlighted.

2. Definition

> ‘Commercial and industrial companies ... have
> as many reputations as there are distinct social groups
> that take an interest in them.’
>
> Dennis Bromley, Emeritus Professor of Psychology
> at the University of Liverpool
> (Bromley, 2002)

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When it comes to the question what corporate reputation really is, there are only ambiguous answers in the academic literature. This chapter is dedicated to extracting the relevant scientific perspectives on reputation. It then shows which definitional path is chosen and builds the definition for medical device company reputation. In the third section, the reputational construct is differentiated from neighbouring constructs to clarify terms and their roles for this research project.

2.1. Relevant perspectives for this research

Corporate reputation has multiple facets that scholars from a variety of disciplines have not been able to agree on to form one consistent definition. Therefore, it is advisable to analyse the relevant perspectives before building and explaining a definition (Barnett & Pollock, 2012; Wartick, 2002). As a starting point, table 5 lists different academic disciplines and their understanding of corporate reputation.

	Discipline	Reputation perspective	Found in
	Accounting	Intangible asset that can or should be given financial worth.	Chun (2005)
✓	Corporate Communications	Reputation is developed by consistent and orchestrated corporate communications.	Van Riel and Fombrun (2007)
	Economy	Game theory and probabilities of reputation influence in cases with complete or incomplete information.	Noe (2012)
✓	Marketing	Customer's or end-user's judgement about a company's attributes. Role of reputation in purchasing decisions.	Chun (2005), Srivoravilai et al. (2011)
	Organizational behaviour	Perception of the organization held by its internal stakeholders, such as employees.	Chun (2005)
	Sociology	Aggregate assessment of an organization's performance relative to expectation and norms in an institutional context: role of the company in society.	Chun (2005), Jensen et al. (2012)
✓	Strategic Management	Resource-based theory and signalling theory. An attribute or a set of attributes ascribed to an organization over time by public, inferred from its past actions.	Chun (2005), Srivoravilai et al. (2011)

Table 5: Academic disciplines and their understanding of corporate reputation. Source: Own compilation.

Three disciplines have been identified as playing a role in this thesis and they are interlinked with the reputational perceptions of hospital procurement managers: strategic management, corporate communication and marketing. This choice recognizes the importance of corporate reputation for strategic management, acknowledges the role of corporate communications for building reputations and shares the customer perspective that is typically described by marketing scholars.

Although the four other perspectives discuss interesting reputational aspects, they do not contribute directly to an understanding of reputation as a customer's perception. The accounting perspective aims to describe the financial worth of corporate reputation (Srivastava, McInish, Wood, & Capraro, 1997), the economic perspective reflects mainly game theory and evaluates the probabilities of reputation influence (Tadelis, 2003). The organizational behaviour perspective suggests insights from perceptions of internal stakeholders only (Whetten & Mackey, 2002). The sociological perspective explores the role of corporate reputation as a general societal standing of companies (Bitektine, 2011; Jensen et al., 2012), and thus will be further introduced in sub-section 2.3.4. This sub-section will introduce sociological constructs that are often used interchangeably with reputation, such as status, legitimacy, prestige and stigma.

The following three sub-sections reflect the strategic management, corporate communications and marketing perspectives. Moreover, unwrapping corporate reputation from these perspectives contributes to the explanation of this rich and complex construct. In the fourth sub-section, how the different perspectives will be included in the definitional understanding of this thesis will be described. Which literature is seen as the most relevant for developing a definition and concept of medical device company reputation is then demonstrated.

2.1.1. Strategic management perspective

Several corporate reputation theories can be found in the strategic management literature, the resource-based view and signalling theory are the most widely employed (Ali et al., 2015). Whereas the resource-based view explains corporate reputation from a company's perspective, signalling theory provides a more stakeholder-centred approach.

Figure 6 introduces major elements and their relations in both theories. Both theories have three elements in common: They describe the company as a key constituent, place corporate reputation in their frameworks, and mention a good reputation as being one of the most important intangible values to gain a sustainable competitive advantage.

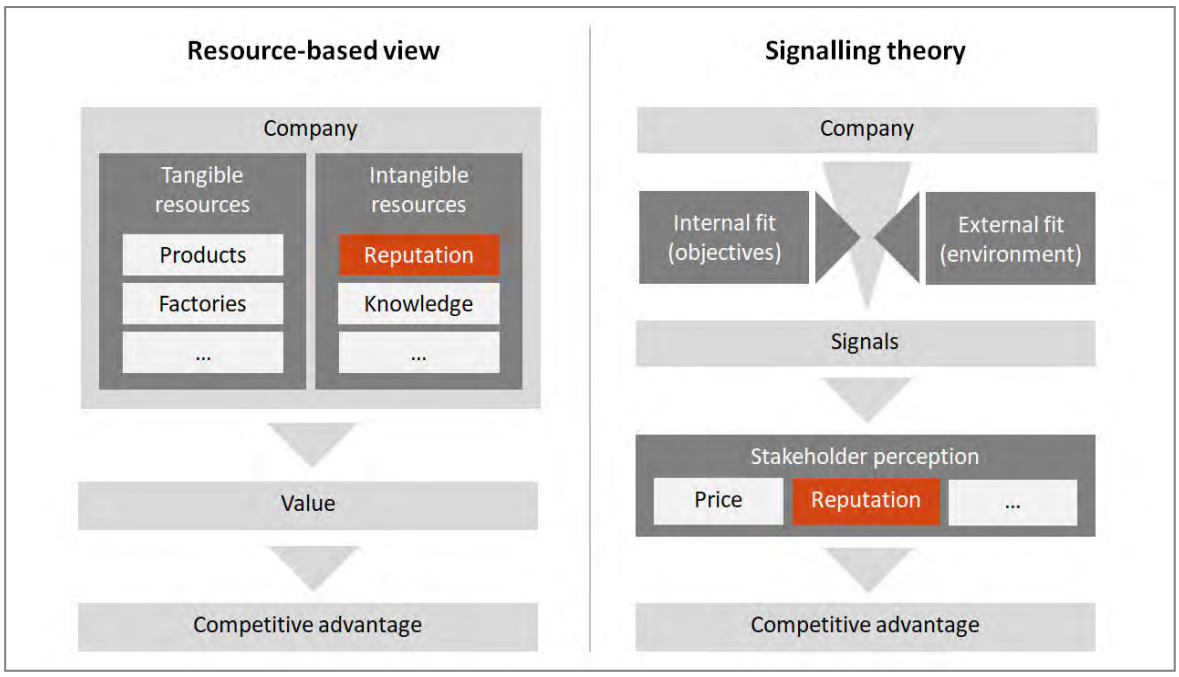

Figure 6: Comparison of resource-based view and signalling theory. Source: Own compilation, based on Fombrun and Shanley (1990), Hall (1992), Laskin (2013), McMillan and Joshi (1997), and Roberts and Dowling (2002).

According to management strategists, sustainable competitive advantage can be reached by having a favourable corporate reputation in two ways. First, companies are able to improve their market position by an active communication of their reputation, differentiating themselves from the competition and creating high market entry barriers for potential competitors (Weigelt & Camerer, 1988). Second, a favourable reputation can be beneficial when companies get attacked or are conflicted in crises, preserving its relationship to customers, increasing the chance for a neutral

public position and softening the crisis outcomes (Baldarelli & Gigli, 2014; Marquina Feldman, Arellano Bahamonde, & Velasquez Bellido, 2014).

The similarities between the resource-based view and the signalling theory end here. It is not surprising that the resource-based view relies on the many resources a company can provide. Beside tangible resources such as financial assets, buildings, equipment and products, companies own a sum of intangible resources that are also referred to as strategic resources (Deephouse, 2000). These resources represent ideas rather than physical forms (Hall, 1992). Examples for intangibles are knowledge and skills of management and employees, corporate culture, image, brand, and reputation (Deephouse, 2000; Hall, 1992).

Scholars characterise intangible resources, and reputation in particular, as valuable and rare as well as difficult to imitate, substitute and transfer (Baldarelli & Gigli, 2014; Carmeli & Tishler, 2005). The value-creating role of reputation as a performance driver results in a sustainable competitive advantage (Boyd, Bergh, & Ketchen, 2010; Fombrun, 1996). The resource-based view literature indicates that reputation needs to be formed in a long-term process inside an organization (Keh & Xie, 2009). Mahon (2002, p. 423) explains reputation as ‘a combination of historical action ... and relationship building’, a reasonable interpretation that could also fit for signalling theorists.

Signalling theory focuses on signals that are sent from a company to stakeholders, aiming to create a positive reputation perception (Fombrun et al., 2015). In their scheme of a strategy-based corporate reputation, Dowling and Moran (2012) introduced the need for an internal and external fit when sending purposive statements. Internal fit means here that the information should be aligned with the objectives and the business model of the company. External fit means the alignment with the strategy

towards the company's environment, involving the expectations of its stakeholders (Dowling & Moran, 2012).

Signals can be understood as strategic actions such as price setting, market performance, warranty policy, product quality, institutional ownership, social responsibility, media visibility, firm size, differentiation, diversification, and other company competencies (Basdeo, Smith, Grimm, Rindova, & Derfus, 2006; Fombrun et al., 2015). They have the potential to influence stakeholders' perception of a company (Basdeo et al., 2006). Additionally, reputation signals can be any information about the company, whether it is given by the company itself or provided by other sources such as formal media, social media, word-of-mouth, competitors or industries (Basdeo et al., 2006; Fombrun et al., 2015).

Signalling theory is stakeholder-centred and relies on their values, perspectives and activities (Fombrun, 2012). If companies cannot match the stakeholder expectations with their actions and communications, their reputations are likely to be damaged (Basdeo et al., 2006; Mahon, 2002). When considering what impact reputation signals have on stakeholder perceptions, it becomes evident why companies need to regard the long-term effect of their actions carefully and communicate professionally (Fombrun, 2012). Positive signals might assuage the concerns of the stakeholders about the product or service quality and they are more willing to enter into exchange relationships with the company, decide for a purchase and pay premium prices (Puncheva, 2008; Rindova, Williamson, Petkova, & Sever, 2005; Shapiro, 1982).

The reputational effect seems to be the greatest when potential customers intend to purchase an item for the first time and for long-term use, as well as when they have only imperfect information, uncertainty and no supplier experience (Cravens & Oliver, 2006; Jeng, 2011; Rindova et al., 2005;

Schwaiger, 2004; Shapiro, 1982). They aim to close these information gaps by evaluating a company's reputation; for example, by observing the previous actions of the company, and predicting about its performance in future (Barron & Rolfe, 2012; Weigelt & Camerer, 1988).

The strategic management perspective is most relevant when interpreting the corporate reputation of medical device companies. The resource-based view can help to evaluate the role of reputation as an intangible resource in the industry. Signalling theory implies a strong stakeholder perspective that is beneficial when explaining perceptions of hospital procurement managers. Also, the multiple signals that form a reputation perception can explain some causal relations in the reputation construct and are therefore a good starting point for the development of a reputational framework.

2.1.2. Corporate communication perspective

Corporate communications, defined as activities for managing and orchestrating all internal and external communications towards the company's stakeholders (Van Riel & Fombrun, 2007), has changed dramatically over the last 20 years. The main reason for the change is the rise of digital media that lead to numerous new communication channels to be considered (Floreddu, Cabiddu, & Evaristo, 2014; Hecht, Hahn-Griffiths, & Kliger, 2017). Moreover, borders between media categories, such as TV, radio, print and internet are vanishing – overlays and interdependencies are no exceptions anymore.

Amidst this environment, the requirements and objectives of corporate communications have been described more accurately. This includes building and safeguarding reputation as one of the most important goals, if not the core philosophy of all corporate communication activities (Brønn, 2013; Chen, 2011; Shamma, 2012). At the same time, corporate reputation

is widely discussed by communication academics. One recent example is the publication of the 600-page *Handbook of communication and corporate reputation*, published in 2013, covering perspectives from 14 communication sub-disciplines in over 50 articles (Carroll, 2013).

Corporate communications can be seen as a cornerstone of signalling theory, providing signal information to the company's multiple stakeholders (Deephouse, 2000; Shamma, 2012). It is sometimes the only 'basis on which stakeholders base their impression of an organization' (Brønn, 2013, p. 59). Therefore, the main interest of the corporate communication literature is to explain how corporate reputation can be managed by communication activities (Forman & Argenti, 2005). Figure 7 gives an overview of this perspective, including some of the identified paradigms, such as the PESO model, agenda setting theory, media reputation and stakeholder theory.

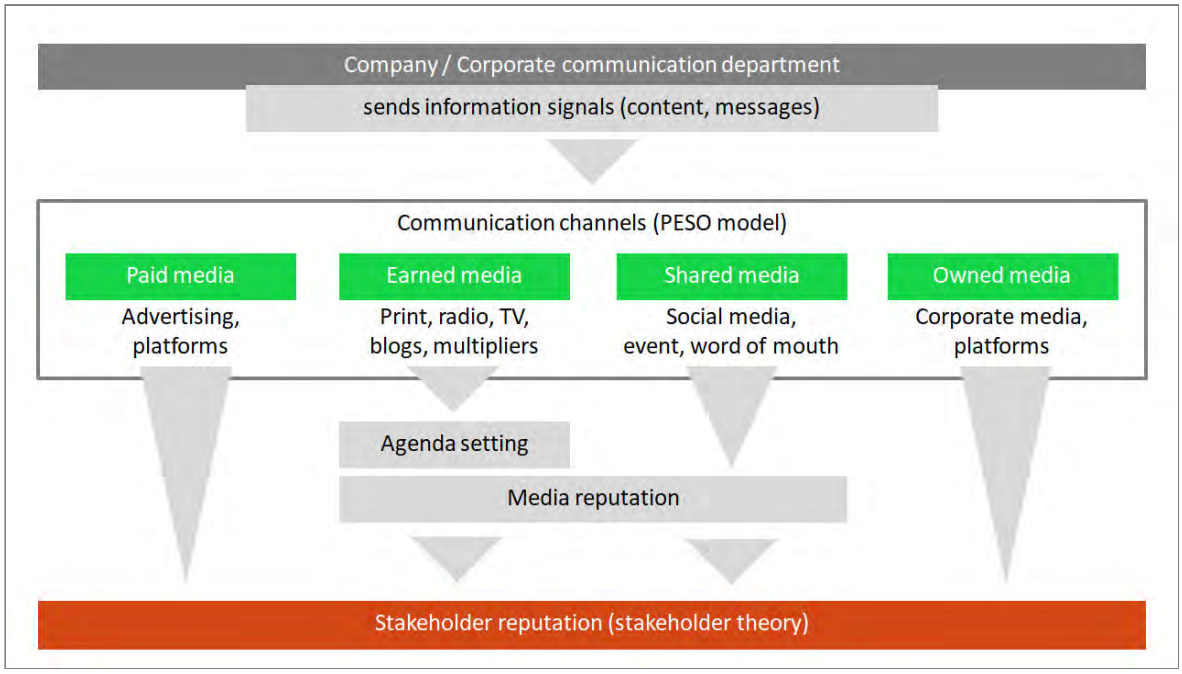

Figure 7: Corporate communication perspective on reputation management. Source: Own compilation, based on Dietrich (2013), Risi (2015), Smudde and Courtright (2013), and Van Riel and Fombrun (2007).

Company communication is usually strategized and executed by the corporate communication department (Smudde & Courtright, 2013). However, there are many more communicators, such as all the employees of the company. Larger communication shares are owned by the management team, by marketing, sales and legal divisions (Smudde & Courtright, 2013). All of them send information signals that should be as consistent as possible (Risi, 2015). Communication professionals are unified to ensure creating a clear message design, a convincing corporate story and philosophy, and credible employee and customer case studies (Dowling, 2006; Smudde & Courtright, 2013).

The numerous media channels were sorted recently in a PESO model by the communication practitioner Dietrich (2013). She grouped four types of media: **P**aid media, **E**arned media, **S**hared media and **O**wned media (Dietrich, 2013; Ritter, 2015). These four media types are also valued by experts when launching communications strategically (Risi, 2015). As this model is different from conventional media classifications, it will be explained in detail.

Paid media are based mainly on advertising in all kinds of media, including traditional media, social media platforms and other internet channels (Schmidt, 2015). The stakeholders can be reached directly by paid media. Reputational effects depend on the consistency and credibility of the content and messages in the advertisements. Besides, paid media also means to invest in wire services and online platforms to distribute the company's content. Through these distribution channels, larger audiences can be addressed and the impact of the message might increase (Dietrich, 2013, 2016; Ritter, 2015).

Earned media channels are run by professionals, such as journalists, analysts or bloggers, and all traditional media channels belong to this

group (Schmidt, 2015). Companies need to 'earn' every story and need to establish professional relationships with these intermediaries. Spreading messages via earned media does not guarantee to reach an immediate or even any result since the intermediaries act as gatekeepers who look for balanced, audience-oriented stories and select news accordingly (Deephouse, 2000; Dietrich, 2016). This news selection process, based on factors like frequency, intensity, unambiguity or unexpectedness, has been described and refined by academics for half a century. Galtung and Ruge (1965) were the first to collect twelve selection factors that can be found in appendix 6.

Agenda setting theorists found that there is a positive correlation between the impact of topics in the mass media and the relevance of these topics in public opinion (Einwiller, Carroll, & Korn, 2010; Kim, Kiousis, & Xiang, 2015; Meijer & Kleinnijenhuis, 2006). A study among journalists suggested that the coverage of a company depends more on corporate communication effectiveness than on its business performance (Lewis, 2001). Corporate communicators can benefit from this perception and develop campaigns that transport strong corporate messages (Kim et al., 2015).

Although there is no guarantee for companies being mentioned favourably in earned media, the efforts of the corporate communication department are well invested. Once a positive news piece is published, it can boost reputation due to the perceived objectivity and credibility of the media publication (Kim et al., 2015).

A major part of shared media is covered by social media channels such as Facebook, Twitter, YouTube, Linked In and Instagram (Dietrich, 2013, 2016). Social media has revolutionized communication, establishing a direct company-stakeholder dialogue that enables stakeholders to share their thoughts and ideas (Floreddu et al., 2014). With intelligent digital

strategies and relevant postings, companies can attract their stakeholders directly through social media channels, and let them like, comment and share their posts (Floreddu et al., 2014; Ritter, 2015). Recent articles in the academic and management literature propose a close relationship between the professional management of social media channels and the increase in reputation (Hecht et al., 2017). There are numerous additional social media channels such as social intranets within companies, advising platforms such as Trip Advisor, commentary functions on websites and – offline – corporate events, industry and stakeholder meetings as well as every individual face-to-face communication.

Finally, owned media includes all content that is published by the company in its own media channels and platforms. These include the corporate website, intranet, corporate blogs, social media accounts, printed and digital books, reports, brochures, visitor centres, brand spaces and events (Ritter, 2015). All of them are ideal for reaching stakeholders with original messages and stories, so they should not be underestimated (Dietrich, 2016; Dowling, 2006). If the content is valuable and presented professionally (Schmidt, 2015), stakeholders are likely to perceive them as trustworthy, although they know that the company has its own communication agenda.

Deephouse (2000, p. 1091) developed a construct called media reputation, which he defined as 'the overall evaluation of a firm presented in the media'. Based on mass communication theory, it can be assumed that he took earned media into consideration, evaluating media favourableness of companies (Deephouse, 2000). Transferring his concept to the PESO model, only the analysis of shared media would add to media reputation knowledge since the messages in paid and owned media can be influenced by the company directly. Therefore, it is important to emphasize that

media reputation, as defined by Deephouse, is not a synonym of corporate reputation but is one of its antecedents (Dowling & Gardberg, 2012).

The PESO model is beneficial for classifying the communication channels of reputational information reaching the stakeholders. It can be important in reputational research to enhance the explanation of media's role in managing reputation.

All corporate communication activities address the company's relationships to its stakeholders, such as customers, suppliers, financiers, communities and employees (Petrokaitė & Stravinskienė, 2013). Whereas Freeman, the founder of stakeholder theory, suggested that executives need to manage and shape these relationships by themselves (Parmar et al., 2010), other scholars attributed this role at least partly to corporate communications (Chen, 2011; Einwiller et al., 2010).

Corporate communications has a high potential to create and maintain awareness, involvement and connection to stakeholders, leading to a positive perception of the company's reputation (Lewis, 2001). As such, it develops stories in the four media types and thus provides rich information about the company that is assumed to be one major antecedent of reputation. As a result, in practice, corporate communications have taken some of the responsibility for managing stakeholders from executives, providing the stakeholders with authentic content, consistent messages and continuous interaction to enhance the company's reputation.

2.1.3. Marketing perspective

The concept of corporate reputation has been addressed by a variety of marketing scholars, using it as a signal to attract customers, to increase sales force effectiveness and to support new product introductions (Chen,

2011; Roberts & Dowling, 2002). Walsh and Beatty (2007) explored that reputational considerations have been accepted among marketing academics and practitioners as being no less significant than operational, legal, and financial decisions. However, there are only a few reputation studies focusing on customers (Terblanche, 2014; Walsh & Beatty, 2007; Walsh et al., 2009), who are anticipated as the most important stakeholder group for companies (Page & Fearn, 2005; Terblanche, 2014). Moreover, as outlined in sub-section 1.3.1., the reputation of suppliers, particularly in B2B relationships, has been underresearched and is identified as a wide research gap among scholars (Lienland et al., 2013; Suh & Houston, 2010).

Walsh and Beatty (2007) were among the first researchers to focus on customer-based corporate reputation solely, providing a specific definition, determining attributes and introducing a measurement model that reflects the marketing perspective. The refined model two years later also included outcome attributes of corporate reputation that contribute to the customer's decision-making process (Walsh et al., 2009), one of the major research interests of marketing scholars (Srivoravilai et al., 2011). Although corporate reputation has not been included in decision-making frameworks theoretically, it is widely accepted in the literature that it has impacts on the purchasing process (Chen, 2011; Dijkmans et al., 2015; Puncheva, 2008). Figure 8 illustrates a basic flowchart of the customer's purchasing process, locating reputation at its beginning and at its end.

The literature provides two different views of how reputation influences the decision-making of a potential customer or a customer. Both are linked with the customer's evaluation of a company and its products or services. Representatives of the first view identify a reputational impact only when experience, relationship and information for decision-making are uncertain or not available (Roberts & Dowling, 2002; Weigelt & Camerer, 1988).

Authors of the second view conceptualize reputation as the result of experience, relationship and information (Markham, 1972; Walsh & Beatty, 2007).

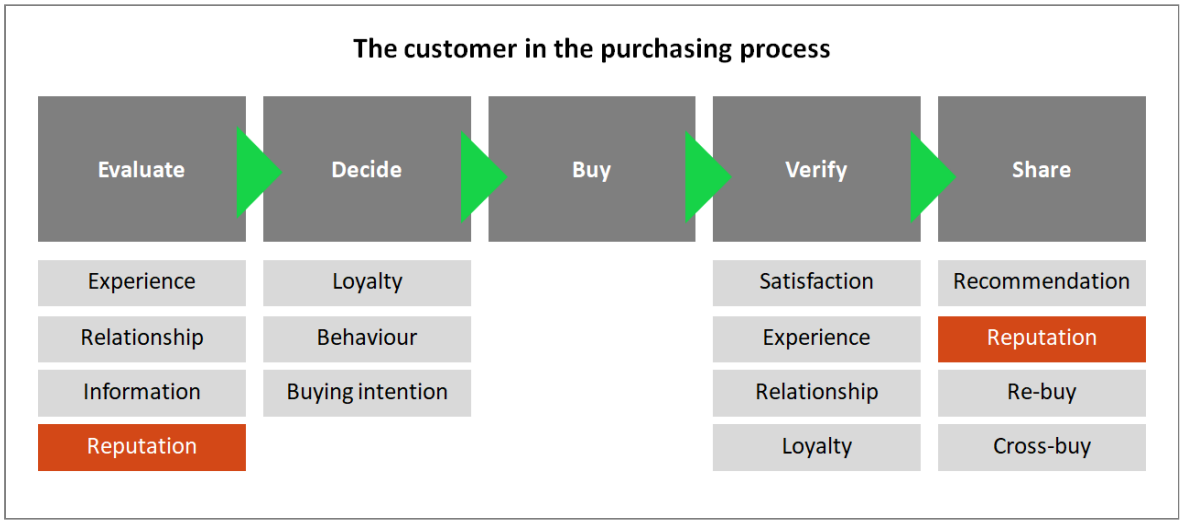

Figure 8: The role of reputation for the customer in the purchasing process. Source: Own compilation, based on Jeng (2011), Markham (1972), Puncheva (2008), and Walsh and Beatty (2007).

The difference between both views can be found in the perspective. The first view defines the role of reputation as a single information source that is used for decision-making processes with special characteristics (Puncheva, 2008; Van Riel & Fombrun, 2007). The uncertainty and absence of experience, relationship to the company and information are the major reasons for using corporate reputation – high evaluation costs and time constraints are other ones (Chen, 2011; Puncheva, 2008). Van Riel and Fombrun (2007) and Jeng (2011) stated additional reasons such as the complexity of the decision, conflicting information or information overload as well as similarity in quality and price. Most of these characteristics apply when the customer intends to buy a product or service for the first time (Puncheva, 2008).

This first view contradicts the findings of signalling theory, which does not separate information signals from reputation. Additionally, some of the abovementioned authors admit that there is a relationship between information and reputation, for instance, that high prices and high quality point to a strong reputation (Chen, 2011; Weigelt & Camerer, 1988). Therefore, the second view, agreeing on interdependencies of reputation with other variables (Walsh & Beatty, 2007), can better describe the complex decision-making process. It not only connects reputation with information signals (Graham & Bansal, 2007), but recognizes previous experiences and interactions with company representatives as part of it (Barron & Rolfe, 2012; Markham, 1972). Walsh and Beatty (2007, p. 129) concluded accordingly: 'corporate reputation may be viewed as a customer's evaluation that results from either or both his or her personal interaction experience ..., as well as from reputation-relevant information received about the firm.'

Besides the role of corporate reputation in evaluating a company, product or service, several scholars found positive correlations to emotional attributes of decision-making such as customer loyalty, customer behaviour and buying intention (Walsh & Beatty, 2007; Walsh et al., 2011). Reputation has the potential to create a 'mental shortcut for stakeholders' (Van Riel & Fombrun, 2007, p. 49) that simplifies decision rules and stimulates the purchase (Andreassen, 1994).

After the completion of the purchase, customers verify if the product or service has met their expectations. If they experience a poor performance it is unlikely that they will repeat the purchase (Walsh et al., 2011). However, if they experience good performance, their post-purchase satisfaction increases and leads to a higher reputation (Eberl & Schwaiger, 2005). This reputational post-purchase effect is substantial, since

customers are willing to share their individual impressions (Puncheva, 2008), especially if they are very good or very poor (Walsh & Beatty, 2007). Very satisfied customers generate a positive word of mouth, give recommendations to other stakeholders in the decision-making process, and tend to act as company advocates (Walsh & Beatty, 2007). A favourable reputation supports repeat purchases and even the cross-buying of one company's products resulting in stable revenue streams (Jeng, 2011).

For this research, the marketing perspective is meaningful since hospital procurement managers are customers of medical device companies. Particularly, the mapping of reputation antecedents and consequences should include considerations of the marketing literature, addressing the causal relations in the reputation construct. Finally, the corporate reputation attributes themselves should be based on a customer-based reputation model (Walsh & Beatty, 2007; Walsh et al., 2009; Walsh et al., 2009), and their interdependencies with antecedents and consequences should be explained.

2.1.4. Academic perspectives and most influential literature

The three academic perspectives explained here are relevant for defining corporate reputation with its constituents, antecedents and consequences. Strategic management, corporate communications and marketing all give momentum to the overall concept in a variety of ways.

Strategic management refers to competitive advantage and company performance as a consequence of a positive corporate reputation. Signalling theory emphasizes that different kinds of signals shape reputation; in the reputation concept, signals will be translated to

attributes, and the communication of signals is a precondition that stakeholders perceive these reputation attributes.

Corporate communications literature describes different channels that transport reputations content to the stakeholders. These channels of paid, earned, shared and owned media are treated as media antecedents in this thesis and transparency as the desired result of communication is an attribute of the reputation concept.

The marketing perspective includes the typical characteristics of a seller-buyer relationship, such as experience, product and service quality, satisfaction and loyalty. These characteristics are highly relevant constituents of the reputation construct in this thesis, since hospital procurement managers are buyers of medical devices.

Fombrun (2012) agrees on the procedure of creating a construct of corporate reputation by using different academic perspectives. Moreover, he delivers an updated definition of reputation and provides extended explanations about reputation antecedents and consequences. Together with the attribute description from the established RepTrak® system (Fombrun et al., 2015), this article is one of the literature sources with the most influence on this thesis. An earlier article that highlighted the importance of thinking about antecedents and consequences is from Money and Hillenbrand (2006), who started to ask whether reputation should be embedded in a structure and processes.

Groundbreaking for the analysis of customer-based reputation is Walsh and Beatty (2007), who revealed that reputation scales should be tailored depending on industry and perceiving stakeholder groups. It is a major literature source for this thesis, which also concentrates on reputation from the view of customers. Together with Wiedmann, Walsh was among

the first scholars to focus on the German market, researching it as a specific environment in reputation research (Walsh & Wiedmann, 2004). An inspiring article that questions the general measurement scales is Wartick (2002). He covered much more than just measuring; however, he called for greater clarity about what reputation means in different industries, stakeholder groups and environments.

Three literature reviews about reputational definitions helped to distill the many reputation definitions to a common understanding (Barnett et al., 2006; Lange et al., 2011; Walker, 2010). The most valuable one for this thesis was from Lange et al. (2011), who built a model that includes all definitional perspectives and was the basis for the reputational conceptualization in this doctoral study.

Besides these most influential sources, there were many other academic and business authors who added important stimuli to key aspects of this thesis. The combination of theoretical discussions, building a reputational concept and the acceptance of reputational research by practitioners, made the research particularly fulfilling and value-creating.

2.2. Towards a reputational definition

The list of academic authors who postulated definitional clarity for the construct of corporate reputation is long (Barnett & Pollock, 2012; Fombrun & van Riel, 1997; Mahon, 2002; Walker, 2010; Wartick, 2002). The confusion among scholars from different disciplines is ‘significant’ (Foreman, Whetten, & Mackey, 2012), and the diversity of reputation research disciplines does not indicate that this will change in future. Nevertheless, this definitional polyphony also reflects that corporate reputation is widely accepted as a topic of research and attracts an increasing number of academics (Smaiziene & Jucevicius, 2009).

Numerous authors aimed to integrate the different definitional approaches (Chun, 2005; Fombrun, 2012; Fombrun & van Riel, 1997; Gotsi & Wilson, 2001). Moreover, there have been expanded literature reviews that categorized the diverse understandings of corporate reputation (Barnett et al., 2006; Lange et al., 2011; Walker, 2010). In the next sub-section, these categorizations are discussed to provide a definitional base.

The following sub-section addresses the widely discussed question if one or many corporate reputations of a company exist (Bromley, 2002; Helm, 2007). The question is central to this thesis, since the many reputations approach implies specificity in the healthcare area that has only been addressed by a few authors. To address this, a definition for medical device reputation will be compiled and explained.

2.2.1. Searching for a consistent definition

The term 'reputation' is derived from the Latin verb *reputare*, meaning 'to count', 'to consider', 'to reckon' (Mahon, 2002; Origgi, 2012). The prefix 're-' points to a repetition of this consideration (Origgi, 2012) and leads to the assumption that reputation is linked with a continuous assessment of someone or something by someone (Noe, 2012).

There is a strong agreement in the literature that the first integrative definition of corporate reputation was provided by Fombrun (1996). He defined the construct as 'a perceptual representation of a company's past actions and future prospects that describes the firm's overall appeal to all of its key constituents when compared with other leading rivals' (Fombrun, 1996, p. 72). This has been the most referenced definition in the reputation literature (Walker, 2010; Wartick, 2002).

This definition consists of three key attributes that are good starting points for the definitional discussion. First, reputation is based on perceptions by stakeholders. This means that it is not only based on accurate information about a company's past actions, but influenced by impressions and expectations for the future (Fombrun, 1996; Walker, 2010). As an impression, corporate reputation has been proved to be fairly volatile and needs to be treated as a constantly emerging phenomenon (Dowling & Gardberg, 2012).

Second, reputation describes the firm's overall appeal to all of its stakeholders. This part of the definition has caused major discussions among academics since there might be different perceptions of a company in different stakeholder groups (Pires & Trez, 2018; Walker, 2010). These discussions are central to this doctoral thesis, which specifically follows the many reputations approach. In the next sub-section, this view is explained and defended by pointing out the distinguishing features of the medical device industry, the hospital procurement manager stakeholder group and the business environment in Germany.

Third, corporate reputation is compared with that of other leading rivals, an expression, which ignores the view that the reputation of the same company could be evaluated and compared over time (Wartick, 2002). Moreover, the term 'leading rivals' suggests that companies not identified as leading rivals might not have reputation characteristics to be compared with. Besides, it remains unclear what 'rivals' really means. They could be competitors from various perspectives: same industry, same type of company, same size of company, same country of origin, same contest for financial resources or for public awareness. Wartick (2002, p. 380) suggests substituting 'leading rivals' with 'some standard'. This general expression includes the possible comparisons to a past performance of the same

company, a company objective, leading rivals or an industry average (Walker, 2010; Wartick, 2002).

Since 1996, Fombrun's definition has been agreed, opposed, developed and refined many times. The three reputation literature reviews by Barnett et al. (2006), Walker (2010), and Lange et al. (2011) found 116 different articles with definitions of corporate reputation. Table 6 shows how the reviewers systemized and categorized the definitions.

Reviewer(s)	Categorization	Number of articles reviewed
Barnett et al. (2006)	(1) Reputation as a state of awareness (2) Reputation as assessment (3) Reputation as asset	49
Walker (2010)	(1) Based on perceptions (2) Aggregate perception of all stakeholders (3) Comparative (4) Can be positive and negative (5) Stable and enduring	55
Lange et al. (2011)	(1) Being known (awareness or visibility) (2) Being known for something (specific interest) (3) Generalized favourability (overall perception)	43

Table 6: Definitional categorizations of reputation literature reviews. Note: All three reviews used 116 different articles. The gap to the accumulated 147 articles is caused by citing the same articles in two (19x) or three (6x) of the reviews. Source: Own compilation, based on the sources given in the table.

Barnett et al. (2006) conducted a meta-analysis of 49 books and articles with definitions of corporate reputation. They clustered the definitions in three categories of meaning: corporate reputation as state of awareness, as assessment and as asset. Reputation as a state of awareness means that stakeholders have perceptions of awareness of a company but do not make judgements about it. The underlying assumption behind

the assessment terminology is that the stakeholders judge, estimate, evaluate or gauge a company's reputation – and perceive its level of attractiveness. The third understanding of reputation as an asset refers to a kind of value or significance of corporate reputation. Although some interfaces between them may exist, the three clusters are relatively distinct (Barnett et al., 2006).

There are three justifications of why Barnett et al. (2006) decided for the second cluster 'reputation as an assessment' as the most accurate one. First, they highlighted the evaluative nature of reputation as a perceptive judgement. Second, the definition of reputation as an assessment was the most frequently used in the analysed literature. Third, it seems to be the only definition that refers to a current state of reputation (Fombrun, 2012).

Finally, Barnett et al. (2006) defined corporate reputation as 'the observers' collective judgements of a corporation based on assessments of the financial, social, and environmental impacts attributed to the corporation over time' (p. 34). Besides the decision about the meaning of assessment, the definition incorporates some attributes of reputation mentioning financial, social and environmental impacts. This distinction has been rightly criticized by Fombrun (2012) who emphasized that these attributes 'are by far not all leading to a corporate reputation' (p. 99). Another term in the definition, 'over time', has been supported by many academics, highlighting, that corporate reputation has a temporal attribute, it is built slowly and is long-lasting (Barnett & Pollock, 2012; Mahon, 2002; Walker, 2010).

In his systematic literature review of 55 studies, Walker (2010) listed the most common characteristics in 13 definitions of reputation (appendix 7). He identified five characteristics, three of them derived from Fombrun's early definition. The two additional attributes describe corporate

reputation as something that can be positive or negative, and something that is stable and enduring. Although it is not explicitly reflected in most of the corporate reputation definitions, they should at least allow a reputation to be positive and negative (Walker, 2010). This characteristic is important for reputation measurement, as it contributes to a transparent comparison between companies. Furthermore, Walker (2010) suggested including the long-term orientation of reputation in a definition, following the thoughts of Barnett et al. (2006).

Walker's definition of corporate reputation refined the initial definition by Fombrun (1996): Corporate reputation is '[a] relatively stable, issue-specific aggregate perceptual representation of a company's past actions and future prospects compared against some standard' (Walker, 2010, p. 370). The definition includes the time attribute, bundles the reputation attributes of Barnett et al. (2006) in the term 'issue-specific' and uses the expression 'against some standard', as suggested by Wartick (2002). However, it remains questionable if the issue specification and comparison with a standard should belong to a corporate reputation definition (Fombrun, 2012). Both expressions somehow raise more questions than answers about what reputation really is.

Lange et al. (2011) analysed 43 definitions of corporate reputation in their literature review. They categorized the findings in three reputation understandings: being known, being known for something and generalized favourability. The first category, being known, incorporates a generalized awareness of visibility of a company in the collective perception, just as in the 'reputation as a state of awareness' category found in Barnett et al. (2006). Reputation is seen to be stronger if the representation or prominence of a company and its attributes is distinctive, independent of

any judgement of perceivers (Graham & Bansal, 2007; Lange et al., 2011; Origgi, 2012; Rindova et al., 2005).

The second category, 'being known for something', is often used for formative multi-attribute frameworks of corporate reputation, consisting of numerous attributes (Berens & van Riel, 2004; Helm, 2005). It suggests that a company has particular attributes that are valuable for the evaluating perceivers. This category supports the view of corporate reputation in relation to a specific context or issue, a specific stakeholder group, and expectations based on the past company actions (Lange et al., 2011; Mahon, 2002; Walsh & Beatty, 2007; Wartick, 2002).

The third category, 'generalized favourability', represents the aggregate perception of the overall company by its stakeholders. Contrary to the 'being known for something' category, perceivers do not evaluate particular attributes, but assess the company's overall attractiveness or their overall emotional attachment to the company (Berens & van Riel, 2004; Lange et al., 2011; Ponzi et al., 2011). Because a majority of academics use the word 'attractiveness' and not 'favourability', 'attractiveness' will be used in this doctoral thesis.

Although the second category is recognized by most of the studies analysed, Lange et al. (2011) did not decide to refine a definition covering this perspective. Instead, they combined all categories in a cube model that shows the richness of the reputation construct (figure 9).

For the definition of corporate reputation, this multi-attribute model implicates that different categories should be embedded rather than separated. Lange et al.'s categories of awareness (A) and assessment (B/C), as well as the attribute-level (B) and overall attractiveness evaluation

(C) approaches, do not contradict each other, but can all contribute to a richer understanding of corporate reputation (Khan & Digout, 2018).

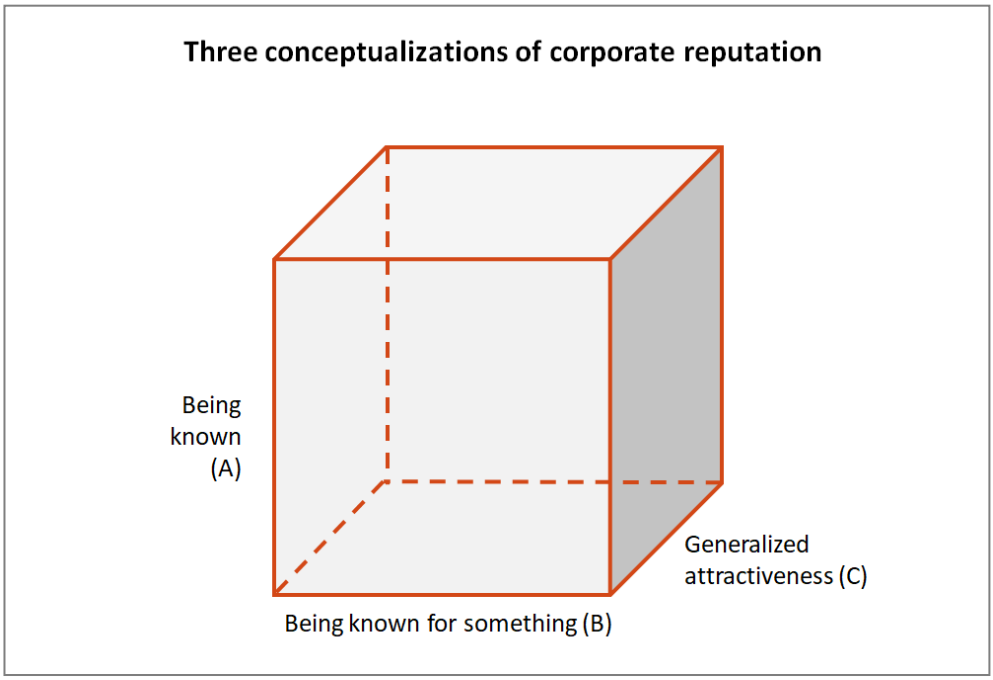

Figure 9: A cube model of corporate reputation categories. Source: Adapted from Lange et al. (2011, p. 163).

The cube model is a promising approach to describe reputation more accurately and is considered a basis for a theoretical corporate reputation framework in this doctoral research. However, before determining a reputational definition that will be used, another major question needs to be clarified: The enquiry regarding the singularity or plurality of the reputation concept.

2.2.2. One reputation or many?

The question 'Do firms have one reputation or many?' was asked first by Fombrun and Shanley (1990, p. 254) and has been referred to by almost all following academics who have aimed to find a consistent definition. The background of this question is the measurement practice of corporate

reputation, particularly Fortune magazine's Most Admired Company (FMAC) ranking, comparing the overall reputation of large companies from all industries (Helm, 2007). The ranking has been proven to be financially biased (Dowling & Moran, 2012; Fryxell & Wang, 1994), but reflects an understanding that there is one distinct reputation which could be measured accurately by its formative attributes (Fombrun, Gardberg, & Sever, 2000). Moreover, this grand aggregation approach suggests that all stakeholders of all companies share similar reputational perceptions and reproduce the same importance for the rated companies (Walsh & Beatty, 2007; Wartick, 2002).

The FMAC measurement approach has partially survived in the measurement standards of the Reputation Quotient (Fombrun et al., 2000) and today's established RepTrak® system. Although the Reputation Institute has increased the number and the depth of RepTrak® reputation rankings, including different country, industry and stakeholder perspectives, the general rankings with fixed attributes are still used and defended (Fombrun et al., 2015). This grand aggregation approach follows Fombrun's early perspective that reputation is a 'net assessment of many individual appraisals of a company by its constituents' (Fombrun, 1996, p. 395), and his early definition as discussed in the previous sub-section. Besides, it meets the pragmatic needs of practitioners and the public, who are used to have general comparisons between leading companies across industries (Fombrun, 2007; Fombrun et al., 2015). However, it has been criticized for having a marginal predictive value and for being a beauty contest (Dowling & Gardberg, 2012).

Following the debates about the corporate reputation construct and its many differentiations, Fombrun emphasized in a more recent publication (2012, p. 100) that his early definition might be limiting, and revised it to:

‘A corporate reputation is a collective assessment of a company’s attractiveness to a specific group of stakeholders relative to a reference group of companies with which the company competes for resources.’ This definition includes the two expressions ‘specific group of stakeholders’ and ‘relative to a reference group’ that direct to the many reputations approach of numerous researchers (Dowling & Gardberg, 2012; Helm, 2007; Pires & Trez, 2018; Walsh & Beatty, 2007).

For the reputation conceptualization in this study, the many reputations approach is the cornerstone that defines most of the individual antecedents, attributes, consequences and mechanisms of medical device company reputation. Here, a general reputation construct that compares different industries is hardly imaginable. Also, the stakeholder group of hospital procurement managers is very specific, as is the healthcare system in Germany in comparison to other countries. Therefore, this study follows and applies the many reputations approach. Table 7 presents all identified specifications of this approach and defines the specifications of this doctoral thesis.

Reputations are industry specific. This underlying assumption is the connection of the reputation concept with an industry based reference group of companies, as provided in the definition of Fombrun (2012). It is questionable if manufacturing and service companies share a common set of reputation attributes since they are completely different types of companies (Dowling & Gardberg, 2012). Depending on different industries, there could be different expectations by stakeholders, different central influences, and therefore an individualized set of reputation attributes (Dowling & Gardberg, 2012; Ethics-Research-Center, 2011; Renner, 2011). The attributes of companies in stigmatized industries, such as cigarette manufacturers, differ to the ones of lionized industries, such as health care

institutions (Dowling & Gardberg, 2012). Energy companies might focus more on environmental responsibility, whereas financial services companies are expected to take more ethical responsibility concerning investments (Ethics-Research-Center, 2011).

#	Specification	Specification in this thesis
1	Industry specific (relative to reference group) Q: Reputation of what?	Medical device companies
2	Stakeholder specific (perceptions in one stakeholder group) Q: Reputation by whom?	Hospital procurement managers
3	Environment specific (differences in region, culture or business environment) Q: Reputation in which environment?	Germany
4	Issue-specific (perceptions of single reputational attributes) Q: Reputation for what?	No specification; integrative mapping is the goal

Table 7: Specifications of the many reputations approach. Source: Own compilation, based on Apéria, Brønn, and Schultz (2004), Deephouse, Newburry, and Soleimani (2016), Dowling and Gardberg (2012), Fombrun (2012), Renner (2011), Walker (2010), Walsh and Beatty (2007), and Wartick (2002).

A number of recent studies explored the reputation construct of different industries, such as service companies (Walsh & Beatty, 2007), consumer goods producers (Helm, 2007), retailers (Terblanche, 2014), business schools (Safón, 2009), and healthcare companies (PatientView, 2017; Renner, 2011; Srivoravilai et al., 2011). As stated earlier, this study aims to map the specific reputation of medical device companies that has not been addressed yet, except from one practitioner's study covering the patient perspective (PatientView, 2017).

Reputations are stakeholder specific, meaning that different stakeholder groups perceive the reputation of the same company differently. This specification has been widely discussed according to stakeholder theory, which defines stakeholders as 'any group or individual who can affect or is affected by the achievement of the organization's objective' (Parmar et al., 2010, p. 411). Walker (2010) recommended specifying the stakeholder group before conducting reputational research. He followed Wartick (2002) who was among the first to possibly identify strong differences between the reputation perceptions of different stakeholder groups. His ground-breaking proof about why specific stakeholder-based reputation measurement leads to more accurate results, is shown in appendix 8.

An aggregated reputation perception of all stakeholder groups loses reputational information and neglects the parameter that different stakeholder groups require different sets or weights of reputation attributes (Pires & Trez, 2018; Rindova et al., 2005; Wartick, 2002). Although two studies provided contradictory evidence that different stakeholders could have similar reputation perceptions (Helm, 2007; Shamma & Hassan, 2009), it is widely accepted that the reputation concept should be individualized according to the stakeholder group (Ali et al., 2015; Dowling & Moran, 2012; Puncheva-Michelotti & Michelotti, 2010; Walsh & Beatty, 2007).

Therefore, academics have been conducting numerous reputation studies examining specific groups of stakeholders, particularly customers (Terblanche, 2014; Walsh & Beatty, 2007), but also investors, employees and local community members (Puncheva-Michelotti & Michelotti, 2010). According to the Reputation Institute, the importance of stakeholder engagement is expected to continue to grow in the coming years (Lackey, 2016), and along with the growth, the demand for stakeholder specific

measurement. For the healthcare industry, Renner (2011) identified a need to further examine which reputational aspects are relevant for which stakeholders. This doctoral research focuses on the perceptions of hospital procurement managers, one major customer group of medical device companies. As such, the study contributes to the understanding of supplier reputations in B2B relationships that has been identified as directions for further research by marketing and supply chain scholars (Lienland et al., 2013; Suh & Houston, 2010), even in the healthcare environment (Hsu et al., 2010).

Reputations are environment specific. This means that reputations can be perceived differently and do not have an identical set of attributes relative to the location, culture and business environment of the companies under evaluation. Since companies have to act and communicate as expected by their environment (Dowling & Moran, 2012), the literature provides some indications that stakeholders recognize this in their reception of reputation. Most obvious is the constraint of reputation measurement to an individual country, which has become common practice in reputation measurement (Deephouse et al., 2016; Fombrun, 2007).

There is empirical evidence that perceptions of reputation attributes differ according to regional aspects, for instance within the relatively similar group of Scandinavian countries (Apéria et al., 2004) or even within people living in different areas (jungle vs. coast and highland) of one country (Marquina Feldman et al., 2014). This also explains why academics have conducted studies to explain country and cultural reputations and their effects on companies (Kang & Yang, 2010; Newburry, 2012).

Regional aspects play an important role in healthcare systems, because they are regulated by national governments (Beeres, 2014; Kruetten et al., 2005). Therefore, the business environment is strongly connected to the

country of research and has a possible impact on the set of reputational attributes. Hence, the concentration on the healthcare market in Germany should provide a more precise reputation construct. As introduced in sub-section 1.3.1., Germany has been underrepresented in corporate reputation research, and this is the reason it is addressed in this study.

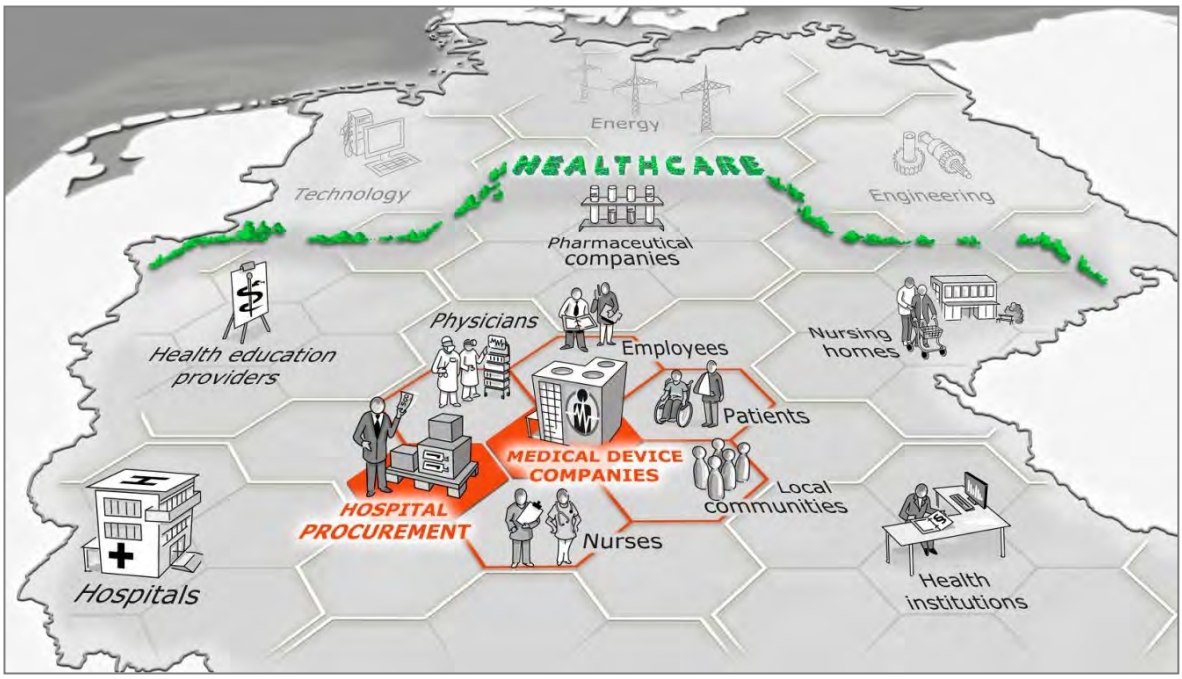

Figure 10: The location of this research in the reputational map. Note: Specifications of this research are in red capital letters. The illustration shows a selection of different players in the healthcare market whose reputation could be evaluated by different stakeholders. Source: Illustrator Hemma Glos on behalf of the author.

Reputations are issue-specific. Some reputation authors suggested that individual reputation constituents should be upgraded to an explicit reputational construct. Examples are reputations for providing good services, reputations for different services and products, or reputations for the treatment of employees (Jensen et al., 2012; Puncheva, 2008; Walker, 2010).

Studies for selective issue-specific reputations have been conducted to evaluate reputation for sustainability (Alon & Vidovic, 2015), environmental reputation (Kumar, 2018), and corporate social performance (Gardberg, Zyglidopoulos, Symeou, & Schepers, 2019; Orlitzky & Swanson, 2012). The intention of these individual issue-specific reputations is to measure the extent of a certain reputation constituent and present it separately. This intention could be also addressed when evaluating the constituents separately as attributes of reputation, as it will be done in this doctoral research. With the explanation of all individual constituents of reputation, a stand-alone 'reputation for what' approach is not needed, and thus not executed in this thesis. Moreover, it would lead the discussion about reputation and its constituents towards a discussion about the specific characteristics of companies, a discussion which would further obfuscate the need for clarity about the reputational definition.

Figure 10 illustrates the specifications of this research, sharpening the research landscape and pinpointing the corporate reputation construct of medical device companies from the perspective of hospital procurement managers in Germany. Following the many reputations approach results in two phenomena that influence the arguments in this research: First, the conceptual need for an individual reputation construct is based on the assumption that there is no single reputation that covers all industries, stakeholder groups and environments. Because this thesis follows and strongly defends the many reputations approach, its results are relevant as it aims to explain a specific reputation. Nevertheless, because there have been many calls to fill the research gap of explaining reputation in the healthcare supplier-buyer context, this need is shared by academics (Lienland et al., 2013; Suh & Houston, 2010) and practitioners (Renner, 2011) and is not a stand-alone perception by one researcher.

Second, the results of this thesis are naturally limited to the specific contexts of the reputation being researched. Whether or not the results could be transferred to related industries, other stakeholder groups and similar countries must be clarified in the conclusion. Then, the results gained will indicate potential outcomes for other contexts than the one under research. Focusing this research accordingly and verifying the research limitations, the theoretical foundation can be constructed.

2.2.3. Definition of medical device company reputation

With the considerations of the previous sections, a definition of medical device company reputation can be developed. Appendix 9 presents all reputational definitions that have been discussed before. This collection reflects the development of reputational definitions towards a specific approach, and highlighted aspects contribute to the definitional foundation of this research. The existing reputational definitions have been extracted and put together to a specific definition that determines this doctoral study. Thus, corporate reputation can be understood as a collective and relatively stable perceptual representation of a medical device company, including awareness, attractiveness and attribute specific judgement, for hospital procurement managers in Germany. Table 8 explains the individual sequences of this definition.

This doctoral study connects to the major knowledge contributions of the previously discussed corporate reputation definitions. It follows the typology approach of Lange et al. (2011), which incorporates three categories of corporate reputation and relates them to each other. Moreover, the specifications of the many reputations approach have been covered, resulting in a clear understanding what corporate reputation means in the context of this research. This definitional foundation is

necessary to build the initial reputation concept for medical device companies, which is explained in chapter 4.

Definition sequence	Explanation
A collective and relatively stable	'Collective' refers to the aggregated perception of one stakeholder group and excludes the perception of only one person. 'Relatively stable' follows the long-term approach that has been clarified by Walker (2010).
perceptual representation	Using this rather general and early definitional term of Fombrun (1996) avoids the decision to choose one category of corporate reputation. This follows Lange et al. (2011) incorporating all categories. Furthermore, it highlights the perceptual characteristic of reputation.
of a medical device company,	This identifies the reference group of companies that is included in the recent definition of Fombrun (2012) and explained as an industry specific approach in the previous sub-section.
including awareness, attractiveness and attribute-specific judgement,	This specification values the approach of Lange et al. (2011) to include all categories for a richer understanding of the reputation construct. The three categories are awareness (being known), attractiveness (generalized favourability) and attribute-specific judgement (being known for something). Attractiveness refers to the definition of Fombrun (2012), whereas the attribute-specific judgement is part of the overall reputation construct and not an intrinsic reputation construct like in the issue-specific approach mentioned by Walker (2010) and explained in the previous sub-section.
to hospital procurement managers	This identifies the stakeholder group that is included in the recent definition of Fombrun (2012) and explained as stakeholder specific in the previous sub-section.
in Germany.	This clarifies the environment of companies and stakeholders, as suggested in the previous sub-section, including the country based on its specific medical business environment.

Table 8: Explanation of the corporate reputation definition for this research. Source: Own compilation, based on the sources given in the table.

2.3. Differentiation to related constructs

Corporate reputation is a construct that has been often used by academics and practitioners interchangeably with numerous competing constructs such as corporate identity, image, brand and trust (Dowling, 2001; Fombrun, 2012; Wartick, 2002). To clarify the use of corporate reputation in their own empirical research, theorists suggested making clear what corporate reputation is not and how the related constructs are seen by the researcher (Barnett & Pollock, 2012; Walker, 2010; Wartick, 2002). Following this recommendation, this section is crucial to explain the understanding of the different terms in this thesis.

A good starting point is the identification of the competing constructs that are most likely to be used together with reputation. Figure 11 gives an impression of which constructs are frequently distinguished from corporate reputation, ranked by the number of their appearance together with reputation in academic article titles.

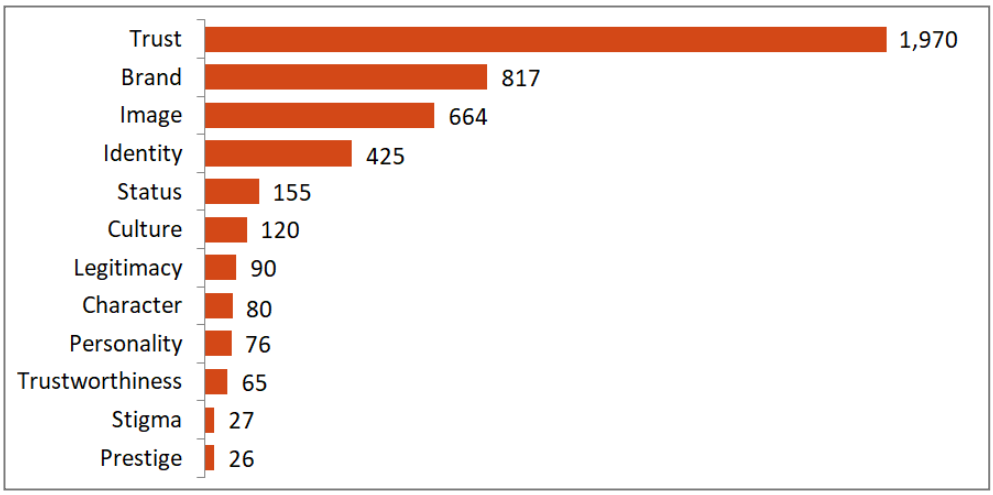

Figure 11: Number of academic articles with reputation and the named competing construct in the title. Source: Google Scholar as of July 1, 2019.

It is surprising that identity and image rank only third and fourth, since they seem to be the constructs most constantly described by academic authors to separate them from corporate reputation. Brand's placement at second can be explained using the expression 'brand reputation', which demonstrates an understanding of a brand specification of reputation, rather than a synonymic use. The dominance of the combined use of reputation and trust indicates that both constructs are strongly intertwined, although an interchangeable usage cannot be explained intuitively (Berens & van Riel, 2004; Tropiano, Ries, & Bersoff, 2019).

Subsequently, the four constructs identity, image, brand and trust will be introduced and investigated in the next sub-sections, focusing on their differentiation to corporate reputation. The other listed constructs will be introduced as well: culture, character and personality represent components of the constructs identity and brand to some extent. Status, legitimacy, prestige and stigma share a social theory perspective and thus will be discussed together in the last sub-section.

2.3.1. Corporate identity and corporate image

This sub-section gives an overview of the definitional approaches of corporate identity and corporate image. These constructs are compared with corporate reputation to highlight their differences. Based on several academic models, the relationships of the three constructs are explained, leading to a model of how their interfaces are understood in this research.

Like for corporate reputation, many different perspectives and definitions for corporate identity exist (Walker, 2010). Most of them include four aspects: (1) corporate identity represents the central character of a company, (2) it is collectively perceived by internal stakeholders of the company, (3) it makes the company unique or distinct in comparison to its

competitors, and (4) it is enduring though it can change over time. With these aspects, a corporate identity can answer the question of who or what the company is (Brown, Dacin, Pratt, & Whetten, 2006; Foreman et al., 2012).

(1) Probably the best known components of the corporate character are the company's visual identifiers that include the company's name, logo, slogan, symbols, typography and colour (Abratt & Kleyn, 2012). A second component is the corporate culture that represents the company's shared values, beliefs and behaviours of management and employees (Bendixen & Abratt, 2007; Kitchen, Tourky, Dean, & Shaalan, 2013). As a third component the literature acknowledges business strategy, structure, philosophy, goals and principles that are related to market conditions (Bendixen & Abratt, 2007; Kitchen et al., 2013). As a preliminary conclusion, the literature suggests that corporate culture is an aspect of corporate character that is one component of corporate identity – with a clear hierarchical order.

(2) There is a strong tendency for corporate identity to be collectively perceived by internal stakeholders such as managers and employees (Walker, 2010). Balmer and Greyser (2006) described corporate identity as the 'collective feeling of employees as to what they feel they are in the setting of the entity' (p. 735). Whereas this statement seems to be rather limiting by including only employees, the explanation from Lewellyn (2002, p. 448) takes a more integrative approach: 'Identity emanates from the shared understanding of the internal stakeholders of an organization regarding what the organization stands for.' This does not only refer to individual feelings, but to a collective understanding of the company by internal stakeholders. This distinction is necessary, because the collective

understanding contributes to identification with the company that is central for corporate identity (Elsbach, 2003).

(3) The uniqueness and distinctiveness of corporate identity is a major aspect in many corporate identity definitions. Leiva, Ferrero, and Calderón (2014) linked corporate identity to the personality of a company that makes it unique. The history and experiences of managers and employees can contribute to this uniqueness, building a distinction to competitors (Chun, 2005).

(4) And finally, the resilience of corporate identity does not mean that it is immutable. Identity can be changed and can emerge over time, just like corporate reputation. But it is strongly connected to both the company's history and intrinsic character, which take time to change (Elsbach, 2003; Kitchen et al., 2013).

Unlike corporate identity, definitions of corporate image are inconsistent and indistinct in the academic literature. There is an ongoing discussion about whether corporate image is a synonym of corporate reputation or needs to be replaced by corporate reputation due to increasingly negative associations (Chun, 2005; Gotsi & Wilson, 2001; Pallas & Svensson, 2016). The definitional ambiguity does not support the idea of replacing corporate image with corporate reputation, and numerous academics have agreed to keep the two constructs seperate (Barnett et al., 2006; Walker, 2010; Wartick, 2002).

Another aspect that is agreed by most academics is that corporate image is an immediate perception or mental picture of a company by its stakeholders (Cornelissen & Thorpe, 2002; Walker, 2010). This shared aspect is shadowed by numerous discussions, including: (1) different types

of corporate image, (2) different types of stakeholders, and (3) different types of perception. The competing viewpoints are listed in table 9.

	Viewpoints	Source
Different types of corporate image	Desired, intended or projected image refers to what insiders want external stakeholders to know.	Walker (2010), Foreman et al. (2012), Brown et al. (2006), Whetten and Mackey (2002)
	Actual, refracted or perceived image refers to the perception of external stakeholders.	Foreman et al. (2012), Brown et al. (2006), Chun (2005)
	Construed or reflected image refers to what insiders think external outsiders perceive.	Foreman et al. (2012), Brown et al. (2006)
Different types of stake-holders	Customers	Chun (2005), Keller (1993)
	External stakeholders	Bromley (2000), Davies and Miles (1998), Walker (2010), Whetten and Mackey (2002)
	Internal or external stakeholders	Elsbach (2003), Barnett et al. (2006)
Different types of perception	Individual perception	Cornelissen and Thorpe (2002), Leiva et al. (2014), Foreman et al. (2012)
	Collective perception by a defined stakeholder group	Chun (2005), Keller (1993), Balmer and Greyser (2006), Walker (2010)
	Collective perception by the public	Nguyen and Leblanc (2001), Bromley (2000)

Table 9: Different viewpoints in the academic discussion about corporate image.
Note: The chosen types in this thesis are marked in red.
Source: Own compilation, based on the sources given in the table.

(1) In the course of the academic discussion, corporate image has been split in the three types of image: desired, actual and construed. Although this separation is helpful for explaining overall perception processes (Fombrun, 2012; Foreman et al., 2012), it seems to be confusing when defining the corporate image construct (Walker, 2010).

The definition of *desired image* by Whetten and Mackey (2002) suggests transporting the corporate identity to external stakeholders. But the *actual image* perceived by these stakeholders must be different due to the fact that the company's actions and communications are only two of many signals stakeholders receive (Cornelissen & Thorpe, 2002). The *construed image* seems to be rather a management method for business leaders to influence a corporate image (Brown et al., 2006), based on the measurement of an actual image.

(2) The current study understands image as an *actual image* construct that is perceived by *external stakeholders*. Internal stakeholders have been only included by Elsbach (2003) and Barnett et al. (2006) because of their role in the creation of a construed image. (3) Regarding the different perception types, this research agrees with Leiva et al. (2014), who described corporate image as an *individual perception*, though they leave the opportunity to have it perceived collectively by meaningful and specific key stakeholder groups open.

The constructs of corporate identity and corporate image have several common characteristics with corporate reputation, though they are not identical and should not be used interchangeably. Table 10 summarizes the similarities and differences of the three constructs.

	Corporate identity	Corporate image	Corporate reputation
Major research disciplines	Organizational studies, communications	Marketing, organizational studies	Strategic management, communications, marketing
Perception	Collective	Individual or collective	Collective
Perceivers	Internal stakeholders	External stakeholders	Internal or external stakeholder group
Influencers	Mainly by company	Company and environment	Company and environment
Time perspective	Enduring, evolving over time	Dynamic, short-term, tractable	Enduring, evolving over time
Key feature	Uniqueness, distinctive from competitors	Immediate picture	Specific perception related to stakeholder group, industry and environment

Table 10: Comparison of corporate identity, corporate image, and corporate reputation. Note: Overlaps are marked red. Source: Own compilation, based on the findings in this sub-section.

The table demonstrates that while none of the three constructs share a single characteristic, sometimes two of the three constructs can share some of the characteristics. Corporate identity and corporate reputation share a collective perception and a slow evolution over time. Corporate image and corporate reputation are both influenced by signals from the company and its environment. However, there are some characteristics in which a relationship between the constructs is identifiable. A perception of corporate image might be a collectively perceived construct under special circumstances, and is therefore similar to the collective constructs of corporate identity and corporate reputation. The company influences all

three constructs, though it is the major influencer for building a corporate identity. Additionally, the perceivers of all three constructs are internal or external stakeholders, or both. Finally, the research disciplines, in which the constructs are described, are somehow similar, yet the major research perspectives vary from construct to construct.

The literature provides numerous hierarchical and causal models to explain the relationships between corporate identity, image and reputation. Five recent ones are presented in figure 12.

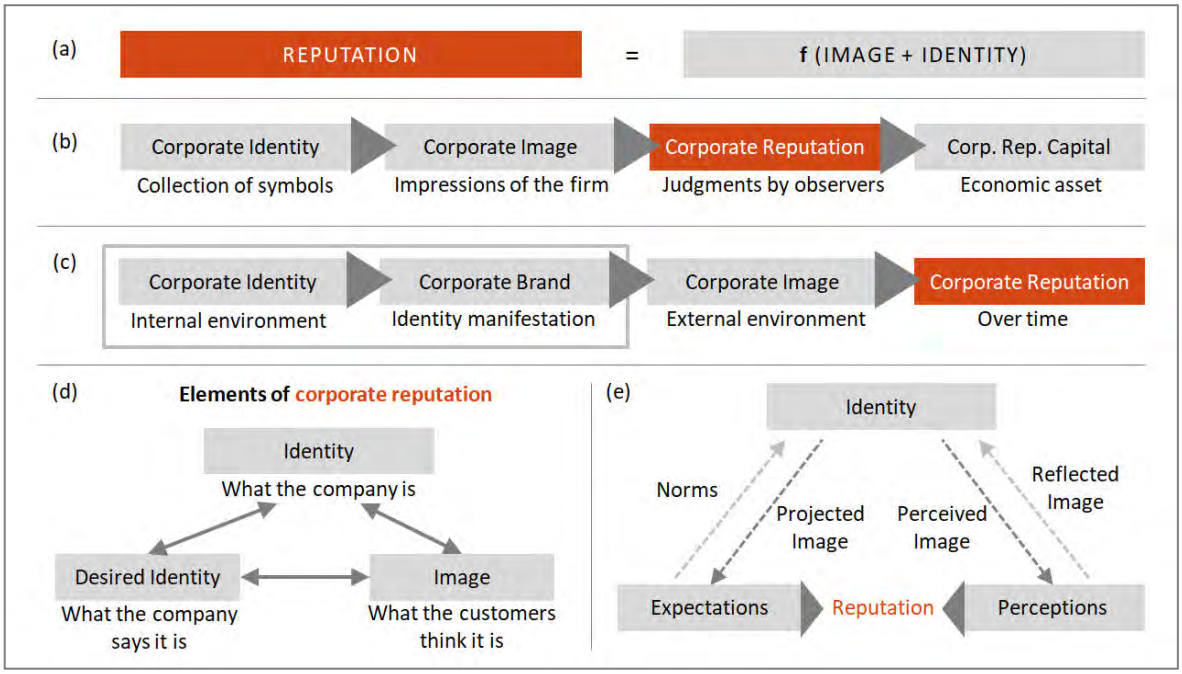

Figure 12: Relationship models of corporate identity, image and reputation. Note: The reputation elements in the models are marked red. Sources: (a) Wartick (2002), p. 376; (b) Barnett et al. (2006), p. 33; (c) Kitchen et al. (2013), p. 268; (d) Chun (2005), p. 98; (e) adaption of Foreman et al. (2012), p. 186.

The two hierarchical models (a) and (d) suggest that corporate reputation incorporates corporate identity and corporate image. In the formula (a), identity and image form no specific association but add up to reputation (Wartick, 2002). The model (d) explains a relationship of identity, desired identity and image as elements of reputation (Chun, 2005; Davies & Miles,

1998). Although intuitional and compelling, both approaches only reflect the constructs from the perceivers' viewpoint, adding the internal stakeholders of identity and the external stakeholders of image. They do not reflect the other characteristics that are different in the three constructs. Logically, the models can never be accurate if some characteristics of identity and image are not identical or can be added to build reputation characteristics.

The flowcharts (b) and (c) present a causal relationship of identity, image and reputation. In model (b), all constructs are defined succinctly, leading to corporate reputation capital described as economic asset (Barnett et al., 2006). As such, it represents a consequence or value of corporate reputation. Identity and image could be read as antecedents of reputation, which is also supported by Fombrun (2012). Flowchart (c) reflects a similar approach, only adding the corporate brand as identity manifestation to the causal model (Kitchen et al., 2013).

The models suggest two differentiations between image and reputation. Whereas model (b) divides impressions from judgements, model (c) reflects that reputation could be an image perception over time. Both approaches combined, completed by the distinction of individual and collective perception by the stakeholders, would be reasonable for explaining the relationship. However, the question remains if some long-lasting components of corporate identity, such as character and culture, could contribute directly to reputation, without taking the path through a corporate image perception.

Model (e) sorts the three constructs in a relationship with the expectations and perceptions that lead to corporate reputation (Foreman et al., 2012). Here, the different types of corporate images could be seen as functions that create expectations and perceptions. Interestingly, identity and

reputation have also no direct link here, and reputation is defined as a result of an expectation-perception mix rather than as a perception itself. Therefore, it does not meet the reputational definition of this doctoral thesis.

Conclusively, corporate identity, image and reputation are overlapping constructs that share some of their characteristics and are distinct in others. A causal model, placing corporate image in the middle of corporate identity and corporate reputation, would not be accurate for describing matching characteristics between identity and reputation. Therefore, the suggestion is to establish a visualization that respects differentiations and interfaces of the three constructs, as it is shown in figure 13.

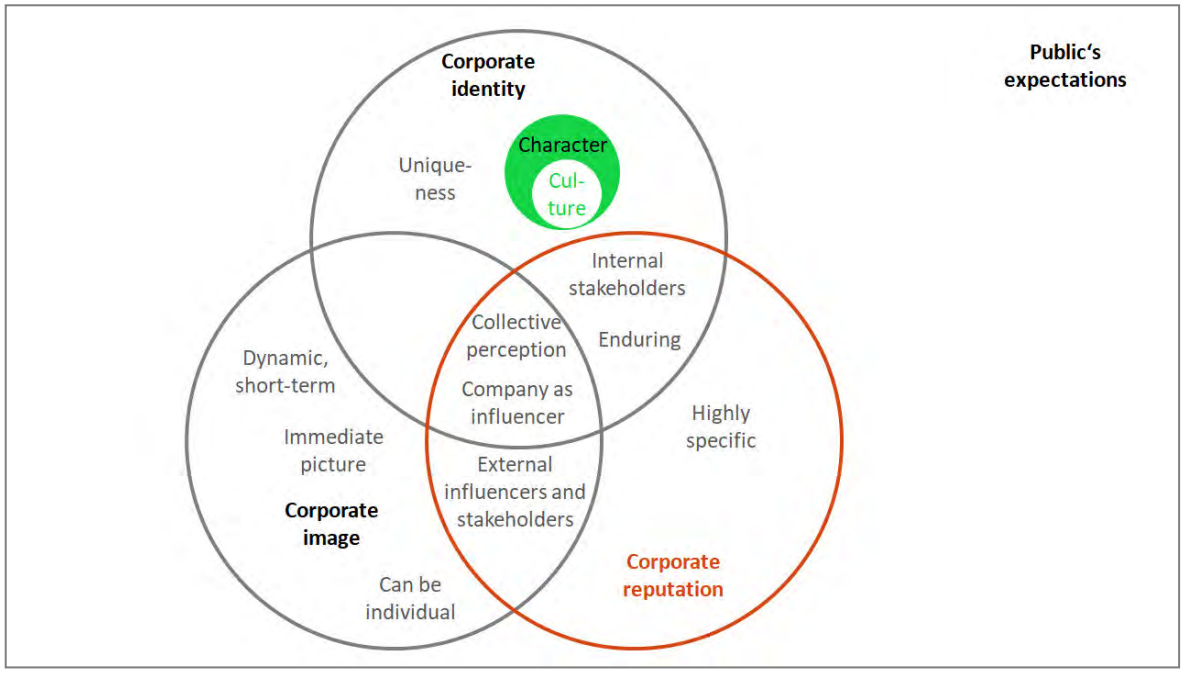

Figure 13: Own relationship visualization of corporate identity, image and reputation. Source: Own compilation, based on the findings in this sub-section.

This visualization does not include a causal statement but it allows overlapping of the three constructs. It clarifies the unique characteristics of each of the constructs, and places them in an environment of public

expectations. As mentioned earlier, corporate character is an aspect of corporate identity and represented accordingly, including corporate culture as a component. Corporate identity, image and reputation are not used interchangeably in this doctoral thesis.

2.3.2. Corporate brand

The term corporate brand is increasingly used synonymously with corporate reputation by practitioners and academics (Ajder & Ross, 2015; Clardy, 2012). The major reason for this is the change of the meaning of brand. Created in marketing literature, brand referred to the expression of one product or service of the company. With the development to move branding to a corporate level, the concept of corporate brand has emerged from the original product and service brand meaning (Schultz, Hatch, & Adams, 2012).

Moreover, the original focus on consumers has been broadened with the corporate branding perspective to multiple stakeholder groups (Schultz et al., 2012; Van Riel & Fombrun, 2007). In practice, this has led to a shift of corporate brand management from the marketing function to the corporate communication function that is often responsible for reputation management as well (Ajder & Ross, 2015). Interestingly, the perception of corporate brand in B2B industries appears to be more often connected with corporate reputation than with individual products and services (Selnes, 1993).

Besides the synonymous use, the literature has also tried to describe certain hierarchical relationships between corporate brand and corporate reputation. Varying in their perspective, one school of thought postulated that corporate brand is a crucial element of corporate reputation (Abratt &

Kleyn, 2012; Argenti & Druckenmiller, 2004), and another one argued vice versa (Bickerton, 2000).

In the marketing literature, a brand was originally defined as a visual representation of goods and services, such as a name, term, sign, symbol, design or combinations thereof, to differentiate the brand from those of competitors (Argenti & Druckenmiller, 2004; Clardy, 2012; Keller, 1993). A corporate brand can be seen as a visual, verbal and behavioural expression of the whole company. The corporate brand expression will convey expectations in the performance of the company, customer experiences, product and service quality (Argenti & Druckenmiller, 2004; Shamma, 2012). It includes mission and vision statements as well as promises and values in a normative logic to guide employees and reassure external stakeholder groups (Dowling & Moran, 2012; Sequeira et al., 2015).

Brands are often recognized as a personality of their own, sharing human characteristics such as sincerity, excitement, competence, sophistication, and ruggedness (Aaker, 1997; Abratt & Kleyn, 2012). The personality approach can be beneficial to building strong relationships with consumers and other stakeholder groups, leading to similar advantages, such as a strong reputation (Forman & Argenti, 2005). The personality construct is also known in reputation measurement where it represents the emotional appeal of a company (Davies, Chun, da Silva, & Roper, 2001). However, the corporate personality is an important aspect of a brand and contributes to its verbal and behavioural expressions. Therefore, it should not be used interchangeably with reputation.

Schultz et al. (2012) compiled a helpful list with differentiators between corporate brand and corporate reputation. Table 11 adapts this list, showing the distinctions of the two constructs. A corporate brand is actively defined and managed by the communication function of the

company, for example, by using advertising (Argenti & Druckenmiller, 2004; Davies, Chun, da Silva, & Roper, 2003). Corporate reputation has some of its antecedents in external signals resulting from stakeholder impressions and thus is less controlled by the company (Argenti & Druckenmiller, 2004).

	Corporate brand	Corporate reputation
Major research disciplines	Marketing, organizational studies	Strategic management, communications, marketing
Perception	Individual and collective	Collective
Perceivers	Internal or external stakeholder group (focus on customers)	Internal or external stakeholder group
Influencers	Mainly by company	Company and environment
Time perspective	Dynamic	Enduring, evolving over time
Key feature	Creates experiences when interaction and use with a brand occurs	Specific perception related to stakeholder group, industry and environment

Table 11: Comparison of corporate brand and corporate reputation. Note: Overlaps are marked red. Source: Adapted from Schultz et al. (2012).

Also, the time perspective is an important differentiator, because the corporate brand is seen as a more dynamic construct (Schultz et al., 2012). Since branding is still predominantly addressed to customers, it aims to influence the perceptions of single stakeholders to influence their buying decisions. Corporate reputation is a construct that is only collectively perceived by a group of stakeholders.

The recent literature recommends viewing the corporate brand as an active calibration of corporate identity, aligning it constantly with the changes in the political, economic, ethical, social and technological environment (Kitchen et al., 2013; Sequeira et al., 2015). Abratt and Kleyn (2012) even define a corporate brand 'as corporate expression and stakeholder images of the organization's identity' (p. 1053). This locates corporate branding in the centre of pro-active management of the corporate identity. However, some authors argue that a corporate brand contributes strongly to the corporate image among customers and other stakeholders (Abratt & Kleyn, 2012; Terblanche, 2014).

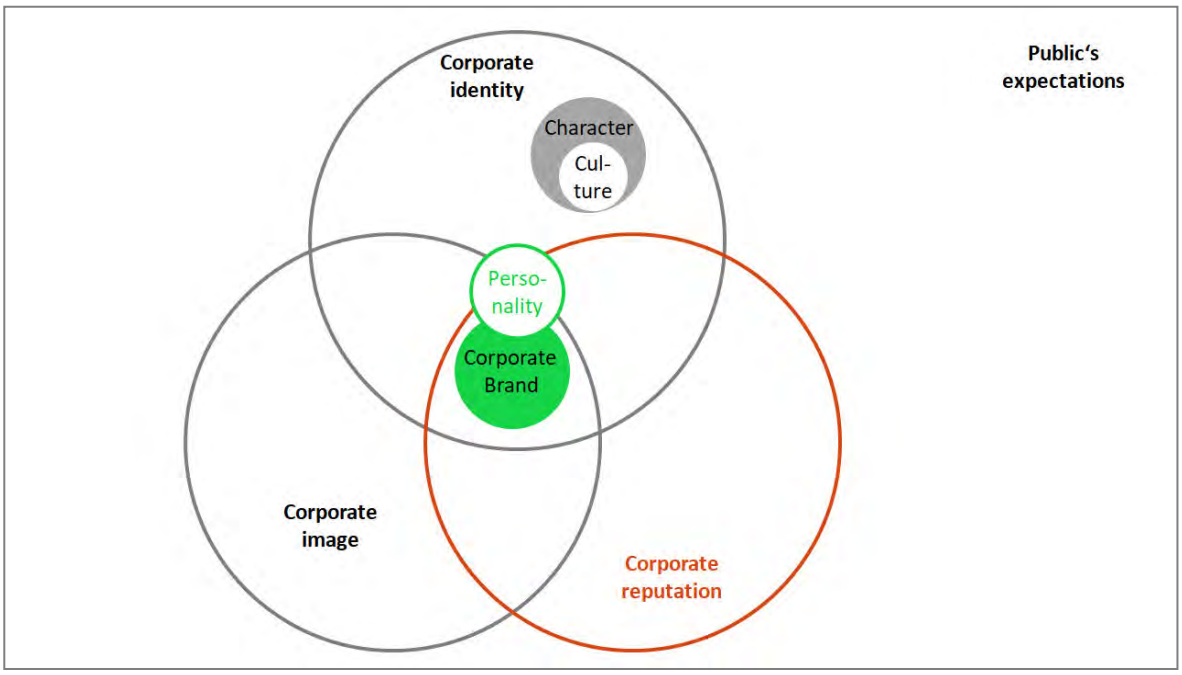

Figure 14: Including corporate brand in the relationship visualization. Source: Own compilation, based on the findings in this sub-section.

Figure 14 includes corporate brand in the relationship visualization of corporate identity, image and reputation. Because of the relevance of the corporate brand for all three constructs, it is placed directly in the overlapping section. This demonstrates the importance of the brand as the expression of corporate identity to its external stakeholders. In

comparison, the company's personality has interfaces with all the constructs, but it is located more towards the centre of the corporate identity circle. The position of corporate brand suggests that the construct has almost no connection to the general public and its expectations; it is primarily addressed to key stakeholder groups. In this thesis, corporate brand is distinguished from corporate reputation, due to the numerous differences in their characteristics.

2.3.3. Corporate trust

It is generally agreed in the literature that corporate reputation and corporate trust have a close relationship and are strongly interdependent (Keh & Xie, 2009; Suh & Houston, 2010; Van der Merwe & Puth, 2014; Walsh & Beatty, 2007). However, there are competing viewpoints on whether trust is an antecedent or consequence of corporate reputation (Ponzi et al., 2011; Renner, 2011; Suh & Houston, 2010; Van der Merwe & Puth, 2014; Walsh & Beatty, 2007).

Reputation and trust are often used imprecisely, for example by an international communication consulting agency that uses trust in the name for a measurement tool that includes numerous corporate reputation attributes presented in appendix 10 (Tropiano et al., 2019; Van der Merwe & Puth, 2014). Berens and van Riel (2004) considered trust as one main conceptual stream in reputation measurement in their literature review, reflecting the exponential use of both terms in academic articles that has been shown before. Therefore, Suh and Houston (2010) posited to carefully distinguish between reputation and trust.

Based on social psychology literature, trust is conceptualized as a subjective and multi-attribute construct in an interpersonal relationship (Van der Merwe & Puth, 2014). Trust requires a trustor, who trusts, a

trustee, whom is trusted, and a specific domain as well as a context in which the trust judgement applies (Kramer, 2010; Van der Merwe & Puth, 2014). Kramer (2010, p. 85) explains the domain and context of a patient's trust in her doctor that can be based on 'the specific training and institutional affiliation of the physician, the interpersonal interaction between them, the reputation of the medical institution ... within which the patient's care is provided, and the nature of the medical complaint or malady.' In this case, the patient predicts the future behaviour of the doctor, relying on objective characteristics such as his training experience and current employment, and on feelings and beliefs after experiencing an interaction with the doctor.

In trust situations, trustors become vulnerable and are at risk, because they confide in the ability and goodwill of the trustees to meet their expectations (Swan, Trawick, Rink, & Roberts, 1988). This has been subject to research in B2B buyer-supplier relationships, in which the buyer believes the salesperson will perform in the buyer's best interests (Doney & Cannon, 1997). To establish a long-term relationship with the trusting B2B customer, the salesperson needs to meet the expectations of the buyer, such as delivering a product within 48 hours (Swan et al., 1988). Through a reliable, credible action, the salesperson creates a positive buyer's experience and can increase trust (Swan et al., 1988). Conversely, if the expectations are not met, the relationship is likely to be damaged, if not destroyed, and the trustor has been left vulnerable.

The term trust has also been used to explain the relationships of a set of trustors and institutional trustees (Kramer, 2010). This concept of collective trust has been addressed mainly in the context of corporate trust, and is understood as trust in a relationship between a company and its stakeholders (Kramer, 2010; Van der Merwe & Puth, 2014). To influence

the relationship, the company needs to communicate and act with its stakeholders to develop 'shared systems of belief and meaning ..., which stakeholders can interpret and use as a basis on which they can evaluate the character and intentions of the organization' (Van der Merwe & Puth, 2014, p. 144). Thus, corporate trust can be defined as a subjective expectation of a stakeholders group that their factual uncertainty and vulnerabilities will not be abused by the trusted organization (Van der Merwe & Puth, 2014).

Attribute	Swan et al. (1988)	Doney and Cannon (1997)	Berens and van Riel (2004)	Suh and Houston (2010)	Van der Merwe and Puth (2014)	Sum
Benevolence		✓	✓	✓	✓	**4**
Ability / competence	✓				✓	**2**
Honesty	✓		✓			**2**
Integrity				✓	✓	**2**
Likeability	✓				✓	**2**
Credibility		✓				**1**
Customer orientation	✓					**1**
Dependence	✓					**1**
Ethical behaviour					✓	**1**
Identifiability					✓	**1**
Reliability			✓			**1**
Transparency					✓	**1**

Table 12: Ranked trust attributes in selected academic articles.
Source: Own compilation, based on the sources given in the table.

Academic authors have cited numerous attributes that help explain the multi-faceted trust construct. For an overview, table 12 presents the attributes stated in five selected articles and ranked them. The dominance of the attribute benevolence that has been mentioned by four of five authors is notable. Benevolence could be defined as the extent to which the trustee is interested in and protects the trustor's welfare, and therefore fulfils his expectations (Doney & Cannon, 1997; Suh & Houston, 2010).

Although honesty, integrity and credibility are not the same, they share a common understanding of a company's truthfulness. In comparison to benevolence, this understanding of the trustor is a rather moral obligation and a belief that the trustee fulfils promises, is reliable, responsible and consistent (Suh & Houston, 2010; Van der Merwe & Puth, 2014). As such, these attributes are thought to be less dynamic than benevolence, adding an ethical component to the trustor's expectation (Suh & Houston, 2010; Van der Merwe & Puth, 2014).

When comparing corporate trust and corporate reputation, one can recognize their close relationship. In most of the categories in table 13, they have similar or partially similar entries. The main difference lies in their key proposition. Whereas corporate reputation is a perception of the stakeholder group, corporate trust is rather socially based on a relationship between the stakeholder group and company. A corporate reputation does not necessarily need a relationship between constituents of the company and the stakeholders, as trust needs. Corporate trust imitates the relationship between trustee and trustor through signals of the company.

	Corporate trust	Corporate reputation
Major research disciplines	Social psychology, marketing	Strategic management, communications, marketing
Perception	Individual and collective	Collective
Perceivers	External stakeholder (group), focus on customers	Internal or external stakeholder group
Influencers	Company and environment	Company and environment
Time perspective	Enduring (integrity attribute), dynamic (benevolence attribute)	Enduring, evolving over time
Key feature	Based on expectations in a vulnerable and possibly risky position within a relationship	Specific perception related to stakeholder group, industry and environment

Table 13: Comparison of corporate trust and corporate reputation. Note: Overlaps are marked red. Source: Own compilation, based on the findings in this sub-section.

In this thesis, corporate trust is conceptualized as part of corporate reputation, as illustrated in figure 15. Its components can be found in many attributes of corporate reputation, such as integrity, transparency and customer focus. However, it is also reflected in the emotion-based perception of generalized attractiveness, and the inclusion of trust in reputation measurement tools like RepTrak® Pulse confirm this (Ponzi et al., 2011).

Van der Merwe and Puth (2014) are among the authors who criticized the interchangeable use of trust and trustworthiness, arguing that trustworthiness is a key driver or antecedent of trust. They defined corporate trustworthiness as 'an objective characteristic of an organization that makes it worthy of having its stakeholders' trust placed in it' (Van der Merwe & Puth, 2014, p. 145).

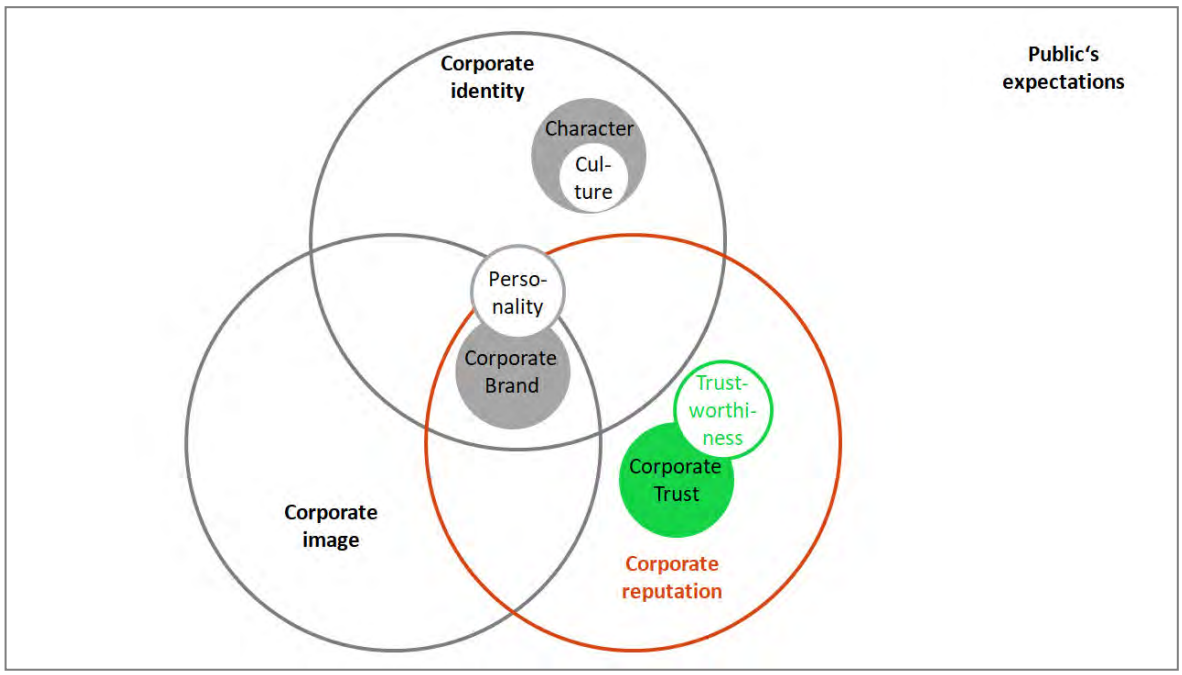

Figure 15: Including corporate trust in the relationship visualization. Source: Own compilation, based on the findings in this sub-section.

In their conceptual model, they placed corporate reputation between corporate trustworthiness as antecedent and corporate trust as consequence. In the current thesis, this perspective is not shared, and trustworthiness is connected with the corporate trust construct within reputation. This reflects the causal bindings between trustworthiness and trust but denies that reputation stands between both. In this understanding, the thesis follows the tradition of corporate reputation research, which expressed the need to perceive corporate trust as one characteristic of corporate reputation (Berens & van Riel, 2004; Ponzi et al., 2011), and thus it will be considered in reputational attributes.

2.3.4. Status and legitimacy, prestige and stigma

The terms status, legitimacy, prestige and stigma have large overlaps with corporate reputation, but are not often used interchangeably due to their origins in sociology and institutional theory (Barron & Rolfe, 2012). All of them are like corporate reputation forms of judgements and share functions of social acceptance or social control – and this, unlike corporate reputation – mainly from a public and not from a specific stakeholder group perspective (Bitektine, 2011; Deephouse & Suchman, 2008; Mishina & Devers, 2012). However, each of the constructs has a differentiated sense of standing that is outlined in the following paragraphs.

Status refers to a position in an ordinal scale or social ranking of collective honour, that can be, for instance, a group of companies with a similar set of characteristics (Barron & Rolfe, 2012; Bitektine, 2011; Deephouse & Suchman, 2008). It varies less within the group than across different groups, which allows distinctions between upper-, middle-, and lower-status tiers in an industry (Deephouse & Suchman, 2008).

The individual status can have consequences for one of the other companies in the ranking. As soon as the individual status increases, the status of another company might decrease to the same extent. This leads to the assumption that a status exchange is always a zero sum transaction (Barron & Rolfe, 2012). Bitektine (2011) found that status represents a mechanism of social closure that requires a special set of conditions, behaviour or performance from a company to enter a higher status group. Consequently, a desirable high status generates privileges, is fundamentally segregating and often expressed by status symbols (Barron & Rolfe, 2012; Bitektine, 2011; Deephouse & Suchman, 2008).

The term legitimacy describes whether or not a company complies with recognizable standards of social acceptance (Bitektine, 2011; Foreman et al., 2012). According to the most cited definition by Suchman (1995), legitimacy is 'a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions' (p. 574). Unlike status, legitimacy categorizes companies not in an ordinal scale or in many groups, but in two groups, acceptable or not acceptable (Bitektine, 2011).

A company's actions, behaviour and communications either fit with or violate the perceived social, institutional, regulative or cognitive norms (Bitektine, 2011; Pallas & Svensson, 2016). These norms can be influenced by a range of factors, such as legal requirements enforced by a government, economic rules and agreements as well as social and moral expectations from the general public (Deephouse & Suchman, 2008; Fombrun, 2012). A company, that fulfils the norms receives legitimacy, meaning an approval of its conformity with societal perceptions of how it should act, behave and communicate (Deephouse & Suchman, 2008). Elsbach (2003) reflected that legitimate organizations can receive unquestioned support, resources, commitment, attachment and identification from their stakeholders. It remains doubtful whether a company that is not legitimated has any chance to survive.

Prestige is a sociological term associated with a favourable social standing ascribed for merit achievement (Shenkar & Yuchtman-Yaar, 1997; Wartick, 2002). It is often used when describing collective evaluations of politically relevant corporate organizations, such as universities (Boyd et al., 2010; Rindova et al., 2005), media corporations (Deephouse & Suchman, 2008), hospitals , military organizations as well as voluntary and community

organizations (Shenkar & Yuchtman-Yaar, 1997). Prestige has a strictly positive connotation, reflecting the high standard and the favourability of the organization by the public, its members, peers and expert panels (Shenkar & Yuchtman-Yaar, 1997).

The opposite to prestige, stigma, is associated with an unfavourable social standing for a fundamental flaw, failure or threat (Mishina & Devers, 2012). A stigma discredits the company and can lead to stakeholder dissociation, customer defection, counter-organizational actions and it threatens overall survival (Mishina & Devers, 2012). Often, the label stigma extends the initial negative event, reflecting the non-conformity of the company in the public expectations for a long period of time (Mishina & Devers, 2012). Although hard to repair or cope with it (Noe, 2012), a stigma can be shaken off by cooperating with prestigious companies (Purohit & Srivastava, 2001) or by changing the trademark of the company or the stigmatized product (Marvel & Ye, 2008).

Table 14 illustrates common and differentiating characteristics of the four constructs and corporate reputation. Similar characteristics are the collective perception, the enduring time perspective, as well as the company and environment as influencers. There might be little differences in these characteristics when defining prestige and stigma, since they result mainly from actions and communications companies are responsible for. Moreover, a stigma can be acquired easily and dynamically after a negative event, but it stays for a long time (Mishina & Devers, 2012).

	Status	Legitimacy	Prestige	Stigma	Corporate reputation
Major research disciplines	Sociology	Institutional theory	Sociology	Sociology	Strategic management, communications, marketing
Perception	Collective	Collective	Collective	Collective	Collective
Perceivers	Public	Public	Public	Public	Specific stakeholder group
Influencers	Company and competitiors	Company and environment	Mainly company	Mainly company	Company and environment
Time perspective	Enduring	Enduring	Enduring	Dynamic and enduring	Enduring
Connotation	Neutral	Positive	Strictly positive	Strictly negative	Neutral

Table 14: Comparison of status, legitimacy, prestige and stigma with corporate reputation. Note: Overlaps are marked red. Source: Own compilation, based on the findings in this sub-section.

Status, legitimacy, prestige and stigma have been discussed, particularly by sociologists and institutional theorists, as emphasized above. Corporate reputation has more differentiated theoretical groundings. One of the other main differences is the stakeholder group of the four constructs and corporate reputation. While the four constructs are typically public-driven and generalized, corporate reputation is likely to differ between or among stakeholder groups. Finally, legitimacy, prestige and stigma provide

connotative information in their terms, whereas status and reputation seem to be used rather neutrally.

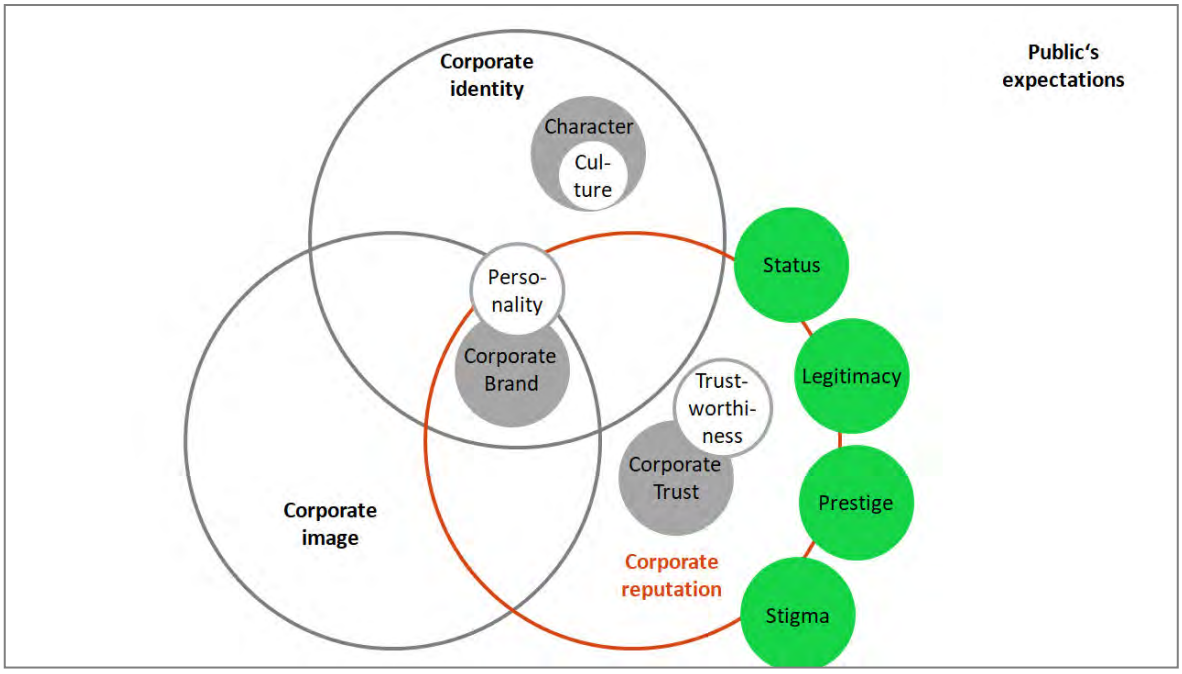

Figure 16: Including status, legitimacy, prestige and stigma in the relationship visualization. Source: Own compilation, based on the findings in this sub-section.

By reviewing common and differentiating characteristics, the four constructs have overlaps not only with corporate reputation, but also in their public perception. Therefore, figure 16 locates them in the public's expectations area, where they are defined to fulfil particular social expectations. The key argument is that corporate reputation should not be used interchangeably with the constructs introduced here, although they are closely intertwined with each other.

2.4. Summary: What corporate reputation really is

Chapter 2 clarified the meaning of corporate reputation for this research. Following the suggestions of numerous academics (Barnett & Pollock,

2012; Dowling & Gardberg, 2012; Helm, 2005; Wartick, 2002), the research perspectives and definitional underpinnings have been explained in detail. To avoid conceptual misinterpretation, it has also provided considerations about what corporate reputation is not: Corporate reputation is seen as distinct from other constructs such as corporate identity, corporate image, corporate brand, corporate trust, status, legitimacy, prestige or stigma, but with overlapping elements as visualized in figure 16 in the previous sub-section.

In order to clarify the meaning of corporate reputation for the current research, numerous different definitions in the literature reviews of Barnett et al. (2006), Walker (2010) and Lange et al. (2011) have been analysed and categorized. This thesis follows the cube model of Lange et al. (2011) that exemplifies the three different categories of corporate reputation: awareness, attribute-specific judgement and overall attractiveness.

The question most relevant to this research is whether there are one or many reputations, as was asked by Fombrun and Shanley (1990) originally, and is widely discussed by many of the following academics. In this research, the many reputations approach is followed and applied, positing that reputation is different according to the company's industry, the perceiving stakeholder group and the environment in which the reputation perception takes place.

Respecting these preconditions, corporate reputation is defined in this doctoral thesis as a collective and relatively stable perceptual representation of a medical device company, including awareness, attractiveness and attribute-specific judgement, to hospital procurement managers in Germany. This indicates that the characteristics of corporate reputation are likely to be different if just one of these parameters

changes, such as when it is a medical device company rather than a pharmaceutical company, hospital procurement managers are the stakeholders instead of doctors, or the environment is in Germany instead of the USA. This tailor-made definition supports the research by explaining a specific reputation, a direction that contributes to the originality of this research. With this aim, it is positioned in contrast to the one reputation approach that compares companies of different industries with an identical concept of reputation among different stakeholder groups in more than one country.

In chapter 4, the definitional foundations of chapter 2 will be developed with a review of academic and business literature to an initial concept of medical device company reputation. The concept is then further developed in chapters 5 and 6, in which the results of the interviews will revise and refine the concept. In the final chapter, the concept is embedded in the overall context of the industry, and theoretical and practical implications are derived. This way of generating new knowledge is supported by critical realism, a research philosophy that will be explained in the third chapter, including its considerations for the current research.

3. Methodology and methods

> 'Positivist research is not the only vehicle through which we can grow knowledge about corporate reputations.'
>
> Charles J. Fombrun, Emeritus Professor at Stern School of Business, New York University, and Co-Founder of the Reputation Institute (Fombrun, 2012)

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Methodology and methods describe paradigms, conventions, rules and techniques to guide the researcher in how the research topic can be investigated (Guba & Lincoln, 1994; O'Mahoney & Vincent, 2014). Central to the understanding of methodology is the research philosophy that determines the ontological and epistemological viewpoints of the researcher, which are discussed in the first section.

The second section explains the methods of the research project. It provides a discussion about qualitative research methods, gives detailed insight into the research design and the nature of concept-driven interviews. It offers information about the interview participants and the way the research project is conducted, analysed and presented. This chapter acts as operating instructions for the concept building as well as for the fieldwork, and at its conclusion, the way the new knowledge is generated should be fully transparent.

3.1. The philosophical position of critical realism

There are countless philosophical positions and theories in an imaginary continuum that is framed by the two endpoints of positivism and constructivism (Guba & Lincoln, 1994; Moses & Knutsen, 2012). Positivism has its origins in the natural sciences and postulates that '[...] there is a *Real World* out there, independent of our experience of it, and that we can gain access to that World by thinking, observing and recording our experiences carefully' (Moses & Knutsen, 2012, p. 8). Positivists usually describe phenomena in the world, rely on the scientific results as truth and see themselves as objectivists because of their careful and documented observation (Bisman, 2010; Blaikie, 2010; Moses & Knutsen, 2012).

This view is challenged by the research philosophy of constructivism established in the social sciences during the 20th century (Dow, 2003). According to constructivism, research subjects are not located in a real world, but are parts of a human agency (Guba, 1990; Moses & Knutsen, 2012). Its supporters are subjectivists, asserting, that every person experiences things differently, and therefore they deny that an objective truth exists (Guba, 1990; Moses & Knutsen, 2012). They argue that the world cannot be experienced objectively or directly, but is always perceived by human beings who reproduce their observations and can only access their own constructed world, which is different from experiences of other human beings (Moses & Knutsen, 2012; O'Mahoney & Vincent, 2014).

In between the two extremes of positivism and constructivism lies the relatively new research philosophy of critical realism (Danermark, Ekström, Jakobsen, & Karlsson, 2002; McEvoy & Richards, 2006). Initially described by the British philosopher Bhaskar in the 1970s as scientific or

transcendental realism (Archer, 2013; Bhaskar, 2008), critical realism constitutes an individual third way and does not represent a compromise of the other two philosophies (Danermark et al., 2002). It can be best described as nuanced version of positivism, serving as an alternative or synthesis of each of the two established positions (Dow, 2003; McEvoy & Richards, 2006; Zachariadis, Scott, & Barrett, 2013). Table 15 summarizes the basic ontological, epistemological and methodological assumptions of the three philosophies.

	Positivism	Critical realism	Constructivism
Ontology	One real reality that is knowable	Three levels of reality, the real level is only imperfectly apprehensible	Specific constructed realities by humans
Epistemology	What can be observed is real	What is real is not given, emergent concepts exist	What exists is primarily a property of perception
Methodology	Verification of hypotheses, mainly quantitative methods	Explanations, quantitative and qualitative methods	Hermeneutical and dialectical, qualitative methods
Research aim	Prediction and control	Development and explanation of a conceptualization and its causalities	Understanding and reconstruction

Table 15: Comparison of positivism, critical realism and constructivism. Sources: Adapted from Ackroyd (2004, p. 139); Guba and Lincoln (1994, pp. 109-112).

The basic difference between positivism and critical realism is the understanding of reality. Whereas positivists posit that there exists one reality, and research subjects are perfectly experiencable, observable and apprehensible, critical realists refer to three different domains of reality,

and only the events in one domain, the domain of the empirical, are empirically accessible (Danermark et al., 2002; Guba, 1990; O'Mahoney & Vincent, 2014). The other two domains, the domains of the real and the actual, consist of structures and mechanisms that produce events existing independently from our experiences (Bhaskar, 2008; Cruickshank, 2012; Danermark et al., 2002; O'Mahoney & Vincent, 2014). The goal of research is to explain constituents, their structures and mechanisms (Ackroyd, 2004; Bhaskar, 2014).

This also leads to differences between methodological approaches between positivists and critical realists. The former rely mainly on quantitative research and describe the results of empirical observation, the latter need to include qualitative research to explain the reasons for empirical results (Guba & Lincoln, 1994; Lindner & Mader, 2017; O'Mahoney & Vincent, 2014). Critical realists admit that all knowledge is somehow conceptually mediated and socially constructed by the perception of subjects under research and the perception of the researcher during the knowledge building process (Danermark et al., 2002; Lindner & Mader, 2017).

However, in opposition to constructivists, critical realists highlight that there is a reality in which structures and mechanisms exist (Bisman, 2010; O'Mahoney & Vincent, 2014). During the process of accessing this conceptual information, critical realists accept that all knowledge is socially produced and perceived (Danermark et al., 2002; McEvoy & Richards, 2006). But not all of the knowledge has the same depth of value-driven meaning, as postulated by constructivists (Moses & Knutsen, 2012). Even though new knowledge only represents an empirical observation of socially produced perceptions, it gives context for the identification of structures and mechanisms, their concept and its refinement (Danermark et al., 2002;

McEvoy & Richards, 2006). Moreover, structures and mechanisms as well as their effects and events are fluid and not fixed, and can change over time (Bhaskar, 2008; Lindner & Mader, 2017; Zachariadis et al., 2013).

The research philosophy of critical realism has led to critiques from both positivists and constructivists, and Kurki (2007) pointed out that these critiques are rather their misunderstandings of the critical realist perspective on social sciences. Positivists posited that critical realism just like constructivism contradicts with scientific work which should be based on the exploration of regularities and not on the search for conceptualizations, mechanisms and their causal connections (Bygstad & Munkvold, 2011; Kurki, 2007). They do not value critical realism for its conceptualizations, because those are not based on evidence, criteria nor scientific guidelines, but are often intertwined in causal complexitivity that is created by the researcher (Kurki, 2007).

Constructivists criticized the goal of critical realists to describe a conceptualization and its causal mechanisms, striving to make general explanations about it (Bygstad & Munkvold, 2011). In their perspective, critical realists are disguised positivists who describe the world as rational knowers. Constructivists asked why critical realists can know more than the research subjects in the empirical domain (Bygstad & Munkvold, 2011; Kurki, 2007), and they deny their phrases like *causal mechanisms* as too generalizing. The individual experiences of research subjects would be mixed up in a description of a group perception, and *individual reasons* would not be included (Kurki, 2007).

Critical realists addressed these critiques by their understanding of knowledge building. If no conceptualization exists, a deductive knowledge building of positivists by testing hypotheses would not be possible. The description and explanation of phenomenons is needed to have

explanatory power and a deep understanding of structures and causalities (Kurki, 2007). This deep understanding is not the description of the individual reasoning of research subjects, as postulated by constructivists, but gives context for the phenomenon under research (Danermark et al., 2002; Kurki, 2007). The resulting concept integrates different reasonings of individuals, and even extreme reasonings are identified and tested for inclusion as well (Moses & Knutsen, 2012). The concept receives its explanatory power because of the combination of individual perspectives that create constituents, structure and causal mechanisms (Danermark et al., 2002; Kurki, 2007).

Critical realism, with its understandings of reality and conceptualization is a promising philosophy of science for corporate reputation research. Reputations are collective representations in a stakeholder group (Bromley, 2000; Fombrun, 2012), and could also be referred to as changeable concepts. As such, their structure and underlying mechanisms are relevant, and their existence depends on stakeholder groups, as Wartick (2002, p. 375), rightly recognized: 'The empirical truth of corporate reputation comes from whatever the respondents say.' Thus, the structure of reputation and its causal mechanisms in the real domain should be abstracted to a certain extent from these empirical outcomes.

Critical realism is the ideal methodology for this reputation study for three reasons: First, a concept for medical device reputation has not been developed yet, and thus cannot be tested in large quantitative surveys as positivists postulate. Usually, reputation academics tend to focus on positivist perspectives (Fombrun, 2012), and the cornerstone of reputation research is providing reputation rankings rather than a discussion about the validity of the scales being used. When following the specific reputations approach, some academics (Berens & van Riel, 2004; Fombrun

et al., 2015; Walsh & Beatty, 2007) used large positivist surveys to verify their scales, which are then defined as displaying the *real* composition of a specific reputation. The weakness of these verified scales is that the reason why respondents were in favour of the attributes in the surveys remains unclear, these scales can only provide supported or unsupported findings. The focus of critical realist methodology is exactly this missing piece, the explanation for the reasoning behind the choice.

Second, a constructivist point of view would not be suitable for the conceptualization of the medical device reputation construct. Surely one or more hospital procurement managers can offer vast interpretative opportunities for their individual reasoning of reputation attributes. However, that is not the goal of this study, which aims to explain a concept of medical device reputation, its antecedents and consequences. The individual opinions need to be consolidated to make general assumptions about structures and mechanisms.

And third, critical realism is appropriate for this study because it offers the possibility to combine quantitative and qualitative research methods; therefore, the initial concept development is supported by an analysis of existing reputation scales. Using qualitative methods can explain the reasons why a reputation scale has its constituents. Using the flexible methodology of critical realism makes it possible to come closer to the stakeholder ratings, perceptions and reasonings. The resulting concept is an overview of medical device company reputation at the time of research, and it has the potential to emerge slowly over time (Barnett et al., 2006; Walker, 2010), and could have different constituents, structures and mechanisms when doing the research at a later date. It is then not falsified, but updated to the changed perception and industry environment.

For critical realists, the connection between ontology, epistemology and methodology is of major importance to access the research topic systematically and defend the research design (Zachariadis et al., 2013). The next two sub-sections provide the key ontological and epistemological implications that are relevant for this doctoral research. The third sub-section introduces the research approach of retroduction, chosen by critical realists because it contributes to the development of concepts, their underlying structure and causal mechanisms.

3.1.1. The stratified ontology of critical realism

The most important feature of critical realism is that it has ontological depth, unlike positivism and constructivism, which emphasize epistemology (Bhaskar, 2014; Blaikie, 2010; Dow, 2003; Zachariadis et al., 2013). As such, critical realism primarily explains the building blocks of existence, may it be a material, ideal, artefactual, psychological or social entity (Bhaskar, 2014; Moses & Knutsen, 2012).

The basis of the critical realist ontology is a structured, differentiated and changing world that exists independently of our knowledge of it (Dow, 2003; Sayer, 2000). Scientific objects or concepts are distinct from their description by the scholar (Bisman, 2010; Sayer, 2000). Critical realism accepts that there are different perceptions about one independent reality and denies that this reality is entirely accessible – its foremost interest is to identify and uncover structures and mechanisms in this reality (Bhaskar, 2008, 2014; Fleetwood, 2005). To gain knowledge, it is necessary for critical realists to provide a theory, model or conceptualization of the research phenomenon that needs to be illustrated as accurately as possible, knowing, that it is only imperfectly accessible (Ackroyd, 2004; Moses & Knutsen, 2012).

Three key aspects characterize the ontology of critical realism: (1) The three domains of reality, (2) the transitivity and intransitivity of research objects and (3) open systems in social sciences. In this sub-section, these aspects will be detailed, and their relevance for corporate reputation research will be discussed.

(1) Three domains of reality. The core assumption of critical realism ontology is the stratification of reality in three overlapping domains, as illustrated in figure 17.

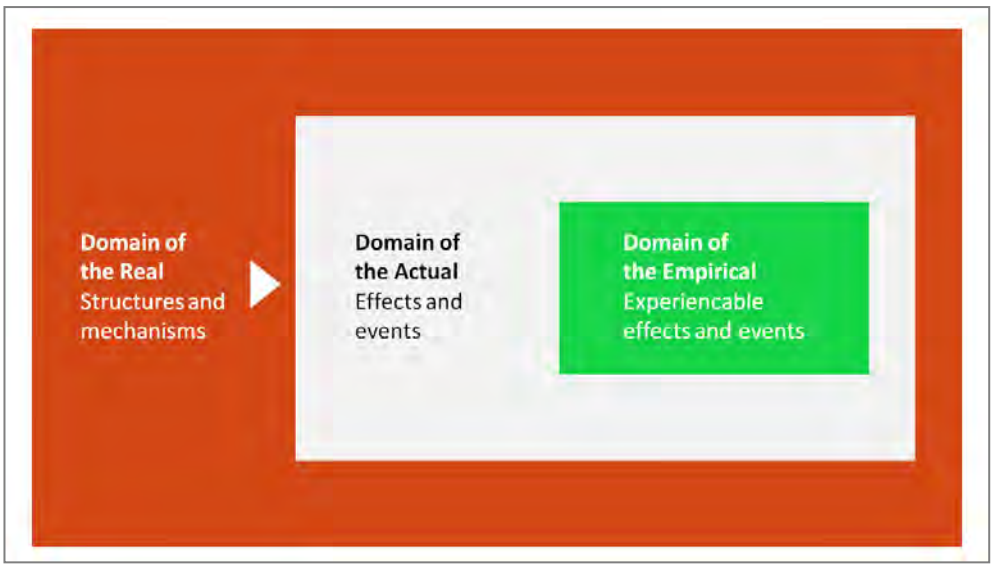

Figure 17: The three domains of reality in critical realism. Source: Adapted from Bhaskar (2008, p. 56) and Zachariadis et al. (2013, p. 858).

In the domain of the real, structures and mechanisms exist independently of what we know about them (Bhaskar, 2008; Collier, 1994). De Souza (2014) defines the term structure as physical and material objects or human practices that have internal relations. Structures can also be social systems and conceptual structures of any kind such as structures on the neurological level (Sayer, 2000; Yucel, 2018).

Mechanisms are likely to be tendencies or powers related to a structure (Collier, 1994; Danermark et al., 2002; Sayer, 2000). If these mechanisms are activated, they generate effects and events in the domain of the actual (De Souza, 2014; O'Mahoney & Vincent, 2014; Sayer, 2000). The nature of the actual domain is distinctive from the real domain (Danermark et al., 2002). In contrast to the structures and mechanisms in the real domain, the effects and events in the actual domain are likely to be determined, though they are not completely observable by researchers (Danermark et al., 2002; Yucel, 2018; Zachariadis et al., 2013). They are the snapshots and actual results of the enduring structures and their activated mechanisms in the domain of the real. The actual domain with its effects and events '[...] may be accessed beyond the immediate context of observed regularities' (O'Mahoney & Vincent, 2014, p. 10).

To observe these regularities, Bhaskar introduced the domain of the empirical, which marks an area of data and facts we can experience, monitor and perceive (Danermark et al., 2002; O'Mahoney & Vincent, 2014; Sayer, 2000). The empirical domain represents a subset of the actual domain, and is ascertainable by academics (Zachariadis et al., 2013). Critical realists emphasize that the observations in the empirical domain are not identical with the existence of real structures and mechanisms as postulated by positivists (Collier, 1994; O'Mahoney & Vincent, 2014; Sayer, 2000).

Critical realists oppose positivism's focus on empirical research because reality should be seen as more complex and theory-laden than data and facts alone (Danermark et al., 2002; O'Mahoney & Vincent, 2014). Danermark et al. (2002, p. 21) got to the heart of this perspective: 'Scientific work is ... to investigate and identify relationships and non-relationships, respectively, between what we experience, what actually

happens, and the underlying mechanisms that produce the events in the world.'

(2) Transitivity and intransitivity of research objects. According to Danermark et al. (2002) and Bhaskar (2008), science has an intransitive and a transitive attribute. An existing structure or mechanism in the real domain is an intransitive object of science independent of our conception of it (Bhaskar, 2008; Danermark et al., 2002; Sayer, 2000). An ontological difference between science and its intransitive objects exists (Cruickshank, 2012; Danermark et al., 2002).

As soon as a researcher tries to identify or constitutes a concept about the structure or mechanism, the concept is a transitive object of science, connecting science with reality (Sayer, 2000). The concept might be wrong and is therefore fallible, but will be treated as a truth that can be described for the moment (Bhaskar, 2008; Zachariadis et al., 2013). New concepts can always arise and replace the old concept as transitive object of science (Danermark et al., 2002). To visualize this, Sayer (2000) chose the example of the earth: '... there is no reason to believe that the shift from a flat earth theory to a round earth theory was accompanied by a change in the shape of the earth itself.' The shape of the earth is an intransitive object of research, but the theory about its shape is a transitive object of research that is socially determined, can emerge and is changeable (Danermark et al., 2002).

(3) Open systems in social science. A structure or mechanism can best be determined empirically when it occurs isolated in a closed system without disturbance from other structures or mechanisms (Cruickshank, 2012; Danermark et al., 2002; O'Mahoney & Vincent, 2014). In natural science, scholars can artificially close an open system with an experiment, eliminating all influences and concluding law-like assumptions (Danermark

et al., 2002; Dow, 2003). Every internal or external influence that could change the structure or mechanism is excluded (Collier, 1994).

A stratified reality in social science, as posited by critical realists, is always an open system, because social effects or events can only happen in open systems where they are activated by multiple mechanisms (Bhaskar, 2014; Collier, 1994; Danermark et al., 2002). A closure of the open system is not possible due to the structures and mechanisms within human society that influence themselves and other structures and mechanisms (Bhaskar, 2014; Cruickshank, 2012; Potter & López, 2005; Zachariadis et al., 2013).

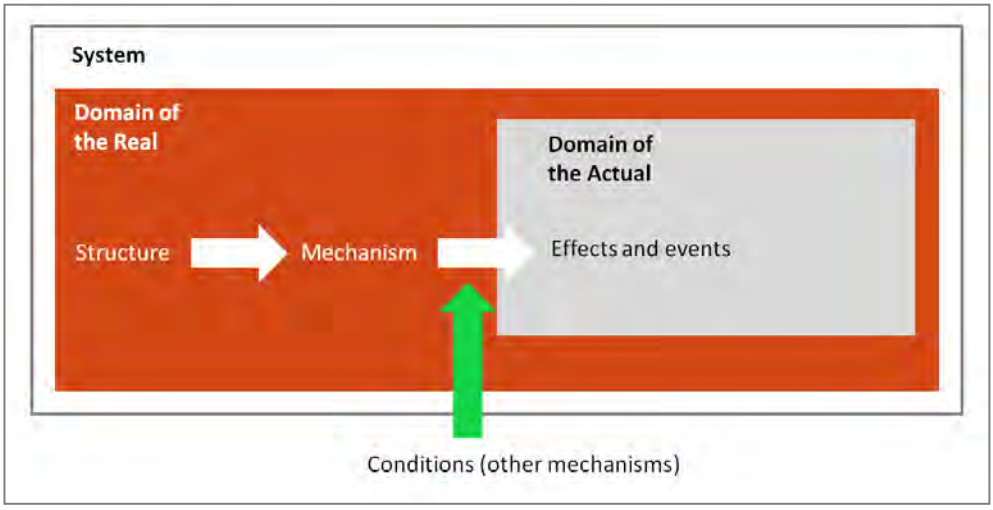

Figure 18: Critical realist view of causation in open systems of social science. Source: Adapted from Sayer (2000, p. 15).

Figure 18 shows an influence from the outside, as it is included in the critical realist view of causation. A causal relation within a system is disturbed by numerous social influences that may interact with each other, resulting in effects and events in the actual domain (Dow, 2003; Zachariadis et al., 2013).

Although regularities in a social system can be defined, uncertainty remains when all external conditions are stopped from intervening in the system

(Danermark et al., 2002). Therefore, the character of an open system in social science is rather complex, unpredictable and emergent (Bhaskar, 2014; O'Mahoney & Vincent, 2014; Sayer, 2000). The consequence is that critical realist researchers always need the context of the research objects to explain structures and mechanisms (Bhaskar, 2014).

These three key ontological implications of critical realism have an impact on the way corporate reputation is investigated in this doctoral thesis. The critical realist methodology follows the call of corporate reputation scholars to extend the knowledge of reputation with a variety of methodologies (Dowling & Gardberg, 2012; Fombrun, 2012). The construct of corporate reputation is treated as a transitive research object that has been continuously shaped in its meaning, concept and attributes in order to create '[...] truer and truer ... accounts of reality' (Potter & López, 2005, p. 12).

In this thesis, medical device company reputation will be conceptualized and explained as a complex construct in the real domain. It consists of various mechanisms and exists in an open system influenced by many other mechanisms such as crises and price, as well as from included constituents such as product and services or transparency. A large number of mechanisms are activated and cause effects in the actual domain. In the reputation concept, an effect is a perception or rating of a constituent such as a reputation attribute.

As an example, transparency is described as attribute in the reputation concept in the real domain, and is influenced by a crisis, a mechanism from outside the reputation construct. The actual domain includes the perceptual effect resulting from this causal relation, meaning that hospital procurement managers will judge the transparency of a medical device company as good, bad or neutral because of the crisis. The assumption is

that a more positive judgement of transparency will have the effect of a positive evaluation of other attributes, and even consequences of corporate reputation.

When a hospital procurement manager articulates an attribute or a mechanism unambiguously in a research interview, the rating and the effect are located in the empirical domain. The corresponding causal connections in the structure are located in the real domain, and other effects, which result from the causal connections but were not articulated in a research interview, are located in the actual domain. The effects in the actual domain and the conceptualization in the real domain are built by the researcher, including the results of the empirical domain, academic and business literature sources, own business and research experience as well as logical inference.

The challenge to build the reputation concept in the real domain can only be addressed with an epistemological strategy of critical realism. The hospital procurement managers interviewed do not express their general understanding about reputation and its constituents, but are confronted with a reputation concept derived from the literature. This strategy contributes to a more focused conceptual discussion in the empirical domain which helps to generate conceptual beliefs that are useful for the real domain. As such, the interview reflects both the hospital procurement manager's perspective of medical device company reputation, and a thoughtful 'meta-discussion' about the representation of the concept under discussion for the whole stakeholder group. This concept-driven approach is one established way for critical realists to generate knowledge, which is explained further in the next sub-section.

3.1.2. The concept-driven epistemology of critical realism

Epistemology, the theory about the nature of knowledge, is usually determined by researchers' ontological views and explains how they acquire and accept knowledge about the world and its reality (Bisman, 2010; Moses & Knutsen, 2012). As such, the epistemological beliefs of scholars about how their research phenomena can be known and explained strongly influence the methodology of the research (Bisman, 2010). In critical realism, the ontologically defined nature of a structure and its mechanisms comes first, and how we construct knowledge about the structure and mechanisms comes second (Dow, 2003).

When critical realists aim to gain knowledge, they are interested in reaching deeper levels of explanation of a research object, not in identifying generalizable laws like positivists or understanding the beliefs of social actors like constructivists (McEvoy & Richards, 2006). To explain the research object in social sciences, they often combine an empirical investigation with theory building, resulting in a concept of a structure and its mechanisms (Bhaskar, 2008; Danermark et al., 2002; McEvoy & Richards, 2006).

Corporate reputation is a phenomenon that is both socially constructed and socially defined. With a concept, it would be possible to understand the significance and meanings of medical device company reputation as well as its effects in the perception of hospital procurement managers (Danermark et al., 2002). Critical realists, who study other people's perceptions, are convinced that the social phenomenon being researched exists in a certain conceptual shape (Danermark et al., 2002). The opinions and interpretations of the study participants can be classified as key sources or a raw material for scientific knowledge, revealed in the

empirical domain of reality (Danermark et al., 2002; Pawson & Tilley, 2004; Yucel, 2018).

The conceptually driven epistemology by critical realists is particularly important when explaining phenomena in the social sciences that are enduring, although they could evolve over time (Danermark et al., 2002; Sayer, 2000). This is evinced by the way conceptual knowledge can be generated and confirmed, neglected and rejected, changed and refined. As human beings, researchers and study participants continually make experiences that shape their perceptions and may result in questioning their opinions and actions (Danermark et al., 2002; McEvoy & Richards, 2006). Additionally, study participants are not all-knowing and may confirm an adequate conceptualization created before-hand by the researcher, though they will not necessarily agree with this conceptualization (Ackroyd, 2004; Pawson & Tilley, 2004).

Critical realists do not fear these interferences but accept them as a natural process that can happen in an open system (Danermark et al., 2002; Dow, 2003). Cruickshank (2012) even emphasizes that this criticism on concepts is one reason why critical realism is described as critical. Following the transitive nature of science in a global scope, concepts can evolve over time and are temporarily limited until the same or another researcher will challenge and possibly replace them (Bhaskar, 2008; Cruickshank, 2012; De Souza, 2014).

Critical realist concepts consist of some basic constituents with conditions and causal relations (Pawson & Tilley, 1997). The following paragraphs will introduce these constituents, their role in knowledge building, and how researchers can access these causal relations. Merging two models from Danermark et al. (2002) and Pawson and Tilley (1997), figure 19 presents an archetypal reputation concept model with some basic constituents.

Starting from the concrete, the researcher extracts the views from the literature and from the study participants to collect empirical effects that are accessible and experienceable. The critical realist researcher tries to identify what underlying mechanisms could exist that would result in these effects (Zachariadis et al., 2013). Underlying means that mechanisms in the real domain do not appear on the surface but recede into their inner workings (Pawson & Tilley, 1997; Walters & Young, 2003). For the causal analysis, four general characteristics of mechanisms have been considered in the critical realist literature.

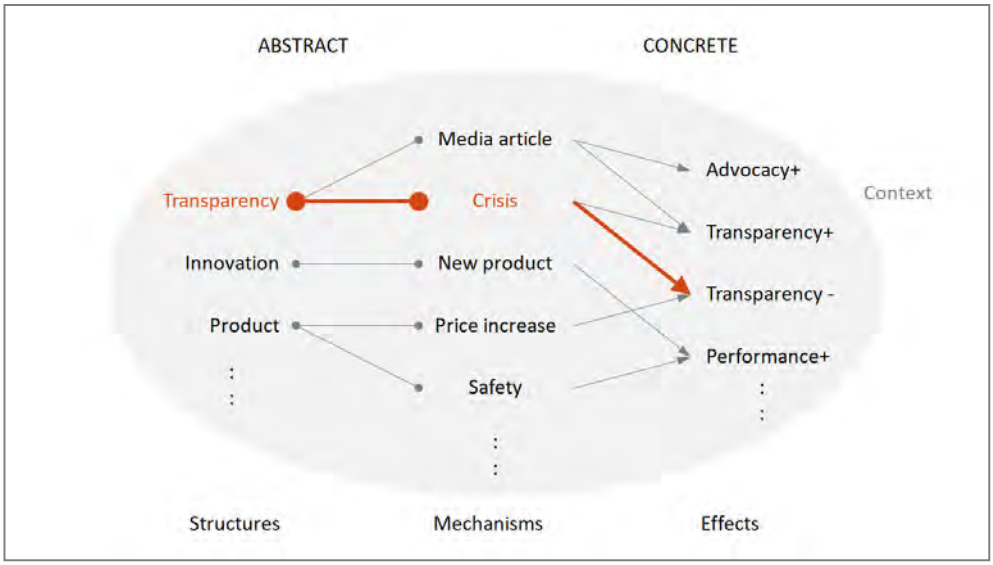

Figure 19: Archetypal reputation concept model including basic constituents. Note: Regularity is marked red: Transparency is an attribute in the reputational concept. A mechanism "crisis" leads to the effect of a negative perception of transparency. Other, not regular mechanisms are marked in grey arrows. Sources: Own compilation, adapted from Danermark et al. (2002, p. 58) and Pawson and Tilley (1997, p. 71).

First, a mechanism always operates in a special context (Bhaskar, 2008). Researchers need to picture the particular circumstances and conditions in which the mechanism could arise (Downward, Finch, & Ramsay, 2003; Pawson & Tilley, 2004). Second, on an abstract level, a mechanism is expected to be embedded in a structure within the stratified nature of

social reality (Danermark et al., 2002; Pawson & Tilley, 1997). One or more mechanisms can be attached to one structural constituent (Danermark et al., 2002). Third, a mechanism can contain processes at a macro and micro level, resulting in general or specific effects and events. And last, the reasoning of the mechanism should be consistent with the empirical findings and explain the perceptions, choices and actions of the study participants (Danermark et al., 2002; Pawson & Tilley, 1997).

Danermark et al. (2002) emphasized that '[...] many mechanisms may be concurrently active, and they may just as well reinforce as neutralize each other's manifestations.' These interactions as well as their differences in the quality or weight (Lawson, 2013) lead to the introduction of the term *regularity* by Pawson and Tilley (1997): 'Explanation takes the form of positing some underlying mechanism ... which generates the regularity and thus consists of propositions about how the interplay between structure and agency has constituted the regularity.'

This regularity is illustrated in figure 19, including transparency, a crisis and the effect of negative transparency. The mechanism of a crisis has caused a negative effect on transparency in the actual domain. However, another connection could be a positive transparency outcome after certain decisions in crisis situations; in the archetypal illustration this is not regular. As noted in the previous sub-section, not all mechanisms within the corporate reputation construct will be explained in this thesis, but the ones that dominate, shine through, or have a chance to be regular (Lawson, 2013).

In corporate reputation research, there have been only a few studies that included their participants in the creation, discussion or refinement of a reputational concept (Berens & van Riel, 2004; Walsh & Beatty, 2007). However, the corporate reputation construct, with its many assorted

attributes, antecedents and consequences represents a structure that is determined by numerous mechanisms in many contexts. With the choice of the medical device sector, the stakeholder group of hospital procurement managers and the location Germany some contexts have been already chosen and will lead to an explanation of structure and mechanisms of medical device company reputation. In current corporate reputation concepts, some structural constituents such as attributes have been already weighted (Reputation-Institute, 2015), and this is a promising way to specify the reputational construct.

Epistemologically, conceptualization is the cornerstone of a critical realist research. One logic of inference that supports this understanding of knowledge generation is retroduction (Bhaskar, 2014; Danermark et al., 2002; Lawson, 2013). The following sub-section describes what retroduction includes, why it is relevant and how it can strategize the research by developing conceptual explanations through empirical findings.

3.1.3. Retroduction as logic of inference

Before starting a research project, scholars intend to specify their logic for reasoning in order to answer their research questions (Blaikie, 2010; Danermark et al., 2002). As such, the term 'logic of inference' can best describe the role of this set of procedures that determine the overall research process. Inference refers straightforwardly to a direction of reasoning towards answering the research questions (Danermark et al., 2002; Miller, 2003; Zachariadis et al., 2013), and labels the underlying research process more accurately than other terms such as research strategy, research approach or thought operation (Blaikie, 2010; Zachariadis et al., 2013). The logic of inference is believed to be vital to generating knowledge in the social sciences, because it defines the starting

and concluding points of the research as well as the research steps in between, derived from the epistemological foundations (Blaikie, 2010).

Academics distinguish the four inference modes of deduction, induction, abduction and retroduction (Danermark et al., 2002). Unlike the other three, retroduction comprises the logic of inference for critical realism (McEvoy & Richards, 2006; Olsen, 2010). Although some theorists identified substantial interfaces between the four logics (Miller, 2003; Walters & Young, 2003), there is a wide agreement in the literature that the four types are fundamentally different in how to reason, interpret and draw conclusions in a research project (Danermark et al., 2002; Olsen, 2010; Zachariadis et al., 2013).

Retroduction has been identified by critical realists to explain complex structures and mechanisms in the real domain that are responsible for observable events in the empirical domain (Danermark et al., 2002; McEvoy & Richards, 2006; Setterfield, 2003). Table 16 provides an overview of the aims, central questions, starting and concluding points as well as the strengths of the four logics of inference.

Deduction aims to test existing theories by hypothesising and generating data in order to find logical and law-like validity. Induction observes a number of entities, describes their characteristics and looks for patterns to develop a generalization that relates to the research questions. Abduction describes the role, defines the meaning and gives an interpretation of entities within a larger context by developing and elaborating a theory about these entities. Retroduction explains effects observed in the empirical domain by detecting the qualities of underlying structures and mechanisms. As such, it already includes the ontological and epistemological wordings of critical realism (Danermark et al., 2002).

	Deduction	Induction	Abduction	Retroduction
Aim	Test theories, eliminate false ones and corroborate the survivor	Establish descriptions of characteristics and patterns	Describe and understand social life in terms of actors' meanings and motives	Discover structures and mechanisms to explain observed regularities
Central question	What are the logical conclusions of the premises?	What is the constituent common for several observed entities and is it true also of a larger population?	What meaning is given to something interpreted within a particular conceptual framework?	What qualities must exist for something to be possible?
Starting point	Identify a regularity that needs to be explored; construct a theory and deduce hypotheses	Collect data on characteristics and/or patterns; produce descriptions	Discover everyday lay concepts, meanings and motives; produce a technical account from lay accounts	Document and model a regularity; describe the context and possible mechanisms
Concluding point	Test hypotheses by matching them with data explanation	Relate descriptions to the research questions	Develop a theory and elaborate it iteratively	Establish which mechanisms provide the best explanation in this context
Strength	Provides rules and guidance for investigations of the logical validity	Provides guidance in connection with empirical generalizations	Provides guidance for the interpretative processes by which we ascribe meaning to events within a larger context	Provides knowledge of conditions, structures and mechanisms that cannot be directly observed in the empirical domain

Table 16: Comparison of the four logics of inference. Sources: Adapted from Danermark et al. (2002, pp. 80-81), and Blaikie (2010, p. 84).

When using retroduction, critical realists build knowledge in the real domain from experiences in the empirical domain (Danermark et al., 2002; Olsen, 2010). Following Olsen (2010), the question *why* is central here, since retroduction includes asking why about the evidence, about the concept, and about the causal mechanisms.

Among corporate reputation researchers, logics other than deduction have rarely been experienced so far. However, academics recently identified a need to gather more substantial knowledge, rather than just providing company rankings. Fombrun (2012) who posited a practice for carefully constructing theoretical frameworks is an example proponent of this opinion. Given the previously identified similarities of corporate reputation with a research phenomenon in the real domain, the logical inference of retroduction could lead to conceptual outcomes.

After this clarification of the retroductive basis, the following paragraphs will introduce how the retroductive research process is conducted. Numerous critical realists recommended using slightly varying procedures, though the essence of the process is almost identical (Bhaskar, 2008, 2014; Collier, 1994; Danermark et al., 2002; De Souza, 2014; Zachariadis et al., 2013). This doctoral thesis is oriented to an interpretation of the DREIC scheme, which stands for **d**escription, **r**etroduction, **e**limination, **i**dentification and **c**ontextualization. Orientation here does not mean to strictly follow the scheme as guideline. Rather, DREIC provides a logical procedure on how to manage the knowledge building process in the thesis. Figure 20 visualizes the five DREIC stages, including the domains of reality involved in the thought operations.

As a starting point, retroduction literature recommends first *describing* a concept, pattern or regularity of a social structure from familiar sources (Bhaskar, 2014; Blaikie, 2007, 2010; Danermark et al., 2002; Downward et

al., 2003). The resulting phenomenon should be illustrated by structures and mechanisms and could include preliminary causalities as well. For the construction of the concept, observable resources like existing models and descriptions of the phenomenon in the literature may be considered. The initial concept is a draft version of a phenomenon in the real domain. It is derived from observations of the academic and non-academic literature and from the experience and perspective of the researcher (Finch & McMaster, 2003).

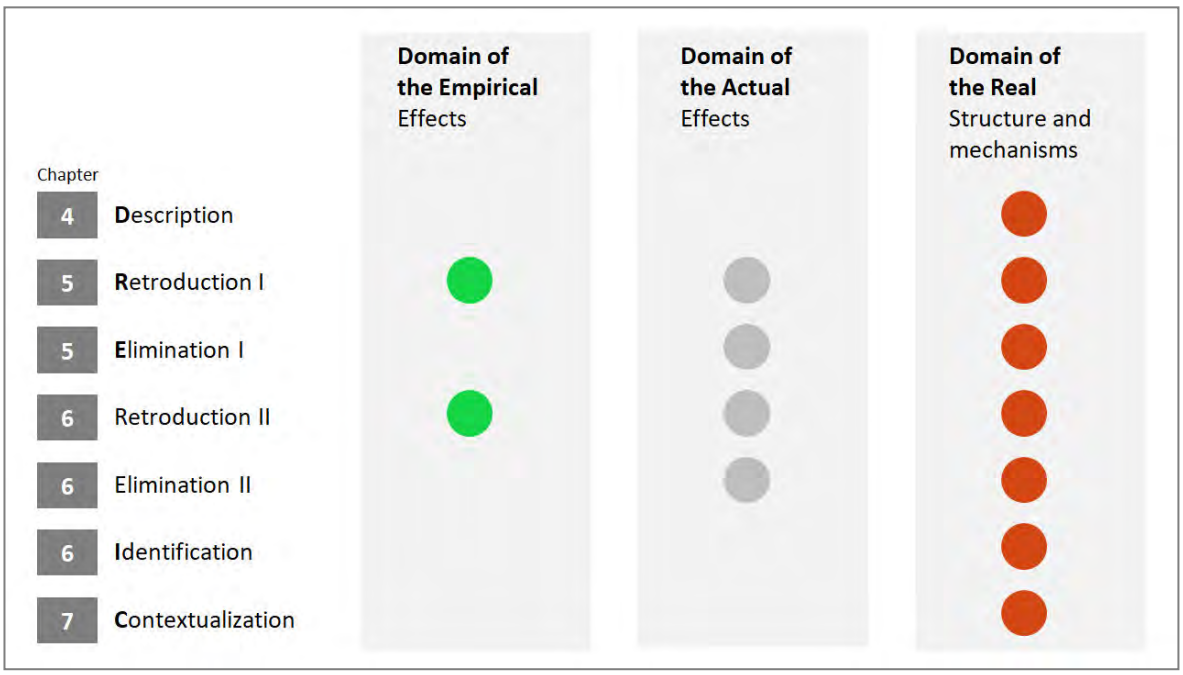

Figure 20: The knowledge building process using the DREIC scheme.
Source: Own compilation, based on the findings in this sub-section.

For the research in this doctoral research, the construction in section 4.1. represents a causal framework that needs to be adapted to medical device company reputation. Therefore, categories, attributes and aspects are derived from the literature in sections 4.2 to 4.5. to bring this framework to life, and causal relations are identified and explained in an initial concept of medical device company reputation.

The second stage, *retroduction*, is the core procedure in the knowledge building process, improving, testing and verifying the concept by transfers of empirical knowledge that has to be generated by the researcher (Blaikie, 2007). As already outlined, retroduction aims to explain the structure and mechanisms that could cause the observed effects as well as the effects theorized in the actual domain (McEvoy & Richards, 2006; Setterfield, 2003).

At the end of the retroduction stage, there will certainly be open questions and unclear constituents to test further, as well as clear tendencies to remove others. This leads to the next point, the *elimination* of constituents that are no longer needed, because they were not mentioned by research subjects, and also not abstracted from the empirical research by the researcher. Here, it is not purposeful to eliminate complete parts of the concept, but rather to exclude single properties or insufficient mechanisms and their effects from the concept. These two stages are performed in chapter 5, where the results of the first phase interviews are presented and discussed, resulting in a revised reputation concept.

If necessary, the stages *retroduction* and *elimination* are performed more than once, in a second or third round of empirical research, including discussions with interview participants about the revised concept in order to receive their feedbacks (Finch & McMaster, 2003). At the end of all the rounds of retroduction and elimination, Bhaskar (2014, p. vii) calls this 'iterative correction', stands the removal of all major competing structural constituents, mechanisms and reasoning (Blaikie, 2007). These results lead to a clear identification of a concept under research, with all of its properties and causalities (Bhaskar, 2014; Blaikie, 2007). In this research project, a second retroduction and elimination is conducted in chapter 6, followed by an *identification* of the refined reputation concept. A third

round of empirical research was not necessary due to the common understanding of the reputational concept by the second phase interview participants.

In the last stage, *contextualization*, the refined concept will be explained and the causal relationships, such as the antecedents and consequences of corporate reputation, will be explained and discussed in a larger context (Danermark et al., 2002). McEvoy and Richards (2006, p. 71), concluded that '[f]rom a critical realist perspective, the best explanations are those that are identified as having the greatest explanatory power.' In this thesis, the contextualization is provided in the conclusion in chapter 7, and the academic and managerial implications are given.

Overall, retroduction is a promising logic of inference to attain a deep knowledge about corporate reputation, its structure and mechanisms. It is embedded in a knowledge generating process that will be applied in this doctoral study. Using different methods is typical for critical realists to identify and explain concepts (Zachariadis et al., 2013). The next section shows how the research project will be conducted in detail.

3.2. Research methods

Research methods support both the study's goal and the selected methodology. This doctoral thesis aims to map medical device company reputation with all of its attributes, antecedents and consequences from the perspective of hospital procurement managers in Germany. It can be reached by quantitative and qualitative research methods, but this usually strict distinction is not supported by critical realists who argue '... that the choice of methods should be dictated by the nature of the research problem' (McEvoy & Richards, 2006, p. 71).

Both types of research methods are compatible with the retroductive logic of inference, and could even be combined, using the advantages of each of the types (Dow, 2003; Pawson & Tilley, 2004; Zachariadis et al., 2013). This implies that an in-depth concept with the explanations of structures and causal mechanisms could be theorized by a qualitative method (Barbour, 2007; Bisman, 2010).

However, the weight of constituents or the strength of causal mechanisms could include quantitative approaches as well, giving just a tendency, not a statistically significant proportion (Bisman, 2010; Bromley, 2002). This does not contradict the advantages of qualitative methods within critical realism: There are more profound and identifiably stronger structures and interactions in social systems that have not been thought of before (McEvoy & Richards, 2006; Zachariadis et al., 2013).

This doctoral study will include more qualitative than quantitative research methods. As such, it is one of the few predominantly qualitative studies in the field of corporate reputation, with their mostly survey-driven research (Fombrun, 2012; Walsh & Beatty, 2007). Reputation surveys are partly criticized for their inaccurate results due to established questionnaires and respondent fatigue when answering long surveys (Dowling & Gardberg, 2012).

Figure 21 introduces the research design. It follows the DREIC scheme that was explained in the previous sub-section. Derived from the literature, an initial reputation concept will be *described* in chapter 4. This initial concept is meant to include numerous options how the constituents of reputation are structured and how they interact with each other, their antecedents and consequences.

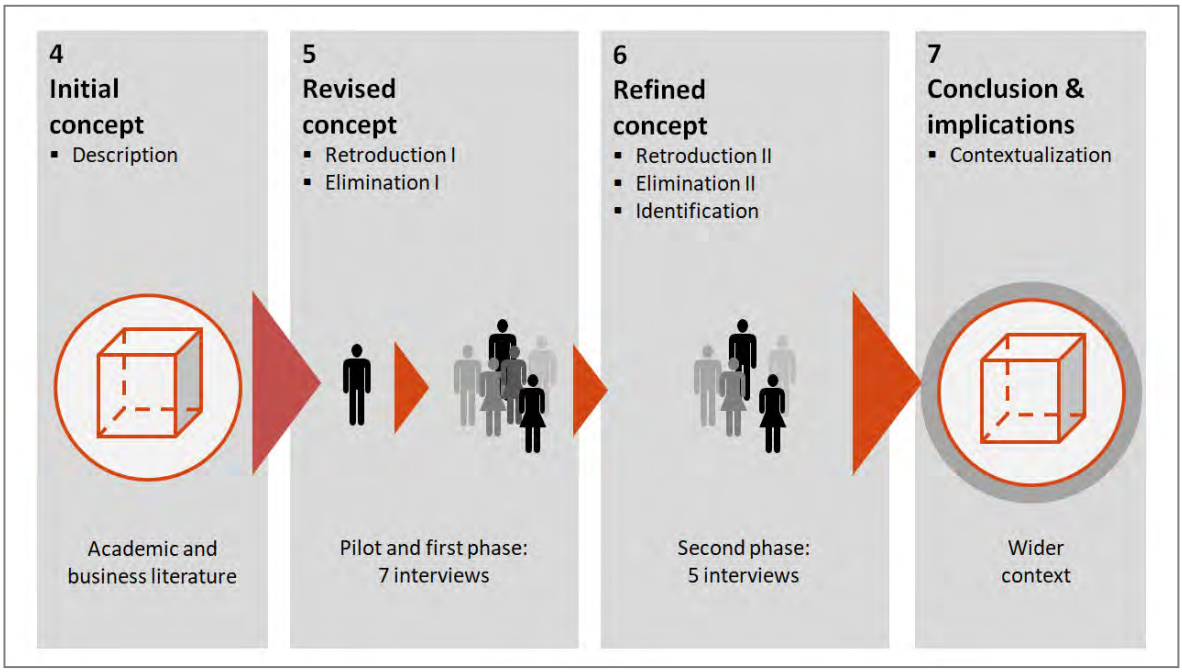

Figure 21: Research design of this doctoral study. Source: Own compilation, based on the findings in the previous sub-section.

The major part of the research project will be presented in chapter 5: The creation of a revised concept of medical device company reputation. In a pilot interview with a manager of a group purchasing organization, the interview structure and the initial model is tested in terms of comprehensibility and overall practical compatibility. The results of this pilot interview and the results of the following six first phase interviews with hospital procurement managers are discussed in chapter 5, and lead to the revised concept. In chapter 6, another five interviews with hospital procurement managers are conducted to identify the refined concept. In the concluding chapter 7, the refined reputation map will be discussed in a wider context. In particular, the implications and relevance of the research results for both the academic and the professional practices will be proposed, reasoned and classified.

This section specifies the methodical considerations for the major part of the research project. The four sub-sections give a detailed reasoning of the

research tactics, starting from the idea of doing semi-structured one-to-one interviews and their design. Then, how the study participants have been selected and what their professional background is will be outlined. The last sub-section gives information about the analysing process in this research project. The sub-sections also include substantial thoughts about research ethics, and how these thoughts were established in the study will be demonstrated.

3.2.1. Concept-driven interviews

Three choices regarding the interviews in the research project have been made and will be defended in this sub-section: (1) The choice of conducting one-to-one-interviews, (2) the decision for semi-structured interviews, and (3) the application of the relatively unknown concept-driven interview.

There are numerous different kinds of qualitative research methods, including observational fieldwork, one-to-one interviews, focus groups and diaries (Barbour, 2007). Reasoning about why most of these research methods are not compatible with this research, is given in appendix 11. The most promising options for critical realists are focus groups and one-to-one interviews (Edwards, O'Mahoney, & Vincent, 2014). They can best address the typical what and how questions that are asked by qualitative researchers (Flick, 2008).

Holstein and Gubrium (1995, p. 140) emphasized that interviewing is 'the most widely used technique for conducting systematic social inquiry'. A major strength of interviewing is that respondents can verbalize their experiences in a fluid interactive process and estimate which concepts and causalities make sense to them (Brinkmann, 2013; Miller & Glassner, 1997; Packer, 2011; Smith & Elger, 2014). From a critical realist point of view, respondents need to be introduced to the context and causalities of the

research phenomenon to verbalize their perspectives of it (Roberts, 2014). Their reflections are valuable when explaining the collective perception of them, just as it is beneficial for the corporate reputation researcher.

One-to-one interviews were not chosen because they are the most favoured and ubiquitous research method among social researchers (Flick, 2008; Packer, 2011). They were chosen because they have three substantial advantages in comparison to focus groups. First, one-to-one interviews are the method of choice when exploring sensitive and discrete topics that are unlikely to be shared with others in a focus group (Brinkmann, 2013). In corporate reputation research with hospital procurement managers, such a sensitive topic could be the consequence of reputation to internal decision processes that will certainly not be revealed in the presence of procurement managers of competing hospitals.

Second, less dominant focus group participants or participants with unpopular beliefs, feelings and opinions might not express their opinions in a group the same way they would in one-to-one interviews (Miller & Glassner, 1997). This results in a loss of opinion variety and contradicts with the aim to conceptualize as complete a structure of corporate reputation as possible. And third, one-to-one-interviews are easier to lead by the interviewer than focus groups, whose dynamics could reduce the researcher's control of the topic (Brinkmann, 2013; Kvale, 2008). Particularly the complex topic of corporate reputation could lead to long discussions about single attributes that will block the understanding of the overall construct. To secure the collection of data that is as accurate and uninterrupted as possible, one-to-one-interviews with the hospital procurement managers are preferred in this research project.

The interviews are conducted as face-to-face interviews in the familiar business environment at the workplaces of the respondents (Flick, 2008;

Taylor, Bogdan, & DeVault, 2016). In contrast to written, phone or video interviews, the respondents are more visible, facial expressions and body language can be recognized, and the Q-sort research technique, a sorting technique with cards introduced in the next sub-section, can be administered without interruption or elaborate explanations (Brinkmann, 2013). The familiar environment ensures that the hospital procurement managers interviewed do not change their talking habits too much because of an unknown setting.

Researchers differentiate between three main types of interviews: structured, semi-structured and unstructured (Brinkmann, 2013). In a structured interview, the researcher adopts a formal style and is tied to a fixed set of questions. Usually, it has a large number of respondents who find a fixed wording and multiple choice answers (Packer, 2011; Pawson & Tilley, 1997; Taylor et al., 2016). In an unstructured interview, also referred to as an in-depth-interview, the researcher uses a broad list of explorable topics. Respondents tell a story, often in long sequences describing their lives, medical history or other topics that are of interest for the researcher (Kvale, 2008; Pawson & Tilley, 1997; Taylor et al., 2016).

The semi-structured interview is the most widespread interview type in social research (Brinkmann, 2013; Packer, 2011). Usually, the semi-structured interview is based on a question guide that consists of the contents which will be asked (Greener, 2008). Thus, the researcher has a plan of the interview, but does not follow a strict order or wording of questions (Packer, 2011). For corporate reputation research, this interview type is ideal, because it combines a structural approach that includes all items for the complex construct with an unstructured approach, giving respondents the opportunity to express why they feel the items belong to corporate reputation.

In a semi-structured interview, the respondents have the freedom to answer the questions at length and their own words, and no multiple-choice answers are given. They are allowed to extend and elaborate on topics where they want, since they and their answers are the centre of attention (Greener, 2008; Packer, 2011). The researcher can ask second questions to clarify ambiguity or explore an important aspect of a given answer. As such, the interviewer has a good '... chance of becoming visible as a knowledge-producing participant in the process itself, rather than hiding behind a preset interview guide' (Brinkmann, 2013, p. 21). As a result, the semi-structured interview can be conducted dynamically and has many features of an everyday conversation (Packer, 2011; Taylor et al., 2016).

Based on critical realist epistemology, the concept-driven interview has the goal to refine a previously developed concept (Kvale, 2008; Pawson & Tilley, 1997; Smith & Elger, 2014). The interviewer presents an appropriate analytical framework, conceptual structure or theory that is discussed with the respondent. The interviewer can guide questions to clarify conceptual constituents, connections, regularities and causalities (Smith & Elger, 2014).

The concept-driven interview design strengthens the role of the researcher as expert but does not intend the respondent to lose the dominant role. The respondent informs the interviewer about his or her thoughts on the introduced concept, and does not bring other major topics into account (Smith & Elger, 2014). As such, the respondent confirms or falsifies the concept, adds new aspects and strings to the topic, and therefore continues to develop the conceptual structure for the researcher (Kvale, 2008; Pawson & Tilley, 1997; Smith & Elger, 2014).

The concept-driven interview in this study brings together two different types of expertise, the academic and business knowledge of the researcher, who is employed at a medical device company, and the practical experience of the hospital procurement managers. Theorists appreciate this interview type as a negotiation and dialogue in which the thoughts of interviewer and respondent are interchanged to frame a more sophisticated version of the concept (Pawson & Tilley, 1997; Smith & Elger, 2014). Pawson and Tilley (1997) suggested how the concept-driven interview can be visualized in a didactic framework, as presented in figure 22.

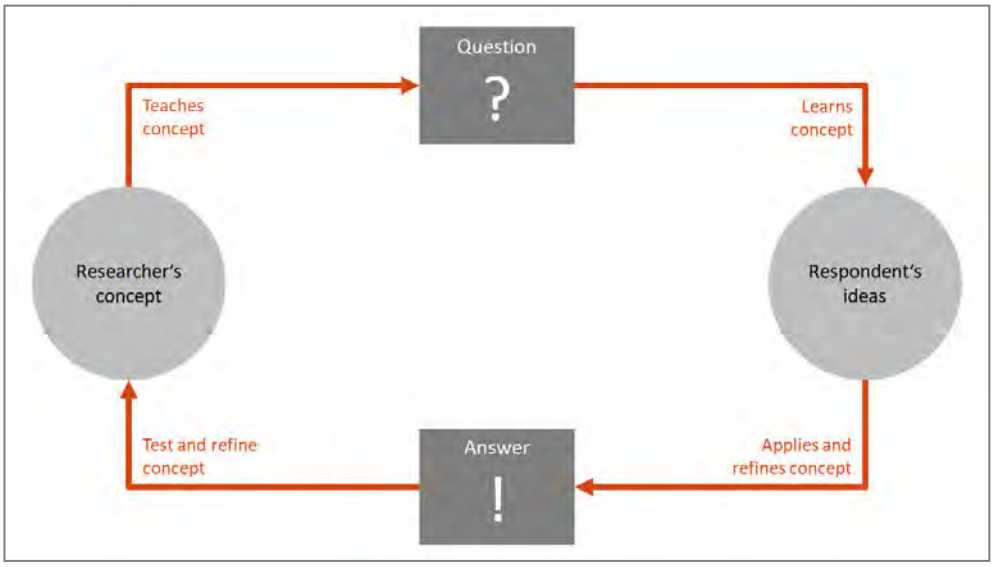

Figure 22: The didactic framework of a concept-driven interview. Source: Adapted from Pawson and Tilley (1997, p. 165).

The didactic framework implies that the researcher initiates a teaching-learning process by explaining the concept with its context to the respondent (Smith & Elger, 2014). This will generate a greater awareness and understanding of the research topic for the respondent, who can then answer more purposefully individual questions concerning the research phenomenon (Smith & Elger, 2014). The result is an informed respondent

who contributes his or her own ideas to explanatory passages, sections in the structure, linked causal relations and identified regularities – and may express difficulties and confusion with the researcher's categories (Pawson & Tilley, 1997; Smith & Elger, 2014). As such, the active role of the respondents becomes apparent by applying the suggested conceptual structure to their practice and by refining or challenging it with their views, beliefs and experiences (Pawson & Tilley, 1997).

The interviewer then refines the concept by testing and correcting existing structural constituents, connections and causes, and by adding new ideas from the respondent. This contributes to a more accurate conceptual structure that can build the foundation for the next clarifying question or a further question with the goal of testing existing ideas or adding more of them (Kvale, 2008; Pawson & Tilley, 1997; Smith & Elger, 2014). The conceptual interview is an efficient method to focus the respondent on a certain phenomenon by balancing teaching-learning sequences with sequences generating knowledge.

Both the researcher and the respondent are attentive and actively involved in the development of the conceptual structure and its mechanisms. This could provide potential drawbacks, such as the influence on the respondents by a too active researcher. In the research project, this is meant to be overcome with an orientation of the questions to the ratings of constituents by the interviewees, and open questions at the end, and asking if the interviewee would like to add constituents, recommendations or remarks.

In corporate reputation research, surveys with many respondents and rankings dominate, the goal being to generate measurement scales by asking stakeholders about their views on reputation attributes and aspects. However, parts of the concept-driven interview have been executed in

some studies to find or refine characteristics of specific reputations, such as customer-based reputation (Helm, 2005; Walsh & Beatty, 2007; Walsh & Wiedmann, 2004), image of pharmaceutical companies from the perspective of medical staff (Wright & Fill, 2001), and the reputation of large companies from the perspective of executives (Reddiar, Kleyn, & Abratt, 2012; Van der Jagt, 2005). Three of these studies have started with a concept derived from the literature in advance (Van der Jagt, 2005; Walsh & Wiedmann, 2004; Wright & Fill, 2001). However, using the concept-driven interview is not a completely new approach within reputation research, it is still pioneering work.

3.2.2. Interview design

It is beneficial to prepare a distinct and creative interview design to successfully lead a semi-structured and concept-driven interview without ignoring major topics in the previously agreed maximum interview time of 75 minutes per respondent. Brinkmann (2013) suggested researchers to compile an interview guide for both the overall structure of the interview and the translation of the research questions into interview questions. Table 17 presents a guide for the overall structure of one typical interview in this research project.

The two unrecorded stages, the briefing and the debriefing of the interview, are important to frame the interview in a professional setting. In the briefing, the interviewer provides the respondent with some general information on the interviewer, the research topic, interview purpose and methods. This should be only an introduction, more detailed information can preferably wait until the interview is over (Kvale, 2008; Taylor et al., 2016). Additionally, consent for interviewing, recording and all analysing

steps is given by the respondent. This informed consent will be introduced in the next section.

Briefing (unrecorded)	**Interviewing** (recorded)	**Debriefing** (unrecorded)
Short introduction of the researcher	Introductory questions of socio-demographic nature	Respondent possibly raises topics that he or she did not want to be recorded
Short introduction of research topic, interview purpose and methods	Detailed questions about the concept of reputation, its antecedents and consequences	Possibly more information on purpose and design of the interview study
Clarification of consent for interview and following steps (written approval)	Concluding question	What happens next? When does the researcher provide respondents with a short report of the results?

Table 17: Interview structure for this reputation research. Note: For details of the interviewing section please see table 18 later in this sub-section. Source: Own compilation, based on Kvale (2008, pp. 55-56).

The consent for recording was important and given by all twelve interviewees; only one interviewee had no experience with being recorded and felt nervous in the beginning. Another struggle with recording is that respondents will not say everything they think of, and indeed three interviewees articulated this at some point in the interviews. However, since the interview topic was not too personal, it is assumed that only marginal knowledge was lost because of recording: The interviewees reflected more on the way something was said and avoided giving names of medical device companies. However, the advantages of recording to collect authentic and quotable interview data outnumbered these disadvantages.

In the debriefing, the respondents had the chance to address topics that he or she did not want to be recorded. This could be confidential background

information or additional aspects that may not relate directly to the topic, and it did not happen in the twelve interviews. When requested, the interviewer gave more information on the research and the interview purpose. Also, the interviewer described the subsequent steps and gave an outlook as when study results would be provided to the respondents. All respondents were interested in receiving this report.

For interviewing, a researcher needs specific qualifications that range from professional and methodical characteristics like being knowledgeable, structuring, clear, critical and interpreting, to personal skills like being gentle, sensitive, open and remembering (Kvale, 2008). Since the interviews in this research study are semi-structured interviews, the interview guide should include a list of topics that remain flexible in their depth, their order and additional subtopics when arising in an interview (Brinkmann, 2013; Flick, 2008). Table 18 suggests a model interview guide for this corporate reputation research.

Beside some concrete questions in the beginning and at the end of the interview, the guide suggests going through the topics of this study, without being limited by a concrete wording or question type. However, open and jargon-free questions are preferred, and follow-up questions are necessary to clarify ambiguous answers (Kvale, 2008). In its questions and topics, the design follows existing corporate reputation interviewing projects, aiming to find a conceptual structure of the construct within different industries and stakeholders (Reddiar et al., 2012; Walsh & Beatty, 2007; Walsh & Wiedmann, 2004).

The most unusual items in the interview guide are numbers 4 and 5. Number 4 refers to the already introduced concept-driven interview that aims to teach the respondent the structural concept of the phenomenon under research (Pawson & Tilley, 1997). Number 5 establishes an interview

#	Topic
1	Introductory questions about the background of the study participant: A. What is your position title? B. What is your job profile? What are your main activities? C. How long have you been working in hospital procurement and with this hospital? D. For how many hospital beds do you buy medical devices?
2	What do you associate with the term 'reputation'?
3	What do you think could characterize medical device company reputation?
4	Introduction of structural concept of medical device company reputation
5	Introduction of Q-sort technique
6	Categories of reputation (awareness, attribute-specific judgement, attractiveness)
7	Attributes of medical device corporate reputation (initial and new ideas)
8	Sorting of the attributes and reasoning
9	Antecedents of medical device company reputation (initial and new attributes)
10	Sorting of the antecedents and reasoning
11	Consequences of medical device company reputation (initial and new attributes)
12	Sorting of the consequences and reasoning
13	Individual causal connections between attributes of reputation, its antecedents and consequences that could be a regularity
14	Recommendations for managing corporate reputation
15	Concluding question: I have no further questions. Is there anything else you would like to bring up, or ask about, before we finish the interview?

Table 18: Interview guide for this reputation research. Note: The original German version can be found in appendix 12. Source: Own compilation. Numbers 1 and 15 are based on Kvale (2008). Numbers 2-4, 6-7, 9, 11, 13-14 follow the didactic framework of a concept-driven interview by Pawson and Tilley (1997). Numbers 5, 8, 10 and 12 follow the Q-sort method introduced in Funder, Furr, and Colvin (2000) and Van Riel and Fombrun (2007).

technique with the name Q-sort that is appropriate for ranking single items and has been used in corporate reputation research before, to sort reputation attributes (Van Riel & Fombrun, 2007; Walsh & Beatty, 2007; Wartick, 2002).

The Q-sort technique is based on a Q-set of attribute items that are typically printed on cards (Funder et al., 2000; Van Riel & Fombrun, 2007). In the preferred version of Q-sort, the respondents are involved in a two-stage process (Van Riel & Fombrun, 2007). First, they have the option to sort out irrelevant items and add relevant items. Second, they carefully rank the items in a 10-point categorical scale (Funder et al., 2000; Van Riel & Fombrun, 2007), 1 being the least relevant and 10 the most relevant. Then, the decisions need to be explained by the respondent, especially the decisions near the endpoints.

The Q-sort technique is particularly favoured when a small number of participants who are asked to decide efficiently on multiple items are interviewed (Van Riel & Fombrun, 2007). It is a quantitative technique that can point to a tendency within a group of respondents and is supplemented here by the qualitative question that asks for an explanation of the choices. In this research study, Q-sort will be applied to weight reputation categories and attributes of reputation, its antecedents and consequences. The Q-sort cards of both interview phases are presented in a photograph in appendix 13.

Interviewing has numerous ethical implications that should be considered while conducting the interview and preparing the face-to-face meeting. Three of the main concerns are addressed here: First, the interviews are dialogues that are the results of a scientific interest and improvement of

the knowledge and not a dispute between and about different cultures, members of different professional classes or any other distinctive characteristics of the interview partners (Holstein & Gubrium, 1995).

Second, the researcher, who is an employee of a major medical device company, does not act as employee but as a researcher who aims to generate new knowledge without actively bringing his employer's name into the interview context. The respondents knew that the researcher is an employee of a medical device company, but also that this is not the reason for the interview. To minimize biased answers, the research does not attempt to create a reputation ranking of medical device companies, but to develop a reputation concept for the entire industry. Additionally, because all of them were interested in the final study results, it is assumed that they answered as spontaneous, unbiased and authentic as possible.

However, respondents could transfer their perception of the researcher's employer's reputation to the perception of medical device companies' reputation in general. This was clarified in the interviews and classified accordingly. Because of the professional role of the interviewer, the respondents were triggered to use his employer more often as example for their answers than they would have done otherwise. When this happened too often, the interviewer asks for other examples.

Third, thanks to the concept-driven interview, personal or biographical information was unlikely to be given to the interviewer. However, some information about the job profile and about the hospital's perspectives on medical device companies and internal decision-making processes are of a confidential nature and are treated by the interviewer as such. Here, if the researcher asked for more knowledge in sensitive areas or was as respectful to the respondent as possible to accept limits of confidentiality was a question of ethical responsibility, interview situation and experience

(Brinkmann, 2013; Flick, 2008; Kvale, 2008). Overall, the interviews were conducted '... according to acceptable standards of practice and without fraud, deception and dishonesty' (Blaikie, 2010, p. 31).

In this sub-section, insights about the interaction between interviewer and respondent were given. The background and the research interest of the interviewer had been introduced earlier in the description of the study's objectives. The following sub-section will concentrate solely on the respondents, introducing them as study participants.

3.2.3. Study participants

Several of the many aspects a researcher has to consider in regard to his or her study participants, are the selection of and access to interview partners, their sampling, the decision about their number, their professional background and ethical issues that need to be clarified for an informed consent. This sub-section will describe the strategy and how the study participants have been integrated in the research project and who they are.

The study participants are hospital procurement managers, their opinions and perspectives are needed to fulfil the purpose of this doctoral thesis. The target population are hospital procurement managers in Germany, and their overall number can only be estimated: The organizers of the largest annual hospital procurement congress see about 600 participants every year. But the number of procurement managers could be significantly higher, assuming that all 1,942 German hospitals have already implemented a professional procurement process. The accessible population for the researcher was approximately 200 procurement managers, who provided their contact details on the website of their hospitals, and additional 400 procurement managers, who the sales

management team of the researcher's company has personal contact to. In total, 72 hospital procurement managers and managers of group purchasing organizations were contacted, and only twelve agreed to an interview.

Three study participants were recruited via e-mail directly by the researcher and nine were found with the help of the sales management team. This access through business-related contacts was necessary because due to their purchasing role hospital procurement managers are very cautious and sceptical when contacted by unknown individuals, even if they are academics. It is expected by hospital management that procurement managers act ethically and refuse any attempt to win their trust with noncompliant activities. Moreover, academic research of hospital procurement in Germany has hardly been conducted do far, and the interview requests of the researcher were seen as unusual by most of the contacted procurement managers.

One GPO (group purchasing organization) manager and eleven hospital procurement managers were involved in the research project, and it was possible to conduct a purposive sampling, as is usual in qualitative studies (Brinkmann, 2013; Payne & Williams, 2005; Smith & Elger, 2014). The concept of purpose was to cover all three hospital types constructively according to the volume of their market presence. Another sampling request was that the hospital procurement managers are geographically based in as many regions as possible, avoiding a bias of having an accumulated study population in particular regions of Germany. Beside these two, there were no other selection criteria and the study participants were chosen in an opportunistic way (Payne & Williams, 2005).

Finding a consistent reputation concept needs different individuals with specific experiences and various perspectives. As in every research, the

interviewer was confronted with some irregular findings. When not supported by more than one interviewee, irregular findings were not treated as regularities in the overall concept but are mentioned in the result discussion.

There are many answers to the question of how many study participants should be involved in a qualitative study. The common understanding of academics is that a large, statistical sample is hardly useful and cannot be organized and analysed by researchers who have an interest in qualitative research (Brinkmann, 2013; Kvale, 2008; Payne & Williams, 2005). Brinkmann (2013) suggested that '... fewer interviews that are thoroughly analysed are preferable to many interviews that are only superficially explored.'

Particularly in a retroductive interview project, in which several interview rounds can be conducted, a definition of the interview number should only be estimated before, and clarified only in the course of the interview project (Taylor et al., 2016). Because the second-phase respondents had a common sense of the reputation construct, the researcher continued with the contextualization of the results, following the DREIC scheme.

The final interview number of this research is twelve, including one pilot interview with a manager of a group purchasing organization, who knew the German hospital procurement market for many years. Table 19 presents the study participants and their characteristics. The researcher verified that with this information no conclusions to the individual hospital procurement manager can be drawn.

All first phase interviews were conducted from September to December 2017, all second phase interviews between December 2018 and February 2019. A pilot interview with a manager of a group purchasing organization

(GPO) was conducted prior to the first phase interviews in September 2017, to initially confirm the interview design as well as to check the comprehensibility and the practical compatibility of the interview procedure. The experienced GPO manager does not belong to the stakeholder group of hospital procurement managers, but the subject had an in-depth understanding of procurement requirements in Germany.

#	Hospital type	Work experience	Geography	Phase
P	GPO	> 15 years	South	Pilot
A1	Public	< 10 years	South	First phase
A2	Public	> 15 years	North	First phase
A3	Public	> 15 years	North	Second phase
A4	Public	< 10 years	West	Second phase
A5	Public	> 15 years	West	Second phase
B1	Non-profit	< 10 years	East	First phase
B2	Non-profit	> 15 years	South	First phase
B3	Non-profit	< 10 years	West	Second phase
C1	Private	> 15 years	East	First phase
C2	Private	< 10 years	South	First phase
C3	Private	< 10 years	South	Second phase

Table 19: Overview about study participants. Source: Own compilation. Note: GPO = Group purchasing organization. In the Geography section, 'East' refers to the German states Berlin, Brandenburg, Mecklenburg-West Pomerania, Saxony, Saxony-Anhalt and Thuringia, 'North' refers to Bremen, Lower Saxony, Hamburg and Schleswig-Holstein, 'South' refers to Baden Wurttemberg and Bavaria, and 'West' refers to Hessen, North Rhine Westphalia, Rhineland Palatinate and Saarland.

Therefore, results from the pilot interview were included in the first-phase discussion of the results, the interviewee responses identified as 'P' refer to outcomes from this interview.

In this first phase, six hospital procurement managers were interviewed; two representatives from each hospital type. The code 'A' refers to a public hospital, 'B' to a non-profit and 'C' to a private hospital. The full codes of the respondents are A1, A2, B1, B2, C1 and C2. In the second phase, five hospital procurement managers were interviewed, three from public hospitals (A3, A4, A5) and one each from non-profit (B3) and private hospitals (C3). This reflects purposive sampling, since public hospitals provide more hospital beds than non-profit and private hospitals.

The professional experience of the eleven hospital procurement managers ranges between one and 27 years, with an average of 13 years. However, there was no manager with work experience between 10 and 15 years, separating the interviewees in two groups, with either short or long work experience. The managers interviewed have a buying power for a total of 15,500 hospital beds, which represent 3.1 percent of the overall hospital bed capacity in Germany. They all have leading hospital procurement positions, and some of the interviewees also have responsibility for logistics, because the purchased goods need to be distributed to the different hospital areas.

In line with the University of Gloucestershire's ethical guidelines (URDC, 2008), the researcher actively addressed sensitive concerns to the study participants in written form. He declared in a signed statement, that he treats all information given by the study participant confidentially and anonymously (Brinkmann, 2013; Kvale, 2008). This includes that the transcription is conducted by the researcher himself and will be made available only to his academic supervisors, examiners and relevant

committees of the university. Also, the researcher guarantees that audio files, the anonymized transcriptions and the informed consent of the study participant will be stored in different data mediums to which only the researcher has access. The audio file and personal data of the study participants were deleted on 31 December 2019, the anonymized transcriptions will be deleted on 31 December 2021 at the latest. The original German declaration of the researcher and its English translation can be found in appendix 14.

Furthermore, it is ethically obligatory that the study participants sign an informed consent declaration on their side, too (Brinkmann, 2013; Greener, 2008; Kvale, 2008). In this document they confirm that they voluntarily participate in the research project and that they have been informed about the topic and methods of the project. With this document, they also verify that they know that they can cancel the interview at any time and can also withdraw from the study at a later time. They officially confirm that they want their data to be treated confidentially and anonymously, used only for academic purposes.

The document also clarifies that they confirm to the transcribing process, the policy of making the transcription available to university representatives, the use of interview extracts in the doctoral thesis, other publication and presentations as well as the transfer of the interview copyrights to the researcher. The study participants were allowed to check the transcription for its correctness and had the opportunity to order an executive summary of the research results after completion and grading of the doctoral thesis. The original German declaration of informed consent and its English translation is in appendix 15.

These documents address the major concerns interview respondents could have, focusing upon what will happen to the interview (Brinkmann, 2013;

Miller & Glassner, 1997). The researcher officially ensures that he does not intend to harm interviewees or let them suffer any disadvantages resulting from their participation in the study (Blaikie, 2010; Flick, 2008).

All study participants signed the informed consent and none raised any ethical concerns about participation in the study. Seven of them requested the transcription of their interviews; none of them stopped the conversation in the course of the interview or cancelled their consent after the interview was given. Therefore, all twelve interviews have been used in the analysis phase, which will be described in the next sub-section.

3.2.4. Interview analysis

After reaching all other research design decisions, academics recommend determining the methods of analysis, which is often neglected in research projects (Blaikie, 2010; Gibbs, 2008; Packer, 2011). Analysis represents the final core constituent specifying and justifying the choice of how to transform the raw interview data into a well-structured, well-analysed and well-written presentation of the research results and their discussion (Blaikie, 2010; Gibbs, 2008). As such, the interview analysis of this research project transforms all collected interview recordings and field notes including the Q-sort ratings into a manageable and coded data corpus.

Some methodologists postulate that the analysis should begin in the data collection phases during the interviews, verifying thoughts of the respondents, clarifying the meaning of new ideas and securing the ground of the succeeding elaborate analysis (Blaikie, 2010; Brinkmann, 2013; Gibbs, 2008; Kvale, 2008). This is also replicated by the retroductive logic of inference and has been performed in the interviews about medical device company reputation (Pawson & Tilley, 1997). This sub-section will introduce the main analytical aspects of this research project, including

transcription and content analysis, two examples of Q-sort data analysis and the comparison of qualitative data, as well as writing up and considerations about validation and ethics.

The recorded interviews were transcribed by the researcher himself, for two reasons: First, external transcription typists might not unambiguously identify the medical or reputation terminology. Also, when transcription is executed by more than one typist, it could result in different nuances and needs to be unified by the researcher afterwards. Second, the researcher transcription has the advantage that one is able to simultaneously build analytical ideas, codes and connections to make use of later in the analysis process (Gibbs, 2008; Kvale, 2008).

This is also supported by academic analysts who explained transcription as a preliminary interpretation and reduction of the collected data (Gibbs, 2008; Kvale, 2008). After transcription, a lot of the non-verbal communication during face-to-face conversation is lost: the body language and gestures of the study participant, the tone of voice, the intonations and the breathing (Kvale, 2008). The researcher decided to use a content-based transcription style, ignoring the documentation of emotional expressions, pauses, grammar mistakes, abbreviations, verbal tics, dialects and repetitions, which is an option justified by the literature (Brinkmann, 2013; Kvale, 2008).

The result is a pre-shaped writing style for the interviews. Since the study's purpose is a content and not a language analysis, a reduction of the transcription is not only permitted but recommended by the literature, because a too-detailed transcription could obstruct the perspective on the content (Flick, 2008; Kvale, 2008). In total, 67,000 words on 228 pages were transcribed in German language using the application on the *oTranscribe* website.

The 12 interview files were analysed in the original German version with the software *NVivo 11*. Following the approach of content analysis (Kvale, 2008), the researcher applies tailor-made techniques to make use of the quantitative Q-sort data and qualitative verbal data from the interviews. In the Q-sort interview technique, the interview participants made decisions about items. First, they evaluated whether an item belongs to medical device company reputation, or not, and second, they ranked the item in a scale from 1 to 10, 1 being the least relevant and 10 being the most relevant for reputation. Figure 23 demonstrates the choices made by the three respondents A, B and C, as well as options on how to analyse the resulting data.

If all three respondents A, B and C answer that awareness, attribute-specific judgement and attractiveness are all relevant to explaining medical device company reputation, the researcher calculates the average of the rated relevance grade. The analytical challenge begins, if one respondent, in this case B, replies that one of the three categories, awareness, is not at all relevant for reputation. The question is how to treat this answer analytically and the figure suggests four options for this scenario.

Option 1 just disregards respondent B's answer and uses only the average of respondents A and C. The result is a moderate awareness relevance of 5.5, although one of three respondents has sorted this category out. The result is misleading and therefore not acceptable. Option 2 treats the 'no relevance' answer as 'zero' on the scale, and awareness would have an average value of 3.7, being still more relevant than attractiveness, which was evaluated by all three respondents with a relatively low relevance average of 2.7. Although more acceptable than option 1, option 2 still gives an advantage to a category that was denied by one respondent.

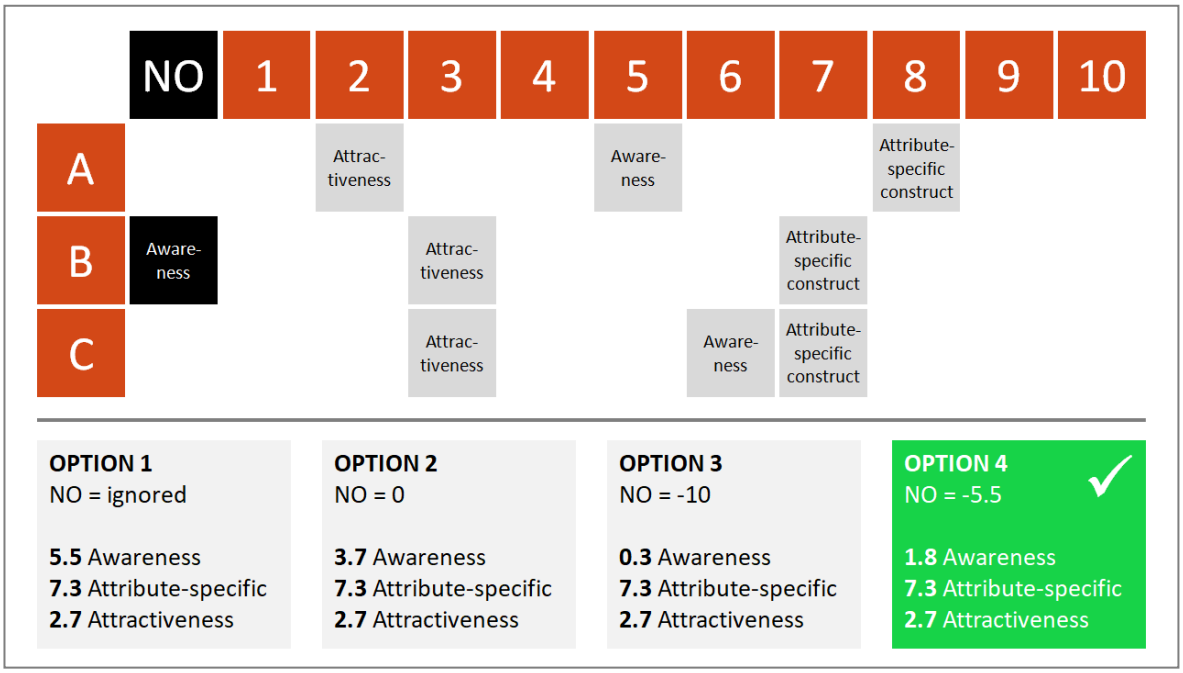

Figure 23: Options of the Q-sort analysing technique. Note: Option 4 is preferred by the researcher. Source: Own compilation, based on Pittman, Kerpelman, Lamke, and Sollie (2009).

Option 3 suggests the other extreme, rating the 'no relevance' answer as 'minus ten', the opposite of 'plus ten' for most relevant choice. This leads averagely to almost no relevance (0.3) for all three respondents, although two of them have rated awareness in the middle of relevance. This option does not accurately reflect the average relevance as either. Option 4 recommends calculating with the value of 'minus 5.5' for 'no relevance', which is the opposite of an average relevance between 1 and 10. The average for awareness in this option has a value of 1.8, still lower than the one for attractiveness, but more accurately reflects the relevance with two respondents weighing the awareness relevance in the middle, and one rejecting its relevance.

This Q-sort example does not indicate that these results will be analysed as accurately statistically as in a quantitative research setting, but aims to give the most accurate weight possible for the individual conceptual items after

twelve interviews. Clearly, the respondents' choices need to be explained and discussed in a qualitative way. However, the quantitative outcomes enable the researcher and the reader to instantly recognize a tendency towards importance for individual items.

The second analysing example is a qualitative technique, comparing the interview data in different ways. In order to prepare the data accordingly, they need to be coded, preferably with a coding list that has been prepared before that includes all constituents of the initially developed concept of medical device company reputation. In the course of coding, new codes can be added to label new ideas resulting from the transcribed interviews (Kvale, 2008). Coding has the advantage that it can weaken the subjective perception of the researcher by sorting data into a certain thematic framework (Gibbs, 2008; Packer, 2011). The *NVivo* code definitions in the research project were based on the individual constituents of reputation, thus expressions of the interviewees could be coded unambiguously. The final *NVivo* coding scheme is presented in appendix 16.

It is crucial that coded data be structured and classified hierarchically in categories that are created in advance or arise during the analysing process (Blaikie, 2010; Gibbs, 2008; Kvale, 2008). Since the researcher is the only one who defines codes and categories, a consistent allocation and possible re-definition is ensured (Saldaña, 2015). After coding and categorization, the tagged data are compared in the subsequent step, looking for patterns. The most common options for comparisons in qualitative analysis are presented in table 20.

In this research project, two types of comparison can be of particular interest. Comparing answers from different interviewees strengthens the identification of similarities and differences as well as the structure of patterns and regularities (Blaikie, 2010; Flick, 2008). These patterns and

regularities in the empirical analysis point to a causal mechanism or a connection in the reputation structure located in the real domain (Blaikie, 2010; Pawson & Tilley, 1997). From an epistemological view of critical realism, this generated knowledge contributes directly to the concept by identifying its characteristics and eliminating alternative explanations (Pawson & Tilley, 1997).

Comparison option	Goal	Application in this study
Interviewee with interviewee	Analyse interviewees as cases	Not applicable, because of concept-driven interviews
Group with group	Identify group characteristics	Look for group patterns in the answers of procurement managers (e.g. hospital type, work experience)
Answer with answer by one interviewee	Verify consistency of interviewee's answers	Not applicable, because ambiguities are clarified in the interviews
Answer of one interviewee with answer of another interviewee on a specific topic	Explain a certain topic and its relevance for the overall subject	Explain structure, mechanisms and causal relations in the reputation construct, its antecedents and consequences

Table 20: Comparison options in qualitative analysis.
Source: Own compilation, with ideas from Flick (2008, p. 80).

The second comparison option between answers of procurement managers from different hospital types or with different work experience could clarify whether there are any differences that could widen the perspective of the concept. In corporate reputation research, only a handful studies have implemented similar analytic approaches so far, categorizing data to discover similarities and differences, patterns and regularities (Hillenbrand & Money, 2007; Reddiar et al., 2012). However,

the number of studies is increasing due to the need for conceptualization of more specific reputation constructs.

Writing up the study outcome in a thesis is more than just presenting the interview findings. The drafting process is valued by academics as a method of inquiry in itself, comparing different perspectives, choosing the most suitable quotation and trying out a number of alternative ways to structure the research topic (Brinkmann, 2013; Gibbs, 2008). To communicate results and discuss the research phenomenon using scientific literature conventions forces the researcher to clarify meanings, contextualizing the findings and drawing conclusions (Flick, 2008; Gibbs, 2008; Kvale, 2008; Miller, 2003).

The concept of validity and the connected concepts of reliability and evidence are typical for quantitative analysis and intuitively they are hardly compatible with qualitative approaches (Kvale, 2008). However, to strengthen the validity and reliability of this study, the researcher has verified the accuracy and consistency of transcription, coding, categorization, findings and explanations with great care (Bisman, 2010; Gibbs, 2008; Kvale, 2008). The evidence of the research project is secured by the conceptual approach that is supported by quotations proofing the study's authenticity and credibility (Gibbs, 2008; Zachariadis et al., 2013).

The previously mentioned ethical considerations of anonymity and confidentiality are also central to the analysis of qualitative data (Flick, 2008). This includes avoiding misinterpretations during the transcription process, coding, translating quotations and reporting (Kvale, 2008). To overcome the pitfalls in translating quotations, all translated quotes presented in chapter 5 and 6 have been confidentially checked by a native English speaker who is an English teacher, has been living in Germany for over ten years and has a very good command of the German language.

The researcher has transcribed all recordings without any dialects or verbal tics, which could be embarrassing for interviewees who read the study (Flick, 2008; Gibbs, 2008; Kvale, 2008). As confirmed in a written declaration, the researcher stored all personal information and recordings of study participants in different locations, which only he has access to.

Kvale (2008) pointed to macro-ethical concerns in interview studies. Publishing research results could have negative consequences for the study participants, their employers, to the health system or to society. Thus, the display of the gender of the interviewees or the precise locations of their hospitals has not been included, because of the few female managers and the few hospitals per city would have pointed to individuals. This research project focuses on the reputation of medical device companies. One consequence could be that medical device companies will address reputational aspects more often and more professionally in their communication with hospitals. As the degree of disturbance through this communication should be kept to a minimum, the advantages for reputation awareness should outnumber any concerns many times over.

3.3. Summary: The data-method-methodology triangle

Chapter 3 explained the methodology and methods of this doctoral research project. It demonstrated that the research questions can be answered using the methodological choices elaborated on in the previous sections. The data are collected within a specific ontological and epistemological framework using methods that are in line with these philosophical underpinnings. To illustrate methodological congruence, Brinkmann (2013) introduced a triangle with the corners of methodology, theory and data that is illustrated in figure 24.

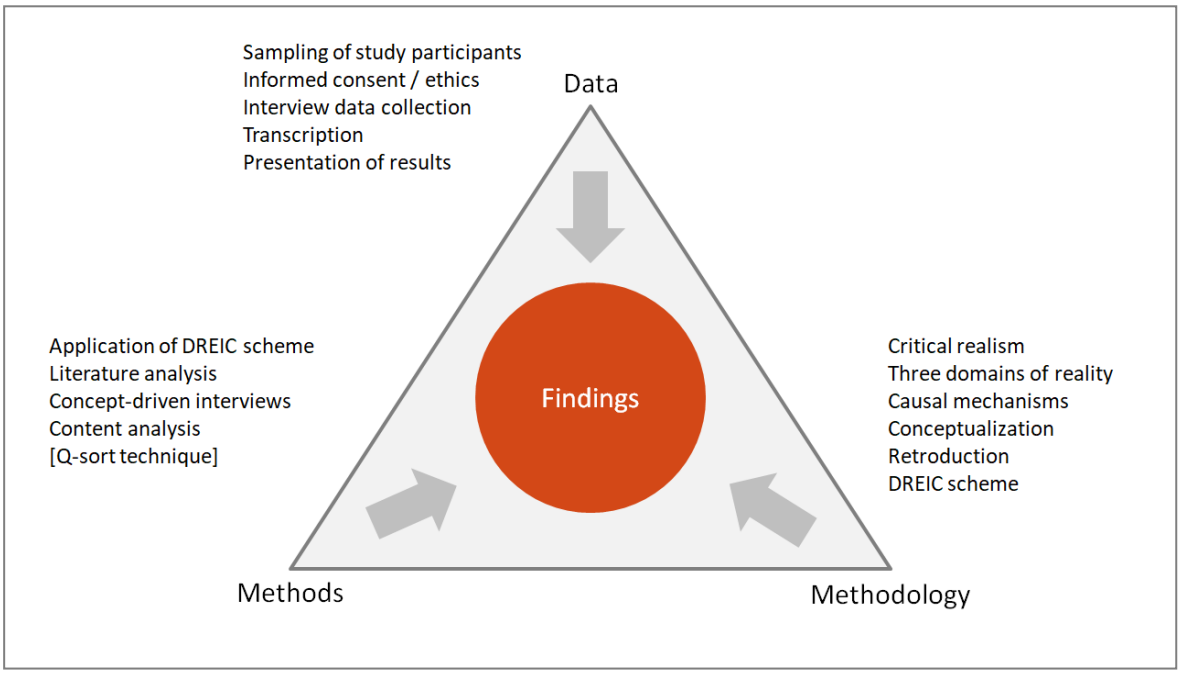

Figure 24: The data-method-methodology triangle including the choices for this research. Source: Source: Adapted from Brinkmann (2013, p. 92), implications of this study added.

The idea behind this triangle is that findings are never just the outcome of data or its analysis, but the result of a mutual relationship between methodology, methods and data (Brinkmann, 2013). This view contradicts with the perspective of positivists who often treat data as simply existent on academic paths, the collection of them being independent from the methodological intention of the collector. Data are codetermined by methodology and its congruent methods, and without them it is difficult to collect the right information (Brinkmann, 2013).

As such, the separated sections and sub-sections of this chapter structure the methodological choices, and do not suggest applying every single methodological feature to every finding. On the contrary, their use is orchestrated to present and discuss the findings in an appropriate and comprehensive fashion. Therefore, figure 24 presents the triangle with the overall methodological implications of this research.

This doctoral study follows the research philosophy of critical realism with its ontological characteristics of three stratified domains of reality, their transitivity and open systems. The concept-driven epistemology is determined by developing and clarifying the structure of the research phenomenon of corporate reputation in the real domain, including its causal mechanisms with structural attributes, antecedents and consequences of reputation.

The retroductive logic of inference was chosen to develop a reputation concept, applying the DREIC scheme of description, retroduction, elimination, identification and contextualization. This is reflected in the research design, describing the initial concept with a literature analysis, seen in chapter 4. This concept is refined by the results of the research project in two research phases, interviewing hospital procurement managers in a semi-structured and concept-related way. The content analysis includes numeric and verbal data that aim to explain the construct of medical device company reputation in Germany.

During the interview and analysing phases, ethical concerns were addressed. The researcher prepared the study so, that study participants will experience no harm from a lack of sensitivity, confidentiality or inaccuracy. The interview results and their discussion are presented in chapters 4 to 6, leading to a concluding chapter that includes a discussion about the relevance and limitations of the study in academic and business environments.

4. Initial concept

> ‘Hospital ... purchasing agents often are the ones
> who place orders for equipment and supplies.
> If they perceive that a company’s reputation is rock solid ...,
> they are more likely to order the company’s products.’
>
> Kevin M. Quinley, President and Principal of
> Quinley Risk Associates (Quinley, 2014)
>
> ---------- ----- ----------

This fourth chapter acts as a connecting chapter in three ways: First, it translates the definitional approach of chapter 2 into a causal framework with concrete attributes, antecedents and consequences extracted from reputation studies and business literature. Second, it describes an initial concept of medical device company reputation, and is therefore the first empirical step in the DREIC scheme introduced in chapter 3. And third, the initial concept is the foundation for the fieldwork presented in chapters 5 and 6 that is concluded in chapter 7.

The structure of the chapter follows the research questions introduced in sub-section 1.3.2. and leads to the overall research aim. Section 4.1. develops the causal reputation framework which the research project is based on. Section 4.2. contributes to the structure of medical device company reputation and focuses on the reputation categories and their weighting. Section 4.3. derives the reputation attributes from the literature, section 4.4. the antecedents and section 4.5. the consequences. In section 4.6., first assumptions about causal mechanisms are presented to discuss the concept in the ontological context of critical realism. Finally,

section 4.7. introduces the complete initial concept that is the basis for the empirical fieldwork.

4.1. The causal reputation framework

This section follows the suggestions of academics to strengthen the research by clarifying the conceptual underpinnings (Dowling & Gardberg, 2012; Helm, 2005; Ponzi et al., 2011; Wartick, 2002) in order to close the research gaps introduced in sub-section 1.3.1., and to develop a research environment to answer the research questions.

The foundation construction process will be divided into two steps. First, general frameworks of corporate reputation, its antecedents and consequences will be identified and sorted in a causal relations concept, which is derived from the different perspectives introduced in section 2.1., and the causal reputation models found in the literature. Second, a framework for medical device reputation will be drafted and discussed, integrating ideas from the medical device industry and healthcare trends that are often recognized as reputation-building. This is a major contribution of the many reputation approach and extends the attributes of general reputation scales.

4.1.1. Causal foundation of reputation

Some authors indicated that reputation is embedded in a number of antecedents and consequences (Fombrun, 2012; Money, Saraeva, Garnelo-Gomez, Pain, & Hillenbrand, 2017; Walsh et al., 2009; Walsh & Wiedmann, 2004). Money and Hillenbrand (2006) provided a simple flowchart to demonstrate the causal relations of corporate reputation, its antecedents and consequences (figure 25). Although this approach is logically compelling, many scholars ignore it due to their focus on reputation

attribute measurement. Antecedents lead to corporate reputation, and consequences are results of corporate reputation. Before describing this in detail, the terms antecedents and consequences are investigated further.

Antecedents influence the reputational perception and experience of stakeholders. They can be the company's actions, communication, or performance as well as external information sources and other external signals (Fombrun, 2012; Walsh & Wiedmann, 2004). They are clues that develop a reputation, deriving also from demographics, affiliations, and industry of a stakeholder group (Lange et al., 2011; Walsh & Wiedmann, 2004). Moreover, when evaluating the antecedents of customer-based reputation, antecedents can be expectation-driven and behaviour-related (Walsh et al., 2009; Walsh & Wiedmann, 2004).

Figure 25: Causal framework of corporate reputation. Source: Money and Hillenbrand (2006, p. 2).

Consequences of corporate reputation include all those values that are ascribed to corporate reputation perception (Dowling, 2006). Depending on the disciplinary perspective, consequences can be resource, performance, communication or behaviour driven, positive or negative (Fombrun, 2012; Walker, 2010; Walsh et al., 2009), as presented in section 1.1.

The basic theoretical chain of corporate reputation, its antecedents and consequences is helpful to understand their relationships (Money & Hillenbrand, 2006; Money et al., 2017). It provides two new aspects: First, it can integrate existing corporate reputation models within one

framework that supports the proposition that reputation is embedded in a causal process. Second, it includes antecedents and consequences of corporate reputation that have not been focused on in the research thus far (Money & Hillenbrand, 2006; Walsh et al., 2009). Interestingly, the first scholars who incorporated this relationship in their research designs, intended to determine customer based reputation (Walsh et al., 2009). This supports the use of the causal relations model in this thesis, which aims to explain the reputation perceived by hospital procurement managers in their role as customers.

Walsh and Wiedmann (2004), Money and Hillenbrand (2006), and Fombrun (2012) elaborated the basic causal relations framework; their models are presented in appendix 17. Walsh and Wiedmann (2004) concentrated on the customer perspective, suggesting antecedents such as age, gender, expectation, experience and involvement, and consequences such as loyalty, trust, word-of-mouth and satisfaction. Money and Hillenbrand (2006) viewed the three causal stages at a resource-based strategic level and a marketing-oriented personal level. Fombrun (2012) included more perspectives that lead to an extended causal sequence of context-strategy-identity-reputation-support-performance. Following several reputation theories, he added numerous characteristics in the antecedent and consequence stages.

Some of the characteristics in the three models have been already addressed in section 2.1. in the discussion of the strategic management, corporate communication and marketing perspectives on corporate reputation. Figure 26 provides a summary of all findings, using the causal framework of corporate reputation.

This data collection gives an impression of the antecedents and consequences in the literature. Fombrun (2012) sorted them according to

their theoretical origin and suggested that they should be examined closely. According to this requirement, the collected antecedents and consequences will be grouped in different attributes in the suggestion of the initial reputational concept.

	ANTECEDENTS	CORPORATE REPUTATION	CONSEQUENCES
Walsh and Wiedmann (2004)	Age / gender Expectation / experience Involvement	Reputation dimensions and emotional attributes	Satisfaction / Loyalty Trust Word-of-mouth
Money and Hillenbrand (2006)	Asset generating activities Observations / experiences	Intangible assets Beliefs / attitudes	Market assets / performance Intentions / behaviours
Fombrun (2012)	Institutional environment Organizational issues Media coverage	One construct next to visibility, celebrity, status and legitimacy	Stakeholder support Resource consequences Performance
Signalling theory	Internal: objectives External: environment	One signal among other signals such as price	Competitive advantage
Corporate Communications	Communication through: paid media, earned media, shared media, owned media	N/A	N/A
Marketing	Experience Relationship Information	Customer-based reputation scales	Satisfaction / Loyalty Buy, re-buy, cross-buy Recommendation

Figure 26: Data collection for an integrated causal corporate reputation framework. Source: Own compilation, based on the sources given in the table and on the findings in the section 2.1. about signalling theory, corporate communications and marketing.

4.1.2. Causal foundation of medical device company reputation

The definitional approach in chapter 2 indicates that the typological model by Lange et al. (2011) represents the understanding of corporate reputation in this study, covering the three categories of awareness, attractiveness and attribute-specific judgement. For the attribute-specific judgement, 50 different reputation scales were analysed for a preliminary mapping of the reputational attributes. The reputation attributes in the healthcare area, as identified in the nine reputation scales in sub-

section 1.2.3., and some trending topics in the recent reputation and healthcare literature will be added to compile an initial concept of medical device company reputation. The inclusion of relevant healthcare attributes and trends follows the many attributions approach, which adds relevant aspects of the industry, stakeholders and environment being researched. Figure 27 presents the causal framework that underlies the current research.

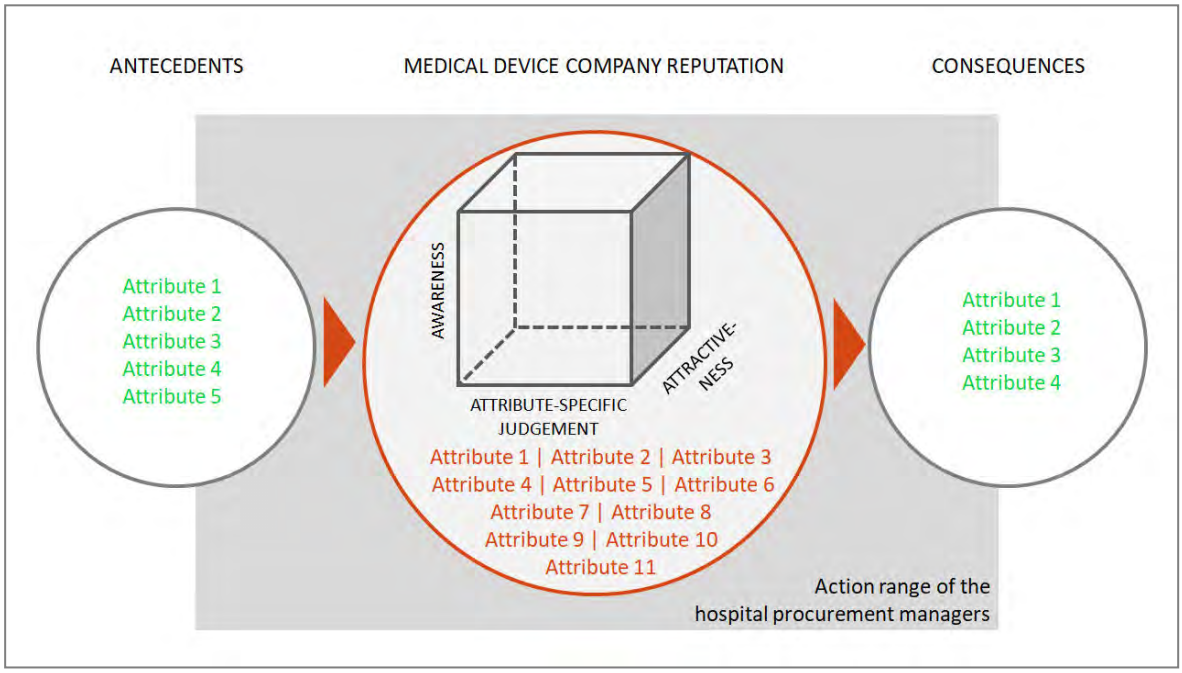

Figure 27: Causal framework underlying this research. Source: Own compilation, the cube model is based on Lange et al. (2011, p. 163).

This framework not only represents the basic causality of medical device company reputation, its antecedents and consequences, but shows the strong stakeholder orientation of the construct. The hospital procurement managers have a wide range of actions: They influence a part of antecedents directly, judge corporate reputation completely, and are involved in some of the consequences. This is a visualization of how

medical device company reputation in this research context is a construct as perceived by hospital procurement managers.

So far, the causal framework has been derived from theoretical models. It needs to be detailed with findings from the reputation measurement literature, an approach support by critical realist logic of inference. Existing research projects and measurement models that have already been defined are a promising starting point for the detailing. These models are theory-based (Walsh & Beatty, 2007), general practice-based (Fombrun et al., 2015), and industry-related practice-based (PatientView, 2017). Additionally, the attributes, antecedents and consequences are derived from a screening of the empirical literature, whether it is academic or practice-based.

4.2. Reputation categories

The three literature review articles of Barnett et al. (2006), Walker (2010) and Lange et al. (2011) presented in sub-section 2.2.3. are the starting point. They identified 116 different articles that provided 82 corporate reputation definitions. As some of the definitions describe more than one reputation category, the total is 97 category statements sorted by awareness, attribute-specific judgement and generalized attractiveness in table 21.

The result of this elementary literature evaluation: More than half of the definitions were based on attribute-specific judgement, one quarter on generalized attractiveness and 18.5 percent on a state of awareness. The evaluation indicates that the category describing reputation as an assessment based on different attributes, may be the most accepted one. This research acknowledges this outcome, taking a closer look at the specific attributes in the next section.

Category	Number of articles describing this category	Percentage
Attribute-specific judgement	54	55.5 %
Generalized attractiveness	25	26 %
Awareness	18	18.5 %
Total	**97**	**100 %**

Table 21: Favourability of the three categories in corporate reputation definitions in the academic literature. Note: 97 categories were identified in 82 definitions introduced in three literature reviews. 13 definitions included two and one definition included all three categories. Sources: Barnett et al. (2006), Lange et al. (2011) and Walker (2010).

The other two categories should not be underrated and will be subjects of the fieldwork as well. Because of the dominance of the attribute-specific judgement category, Lange et al.'s cube, illustrated in sub-section 2.2.1., should not be a cube, but a cuboid with attribute-specific judgement on the longest side.

Following Lange et al. (2011), the category of generalized attractiveness covers the overall emotional attachment to a company. Therefore, specific emotional attributes such as trust, good feeling, admiration and respect as evaluated by Ponzi et al. (2011) will not be included in the specific-attribute judgement definition. Furthermore, in some reputation scales, awareness is mentioned as a reputation attribute. Here, awareness is treated as a category in the initial concept.

However, the concept of trust, explained in sub-section 2.3.3. and identified as part of corporate reputation, is particularly important in business relationships in the healthcare sector (Şatir, 2006). In this initial concept, trust is split into its two major attributes, benevolence and integrity. Because of its role in relationships, benevolence should act as

pathway to corporate reputation, and is included in the stakeholder experience antecedent introduced in sub-section 4.4.3. In comparison, the integrity attribute of trust is included in the integrity attribute of corporate reputation, explained in section 4.3.4.

4.3. Reputation attributes

In the academic and business literature about corporate reputation, sophisticated attribute scales have been developed by researchers to compare the reputations of different companies. For the development of the reputation attributes, 50 scales were reviewed, and their attributes counted, added according to reputation topics that were of growing importance in the reputation literature in recent years.

Applying the many reputations approach, the healthcare perspective was included in the research project. The nine reputation surveys introduced in sub-section 1.2.3., were analysed and their attributes counted as well. Additionally, emerging topics from the medical device business literature were collected. Similar attributes and topics were accumulated, leading to the general attribute overview presented in table 22.

This overview does not represent a ranking of attributes, it is a first impression about the relevance and origins of single attributes. After eliminating the reputation categories of general emotional appeal and awareness, as posited in section 4.2., the table supports four assumptions: (1) Products and services is a must-have attribute, being covered by almost all reputation scales. (2) Leadership, citizenship, financial performance and workplace are attributes that are mentioned regularly in reputation scales, so they should play a vital role in a reputation concept.

Reputation attributes	Corporate reputation scales (50)	Emerging reputation topics (22)	Corporate reputation health (9)	Rising health topics (34)	Total number
Products and services	46		8		**54**
Leadership	36	9	4		**49**
Citizenship	39		4		**43**
Financial performance	40		3		**43**
Workplace	37		4		**41**
Customer focus	26		5	5	**36**
Innovation	18		4	13	**35**
Integrity	27		3		**30**
Transparency	16	5	3		**24**
[Emotional appeal]	[20]		[3]		[23]
Safety		5	**1**	16	**22**
[Awareness]	[10]				[10]
Tradition	**1**	3			**4**
Total	**286**	**22**	**39**	**34**	**381**

Table 22: Literature analysis of corporate reputation attributes. Notes: A detailed overview of the findings is presented in appendices 18, 19, 20 and 21. Source: Own compilation.

(3) Customer focus, innovation and safety are topics that have gained more importance recently in the B2B healthcare environment. Since they are also addressed in combination with the reputation construct, it appears plausible to include them in an initial reputation concept. (4) Integrity, transparency and tradition seem to be rather soft attributes, being at the

end of the list. However, it might be beneficial to check with the hospital procurement managers to see if they play a role in their understanding of reputation. These four assumptions are explained further in the next four sub-sections.

4.3.1. Products and services: The must-have attribute

The *product and service* attribute is the dominant building block of corporate reputation for almost all academic and business researchers (Shamma & Hassan, 2009). The attribute is hardly explained in reputation scales, being treated as a natural cornerstone that does not need to be discussed. The most regularly identified aspect is the high quality of products and services, followed by competitiveness and distinctiveness (Carroll & McCombs, 2003; Fombrun et al., 2000; Gardberg, 2006; Helm, 2005; Puncheva-Michelotti & Michelotti, 2010; Tropiano et al., 2019). Other aspects such as market leadership (Greyser, 1999), reliability (Dowling, 2004), usefulness (PatientView, 2017) and warranty (Cravens, Oliver, & Ramamoorti, 2003) appear less often, and could be included in the aspects mentioned, such as market leadership in competitiveness.

Fombrun et al. (2015) point to the reason for the important role of products and services for corporate reputation. They assume that '[m]ost stakeholders know of a company from its product and service offerings in the marketplace, and its reputation is likely to be influenced by perceptions of its product brands' (Fombrun et al., 2015, p. 6). Particularly for the stakeholder group of customers, the salience of the product and service attribute has been proven (Baldarelli & Gigli, 2014; Cravens & Oliver, 2006; Fombrun et al., 2015).

The reputation survey collection in sub-section 1.2.3. illustrated the dominance of the product and service attribute for the healthcare sector.

Hospitals rely on the delivery of high-quality, reliable and sensitive medical products that are used on patients. An inconsistency in a product or service could have an impact on patients' lives and consequently on the hospital's reputation.

4.3.2. Leadership, citizenship, financial performance and workplace: The usually suspected attributes

The four attributes in the sub-section's title have one thing in common: They appear often in corporate reputation scales, and because of their dissimilar scope they represent rich input for formative assessments of corporate reputation. Leadership and workplace have impact on the company's employees, leadership and financial performance on the company's development, and citizenship mainly on society. In corporate reputation research, these four attributes are used differently than one might intuit, therefore they will be briefly described, and their aspects introduced.

The *leadership* attribute refers often to a strong and excellent management that has a clear vision for the company's future und strategic abilities (Carroll & McCombs, 2003; Dowling, 2004; Fombrun et al., 2015; Gardberg, 2006; Walsh et al., 2009). A good management team or senior staff is considered capable of delivering the company's goals and acts as a role model for employees (Gardberg, 2006; Porritt, 2005; Reddiar et al., 2012).

However, since 2010, numerous surveys about CEO reputation have gained a remarkable visibility (Fombrun et al., 2015; Gaines-Ross, 2016; Graffin, Pfarrer, & Hill, 2012). With celebrity CEOs such as Steve Jobs, Jeff Bezos and Mark Zuckerberg, company leaders are evaluated not only for their long-term vision and strategic decisions, but for their soundness, caretaking, charisma and communication skills, which result in stakeholder

perceptions that can cause reputation to rise and fall (Burke, 2011; Fombrun et al., 2015; Shayon, 2015; Van der Jagt, 2005).

Meng and Berger (2013) emphasize that the CEO's responsibilities are complex, ranging from representing the company in the media to helping shape the company's culture. Once a CEO creates a favourable leadership representation, this can determine up to 45 percent of a company's reputation (Gaines-Ross, 2016; Shayon, 2015). Despite these survey outcomes, the role leadership has for reputation from the perspective of B2B customers in the healthcare business is unclear. It is uncertain if the medical device company's CEO, management and their vision is a strong pillar for the reputational perception of hospital procurement managers.

Since reputation was established as formative construct, *citizenship* has been included as a key attribute (Agarwal, Osiyevskyy, & Feldman, 2015; Baldarelli & Gigli, 2014; Lange et al., 2011). Although it has some ambiguous meanings like CSR, corporate responsibility or social performance, the term citizenship reflects the unique idea that companies not only have economically-driven responsibilities towards their stakeholders, but environmental and social responsibilities as well (Baldarelli & Gigli, 2014; Hasan & Yun, 2017).

Research suggests that a company's engagement in environmental and social activities leads to a set of values that is strategically relevant and highly rewarded by stakeholders such as customers, local communities and the public (Fombrun et al., 2015; Page & Fearn, 2005). The strength of the link between citizenship and company performance is regularly discussed by academics, but it is not a direct link and not completely supported (Fombrun et al., 2015; Saeidi, Sofian, Saeidi, Saeidi, & Saaeidi, 2015). However, a company with commitment for citizenship acts as a positive contributor to the 'common wealth' of the society (Schultz, 2013).

In the medical device sector, there are some visible business activities that relate to citizenship. Many companies support people after earthquakes, floods or other crises as well as providing citizens in poor regions with desperately needed medical equipment and services. Beside this, there are many programmes to support communities to improve their residents' health. In comparison to the social activities, the environmental ones are still in their nascent stages, focusing on environmentally conscious product design and energy savings (Çolak, Çolak, & Gürel, 2017; Moultrie, Sutcliffe, & Maier, 2015). Medical devices are often made of plastic components, and the production with raw material derived from the fossile resource oil is being scrutinised in contemporary society (Çolak et al., 2017; Moultrie et al., 2015). Moreover, medical devices are shipped all over the world for further production and eventually to customers. Citizenship could have a considerable impact on hospital procurement managers' views on the reputation of medical device companies – but only if they are conscious to a certain degree of the business role in societal responsibility.

Growth prospects, profitability, continuity and company value – these are the aspects of *financial performance* (Carroll & McCombs, 2003; Walsh & Beatty, 2007). Financial soundness signals a certain stability of the company to the stakeholders and thus increases their confidence (Shamma & Hassan, 2009). As explained in sub-section 2.2.2., financial performance was overrated in early reputation research, but today it is only one attribute among others in the formative reputation construct (Eberl & Schwaiger, 2005; Fryxell & Wang, 1994; Laskin, 2013). However, past profitability is a strong indicator for the company's future success, and therefore considered as a crucial attribute of corporate reputation (Fombrun et al., 2015; Reddiar et al., 2012).

Academics evaluated that the perception of financial performance varies between different stakeholder groups (Dowling & Moran, 2012; Fombrun et al., 2015). Consumers are usually less interested in the financial soundness of a company than investors (Dowling & Moran, 2012). Porritt (2005) emphasizes that a strong bottom-line performance can even damage the reputation if it could not meet the needs of customers: 'A 'bottom line backlash' can result in additional hostility to companies that are seen as making large profits at the expense of ... stakeholders, especially where these ... stakeholders are seen as having no choice' (Porritt, 2005, p. 198). In the medical device industry, there are only few manufacturers for large volume products, and hospitals are often forced to accept their conditions because of a lack of alternatives. Since hospital procurement managers are cost sensitive (Medina, 2016; Parmar, 2016), very good financial performance could negatively influence their reputation perception.

The *workplace* attribute is probably the most visible one of the four in this sub-section, since there are numerous rankings about the best companies to work for (Fombrun, 2007; Fombrun et al., 2015; Gaines-Ross, 2016). The fair treatment of employees, workplace attractiveness and the company's understanding of diversity could lead to four positive perceptions.

First, stakeholders respect companies that provide good workplaces (Fombrun et al., 2015). Second, satisfied employees are more motivated, and the company's stakeholders are likely to be treated at a higher service level (Chun, 2005; Fombrun et al., 2015). Third, motivated employees act as company ambassadors to other stakeholders and give their employer a good rating (Fombrun et al., 2015). And fourth, high employer ratings attract new employees who are usually higher qualified and more talented than the ones of competitors with no visibility in the workplace rankings

(Dowling, 2001; Helm, 2007). Customers might perceive and experience these advantages.

Therefore, it has been determined that hospital procurement managers include the workplace attribute in their reputation perception. To which extent they do this depends on their knowledge of workplace rankings and their impression about the company's managers and sales representatives they are continuously in contact with.

4.3.3. Customer focus, innovation and safety: The health market-driven attributes

To provide an initial attribute set that reflects the latest healthcare developments, customer focus, innovation and safety are included in the concept. Whereas customer focus and innovation are mentioned in about half of the established reputation measurements, safety is part of only one that is highly relevant: the medical device reputation ranking from the perspective of patient groups (PatientView, 2017). This sub-section explains these three attributes.

The attribute *customer focus* describes the effort of medical device companies to provide tailored solutions that focus on the individual needs of hospital management, doctors and nurses as users of medical devices, and patients. Walsh, the pioneer of customer-based reputation research, defines customer orientation as the customers' perception about how the company fulfil their needs (Terblanche, 2014; Walsh & Beatty, 2007; Walsh & Wiedmann, 2004). This includes that customers expect the company to put them in the centre of its strategic focus, treating them fairly and courteously as well as taking their customer rights seriously (Walsh & Beatty, 2007; Walsh et al., 2009; Walsh & Wiedmann, 2004).

There is evidence that customer focus plays an increasing role in corporate reputation in Germany (Walsh & Wiedmann, 2004), and in service industries it was even proven as most important attribute (Greyser, 1999). In the healthcare sector, customer centricity was included in 53 percent of the reputation studies, mostly as a description of how the company representative needs to interact with the customer to guarantee tailored medical solutions and customer satisfaction (PatientView, 2017; Renner, 2011). In the interviews with hospital procurement managers, this attribute needs to be discussed to find an explanation of what customer focus means for them.

The word *innovation* includes generally positive ideas such as newness, uniqueness, improvement and development (Courtright & Smudde, 2009). As such, research and development, the ability to be first to market and technology orientation are aspects that can lead to the beneficial impact of innovation on corporate reputation (Courtright & Smudde, 2009). Companies can position themselves as innovators with new products and services, resulting in respect and admiration by their stakeholders (Fombrun et al., 2015).

The role of the attribute innovation for corporate reputation is generally confirmed in the academic literature (Fombrun et al., 2015; Wright & Fill, 2001). A recent survey in the business literature even suggested that innovation was the main driver of corporate reputation in 15 of 20 industry sectors (Farey-Jones, 2013). The latest literature has also clarified that innovation refers not only to product development, but also to service development (Ganesan & Sridhar, 2016).

As introduced in sub-section 1.2.1., the medical device sector is pivotal to transforming healthcare with innovative ideas based on technological improvements. Future developments in e-procurement, mHealth, big data

management and miniaturization will result in fierce competition between medical device manufacturers and will certainly change products, services and processes in the healthcare market (Boyle, 2013; Weeks, 2016).

However, innovation could be seen critically by health market stakeholders who focus on the risks of change: Are less innovative medical solutions still available and do they retain their quality level? Will innovative medical solutions in key therapeutic areas be affordable for medical institutions? Hospital procurement managers are operating amidst these crucial questions, deciding what can be financed and what is required for efficient patient treatment in their hospitals.

Safety is not a common attribute in general reputation scales. Beside the afore mentioned patient group study (PatientView, 2017), the word is included in only one academic reputation article that placed safety as an item under ethical responsibility (Puncheva-Michelotti & Michelotti, 2010). Additionally, some recent business articles describe safety aspects and their impact on corporate reputation (Allen-Back, 2015; Hirsch, 2013; Sherson, 2017). There are four major developments in healthcare that transform the healthcare sector and urge companies as well as hospitals to focus on safety.

First, patient safety must be highlighted, and medical products have their part in improving this. To give some examples here: Hygiene products should increase the protection against multi-resistant bacteria (MRSA), infusion pump software guarantees that the maximum dose is not accidently exceeded, and hip replacements should be made with a minimized risk for dislocation and inflammation. As highlighted in sub-section 1.2.2., hospitals are striving to continue to optimize patient safety (DKG, 2013; Parmar, 2016). Second, in the demanding work environment of hospitals, healthcare professionals must prepare and perform

treatments efficiently. Medical products need to have safety features that reduce the possible harm to users, such as a needle that has a safety cap or the safe application of oncology therapy.

Third, rapid technological development and automatic data processing comes with a cybersecurity discussion and the fear that hospital IT systems could be hacked and patients' lives could be threatened (Engler Modic, 2016). Medical device manufacturers need to prioritize hardware and software security from the beginning of the development process (Kaspersky, 2016). Security breaches are most threatening for medical devices that are designed to be updated automatically using their online access, and these certainly have impacts on their reputation (Engler Modic, 2016; Sherson, 2017; Weeks, 2016). And fourth, the EU data protection act (GDPR), that became effective in May 2018, forces companies to process personal data with care, informing patients beforehand what part of their data will be saved and asking them for their permission (Allen-Back, 2015).

All these safety considerations are so central for healthcare institutions that safety could have an impact on the reputation of medical device companies. Hospital procurement managers usually expect companies to help them increase safety and reduce risks in their hospitals.

4.3.4. Integrity, transparency and tradition: Soft attributes?

It is possible to classify integrity, transparency and tradition as soft reputation attributes for two reasons: First, they are not mentioned often in the reputation literature, and second, their aspects are often not clearly expressed and vary from study to study. Where possible, aspects from neighbouring fields were also taken to limit the overall number of reputation attributes in this initial concept. The interviews with hospital

procurement managers have to show whether this accumulation of aspects can be handled or not.

Integrity is the attribute that is the most common in reputation research. It is often described synonymously as ethical behaviour or corporate governance (Gazzola, 2018), and credibility, fairness and reliability were chosen as aspects in this research. A useful definition of integrity is that companies are congruent in their actions, deliver on their promises and ensure ethical behaviour and commitment (Pettigrew & Reber, 2013; Van der Merwe & Puth, 2014). In some reputation studies, integrity is scored highly, reflecting the importance of a business culture that has been torpedoed in corporate scandals (Fombrun et al., 2015; Lowe, 2015) such as at Enron and Volkswagen.

As explained in sub-section 2.3.3., corporate trust has also an ethical attribute that includes integrity, credibility and reliability (Suh & Houston, 2010; Van der Merwe & Puth, 2014). The integrity attribute in this study embodies this ethical facet, without postulating that trust is a part of it. In the healthcare business, integrity is extremely important, because medical staff and hospitals work on the basis of ethical behaviour as is expected by their patients. Therefore, it is possible that this attribute is perceived as crucial by hospital procurement managers, as opposed to soft.

Some academics classify *transparency* as an aspect of integrity (Fombrun et al., 2015) or as a attribute of trust (Van der Merwe & Puth, 2014). But whereas integrity concentrates of the sound understanding and actions of a company, transparency focuses on communication, which has gained importance during the past decade in the light of many corporate and political dishonesty crises (Holmes, 2016; Plotnick, 2010; Walsh & Wiedmann, 2004).

This thesis follows numerous reputation studies and the recent business literature that promote transparency as an attribute of reputation (Gardberg, 2006; PatientView, 2017; Plotnick, 2010; Renner, 2011). Transparency means to release information that is reliable, substantial and useful (Albu & Flyverbom, 2019; Plotnick, 2010). A fast and active interaction on equal footing is crucial for companies to convince stakeholders of their openness, authenticity and the plausibility of communication (Burke, 2011; Dickinson-Delaporte, Beverland, & Lindgreen, 2010; Lackey, 2016; Van der Merwe & Puth, 2014).

Transparency is mentioned in 31 percent of the reputation measurement scales that were evaluated, but the customer-based ones in particular include it as an attribute in its own right (Walsh & Beatty, 2007). Customers are the main stakeholders affected when the company has something to hide, and are therefore highly aware if the company's communication is open or not (Albu & Flyverbom, 2019; Walsh & Beatty, 2007).

Walsh and Wiedmann (2004, p. 308) pointed out the phenomenon, '… that Germans belong to a (relatively) high uncertainty avoidance culture ..., which implies that Germans avoid risk taking when purchasing products and dealing with companies. This risk averseness explains their desire for relevant company-related information and, hence, transparency.' This leads to the assumption that the more transparent a company is, the more confident stakeholders are about relying on its information (Albu & Flyverbom, 2019; Van den Bosch, de Jong, & Elving, 2005), a position that needs to be confirmed in the interviews with hospital procurement managers.

It seems that *tradition* is a less relevant attribute in reputation research. Only one study included it as a measure (Puncheva-Michelotti & Michelotti, 2010), and only some reputation academics defended its connection to

reputation. The tradition attribute includes the aspects of German origin, made in Germany, family-owned company and company age.

Reputation researchers referred mainly to the country-of-origin aspect (Kang & Yang, 2010; Newburry, 2012; Puncheva-Michelotti & Michelotti, 2010; Reuber & Fischer, 2011). This aspect suggests that the reputation of companies from the same country as the evaluators is perceived better than the one from other countries, and Puncheva-Michelotti and Michelotti (2010) called this patriotic appeal. Studies came to ambiguous results how a country reputation can influence the reputations of its companies (Kang & Yang, 2010; Puncheva-Michelotti & Michelotti, 2010). Since *Made in Germany* is a strong label and this study is limited to Germany, this item was included in the research. As appendix 5 shows, only three German companies – Siemens Healthineers, B. Braun and Fresenius – belong to the largest 20 medical device companies.

Company age could be relevant too (Reuber & Fischer, 2011), and family-owned businesses are typical for German companies that value tradition (Brinke, 2018). Additionally, the researcher is an employee of a company with a long tradition. Therefore, it was a natural temptation to include this aspect in the study. In this respect, it is an experiment, to see if the tradition attribute plays a decisive role in the reputation perception of hospital procurement managers, or not.

4.4. Reputation antecedents

In contrast to the high number of reputation measurement scales, the antecedents of corporate reputation have barely been defined or evaluated by academics and practitioners. In the reputation literature, 16 articles were found that describe antecedents prominently, only some of them suggest structured collections (Fombrun, 2012; MacMillan, Money,

Downing, & Hillenbrand, 2005; Walsh et al., 2009). The antecedent sets vary strongly, dependent on the academic disciplines the researchers come from.

The antecedents for this initial reputation concept reflect the three academic disciplines and their perspectives as introduced in sub-section 2.1.1.: Company and business environment antecedents were extracted from the strategic management literature, media exposure from the corporate communications stream, and stakeholder expectations as well as their background were derived from marketing concepts. Table 23 shows the number of articles mentioning the individual antecedents; they are almost evenly represented.

Antecedent	Academic literature (16)
Company	8
Business environment	8
Media exposure	9
Stakeholder expectations	9
Stakeholder background	5
Total	**39**

Table 23: Literature analysis of corporate reputation antecedents. Note: A detailed overview of the findings is presented in appendix 22. Source: Own compilation.

The next three sub-sections follow the sorting of the three different perspectives and consist of short descriptions of each of the antecedents, including their aspects. The literature provides some indication of how antecedents could be interwoven with each other. However, scholars show a widespread understanding without any agreement, and therefore the connection between the antecedents were only mentioned if it occurred in more than one academic article.

4.4.1. Company and business environment antecedents

The *company* antecedent includes all reputational characteristics and actions that are maintained by the company. They are described by Dowling and Moran (2012) as internal fit and contain aspects such as the company's values, objectives, strategy and actions (Lange et al., 2011). Fombrun (2012) summarized these attributes under organizational symbolism and organizational strategy.

The company antecedent can be steered by the company's management completely. This implies that stakeholders such as customers are influenced by the company management's decisions and associate relevance for themselves (Gardberg, 2006). The values, objectives and strategy are often revealed by the market actions of the companies, and the impact, frequency, consistency and complexity of these actions are closely evaluated by customers (Basdeo et al., 2006; Lange et al., 2011). In particular, the objectives should be formulated with special care; an objective that focuses on the profitability towards customers could result in a lack of understanding and reputation damage (Dowling & Moran, 2012).

Market actions of a company are not the only thing that can lead to a corporate reputation perception, actions from rivals or other environmental factors can as well (Basdeo et al., 2006; Dowling & Moran, 2012; Lange et al., 2011). The *business environment* antecedent represents all external specifications that can affect the stakeholders' opinions. It could be interpreted as the external fit of the organization towards regulations or standards (Shapira, 2016; Stein, 2017), the industry's market situation and reputation as well as general social, political and economic aspects (Dowling & Moran, 2012; Fombrun, 2012; Winn, MacDonald, & Zietsma, 2008).

The business environment antecedent cannot be changed directly by the company's managers, but they could consider actions to comply with and influence political, economic, social, technological, legal and environmental actions (Dowling & Moran, 2012). Winn et al. (2008) established examples for external reputational crises in which companies from the same industry worked together on collective reputation management. Additionally, companies could influence reputation perceptions with an active membership in industry and trade associations (Winn et al., 2008).

Since healthcare markets are so different and change rapidly, medical device companies are forced to position themselves towards their stakeholders. Also, innovations, mergers, cost pressure and the new *EU medical device regulation*, planned for May 2021, increase the development speed and force all actors to keep themselves updated. Therefore, the company and business environment attributes could be highly relevant for hospital procurement managers.

4.4.2. Media exposure

The antecedent of media exposure represents a reputation perspective from corporate communications, including agenda-setting theory and the concept of media reputation (Carroll & McCombs, 2003; Deephouse, 2000; Einwiller et al., 2010; Meijer & Kleinnijenhuis, 2006). The PESO media type classification by Dietrich (2013), introduced in sub-section 2.1.2., provides a rich understanding of how media can be perceived by stakeholders. With its broad approach, it includes the recent developments of media digitization and corporate ownership of media.

Paid and owned media such as annual reports, corporate stories, therapy and product information, events, advertisements, website and owned

social media activities are usually managed directly by communication departments. These channels rarely have an intermediary between the company and the stakeholder; therefore researchers refer to this as a company's action (Fombrun, 2012), or question their role for more than product information (Rindova et al., 2005). However, practitioners recognized the role of individual corporate media channels for reputation building, such as in annual reports (Hyna, 2016).

The most influential intermediaries are journalists and the news media they work for (Coombs, 2007; Fombrun, 2012; Gardberg, 2006). Third-party media – lay media, newspapers, TV, news websites, newsletters or professional business magazines – can report about and comment on company actions for their audiences. Based on this information, stakeholders are able to build their perceptions without a direct company influence, in particular in cases of uncertainty towards a company (Rindova et al., 2005). Other intermediaries like bloggers, politicians, or other relevant information gatekeepers influence perceptions (Fombrun, 2012). Digital channels and social media tend to gain more and more influence (Hecht et al., 2017), and the new term 'e-reputation' is being discussed among researchers (Dutot & Castellano, 2015). However, what information sources hospital procurement managers use to create, complete or change their reputational perception of medical device companies will be of high interest for communication professionals.

4.4.3. Stakeholder-driven antecedents

Stakeholder expectation is an antecedent that includes all aspects accompanying a stakeholder's relationship to a company before assessing its reputation. Deriving from the marketing perspective, these could be observations, experiences with the company, the length and

trustworthiness of the relationship with company representatives, and expectations of their goodwill (Fombrun, 2012; Money & Hillenbrand, 2006; Walsh & Beatty, 2007; Walsh & Wiedmann, 2004). This antecedent supports the approach to consider corporate reputation when explaining the dynamics of business relationships (Lienland et al., 2013; Suh & Houston, 2010).

To meet or even exceed the expectations of their customers is critical for companies to acquire or secure their business. A failure here, an expectation gap, is highly problematic (Coombs, 2007), and must be closed immediately to bind the customers for long-term business. The personal involvement of the medical device company's sales representatives must be emphasized here, because their relationships to the hospital procurement managers can have an exceptional role in the company's reputation (Suh & Houston, 2010). This also includes the knowledge about the background of the hospital procurement manager.

This *background* is the fifth identified antecedent of medical device company reputation. It includes the characteristics of stakeholders that influence their perception. Walsh and Wiedmann (2004) mention age and gender as those characteristics, meaning that the characteristics should be linked to the stakeholders' professional experience and value system. For hospital procurement managers, age and gender are rather less important. *Age* would not refer to their work experience, since there are numerous lateral entrants, starting their hospital procurement career at age 40 or above. Thus, the *number of years in hospital procurement* is highly relevant. *Gender* is not considered, because of the few female hospital procurement managers, who could be identified when including their gender in the discussion of the study.

Moreover, the hospital type, its size and challenges could be decisive for the managers' responsibilities and their perception of reputation. Therefore, this research covers all three different hospital types in Germany. Professional experience also includes the personal network with other hospital procurement managers, such as the membership in associations or any other exchange of experience within the professional group.

4.5. Reputation consequences

Reputation can have positive and negative consequences, and the consequences vary between the different stakeholder groups. When it comes to customers, the marketing and strategic management perspectives provide helpful insights: Reputation can affect basically all stages of a buying process, and as one result, the company can earn more revenues and higher profit. It should be mentioned again here that reputation may have a higher impact if customers purchase an item for the first time with imperfect information, uncertainty and no supplier experience (Cravens & Oliver, 2006; Jeng, 2011; Schwaiger, 2004).

However, when analysing the literature about reputation consequences towards customers, there are few studies that are based on a plausible concept (Fombrun, 2012; Walsh & Wiedmann, 2004). In the 14 identified literature sources, three attributes could be found, namely purchase decision, advocacy and company performance. One further attribute, business environment outcome, was added to mirror the business environment antecedent. All four attributes are listed in table 24, including the numbers of their appearances.

Consequence	Academic literature (14)
Purchase decision	13
Advocacy	8
Company performance	6
Business environment outcome	0
Total	**27**

Table 24: Literature analysis of corporate reputation consequences. Note: A detailed overview of the findings is presented in appendix 23. Source: Own compilation.

The attribute of purchase decision was mentioned in almost all studies. Advocacy and company performance were relevant in half of the articles analysed. In the subsequent two sub-sections, these attributes, plus the added business environment outcome attribute are introduced.

4.5.1. Stakeholder-driven consequences

Purchase decision and advocacy are both consequences that set the stakeholder in the focus of interest. The consequence of *purchase decision* includes all aspects that accompany a stakeholder's relation to a company after assessing a reputation. The marketing perspective suggests aspects like satisfaction, loyalty, identification and buying intention are consequences of corporate reputation (Money & Hillenbrand, 2006; Puncheva, 2008; Terblanche, 2014; Walsh & Beatty, 2007; Walsh & Wiedmann, 2004). These attributes lead to a buying decision and probably to re-purchases, cross-purchases and long-term customer retention (Jeng, 2011; Shamma & Hassan, 2009; Walsh & Beatty, 2007). Terblanche (2014) pointed out the impact of reputation when two companies' products or services are similar in their quality.

Advocacy as a consequence positions the stakeholders as communicators to others. Drawing on corporate communication and marketing perspectives, stakeholders can act as advocates for companies, recommending them via word of mouth (Shamma & Hassan, 2009; Walsh et al., 2009). This advocacy function is valuable, since stakeholders act as trustful information sources for other stakeholders, sharing reputation-relevant information and opinions (Shamma & Hassan, 2009). Studies suggest that companies with a beneficial reputation can gain so much goodwill that customers act as advocates for them (Walsh et al., 2009). In contrast, companies offering bad customer experiences resulting in a bad reputation will be penalized by customers, spreading a negative word of mouth (Fombrun & van Riel, 1997; Walsh & Beatty, 2007).

Focusing on hospital procurement managers, it is assumed by the author that they do share good experiences, but more often poor experiences with their colleagues. In special procurement situations, when a large investment in expensive medical equipment is needed, the purchase is for the first time or unusual challenges appear, a consultation with the professional network is probable. As for the purchase decision itself, it is not a question if corporate reputation influences it, but to what extent. This is one of the more detailed questions in the interviews, and the answer is valuable for the management of medical device companies.

4.5.2. Company and business environment consequences

Reputation has consequences on a *company's performance*, following the arguments from the strategic management perspective. It also has a strong link to the purchase decision made by the customers: More purchases of products and services increase the revenues of a company (Dowling, 2006; Lange et al., 2011). A good reputational perception can

add to a competitive advantage (Fombrun, 1996; Helm, 2007), resulting in the option to increase prices and strengthen the company's profitability (Chun, 2005; Fombrun & Shanley, 1990; Helm, 2007; Rindova et al., 2005).

For Lange et al. (2011, p. 169) 'economic outcomes are the most prevalent consequences of reputation investigated'. MacMillan et al. (2005) even identified that all other outcomes result in a better long-term company performance. This supports Dowling (2006) who argued that size and stickiness of the customer base lead automatically to a favourable performance. Size refers to the number of customers, stickiness to their loyalty and cross-purchase intents.

Whereas many indicators for the company performance exist, the *business environment outcome* has not been supported by any evidence yet. It reflects that the reputational perception could influence the business environment of the perceived company. This includes effects of a single negative corporate reputation perception to a whole industry or the country of origin of the company; this approach is mentioned only marginally in the literature (Kang & Yang, 2010; Michaelis, Woisetschläger, Backhaus, & Ahlert, 2008). Empirical research will show whether business environment outcome deserves its place in the reputation concept.

Whether hospital procurement managers care much about reputation consequences for medical device businesses can be doubted. Nevertheless, they are interested in long-term partnerships and should value strong medical device companies that can deliver large volumes at high quality in time.

4.6. First assumptions about mechanisms

The corporate reputation literature provides only marginal considerations of causal mechanisms and their interpretations; figure 28 is an attempt to visualize the major causal mechanisms identified by scholars. A handful of articles position the construct of corporate reputation between its antecedents and consequences (Fombrun, 2012; Money & Hillenbrand, 2006; Shamma & Hassan, 2009; Terblanche, 2014; Walsh et al., 2009), which represents the basic mechanism: Antecedents lead to corporate reputation, which causes consequences.

The reputation construct itself consists of a structure of reputation categories and attributes that have numerous associations with each other. In section 4.3., some connections have already been mentioned, such as the connections of the attribute products/services with the other attributes, workplace, innovation and safety. It is suggested that the first phase interviews will provide more information about these connections that make up corporate reputation, particularly about the strong ones representing patterns in the reputation structure.

Fombrun (2012) provides an extensive framework of reputation antecedents and their relations to each other. The basic order here is to start with the characteristics of the company and its business environment. To build their own perceptions, hospital procurement managers are informed about the company and the environment by intermediaries, especially the different media channels. The media reception leads to the hospital procurement manager's antecedents, namely his expectations and experience. This causal mechanism within the reputation antecedents is also supported by Dowling and Moran (2012) as well as by Shamma and

Hassan (2009): Both articles underline the necessity of this causal process for reputation building in the perception of the addressed stakeholders.

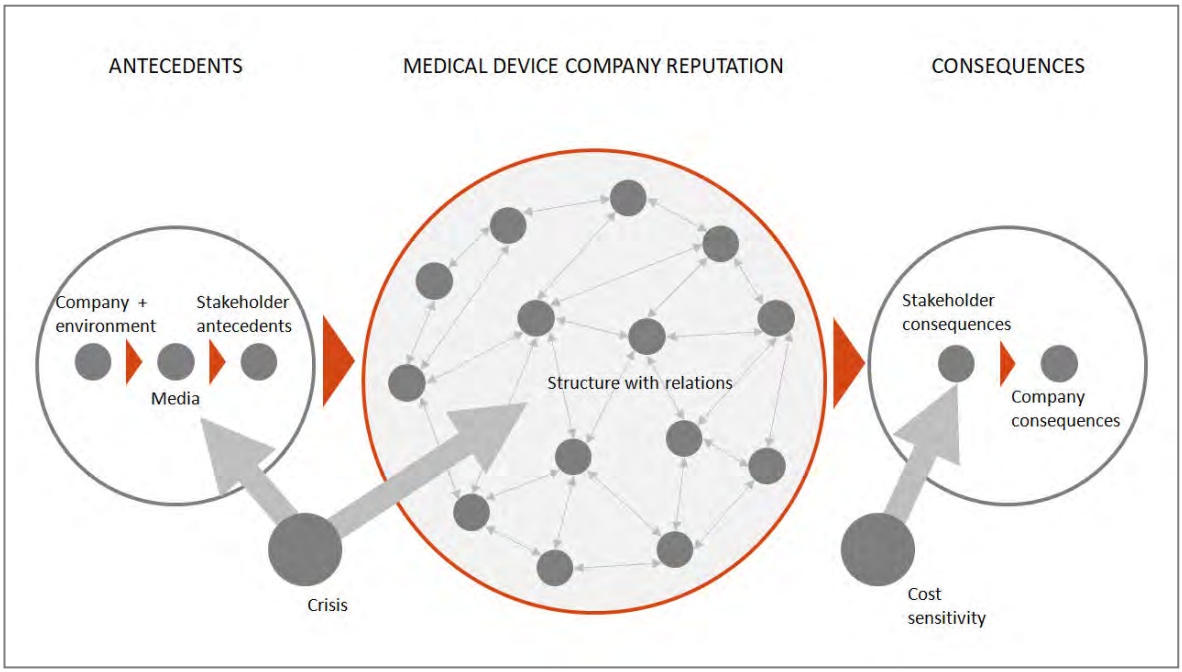

Figure 28: Basic mechanisms in the medical device reputation concept. Source: Own compilation, based on Dowling and Moran (2012), Fombrun (2012) and Shamma and Hassan (2009).

Turning to the consequences of corporate reputation, the academic evidence of a causal mechanism is stronger. Especially in the customer-based corporate reputation literature, the role of decision-making based on reputation, the resulting loyalty and advocacy, as well as their role for the company's performance are widely evaluated and demonstrated (Dowling, 2006; Terblanche, 2014; Walsh & Beatty, 2007; Walsh et al., 2009). Moreover, Fombrun's causal framework breaks down the consequences into more items, recognizing different stakeholder groups, such as shareholders, employees and politicians (Fombrun, 2012).

Corporate reputation, however, is not a closed system, even not with its antecedents and consequences. The literature indicates at least two

external drivers that influence the construct: First, crises of the medical device company or in the industry as a whole can occur. As Coombs (2007) convincingly describes, crises have the potential to threaten corporate reputation and its constituents, and active reputation management must be implemented to avoid widespread and consistent reputation damage (Brown, 1998; Dowling, 2006; Terblanche, 2014). Crises also go through the whole causal mechanism of the reputation antecedents, starting from the company or its environment, being communicated by intermediaries and perceived by stakeholders. This is relevant for medical device companies because the number of product recalls has dramatically increased in recent years and this affects the relationship with hospital procurement managers (Arndt, 2017; Ball, Shah, & Donohue, 2018; Walter, 2018).

And second, the cost sensitivity caused by the German health care market has a direct influence on the reputation consequence of purchase decisions. Particularly among hospital procurement managers, price evaluation plays a decisive role that conflicts with reputation (Berg & Burdach, 2012; Sontheimer, 2015). They tend to ignore reputational advantages when they can generate cost savings, and they would not accept too high prices just because a beneficial reputation exists (Medina, 2016; Parmar, 2016; Porritt, 2005).

These causal mechanisms belong to the reputation concept in the real domain of critical realism. As soon as these connections are activated, their effects are located in the actual domain, and when empirically observable, in the empirical domain. By activation, the process of a qualitative evaluation is meant; as soon as one constituent is perceived as positive or negative, the effects of this perception will be taking place in the whole reputation construct. Figure 29 demonstrates this using a positive

product/service perception that has an impact on some of the connected reputation attributes and the reputation consequences.

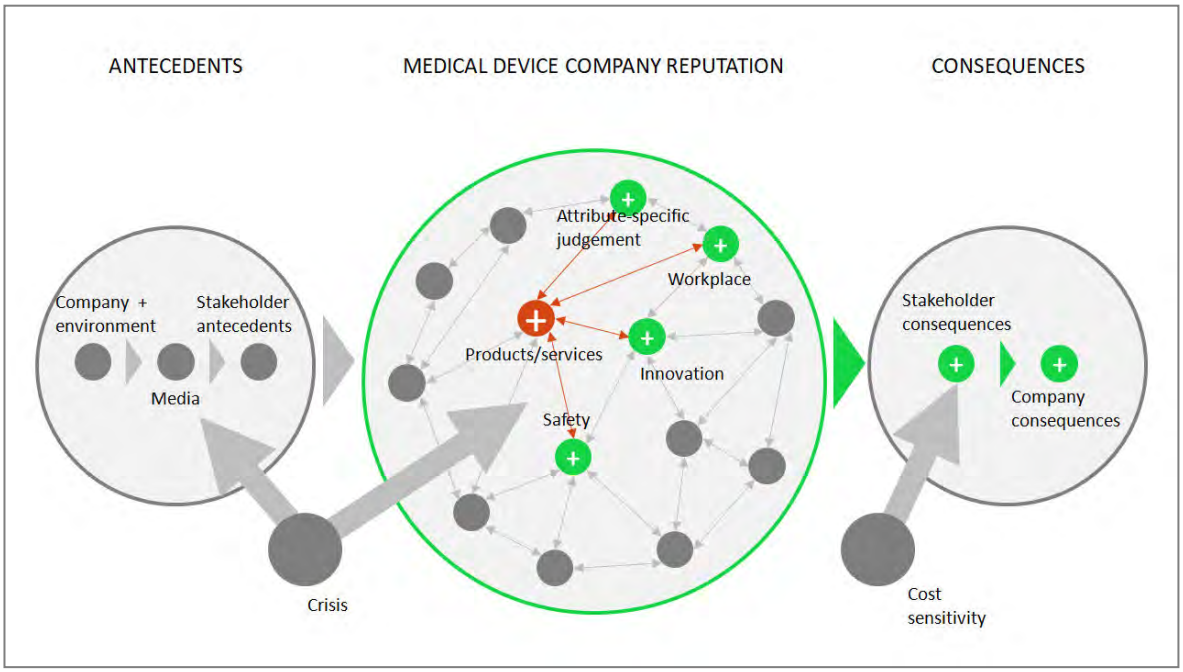

Figure 29: Exemplary effects following a positive product/services perception in the medical device reputation construct. Source: Own compilation.

A positive perception of the products/services attribute has positive effects on the attribute-specific judgement generally, and more specifically on innovation, safety and workplace, depending on the product features. The reputation as a whole increases and, as a domino effect, the positive consequences on purchase decision and advocacy do increase as well. They lead to higher revenues, strengthening the company's performance.

A more complex example is given in figure 30: Here, a recall of a set of products because of legal allegations is simulated. As the crisis comes up, all reputation antecedents get a negative value, leading to a negative perception of reputation. Furthermore, the crisis has a direct impact on reputation attributes such as integrity, leadership and products/services, which go down, even if the company's transparency during the crisis is

perceived positively. The consequences of the negative perception are reduced purchasing and subsequently a reduced company performance.

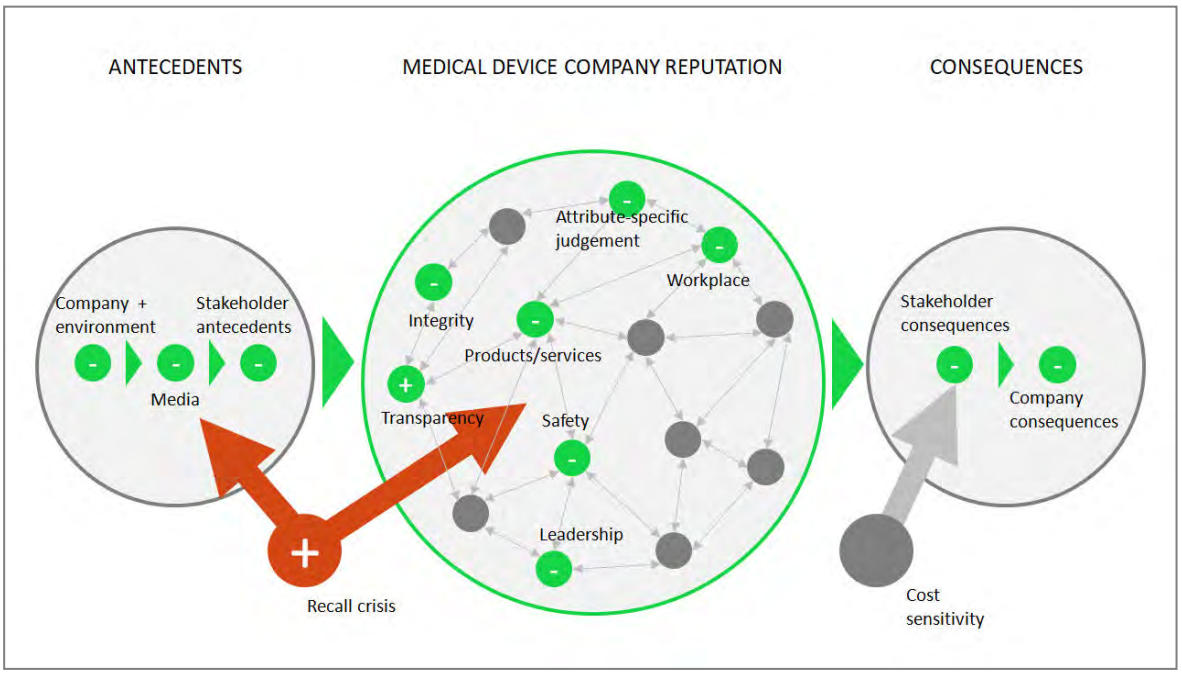

Figure 30: Exemplary effects following a recall crisis in the medical device reputation framework. Source: Own compilation.

These two scenarios demonstrate how many causal mechanisms can lie behind one positive or one negative perception in the reputation construct. The first phase interviews aim to find causal mechanisms that have the strongest impacts in the framework. If they are directly mentioned by the interviewees, they are situated in the empirical domain; if they are derived by the researcher, they are located in the actual domain.

4.7. Summary: A prototype of a reputation map

The reputation definition in chapter 2 was the starting point for creating an initial concept of corporate reputation, its antecedents and consequences. The previous sections demonstrated the different degrees of maturity in the academic research of reputational constituents, resulting in a concept

that is well established, but with some additional assumptions in regard to the business-relevant developments in the medical device industry wherever gaps in the academic research were identified. Figure 31 shows the initial concept.

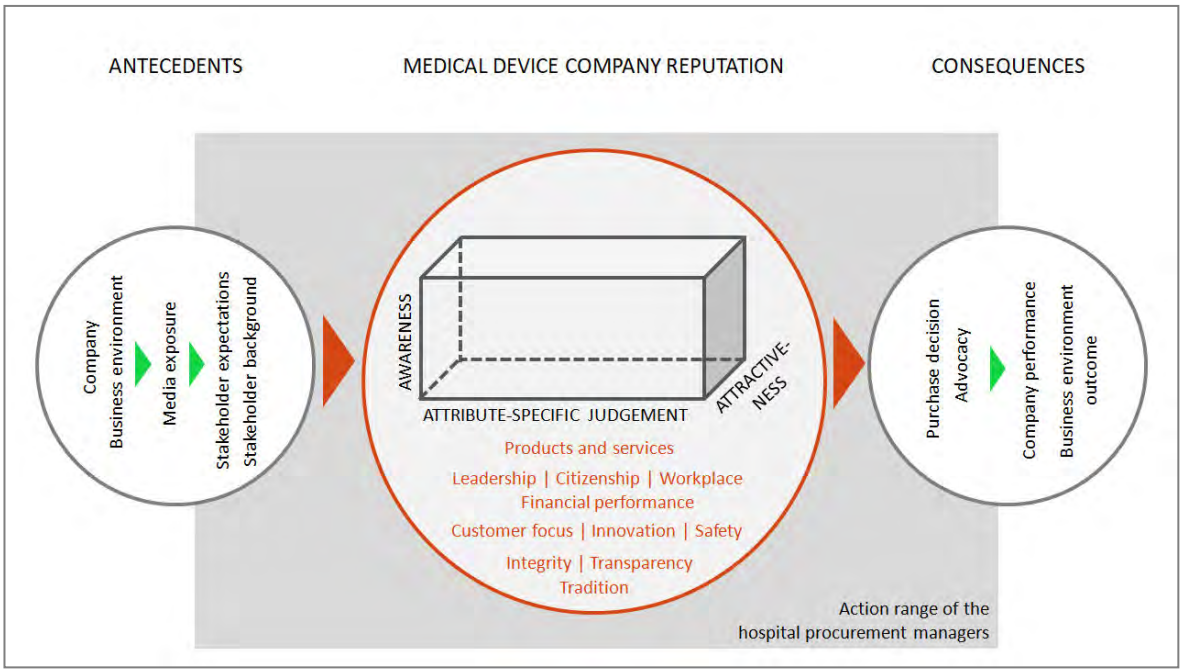

Figure 31: The initial concept of medical device company reputation. Note: A detailed overview of all aspects is given in appendix 24. Note: All red marked constituents refer to the reputation structure itself. Source: Own compilation.

Besides the assorted attributes, this research embeds corporate reputation in a causal framework of antecedents and consequences, as described by Money and Hillenbrand (2006). The framework was created by incorporating different approaches by leading reputation authors (Fombrun, 2012; Money & Hillenbrand, 2006; Walsh & Wiedmann, 2004), and the understanding of the causal relations of corporate reputation by the research disciplines of strategic management, corporate communications and marketing. The result is a framework that visualizes two statements: first, corporate reputation is connected to a number of antecedents and consequences that can be structured in different

attributes, and second, the major part of the causal framework is determined by the stakeholder group that perceives corporate reputation.

In chapters 5 and 6, this model will be revised and refined to fulfil the aim of the doctoral study to provide a comprehensive reputational map of medical device companies. The analysis will be undertaken by including the results of twelve interviews in the empirical field study. The research methodology and methods that lie behind this research, and how the reputation concept will be revised and refined is explained in the following chapter.

5. Revised concept

‘I find this concept exciting,
and I can assure you that
I will use it in the near future.’

Interview participant P

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This chapter presents the results of the first phase interviews with one manager of a group purchasing organization (P) and six hospital procurement managers (A1, A2, B1, B2, C1, C2). The analysis of the interviews modifies the initial reputation concept introduced in chapter 4 and identifies directions for the second interview phase. As such, this chapter is the cornerstone of this doctoral thesis. It gives an in-depth insight into the reputational understanding of the interviewees in the critical realist domain of the empirical, extrapolates the results for the actual domain, and explains the conceptual underpinnings in the real domain. The concept discussed is without exception based in the real domain. However, examples that qualify reputation in *positive reputation* or *negative reputation* illustrate effects of the concept, and therefore represent the empirical domain when mentioned by the interview participants. The qualified examples lie in the actual domain, when theorized by the researcher based on the empirical outcome.

Figure 32 shows the reputation concept after the first phase interviews. It has considerably changed from the initial concept introduced earlier: The three reputation categories are split in one antecedent category and two

remaining reputation categories, the number of antecedents increased from five to seven, the number of attributes reduced from eleven to ten and the number of consequences decreased from four to three. However, apart from the numeric changes, the qualitative meanings and relevance of most of the constituents were sharpened, including adding or removing some of their aspects. Following the critical realist approach, all attributes, their structure and major causal mechanisms will be explained in the following sections. The attributes are grouped in sections that consider the type of change in comparison to the initial concept.

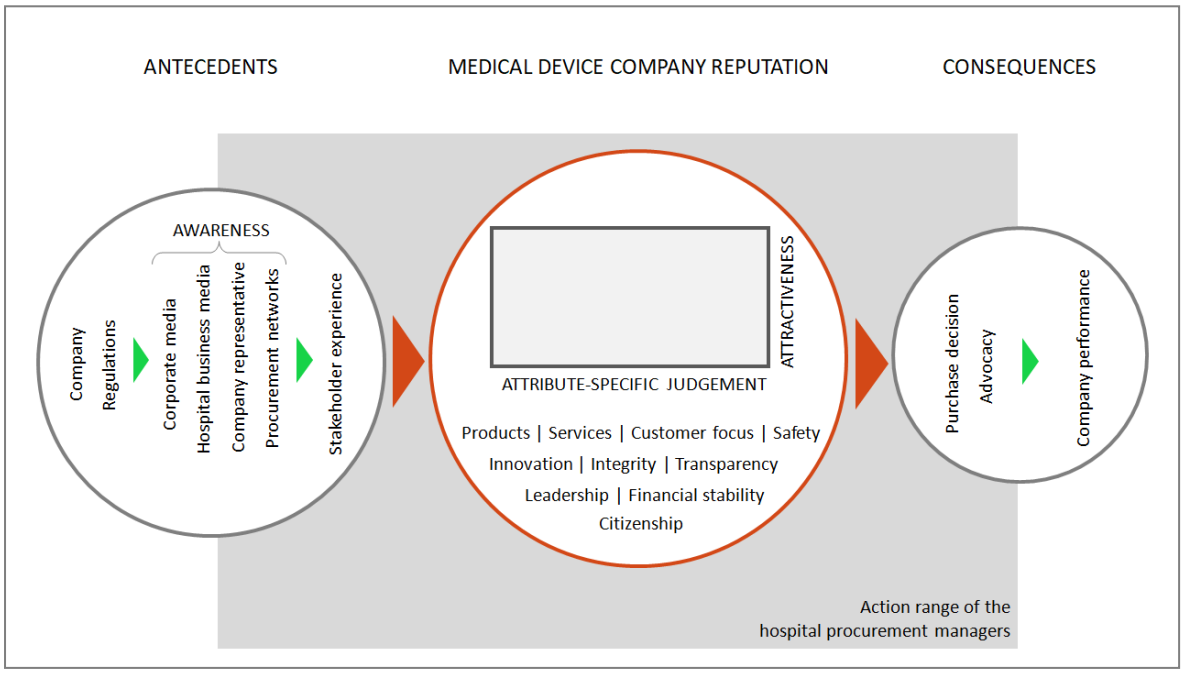

Figure 32: The concept of medical device company reputation after the first interview phase. Source: Own compilation.

First, the confirmations are described. Customer focus, innovation, safety, integrity, transparency, company antecedent, purchase decision and advocacy had no change at all or only a slight change in their meaning and relevance for the reputation structure. Second, there were two constituents, product and services as well as media exposure, which included so much value that they were both split into two individual

constituents. The reasoning and the implications of these splits will be discussed in section 5.2. In the same section, two merged constituents are discussed, consolidating stakeholder expectations and stakeholder background to experience as well as leadership and workplace to leadership. Here, the interfaces of the constituents, identified during the interviews, were so manifest that the fusion is a promising option.

Third, the analysis of the interviews suggested to transform eight constituents – namely the three categories awareness, attribute-specific judgement and attractiveness, the attributes financial performance and tradition as well as the new antecedents regulations, company representative and procurement networks – mainly to relocate them in the structure, to rearrange their relevance within the reputation construct, or to specify them where their definitions were vague to hospital procurement managers. And fourth, the three constituents of citizenship, company performance and business environment outcome were identified as being questionable as part of reputation. Here, a solid trend, common understanding or support does not exist among the interviewees. Therefore, these constituents need to be discussed in section 5.4. Table 25 provides an overview about all constituents and their development after the first phase interviews.

The hospital procurement managers revealed several causal relations when describing their perspectives of reputation antecedents, attributes and consequences. These causal relations are presented in section 5.5., and the strongest identified mechanisms are explained. Finally, the last section provides a summary about open issues that need to be clarified in the next interview phase.

Type	Before first phase interviews	After first phase interviews	Change	Sub-section
Category	Awareness	Awareness	Moved from reputation to antecedents	5.3.1.
Category	Attribute-specific judgement	Attribute-specific judgement	No change	5.3.2.
Category	Attractiveness	Attractiveness	No change	5.3.2.
Attribute	Products and services	Products	Split	5.2.1.
Attribute	Products and services	Services	Split	5.2.1.
Attribute	Leadership	Leadership	Merged with workplace	5.2.4.
Attribute	Citizenship	Citizenship	No change	5.4.1.
Attribute	Financial performance	Financial stability	Name change	5.3.3.
Attribute	Workplace	--	New aspect in leadership	5.2.4.
Attribute	Customer focus	Customer focus	No change	5.1.1.
Attribute	Innovation	Innovation	No change	5.1.2.
Attribute	Safety	Safety	No change	5.1.3.
Attribute	Integrity	Integrity	No change	5.1.4.
Attribute	Transparency	Transparency	No change	5.1.4.
Attribute	Tradition	--	New aspect in company antecedent	5.3.4.
Antecedent	Company	Company	No change	5.1.5.
Antecedent	Business environment	Regulations	Name change	5.3.5.
Antecedent	Media exposure	Corporate media	Split	5.2.2.

Type	Before first phase interviews	After first phase interviews	Change	Sub-section
Antecedent	Media exposure	Hospital business media	Split	5.2.2.
Antecedent	--	Company representative	New	5.3.6.
Antecedent	--	Procurement networks	New	5.3.7.
Antecedent	Stakeholder expectations	Experience	Merged with stake-holder background	5.2.3.
Antecedent	Stakeholder background	Experience	Merged with stake-holder expectations	5.2.3.
Conse-quence	Purchase decision	Purchase decision	No change	5.1.6.
Conse-quence	Advocacy	Advocacy	No change	5.1.7.
Conse-quence	Company performance	Company performance	No change	5.4.2.
Conse-quence	Business environ-ment outcome	--	Removed	5.4.3.

Table 25: Development of reputation constituents after the first phase interviews. Source: Own compilation.

A strong indicator of the reputation constituents' relevance was the Q-sort method introduced in sub-sections 3.2.2. and 3.2.4. (Van Riel & Fombrun, 2007), in which the interviewees sorted constituents on a scale from 0 to 10, rating the relevance for the reputation construct. The ratings were added, and the average rating was calculated. These ratings are shown in appendix 25. However, the ratings of the individual constituents are regularly presented and discussed in this chapter, as they were the basis to gain detailed qualitative explanations from the interviewees. Where the

relevance for reputation is 5 and below, it will be generally discussed whether the constituent should remain in the reputation construct or not.

Based on the transcriptions, qualitative analysis was used to extract interviewees' quotes. These quotes are presented where they were strong and stand for a trend, a strong or a unique position that leads to a decision in the shaping process of the reputation construct. In some cases, a general overview is more helpful to explain a trend or difference. Here, summary tables provide an overview of the participants' opinions.

5.1. Confirmations

Besides all the changes in the medical device reputation concept that were identified in the interview analysis, there were also some confirmations of constituents and their location in the structure. Figure 33 illustrates the five reputation attributes, the one antecedent and the two consequences that were strongly supported by the interview participants. Confirmation does not mean that the constituents remain identical in each of their aspects, but that the meaning or connotation is aligned.

In the next sub-sections, these constituents are discussed, their aspects revisited, and their reputational strength explained. The combination of integrity and transparency in one sub-section does not imply that these constituents are to be merged. They are perceived similarly by hospital procurement managers, which makes it more efficient to discuss them in one sub-section.

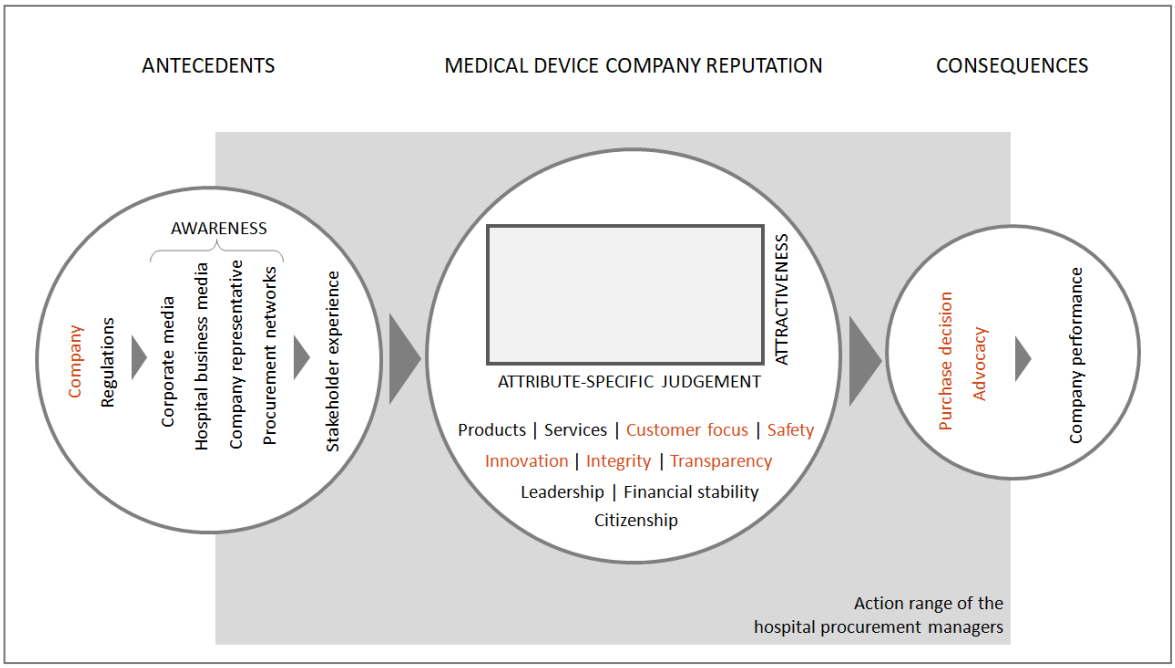

Figure 33: The confirmations in the medical device reputation concept in the first interview phase. Note: The constituents discussed in this section are marked red. Source: Own compilation.

5.1.1. Customer focus: One of the core reputation attributes

Unsurprisingly, customer focus is posited by hospital procurement managers to be most relevant: They perceived themselves as customers of medical device companies, but sometimes they also considered doctors, nurses and patients as customers. The interviewees made clear in their answers to what customer type they refer.

In their common understanding, the interviewees confirmed the assumptions from the academic literature about customer focus as a fulfilment of their needs and the central role for the strategic focus of a medical device company. Table 26 illustrates this in numbers: Customer focus is behind products/services and safety as the third highest rated reputation attribute. All interview participants provided ratings of more

than 5, three even gave the highest possible rating of 10. This underlines the high relevance of customer focus for medical device company reputation.

Reputation attribute	P	A1	A2	B1	B2	C1	C2	Average
Customer focus	9	10	7	6	10	10	7	**8.4**

Table 26: The customer focus attribute evaluated by the first phase interviewees. Source: Own compilation.

But what does customer focus mean to hospital procurement managers in detail? The interview results indicate that there are four major aspects of customer focus: benefit-based consulting, flexibility, problem-solving competencies and customer proximity. These four aspects should not only address hospital procurement managers, but also the medical hospital staff. Each of the aspects can be found explicitly in the interview records. For example, benefit-based consulting means to B2:

> 'This benefit-based argumentation – if someone has understood this, then he/she is unbelievably valuable to us. If someone understands our situation and our problem, and is not just selling his/her product, then we can come together.' (B2)

There are two main perspectives in this quote. First, it is the understanding of the customers and their needs that should be in focus rather than the pure selling of medical device products. And second, based on customer needs, the medical device company must provide consulting based on equal footing, keeping in mind how the needs can be satisfied, ideally with the help of its portfolio.

C2 defended his rather low customer focus rating of 7 with the fact that most of the medical device companies have potential for improvement

here. He expects a high level of flexibility, especially when it comes to customized sets of medical products. According to him, medical device manufacturers have a different grade of flexibility towards the customers' needs when it comes to individualizing the set components. A1 singled out US companies for not turning to the customer perspective and for only being focused on selling at the end of their reporting quarter. Benefit-based consulting and flexibility are even of more value when it comes to critical situations in the hospital:

> 'I need someone I can talk with about our needs, someone, who understands our needs – the customer focus – and who has a minimum level of competency to solve the problem on-site. ... The issue is the actual handling of difficult situations. If someone says: My apologies, we have forgotten to send it [the product], there is nothing we can do now. Or there is someone who says: Give me an hour, I will find a solution.' (B2)

These problem-solving competencies are critical for hospital procurement managers, because there could be shortages that have an impact on the treatment or care of patients that need to be resolved immediately. C1 gave an example of an urgent implant delivery that was promised to be sent quickly. The patient was already anesthetized in the operation room, but the implant was still on the road 300 kilometres away. In situations like this, a reputation grown over years is jeopardized in a moment. C1 also expressed the need for customer proximity between medical device companies and the medical staff:

> 'In terms of reputation, the most important thing for me is that you are close to the customer, that the contact between supplier and user is very close. There are companies that do not let their sales reps go into hospitals. … I think this is completely wrong. The doctor who uses the product is basically the contact person for every company, if he says

> that he needs the product to turn to the left and to the right, the company must be able to react. The close contact is important, and if it is there, then I think it will also earn the company a good reputation with the users'. (C1)

This description of proximity is not shared by all interview participants. A2 pointed at some challenges for hospital procurement when medical device companies present a product to medical staff alone, without including the procurement team. Moreover, B1 challenged the overall concept of customer proximity as part of customer focus:

> 'The number of visits does not reflect customer focus. It is the other way around: If a business relationship is based on a framework contract, the conditions have been negotiated and the agreements are made and kept, I'm not convinced that you have to support this with sales visits.' (B1)

Additionally, B1 was the only interview participant with a sceptical perception of customer-focused activities by medical device companies. His rating of 6 was the lowest, and he had also a contradictory opinion about individual solutions for clinics, seeing it from the perspective of a procurement manager responsible for more than one hospital:

> 'Custom solutions are always nice, and they are important for hospitals, but they also lead to internal efforts – we shouldn't forget this. If I have seven hospitals with about 200 beds each, and I have seven different theurapeutic solutions, that's a problem. As a central procurement manager, I'm more interested in implementing a single standard.' (B1)

However, he does not deny the advantages of a customer focus oriented to the central hospital procurement. As such, his argument is rather to define what tailored or individual solutions really mean. Understanding the customer needs should include avoiding many individual solutions while staying informed about the standard customer requirements.

Overall, these interview excerpts show the relevance of customer focus for corporate reputation, and the strong confirmation for it being a core attribute. In the initial concept, the customer focus aspects only included bespoke solutions along with the focus on hospital managers, and sometimes also on medical staff and patients. After the first phase interviews, this needs to be extended by benefit-based consulting, flexibility, problem-solving competency and customer proximity.

5.1.2. Innovation: Special emphasis on added value

The hospital procurement managers interviewed in the first phase confirmed innovation as an attribute of corporate reputation. Innovation is perceived as an expression of high quality and value; its importance is easily connected with medical device companies and their substantial role for healthcare development.

Reputation attribute	P	A1	A2	B1	B2	C1	C2	Average
Innovation	7	6.5	6	9	6	10	6	**7.2**

Table 27: The innovation attribute evaluated by the first phase interviewees. Source: Own compilation.

Table 27 illustrates this in the relevance ranking for reputation: All interview participants rated innovation better than 5. The average ranking of 7.2 shows that the attribute innovation was evaluated lower than customer focus, which reached 8.4. This reflects a conscious or subconscious 'but' that was experienced in almost all interviews. The interview analysis indicates that this 'but' has origins stemming from the fear of hospital procurement managers that innovative companies demand higher prices, and this subsequently interferes with the buying process of

hospitals. Table 28 lists the verbal expressions of this fear and contrasts it with the overall, mostly positive expressions of innovation.

Participant	Innovation	Innovation vs. cost sensitivity
P	Expression of quality	Expensive, but important
A1	High value, but limited to existing partners	High costs lead to devaluation by customers
A2	Importance of advancements for medicine, patients and hospitals	-
B1	Strongest driver of reputation; innovation cycles speed up	Can downsize processes, relieve nursing staff, increase hospital revenues
B2	Ordinary value	Need to have advantages for hospitals
C1	Convincing value	Rather expensive
C2	Hospital management is focused on innovation	Needs to be affordable

Table 28: Summary table of innovation statements by first phase interviewees. Source: Own compilation.

The different depth of the answers is noticeable: P and C1 just mentioned the expense of innovation, though they understood its importance for healthcare developments. A1 added the consequence that a company that includes an exaggerated extra charge for innovation will be rated lower by customers. C2 concluded that innovation needs to be affordable, but generally accepted higher prices from innovative companies. B2 urged companies to change their innovation perspective and to highlight the advantageous innovation role for hospitals.

These interview outcomes express the requirements towards innovation, though imply a generally sceptical view of the healthcare industry that promotes innovation for the sake of being technology-driven itself (A1). The recognized ambivalence was accurately described by B1, who designated innovation as strongest driver of reputation, but also warned:

> 'The medical device market in hospitals is subject to extreme innovation cycles, and they're churning faster. As a rule, these cycles are faster in the industry than in hospital procurement. The cut-throat competition [between medical device companies] makes this even more sensitive. You must be careful with fake innovations. This is a very big issue. When the market starts to promote innovations that are not necessarily useful. ... Real innovations that streamline processes, relieve the burden on nursing staff and increase hospital revenues – these innovations get my attention, of course.' (B1)

This quotation explains that the fear of high prices by hospital procurement managers is not absolute, but present whenever the value of innovation cannot be easily gauged. Since the innovation cycles are perceived as being faster in the industry than in hospital procurement, accurate evaluation seems to be difficult. Hospital procurement managers are aware of the fierce competition among medical device companies and are sceptical about the value, usefulness and benefit of innovations. Once the value can be estimated, the 'but' is rather small, because the interviewees generally understand the role of research and development in healthcare:

> 'I rate innovation here at 6 or 7, because it is of course important that further developments take place to improve medicine and to correspondingly generate added value for the patient and, of course, also for the hospital.' (A2)

To summarize, innovation is an important reputation attribute for the interview participants. The further development of products and services is

appreciated, and technological improvements are seen as changing healthcare in hospitals rapidly. While being first to market is less relevant to the respondents, the avoidance of fake innovations and the emphasis on value-generating innovation are added as aspects of the innovation attribute.

5.1.3. Safety: A matter of fact in healthcare

Safety is the reputation attribute with the second highest rating by the interview participants, only topped by products/services. Table 29 shows that all ratings are above 5, three procurement managers even gave the maximum rating of 10. Safety is obviously a very strong attribute for medical device company reputation, and its nomination in the initial concept pointed to a possible significance that was impressively confirmed in the interviews.

Reputation attribute	P	A1	A2	B1	B2	C1	C2	Average
Safety	8	8.5	10	7.5	6	10	10	**8.6**

Table 29: The safety attribute evaluated by the first phase interviewees. Source: Own compilation.

Safety was explained by the respondents as a matter of fact for medical device companies – without safety they could hardly exist (C1). It is a crucial issue (P), must be written in capital letters (A2) and plays a crucial role in the evaluation (B2), whether it includes medical staff safety (A2, B2, C1, C2), patient safety (P, A1, A2, C1, C2), or data protection (A1, A2, C2). C2, who gave a safety rating of 10, shared his thoughts about safety in more detail:

> ‘It [safety] is important to me and I think, it is also very good for the reputation of a company, if I am well taken care of here. Because the developments in medical device data security are heading more and more in the direction of IT-based solutions. And that [safety] is already a high priority for me. ... I don’t want anything to happen to my employees here, or to put them in danger if they use products from any company. Patient safety must have the highest priority in the hospital, and a corresponding value in the company’s reputation with potential business partners.’ (C2)

These confirmations are hardly astonishing, because healthcare institutions need to focus on safety themselves, and emphasize its significance for their suppliers. However, two interviewees questioned whether safety can be really influenced by medical device companies: C1 referred to legal regulations that need to be complied with. A1 believed that safety consists of 95 percent existing standards, and only 5 percent of options for differentiation. These opinions contradict with the high reputation relevance of safety: How can safety be most relevant for reputation, if a high percentage of this attribute cannot be actively managed by medical device companies?

The answer to this question has three dimensions and can be also extracted from a more comprehensive interview analysis. First, the legal regulations or standards are based on official admissions and certificates that can be achieved easily when copying a medical product (P). In these cases, the experience with safety aspects will be decisive for medical staff in hospitals, the admission or certificate partly loses its significance.

Second, it was apparent that the aspect of cybersecurity that had been identified in the initial concept was not mentioned at all in the interviews. The reason for this can only be speculated on, possibly the hospital procurement managers were not aware about the latest cyber-attacks in

hospitals, or they were too focused on the other aspects. However, cybersecurity was left out for some reason, and it is one aspect that can differentiate the safety perception of medical device companies.

And third, C1 and C2 mentioned the aspect of delivery accuracy and confidence as a new aspect to be included in the reputation construct. C1 gave the example about the delayed implant delivery stated above in sub-section 5.1.1., C2 described the case of a company that closed production and did not offer an alternative option for procuring the product. Especially in some medical device subsectors with only five players or fewer, a shortage in production can lead to a significant undersupply of products until the company or its competitors can increase production output. This aspect can be a differentiator for the safety of medical device companies.

Safety was categorically identified as one of the most relevant attributes of medical device company reputation. The aspects of medical staff safety, patient safety and data protection were confirmed by the interview participants, the aspects cybersecurity and delivery security should be clarified in the next interview phase.

5.1.4. Integrity and transparency: Strong ethical requirements

In sub-section 4.3.4., the question whether integrity and transparency are soft reputation attributes was discussed. To give an initial answer to this question, they are not soft attributes, but relevant ones. The hospital procurement managers even referred to some aspects such as reliability, fairness and truthfulness in their first definitional thoughts about corporate reputation. Integrity and transparency were intuitively clear to the interviewees: Both represent ethical values, integrity from a behavioural point of view, and transparency from a communicative perspective.

Reputation attributes	P	A1	A2	B1	B2	C1	C2	Average
Integrity	5	8.5	5	4	8	10	10	**7.2**
Transparency	5	8	9	5	8	9	8	**7.4**

Table 30: The integrity and transparency attributes evaluated by first phase interviewees. Source: Own compilation.

Table 30 shows the rankings of the two attributes as rated by the interviewees. With an average rating higher than 7, neither are questioned in their value for corporate reputation, and most of the respondents rated them similarly. Almost all classified their relevance as 5 and above, with the exception of B1, who had difficulties to define the meaning of integrity. However, the relevance of integrity for the reputation construct is described as crucial:

> 'Integrity, in my opinion, is actually a criterion. An unreliable company, what reputation should it have? It won't be on the market for long, I think. If I [as a company] make promises I can't deliver on, that I'm not convinced of, when I sell things that harm my patients because I don't take it so seriously ethically and morally. I cannot imagine that such a company really exists.' (C1)

The interviewees' reflections on integrity and transparency are collected in table 31. Most of them highlight the importance of the two attributes and mention one or more of their aspects. It is interesting, that the connection between transparency and communication was explained spontaneously by three of seven interview partners (P, A1, C2).

Participant	Integrity	Transparency
P	Reliability, responsibility for products	How to communicate, and how often; transparency of CEO as communicator
A1	Integrity is important, but covered by compliance regulations	Transparency is crucial, but depends on the person communicating
A2	Reliability is in the focus; values must be lived and not just paid lip service	Truthfulness, openness, in areas with single sourcing
B1	Authenticity increases credibility; this is a standard for business relationships	Not that central; could be better among medical device companies
B2	Integrity is essential to reputation	Truthfulness, particularly in crises; transparency vs. compliance
C1	Credibility as basis for reputation and business	Transparency is important, particularly in crises; hardly possible to reach an in-depth transparency
C2	Supplier responsibility for its actions; credibility, fairness, reliability are cornerstones for business relationships	Expectation of openness and communication

Table 31: Summary table of integrity and transparency statements by first phase interviewees. Source: Own compilation.

Integrity was evaluated as the basis for creating a substantial business relationship (B1, C1, C2), and as value-based decision-making by the medical device company (A2, C2). The integrity aspect of reliability was highlighted by some of the interviewees (P, A2, C2), due to its exceptional role in some medical device subsectors where only few suppliers lead to single sourcing by hospital procurement managers. Hospital managers depend strongly on products and services in these sub-sectors, which

causes their perception of reliability as part of corporate reputation to increase:

> ‘Often we accept single sourcing to generate cost savings. With this, reliability, transparency and openness are absolutely important to us, of course.’ (A2)

Moreover, the interviews showed that integrity was discussed in the context of compliance:

> ‘Integrity at the top of the list but today it is a completely different issue compared to ten years ago. Ten years ago, suppliers could invite customers for lunch, much more often than is possible today. And customers were given presents more often. I think it’s good that we’ve put a stop to this, that I never get an immoral offer. This was an issue in the past. That’s why integrity is a high priority.’ (A1)

However, some of the hospital procurement managers interviewed also explained the negative consequences of the compliance regulations for the level of transparency that should be improved (B1, B2). B2 understands the compliance regulations but regrets that they were necessary due to some suppliers exaggerating their acquisition efforts in the past. The consequence for him is an increase of uncertainty in the selection of new suppliers:

> ‘In a previous company, I would not have made a contract with an A-supplier without inspecting the supplier myself. This is not the case with medical product suppliers today. ... This is sad, because [...] seeing a company is irreplaceable. But this is completely unusual: In the sense of the compliance discussion, hardly any procurement manager goes out to look at a company. We used to look at A-suppliers, even B-suppliers, before signing a contract.’ (B2)

To a neutral observer it is unclear whether the lack of transparency is a consequence of the compliance regulations alone. In fact, the increased

responsibilities of hospital procurement managers could force them to avoid supplier visits because of time constraints. An evaluation of the types of tours in the researcher's medical device company revealed that although the number of tours with customers has slightly decreased in the past years, a lot of customers still visit the company. Also, one of the interviewees emphasized the role of constant inspections for transparency, reputation and his selection process (C1).

Another influence on integrity and transparency are crises. How do medical device companies need to act and communicate in crisis situations like product recalls to maintain their reputations? The interview participants agree that crises can happen and that they will accept them (P, B2, C1):

> 'We do not fire a supplier just because something went wrong once. On the contrary: If the company proves that it does anything for a solution and is willing to do something extraordinary, then we will stay with this supplier – because everyone makes mistakes. But how you deal with them is important.' (B2)

In the medical device industry, most crises occur when companies need to recall products. Recalls were mentioned by five of the seven interviewees as examples of a corporate reputation emergency, and table 32 presents their expectations towards an early recall decision based on integrity and transparent communication.

A common understanding is that corporate reputation is scrutinized when it comes to a critical situation like a recall. Procurement managers look closely when and how products are recalled. When making this decision, patients' lives should be at the forefront, not worries about profit.

Participant	Desired recall action and communication
P	Be very responsible with the patients' lives; organize an early recall before complications arise, be open in communication
A1	Bring recall message personally; make it easy to understand
A2	-
B1	Make a recall early; do not stop communication in crisis situations
B2	Crisis behaviour is crucial; we look closely at actions in crises; be fair and flexible
C1	Decide carefully; reputation does not automatically decrease with a recall; be transparent in communication and recall early; avoid patient damage
C2	-

Table 32: Summary table of desired recall actions and communication by first phase interviewees. Source: Own compilation.

Especially in times of a recall, personal contact as well as open and clear communication is essential to avoid misinterpretations. Interviewee C1 made it clear and his statement also characterizes the opinions of the other procurement managers:

> 'Many say if companies recall [products], they are no good. I say, it's better to have a recall if you're not quite sure. Transparency is important.' (C1)

Integrity and transparency are determinant medical device company reputation attributes that were confirmed by the first phase interviewees. They are interlinked with and influence each other, though they represent two individual attributes: integrity focuses on ethical behaviour and actions, and transparency on ethical communication. The aspects are consistently confirmed, and only slight amendments were made. Integrity and transparency are attributes that are causally connected with the influence of a crisis. As such, they represent strong ethical requirements and are elementary cornerstones of corporate reputation.

5.1.5. Company antecedent: Prerequisite for reputation

The company antecedent should be a natural antecedent of reputation. Without the company's values, objectives, strategy and actions, there would not be anything to evaluate; a medical device company reputation is hardly perceivable without keeping medical device companies in mind. The Q-sort ratings of the interviewees differ strongly and thus the company as antecedent needs a closer look. The average rating of almost 7 in table 33 indicates that the company is relatively confirmed rather than not confirmed as a reputation antecedent.

Antecedent	P	A1	A2	B1	B2	C1	C2	Average
Company	7	7.5	3	10	5	10	5	**6.8**

Table 33: The company antecedent evaluated by the first phase interviewees. Source: Own compilation.

Four interview abstracts are chosen to demonstrate the variety of opinions from hospital procurement managers and their reasons to give these diverse ratings. The first one comes from A2 who rated the company antecedent lowest of all interviewees:

> 'Yes, values, objectives and strategies of the company are usually nice to know, but whether they are lived and implemented or rather are lip services, one can ever know exactly.' (A2)

There are three considerations in this opinion, and all three weaken the acceptance of company characteristics. First, a more strategic knowledge of the company is 'usually nice to know' for A2, which trivializes the need for customers to know the company which they buy products and services from. Second, A2 questions the companies' realization of values, objectives and strategies, which demonstrates a rather negative experience with

untruthful communications of companies. And third, it is rightly suggested that it is hardly possible to know about the policies of a company for certain. However, the reputational perception needs to be based on some assumptions about a company, knowing that not all information can be perfectly evaluated. Therefore, the sceptical point of view by A2 is important as an individual opinion, but as a common perception the antecedent company plays a role in the reputation conception.

The second quote comes from interviewee C2, who rated the company antecedent at level 5 and argued with the limited time of hospital procurement managers:

> 'It happens often that a hospital procurement manager has no time to read about a company, and its values, objectives and strategies. There is always a time factor.' (C2)

The word 'often' makes it clear why C2 rated the company antecedent at level 5. The time factor is, of course, a decisive factor in evaluating companies. However, one could suggest that procurement managers should know at least a minimum about the company before perceiving its reputation or buying a product or service, otherwise they are not able to defend the purchase to the medical staff and the hospital management. Additionally, most of the suppliers should be known and perceived without doing extra research for information.

The third quote comes from the pilot interviewee who manages a group purchasing organization and rated the company antecedent at level 7:

> 'I think that companies with values, objectives and strategies that position themselves in the market, have first serve. Therefore, companies should try to meet the expectations of the stakeholders accordingly.' (P)

This interviewee accepts the antecedent role of the company for corporate reputation and uses the expression 'have first serve' from tennis. However, he limits the relevance to a first serve only, which could also become a fault if it is not orientated to the company's stakeholders. This implies that the company should analyse the requirements of its relevant stakeholders before setting up its values, objectives and strategies.

In contrast, B1 completely agrees with the company antecedent for reputation and was one of the two interviewees who gave it the highest rating of 10:

> 'If we talk now about how a reputation or perception ... develops, in my opinion it is the company that primarily carries the objectives, strategy and actions.' (B1)

This perspective is more identity-based than the third one that asked for stakeholder orientation. B1 makes clear that the characteristics of a company are in its own purview, being unique at least in its values and objectives.

These four perspectives demonstrate the variety of the hospital procurement manager profiles, from rather sceptical to optimistic, from concerns about stakeholders, blurred messaging and the time factor to a unique corporate identity that is one prerequisite for corporate reputation. Convincingly, after a third look, the company antecedent was confirmed by the interview participants who agreed to use at least to some extent information about the company for their reputation judgements.

5.1.6. Purchase decision: The most relevant consequence

Purchase decision was confirmed by the first phase interviewees as most important consequence of medical device company reputation. Its average

rating was 8.1, and all respondents rated purchase decision at level 6 or higher, as table 34 shows.

Consequence	P	A1	A2	B1	B2	C1	C2	Average
Purchase decision	8	7.5	7	9	9	10	6	**8.1**

Table 34: The purchase decision consequence evaluated by the first phase interviewees. Source: Own compilation.

Furthermore, the verbal feedback of the interview participants also indicates that the decision-making process of products and services with all of its aspects is a consequence of corporate reputation. Table 35 provides a summary of the interviewees' statements which contain expressions like 'definitely', 'high influence', 'big role', 'important' and 'in any case'. Some of the respondents mentioned that the grade of consequence depends on the subsector of medical devices, and this is worth a closer look.

Participant	Purchase decision
P	Is connected to reputation
A1	Is definitely a consequence of reputation; depends on set of suppliers
A2	High influence through reputation; depends on medical product subsector
B1	Reputation plays a role in decision-making
B2	Important consequence of reputation; high reputation vs. responsibility towards the user
C1	In any case purchase decision is consequence of reputation
C2	Reputation plays a big role in decision-making; re-purchase particularly in the sector of disposable medical products

Table 35: Summary table of purchase decision opinions by first phase interviewees. Source: Own compilation.

Interviewee C2 highlighted the relevance of reputation when disposable medical products are ordered repeatedly and often from a current supplier:

> 'In the disposable medical product sector, it comes certainly again and again to a repeated purchase. Before you kick someone out and change the supplier, you just have a talk with the current supplier to speak about your thoughts about a change. And this, as I said before, depends also on the reputation [of this supplier]. This is how I would assess it.' (C2)

The reputation in this case acts as a buffer in a difficult supplier-buyer-relationship, giving the existing supplier a chance to keep the customer and work on the reasons why the customer is not satisfied and wants to change. Interviewee B2 includes the responsibility of hospital procurement managers for their hospital's medical staff, who are the users of the devices:

> 'And reputation ... is important for me when it comes to decisions, because it is my duty towards the users, and the product I buy is not for me. The user must work with it. And a good reputation means, I can assume these positive characteristics [of a company] with a high probability. It is quite clear that this plays a role.' (B2)

This is interesting to the extent that the hospital procurement managers rarely experience products and services themselves, they have to rely on feedback from the medical staff or patients. In some of the hospitals, medical staff communicate regularly with the procurement division about the purchase of medical products (A2, B1, C1), and contribute to choices, particularly when it comes to decisions for expensive medical devices (A2). Interviewee A2 describes the varying relevance of corporate reputation in relation to the type of purchased products:

> ‘I think [the relevance of reputation] is completely different, depending on the product sector. Meaning, is this a critical product, a less critical product? In what context will it be used? This can be different, whether it is a product of high value or rather one that is of small value which goes through because it does not matter. It is different. ... But this is not necessarily linked to the quantity. If I procure a hip, I have of course a completely different reputation and quality benchmark than procuring a cannula fixation plaster.’ (A2)

The quote reveals the many considerations a hospital procurement manager has to make before buying a product. The questions about the critical use, the context, the value and different benchmarks show consequences for the role of corporate reputation on the decision-making process. Interviewee A2 contradicts C2, insofar that he emphasized the relevance of reputation for the re-purchase of disposable medical products that often have a low unit price. Moreover, interviewee C1 focused on time-critical purchase decisions that let him choose the product of a company with a high reputation rather than evaluating alternative options. However, the role of reputation when purchasing different product types should be evaluated further in the second phase interviews to find a pattern where reputation has more influence on the purchase decisions.

The impact of a positive reputation on the purchase decision was confirmed or strongly confirmed by all first phase interviewees. The interview respondents mentioned two conditions of the reputation-purchase-relationship. First, the role of reputation varies for different purchase decisions: It depends on the available number of suppliers for the medical product (A1), the complexity and value of the product (A1, A2), on the frequency of the purchase (A2) and on the grade of similarity of two suppliers in the other decision-making criteria (B1). Second, there are other criteria for a purchase decision like price (A2, B2, C1, C2), the evaluation of product characteristics by the medical staff (A2, B1, B2) and a positive

influence on hospital processes (A2). The number of decision criteria varied from interviewee to interviewee from three (B2) to seven (B1) to 'numerous' (C2).

in %	P	A1	A2	B1	B2	C1	C2	Average
Relevance of reputation for purchase decision	30	~15.5	10	20	33.3	~35	60	**29.1**

Table 36: Estimated relevance of medical device company reputation for the purchase decision of first phase interviewees in percent. Note: Mean values where interviewees gave a range: A1 answered 1-30%, C1 answered 30-40%. The exact overall average is 26.3-31.9%. Source: Own compilation.

The interviewees were asked for a percentage of reputation's relevance for the purchase decision-making. Some (B1, C1, P) could give a number promptly, others (A1, A2, B2, C2) had more difficulties, but all of them finally delivered a number or a percentage range. Table 36 presents the outcome of the percentage question, revealing a span between ten and 60 percent.

Considering the two percentage ranges of A1 and C1, the role of reputation was perceived between 26.3 and 31.9 percent. When an average value of these ranges is calculated, the relevance is 29.1 percent. Reputation as such makes up a remarkable share of the purchase decision of the seven first phase interviewees, and the second phase interviews will test if this share is perceived as realistic by other hospital procurement managers, too.

5.1.7. Advocacy: Recommendations based on reputation

Generally, the interviewed hospital procurement managers saw advocacy as a consequence of reputation. Five of the seven interviewees rated

advocacy at level 7 or above, the average rating is 6.9, as shown in table 37. However, to address the doubts, the opinions of the interviewees A1 and A2, who gave the worst ratings, will be analysed.

Consequence	P	A1	A2	B1	B2	C1	C2	Average
Advocacy	8	5	3	7	8	10	7	**6.9**

Table 37: The advocacy consequence evaluated by the first phase interviewees. Source: Own compilation.

The rating of interview participant A1 somehow surprises us when reading his thoughts about advocacy. It seems that he is completely in favour of advocacy, only his rating at level 5 turns his opinion in a more differentiated view:

> 'Advocacy depends on the procurement manager, on the hospital. But I am someone who lives by the motto ´Do good things and talk about it´. I have reported about my friends relatively often.' (A1)

His rating is explainable due to his perspective of all procurement managers, which obviously differs from his own view. It also implies that the hospital policy could play a crucial role in the extent of sharing recommendations. Some hospitals might be more careful about sharing procurement information than others. It seems, that interviewee A2 is manager in one of these hospitals with careful policies:

> 'No, we do not advertise companies. To praise is also not the right word. If it is a concrete case or somehow a bit ambiguous or you have heard something, then you can make these [recommendations]. But this is not the decisive point. Also, it does not happen so often. ... It steers the tendency a bit but is not a real decision criterion.' (A2)

This sceptical view on advocacy supports the low rating at level 3. But even this manager gives and uses recommendations when information or context about a company is not clear in a particular case. What is remarkable about this quotation is that the interviewee focuses on the decision and sees recommendations given by networks as a tendency for decision-making. His statement points to a causal relation between advocacy and professional or personal networks, meaning that a reputation consequence is connected through a causal mechanism to a reputation antecedent.

Participant	Advocacy
P	Important to share experiences when needed
A1	Happens often; depends on procurement manager
A2	Not actively; happens from time to time; not a decisive point
B1	Word of mouth happens
B2	Networks exist to change experiences
C1	Recommendations happen when satisfied with supplier
C2	Recommendations in the close professional network

Table 38: Summary table of advocacy opinions by first phase interviewees. Source: Own compilation.

Table 38 sums up the advocacy statements by all first phase interview participants who usually agree to give verbal or written recommendations to others, and as a result strengthen their networks. Generally, the interviews have shown that networks play a bigger role in reputation building than indicated in the literature. Therefore, an additional reputation antecedent of networks will be introduced in sub-section 5.4.2. Advocacy itself remains as strong reputation consequence, as it is linked

with purchase decisions on which basis the positive or negative recommendations are given.

5.2. Splits and fusions

The section above was the only section without considerable changes in comparison to the initial model. All the other constituents in the initial concept were changed after the first phase interviews. In this section, two splits and two fusions are described. Figure 34 shows the six constituents that are left after the changes, three of them are reputation antecedents and three of them are reputation attributes.

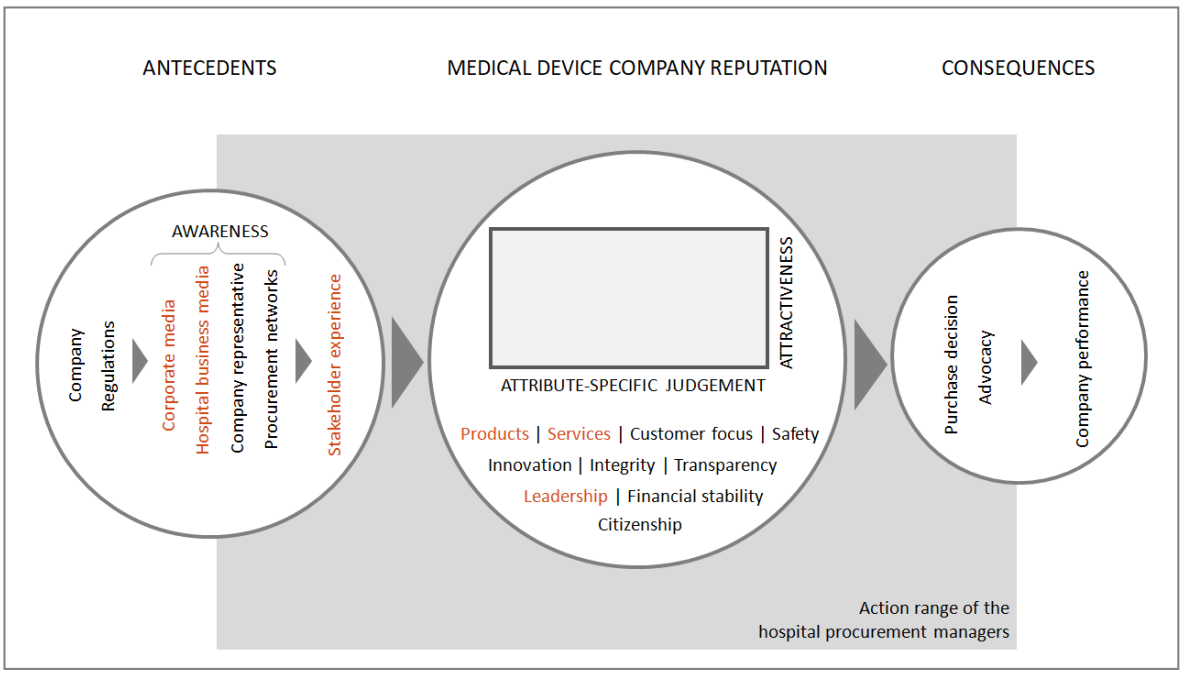

Figure 34: The constituents that were split and merged in the medical device reputation concept in the first interview phase. Note: The constituents discussed in this section are marked red. Source: Own compilation.

The changes have been undertaken for different reasons: the former attribute products and services included too many variant aspects, and the media antecedent was split due to the recommendations of the interview

participants. The experience antecedent was created from the stakeholder expectations and stakeholder background antecedent because they had large interfaces and were often mixed up by the interviewees. And the leadership and workplace attributes were merged because of their weak reputation relevance. In the next sub-sections these emerging processes in the concept will be discussed, and the opinions of hospital procurement managers will be presented and analysed.

5.2.1. Products and services: Too strong to stay together

This sub-section begins with a confirmation by the interviewed hospital procurement managers: As introduced in sub-section 4.3.1., the products and services attribute is the dominant building block of corporate reputation. Table 39 demonstrates the attribute rating by hospital procurement managers; an 8.9 averagely is the highest rating of all reputation attributes, and three managers rated it at the maximum level of 10.

Reputation attributes	P	A1	A2	B1	B2	C1	C2	Average
Products and services	7	9	10	8	10	10	8	**8.9**

Table 39: The products and services attribute evaluated by the first phase interviewees. Source: Own compilation.

The product and services attribute appears to be too strong to be just an attribute, and indeed, interview participant B1 often referred to a product reputation that was stronger than corporate reputation. However, the majority of the interviewees gave examples for their perspectives of products as attributes of corporate reputation. Examples of services were rather rarely given first, but when asking for additional constituents that

were relevant for reputation, most of the interviewees mentioned types of services that were not included in the initial concept. It is this distinction between products and services which suggests splitting the one attribute into two attributes, and the following paragraphs will provide some more clarity.

Participant	Product aspects included in spontaneous reputation definitions
P	Solid and basic product quality
A1	Value for money
A2	Prove of performance ability, appropriate value for money
B1	Strength of product brand, product experiences, strategic product positioning
B2	New products, product quality
C1	-
C2	-

Table 40: Summary table of spontaneous product-related reputation definitions by first phase interviewees. Source: Own compilation.

Under the spontaneous definitions of corporate reputation by hospital procurement managers, listed in table 40, four managers included product aspects such as product quality and strategic product positioning. No other attribute was mentioned more often and in that detail. The services attribute was mentioned twice, but it was just the word services twice, no aspects were given.

This high relevance of products for hospital procurement managers is not surprising because they buy products. The high relevance for corporate reputation should be thus at least explained, and interviewee B1 delivered two major reasons:

> ‘When products in individual hospitals are known, and the [product] labels are even present in day-to-day language use, they could have a certain ideal value, and this strengthens the reputation. ... The competition situation of hospitals will be more influenced by the product choice, in both investment and medical products. This is not yet fully visible and understandable, but the patients will be better informed. Patients will look closer at operations than before, and then they want to decide whether they want to have a surgery by a robot or a human hand. This could go so far that they want to choose the supplier of their knee prosthesis.’ (B1)

First, the quote points to the value of product labels that will boost corporate reputation. Some of these labels were indeed transferred into day-to-day medical language, such as *Braunüle* (Braunula), the first cannula with a plastic intravenous access by the company B. Braun. There are more examples like this, and the product label stands for a high-quality product category that makes it hard for procurement managers to change the original supplier (B1). Second, the interview participant recognized the reputation value transfer from the medical product to the hospital. When patients get more and more involved in the therapy decision process, it is likely that they are more informed about the different choices. In the medical sector, this is called patient empowerment. Patients could put pressure on hospitals to use medical products favoured by them. Interviewee P adds that the product attribute needs a product benefit aspect:

> ‘I think the crucial point is that medical device suppliers need to make the product benefit clear for the patient and the user: The patient benefits and gets healthy quicker, is able to work earlier, undergoes fewer operations, benefits in some way. This is the focus for medical device manufacturers because the product approvals are strongly related to this, too. This is very important.’ (P)

This benefit for patients and medical staff adds to the corporate reputation of medical device companies (B2). It helps the hospital procurement manager to evaluate the value for money better, more than a unique product that could have a useless feature without any significant medical or practical benefit. Therefore, uniqueness in this context will be removed as aspect of the *product* attribute, and product benefit will be added.

A benefit added to products represents a service that is an advantage for competitiveness in its own right and is likely to be an exclusion criterion when not provided by the medical device company (A1). *Service* includes different aspects, and table 41 provides an overview of the aspects mentioned by the first phase interviewees.

Service aspects	P	A1	A2	B1	B2	C1	C2
System partnership		✓		✓			
E-Procurement			✓	✓			
Process consulting	✓		✓	✓			
Training		✓	✓				

Table 41: The service aspects mentioned by the first phase interviewees. Source: Own compilation.

System partnership describes a partnership between hospital procurement and medical device companies in a special therapeutic area or more than one therapy (Ludwig, 2017). The idea behind this is to think about the respective therapy system in the hospital first, for example in the infusion therapy unit as a whole. The system is analysed, improvement potential identified, and then a system suggestion is made to improve the performance of the unit. This perspective changes from product selling to product system selling, including analysis and implementation, and is

provided as a service. Both parties benefit: The hospital procurement manager improves the overall performance and modernises the system of a therapy, and the medical device company sells its products for this therapy and generates constant business through the continuous partnership (Ludwig, 2017). Interviewee A1 is a strong supporter of the system partnership approach:

> 'I am more of a partnership person. Here, you can see the awards I got for them. We have realized energy partnerships, ... partnerships in ultrasonic treatment, in the monitor and endoscopy sector, and with B. Braun in infusion therapy. I am someone who stands for these partnerships.' (A1)

Process consulting has two objectives: First, medical device companies contribute to a system partnership by delivering process consulting that is therapy related, for example, how surgical instruments can be efficiently and safely sterilized in the hospital (Asiago, 2017; Chao & Cheng, 2012; Ludwig, 2017). Second, process consulting adds input to general processes in hospitals between different units, such as the warehouse and the intensive care unit (Ludwig, 2017). The goals are to restructure processes to make them leaner and to improve their digital documentation (A2).

E-procurement in hospitals brings all the digital processes related to the purchase and distribution of medical and non-medical products together (Hübner et al., 2019; Stephani et al., 2019). To make orders, purchases and delivery management more efficient, more and more procurement divisions are implementing software solutions. Medical device companies with many products play a decisive role here in providing product databases and connect their own production order system with the e-procurement systems of hospitals (Ludwig, 2017; Stephani et al., 2019).

Interviewee A2 described what this has to do with corporate reputation at length:

> 'I expect ... companies to make all of their product data available to me in a neutral way. I want to build an electronic catalogue system and a warehouse, so my users can search for the products they need. I want more or less my own Google. ... There are a lot of companies that refuse to deliver their product information so it can be used in neutral classification systems. ... This will be a very important issue in the future, which we will pay more and more attention to. ... Those who do not deliver here, no longer have a reputation.' (A2)

As every hospital or hospital group has its individual software system, the effort for medical device companies is enormous. But cooperating here adds to the reputation perception and can generate consistent business in the future.

The fourth service aspect is to provide product training. This includes introducing new features, regularly training new medical staff in the hospital, and providing a hotline to help when questions arise. It is often standard, but not part of the selling of a product (Asiago, 2017). Interviewee A1 sees training's importance for corporate reputation and a long-term partnership with medical device companies.

Each of these service aspects were mentioned by two interviewees at least, without any prompting from the researcher. This also explains why three of the respondents did not mention service aspects at all: They were not explicitly asked. In the second interview phase the service aspects explained need to be proactively discussed with the hospital procurement managers.

5.2.2. Media antecedent: Clean-up in the media jungle

The media antecedent was strongly discussed in the first phase interviews. The hospital procurement managers generally agree that media coverage leads to corporate reputation, and table 42 shows an average rating of 6.3 as well as five ratings at 6 and above. Interviewee A1 gave just a 4.5 rating, but explained that media is for him a standard, a prerequisite for reputation. Respondent A2 had a sceptical view on media generally, and his low rating rather reflected that and not the role of media for reputation.

Antecedent	P	A1	A2	B1	B2	C1	C2	Average
Media	7	4.5	3	9	6	8	6.5	**6.3**

Table 42: The media antecedent evaluated by the first phase interviewees. Source: Own compilation.

However, most of the interview partners were surprised about the many aspects in the media antecedent, and three of them recommended differentiating it into *corporate media* and *healthcare business media*. C2 felt that the aspects were mixed; B1 stated clearly that he would rate the different media sources differently:

> 'Neutral media, such as media coverage by associations or publishers, are to be differentiated from corporate communications in my opinion.' (B1)

All interview partners agreed that the media antecedent should be clarified somehow, describing the relevance of the single aspects as information sources. The result is seen in table 43: Here, the tendency for or against an aspect is documented. Aspects that were not mentioned at all include corporate stories and general news media; they were removed from the aspect list. The preference towards print or digital media varied, with a

tendency to digital media. With the exception of social media, the remaining aspects are given without a specifying if they are published in paper or digitally – it is the source and the content that are to be discussed, not the distribution form.

The hospital procurement managers read medical device companies' annual reports and their therapy and product information. Four of seven interviewees looked into annual reports to find out about the companies' revenues, profit, operative margin and financial stability. As such, they are perceived as an objective source of information which can be trusted.

Media aspects	P	A1	A2	B1	B2	C1	C2	Total
Split corporate and third-party media?		?		+	+		+	++
Annual report		+	+		+	+	-	++
Corporate magazines					-			-
Therapy and product info			+	+	+	+	+	++
Advertisement			-		-	+	-	?
Hospital business media		-	-	+	+	+	+	+
Social media		-	-		-	-	-	--

*Table 43: Tendency how first phase interviewees evaluated different media types. **N**ote: '+' means positive, '?' means unsure, '-' means negative, nothing means not mentioned. Source: Own compilation.*

Therapy and product information is a matter of fact for hospital procurement managers and should contain all the determinants for decision-making (A2, B1). However, there are three conditions for acceptable information brochures, PDFs or summaries: First, they should

be sent only when requested and not in numerous mailings (C2). Second, they should contain reliable facts, objective information and not 'marketing blah-blah-blah' (A2, B1). And third, they should be designed attractively, supporting the facts and showing them at a glance (A2).

The first phase interviewees had contradictory opinions about advertisements. C1 points out that advertisement has a positive effect on awareness and reputation, and without advertisement he would never know about some companies. B2 and C2 ascribe only a small role for reputation evaluation to advertisement, for A2 advertisement is even aggressive communication. Because of the strong emphasis by C1 for advertisement effects, this aspect will be discussed further in the second phase interviews. Corporate magazines were not mentioned by six of seven interviewees. And B2 explained why: They were boring and not read by anyone, even if companies designed them perfectly.

Hospital business media is used by most of the hospital procurement managers queried, but not by the sceptical A1 and A2 interviewees who almost warn against reading them because of their deficient information. However, B1 praises their aim to be neutral information platforms, B2 relies on the product information presented, and for C2 they are a first research step, considering that the information presented is only superficial. In the second phase interviews, hospital business media should be more specified. B1 and C2 already mentioned the magazine brands *MTD Medizintechnischer Dialog* and *Management & Krankenhaus*, and this publication list should be expanded and closely evaluated.

Surprisingly, social media was rejected by all the first phase interviewees who commented on this. Reasons given were the unfamiliarity with social media (A1, B2), as well as the low relevance and critical perception of social media for the healthcare business (A2, C2). Social communities for hospital

procurement managers are recognized but are rarely used and not in focus yet (A2). Therefore, social media will be excluded from the antecedents for medical device company reputation.

To sum up, the media antecedent is split into two: In a corporate media antecedent with the aspects annual report, therapy and product information, and advertisement; and in a hospital business media antecedent that includes brands of the individual professional print and online magazines. However, the second interview phase should also clarify whether hospital procurement managers use other corporate and neutral information sources.

5.2.3. Experience: A merger of stakeholder-related antecedents

The expectations and the background of stakeholders lead to corporate reputation. B1 and B2 suggested in the beginning of their interviews that experiences with a company's products, services and collaboration as well as work experience are preconditions for corporate reputation.

Furthermore, the ratings of the initial antecedents stakeholder expectations and stakeholder background were identical or similar, as shown in table 44. Almost all interview partners had difficulties to differentiate the two antecedents, and three recommended combining them into one antecedent. However, a combination here does not mean that the two initial antecedents were weak – the average ratings are among the frontrunners – but large overlaps make the combination to a new antecedent a promising solution.

Antecedent	P	A1	A2	B1	B2	C1	C2	Average
Stakeholder expectations	9	8.5	9	6	7	8	8	**7.9**
Stakeholder background	9	8.5	8	7	7	8	9	**8.1**
Merger recommended	✓			✓			✓	
New: Experience	9	8.5	8.5	6.5	7	8	8.5	**8.0**

Table 44: The stakeholder expectations and stakeholder background antecedents evaluated by the first phase interviewees. Source: Own compilation.

The name of the new antecedent is *experience*, because this wording was used by most of the interviewees when describing expectations and their own background. Also, the word stakeholder before experience is not needed anymore, as it is clear that these are experiences from hospital procurement managers. Aspects of the new experience antecedent are work experience, hospital positioning and expectations.

There is a strong agreement among the first phase interviewees that work experience is the most relevant aspect. The interview results indicate different types of work experience. A first type deals with the age of the hospital procurement manager: P pointed out that young procurement managers have a lack of work experience and are more open, whereas older procurement managers could be rather blind to innovations.
A second type is related to different jobs, the procurement managers had before: While C1, who started his working life in a hospital, wondered generally if he could evaluate the reputation of a company well enough when changing jobs more often, A1 and B2 appreciated their experience in other jobs as the applied to their role in hospital procurement. These

diverse opinions reflect the different career paths in hospital procurement, and straight careers are consistently accepted, as are lateral job entrants.

Everyone agreed that the third type of work experience is that knowledge varies from one procurement manager to the other. This is commonly accepted, but thus not directly connected with age or a previous job change:

> 'When [a] Medtronic [representative] comes to a beginner and explains how great and amazing their products are ... I know that all of this has been acquired recently. And you [Medtronic representative] do not even know what you're selling. And, until you know what you're selling you have to sell something completely different, because your company looks quite different then. There is a distinction in knowing this. ... Or to know that B. Braun in a special therapy ... understands what they do. Because I know that B. Braun has already been doing this for 800 years.' (B2)

Apparently, with the emphasis on consistency of medical device companies, what interviewee B2 argued here is different from the argument of a procurement beginner. The statement above shows a deep knowledge of the market, about regular changes at Medtronic and continuity at B. Braun, and the quote exaggerates this pointedly. The knowledge of the medical device market and companies contributes to the individual work experience of every hospital procurement manager, in addition to his age and the jobs he had before.

The aspect of hospital positioning includes the type and size of the hospital, its needs and therapy scope as well as its organization. Combining all these points, a hospital procurement manager has different requirements to fulfil (B1, B2, P). In public hospitals, tenders for new medical devices are regulated by authorities (A2, C2), private hospital groups have central guidelines for what products and services are included in framework

contracts and what can be bought by their hospitals individually (C1). A cardiology clinic needs products that are different than those from a large full-service hospital in an urban area (C2). And supplier management can be organized in many different ways, resulting in different types of access for company sales representatives: only to procurement managers, only to medical staff, or both. All these points contribute to a special hospital positioning that influences the experience of hospital procurement managers and their perceptions on attributes of corporate reputation.

Work experience and hospital positioning have a deep impact on the expectations of hospital procurement managers. The expectations can be different; they could be personally implied (B2), rely on decision factors (B1), be strongly process oriented (A2, C1), partnership-based (A1) or address the method of contacting hospital procurement (A1, A2, B1).
A1 suggests that companies should analyse the expectations before visiting a hospital procurement manager and ask some questions:

> 'Who is in charge? What is he doing? And what projects could we do with him? How can I deal with him? What kind of contact is wanted, a call, a visit, or e-mails? ... What expectations does the customer have, and how can I fulfil them? ... I find this very important.' (A1)

Reputation is connected with these questions. A failure in dealing with the customer, even if it is only based on a misunderstanding in how to contact the hospital, can lead to a lower reputation rating. The expectations have a causal relation to customer focus: Understanding and individual solutions are must-haves to increase the company's reputation for all first phase interviewees. Foreseeing expectations of hospital procurement managers, knowing about their experiences and hospital positioning, as well as discussing helpful options rather than just selling products – all these experiential aspects were highly appreciated in the interviews.

5.2.4. Leadership and workplace: Notable similarities

Unlike in the initial concept, leadership and workplace are only weak pillars of medical device company reputation after the first phase interviews. Their perception by hospital procurement managers is ambivalent in four ways: First, the overall ratings of only 4.4 and 5.2 in table 45 means that the connection of leadership and workplace to reputation is not strong. The poor rating for leadership means a dramatic drop in comparison to the initial concept in which leadership was assumed to be the second strongest reputation attribute. A rating of 4.4 implies that leadership is nearer to the not-relevant endpoint than to the high-relevant endpoint of reputation.

Reputation attributes	P	A1	A2	B1	B2	C1	C2	Average
Leadership	5	7.5	1	3	6	2	6	**4.4**
Workplace	5	7.5	4	3	3	9	5	**5.2**
Merger recommended	(✓)	(✓)		✓	(✓)	(✓)		
New: Leadership	5	7.5	2.5	3	4.5	5.5	5.5	**4.8**

Table 45: The leadership and workplace attributes evaluated by the first phase interviewees. Source: Own compilation.

Second, the ratings of leadership and workplace do not follow a particular trend of whether these attributes are to be included in the reputation concept or not. Some interview participants rated the attributes at 5, some at higher than 5 and some at lower than 5. The spectrum of ratings ranges from 1 to 9.

Third, it is this inconsistency that continues in the comparison of the ratings with the answers of the first phase interviewees. Most of the answers are in favour of a strong and visionary leadership and in good

employee treatment. This ambivalence is hard to explain; only two interview partners (B1, C2) admitted that they cannot experience leadership and workplace directly, and one (C1) highlighted that leadership is only important to the medical device company but not for himself. The analysis also showed no similarities here of managers with the same work experience or from the same hospital type. There seems to be a gap between the general importance of the attributes of leadership and workplace and the role of hospital procurement managers as they evaluate it from their professional view.

And last, the first phase interviewees had many different arguments for their rating decisions. Table 46 summarizes the answers, and some of these answers will be discussed further.

Participant	Leadership	Workplace
P	CEO is decisive; CEO communication impacts workplace and dealing with employees	Employees are important for company's success; employer branding good for war for talent
A1	Companies with good leadership have a better workforce	Good employees increase customer focus
A2	Management team changes quicker and quicker	Hard to evaluate; rather less important
B1	Good leadership means good workplace	Good leadership means good workplace; workplace conditions hard to evaluate
B2	Important; wants to know managers of company representatives; some CEOs are inspiring	Workplace as symbol for innovation

	C1	For company important, but not for me; would be nice to meet management team; some CEOs are inspiring	How managers lead employees is highly important
	C2	Negative example of management team; impact on employees	Dealing with employees important, but hard to evaluate

Table 46: Summary table of leadership and workplace statements by first phase interviewees. Source: Own compilation.

With so many inconsistencies, the leadership and workplace attributes have also notable similarities, as table 45 demonstrates: the overall rating of about 5, the fact that most of the answers connected leadership and workplace with each other, and interviewee B1 even recommended merging these two attributes. Therefore, leadership and workplace are combined in one attribute, recognizing their overlaps identified by the hospital procurement managers.

The new attribute was named *leadership*, because five of the seven first phase interviewees emphasized that leadership implies how to treat employees, and as such influences the way fair, diverse and attractive work is managed in the companies. B1 sees the relation as interrelated parts of a chain:

> 'For me, good company leadership includes perfectly equipped workplaces with motivated employees. Employees are the capital of a company, which then becomes economically successful.' (B1)

Just again for comparison: B1 rated leadership and employees at level 3. Leadership seems to be more relevant for the success of a company for B1, but not for reputation. The quote itself expresses why he would like to merge both attributes. It also shows that leadership integrates employees and not vice versa.

Among the other ideas about leadership and workplace are the important role of the CEO (P, B2, C1), the war for talent (P), the mechanism that good employees increase customer focus (A1), the rather negative observation that the management teams are changing quicker recently (A2), the idea of getting to know the managers of the sales representatives, that innovation is a result of motivated employees (B2), and the negative Siemens example of how the management treats employees when planning to shut down a subsidiary (C2). Three of these ideas will be developed further.

Interviewee B2, who gave a rather favourable rating of 6 for leadership and an unfavourable one of 3 for workplace, reveals his thoughts about meeting the managers of his sales representative to be on the safe side:

> 'Leadership is important to me. We always try to meet not only the local representative, but someone at least two levels above, and – if possible, also the management. And it is important for the company's reputation that we know these people and see the impression they make. Because knowing someone who can solve a problem that cannot be solved by the sales representative does matter.' (B2)

The quote explains his view on the role of leadership, which is not a visionary one, rather a problem-solving one. The manager is part of the company representative team, and equally responsible for B2's reputation perception. That idea that he also appreciates meeting the company's CEO, is reflected in the next quote that describes one causal mechanism between leadership, workplace and innovation:

> 'I had an interview once with Professor Ludwig Georg Braun [Ex-CEO B. Braun]. He told me how the workplaces are designed for mobility, that was particularly exciting. ... He made quite an impression on me. His thoughts, this agreement: We take a different path. We don't move our production facilities to foreign countries, we make agreements with the employees in Germany. ... Not to say

> that the German products are better, just the thought of creating exceptional solutions, I found that great, I was impressed.' (B2)

This example is one of many related to leadership and workplace, and it illustrates the problem of these attributes. Generally, most of the interview partners know something about leadership, but they do not connect it with reputation or the purchase decision directly, but find other causal relations, like innovation, here. It remains questionable why leadership was only rated at 6 by B2 with these two impressive examples, but it is probably the role of procurement managers to not be personally impressed by charismatic leaders, although they recognize them and their contribution to success. Another example interesting in this context is given by interviewee P, who knows some medical device company CEOs. He singles out the role of the CEO, a role that he had before entering GPO management:

> 'For me, the decisive position is the CEO, because when the responsible manager does not live the company's values in any way, it will not reach the other management levels as it should. How I treat employees contributes to the attractiveness of the workplace. ... Beside a certain transparency from the CEO, a clear communication in the whole company is necessary. ... This has to be lived at the management level, and then it is likely that the other levels will copy it.' (P)

The CEO as role model seems to be very much anchored in the perception of hospital procurement. It is just not that important for their reputation perception. Even interviewee P rated leadership at 5, meaning, it has not first priority in the reputation perception. The second phase interviews are a chance to clarify why this broad gap exists between leadership recognition on the one side and moderate leadership relevance for reputation on the other side.

5.3. Transformations

This section introduces the constituents of the initial concept that have undergone a special change. They were transformed from their original location, name or character to another location, name or character. In the next seven sub-sections, the first phase interview outcomes of eight constituents will be explained and discussed.

Figure 35 illustrates what these constituents are, namely one antecedent category, two reputation categories, three antecedents and one antecedent aspect, as well as one reputation attribute. The changes in positions and character were necessary for different reasons: the former reputation category awareness was perceived by hospital procurement managers to be an antecedent category. The leftover reputation categories needed to be re-arranged accordingly.

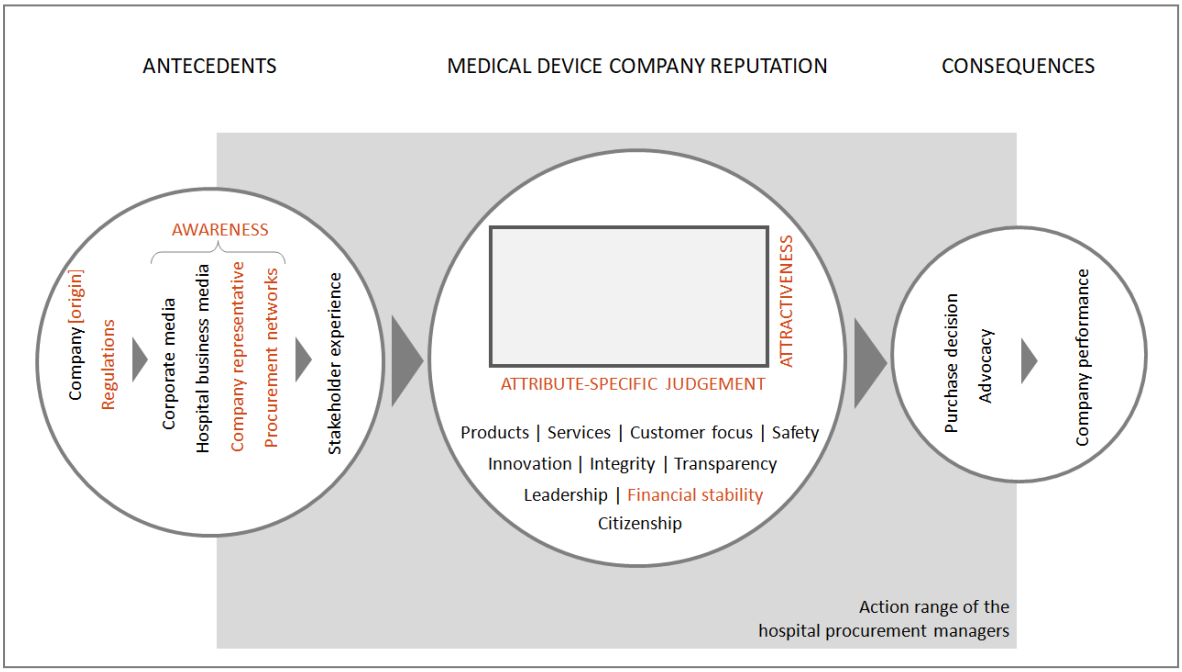

Figure 35: The constituents that were transformed in the medical device reputation concept after the first interview phase. Note: The constituents discussed in this section are marked red. Source: Own compilation.

The financial performance attribute was widely discussed by hospital procurement managers, resulting in a focus and name change to financial stability. The earlier tradition attribute was reduced to an origin aspect of the company antecedent. The business environment antecedent was specified towards a regulations antecedent. The relationship to the company representative has emerged from an aspect of stakeholder expectation to its own antecedent. Also, the antecedent procurement networks, an earlier aspect of stakeholder background, was upgraded to an antecedent of corporate reputation. All these transformations will be explained in more detail in this section, accompanied by some views on their structural relations to other constituents of the reputation construct.

5.3.1. Awareness: From reputation to antecedent category

The diagnosis of the reputation category awareness was unclear after finishing the first phase interviews. The background is highly ambiguous: The rating of the interviewees, shown in table 47, reveals an average of only 3.6, two ratings at level 8, four ratings between 2.5 and 5, and one rating at the lowest endpoint. This reflects arguments in the reputation literature, which partly suggests locating awareness in causality to corporate reputation, but not representing reputation (Barnett et al., 2006; Fombrun, 2012) .

Category	P	A1	A2	B1	B2	C1	C2	Average
Awareness	4	8	-5.5	8	5	3	2.5	**3.6**

Table 47: Rating of the awareness category by the first phase interviewees. Note: A2's choice of 'Not relevant for reputation' was coded as -5.5, as explained in sub-section 3.2.4. Source: Own compilation.

The reason lies partly in a different definitional understanding of awareness. Interviewee A2 defended the choice:

> 'Awareness is something different than knowing. Of course, I must know the company, but it is not about this. The company must be known to a certain degree, so that everyone speaks about it. This is awareness for me. At least, it must be known in our hospital procurement network, and not only by me.' (A2)

Interviewee A2's view on awareness is a narrow one: For him, awareness implies that the company is known generally and not only by him. This excludes the views of other interviewees who argue their personal perspective (A1, C1). Interviewee C1 even postulated only successful companies can be known and this is why awareness would be an important factor for decision-making. But A2's narrow view on awareness is shared by B2 who emphasized, that awareness is not reputation and that it is situated somewhere in the construct; however, it is not that essential overall. One question remains: What is awareness, if not a reputation category?

The answer to this question is delivered by interview partner P, who described awareness as a category, but described it as a door opener or entry barrier:

> '... a company that is known has a certain advantage in reputation, an edge when it comes to trust. ... A new company has to work hard to develop this. ... Because the company is known, then I will deal with them. ... In the medical device sector, for example, you can see very well at the moment, that there are big, global players who get the door opened for them. When they have something new, you listen, because they are well known ..." (P)

According to P, awareness is a door opener for corporate reputation, so it is a prerequisite or antecedent. This view is supported by interviewees A1 and C1, who added that coming from a known company brings company

representatives to a more comfortable, advantageous position in comparison to a company that is not known. Awareness here is seen as a door opener, too, but is rather not a category or attribute of reputation.

For the interview partners, awareness is grounded in the antecedent spectrum of corporate reputation but must not be automatically an antecedent. Interviewee C1 argued about the strong connection between awareness and advertisement. Although no other interviewee has this opinion, the path is interesting: Advertisement is located as an aspect under corporate media, and as such, contributes to awareness. Other antecedents are communication channels, such as healthcare business media, the relationship to the company representative and hospital procurement networks, these strengthen the awareness of a medical device company, too.

This leads to the assumption that awareness remains a category, not for reputation, but for all reputation antecedents that are intermediaries between the medical device company and the hospital procurement manager. As a matter of fact, these intermediaries create and increase awareness of the company. For this reason, awareness is defined as reputation antecedent category after the first phase interviews. The second phase interviews must test whether this assumption can be confirmed.

5.3.2. The leftover rectangle of two reputation categories

The placement of the awareness category under antecedents leaves attribute-specific judgement and generalized attractiveness as two reputation categories. Table 48 demonstrates the support of the first phase interviewees for the two categories, with an average rating of 8.4 for attribute-specific judgement and 7.3 for generalized attractiveness.

Category	P	A1	A2	B1	B2	C1	C2	Average
Attribute-specific judgement	8	8	10	6	7	10	9.5	**8.4**
Generalized attractiveness	6	8	8	8	9	7	5	**7.3**

Table 48: Rating of the attribute-specific judgement and generalized attractiveness categories by the first phase interviewees. Source: Own compilation.

The interview partners generally agreed that the two categories belong together because every purchase has a conscious rational dimension and a subconscious emotional dimension (A1, B2, C1). The hospital procurement managers define the assessment of specific attributes as conscious, the feelings towards a medical device company as subconscious (A2, C1).

This rather general evaluation of the reputation categories gets more specific when the first phase interviewees were asked to narrow their view to their professional perception of reputation. Here, most of them posited to be more rational-driven and defended this with their role as hospital procurement manager, as this quote shows:

> 'I myself have relatively little emotion ..., because my neutrality as procurement manager already presupposes a reputation of being relatively neutral. Therefore, I compare rather away from emotions. Nevertheless, it is important for me to find a more objective level, e.g. attributes.' (B1)

Other interviewees mentioned similar approaches, defending their neutral and rational attitude (B2, C2, P) based on attributes that can be evaluated. The reason for this clear understanding can be found in the compliance discussion in the healthcare sector concerning decision-making in the past. Until the first decade of the 21st century, decision-making was partly based on incentives for hospital purchasers: Presents, trips to attractive venues, tickets for shows and sporting events were used to involve the decision

makers emotionally (B2). With new compliance regulations and agreements from industry associations, these influencing activities stopped, and decision makers try to avoid giving any signals that the comparison of companies could be based on their emotional perception.

However, since a generalized attractiveness was recognized as an important factor, some of the interviewees argued that this is an emotional attachment for the medical device end users (A1, B1, B2, P). As procurement managers who buy products and services for others, they have to assume what kind of emotion the medical staff at the hospital (B1) or the patients (B2) might have. Interviewee B1 called this a 'mirrored emotion of the user', and that this is included in his reputation perception.

Another perspective on emotional evaluation is provided by interviewee C2, who points out the role of generalized attractiveness has when the rational assessment of companies is equal or similar. Here, an emotional perspective influences the hospital procurement manager's perception towards the company he has a better feeling with. Furthermore, interviewees C1 and P mentioned the important role of company representatives, who can convince or not convince them emotionally to perceive a company differently.

It is challenging, though, to visualize the relationship between the rational attribute-specific judgement and the more emotional generalized attractiveness. It is clear now, that the initial cuboid with awareness must be changed to a rectangle with two sides, and attribute-specific judgement must represent the long side, as shown in figure 35 at the beginning of section 5.3. According to hospital procurement managers, it was more relevant than the emotional category and follows their self-perception to accept relatively rational decision-making tools. The propinquity between

the rational and emotional perspective needs to be determined after the second phase interviews.

5.3.3. From financial performance to financial stability

As expected, the financial performance attribute of corporate reputation was vehemently discussed by the hospital procurement managers: With one exception (C1), the interviewees rated financial performance between 2 and 5.5, and gave an average rating of only 4.4, as table 49 shows.

Reputation attribute	P	A1	A2	B1	B2	C1	C2	Average
Financial performance	2	5.5	4	3	3	9	4	**4.4**

Table 49: The financial performance attribute evaluated by the first phase interviewees. Source: Own compilation.

The reason for this low rating is twofold. Obviously, some of the interview partners did not accept that financial performance is an attribute of corporate reputation. A2 delivered some insight into this difficult relationship:

> 'What comes first? Is a good reputation dependent on financial performance? Or does a successful company have a good reputation? Does B. Braun – they are definitely successful, with good financial KPIs, good results too ... is their reputation caused by that? To be honest, not necessarily for me. There are enough other companies that are successful, that do not have a good reputation in my opinion. US companies for example, I must say it clearly, do not really have a good reputation.' (A2)

The problem, as interviewee A2 stated it here, has been recognized by reputation academics before, especially when discussing early reputation

scales that contained many financial attributes (Fombrun, 2001; Fryxell & Wang, 1994). The solution was to reduce the financial attributes to only one. However, the quote also agrees with the findings in the literature that customer groups are only to a certain extent interested in the financial soundness of a company (Dowling & Moran, 2012).

Taking this assumption, the quote shows another dilemma of financial performance as an attribute of corporate reputation. It is the only attribute that implies a rather negative statement for hospital procurement managers. Therefore, the interviewees hesitated to relate that negative perception of financial performance with a good reputation, and consequently gave low ratings. The strong bottom-line performance does not meet the needs of customers and torpedoes their reputation perception (Porritt, 2005).

Participant	Financial performance	Continuity	Long-term orientation	Strong partner
P	Is necessary for companies; highly discussed in hospitals; double-digit profit is hard to explain		✓	✓
A1	Only partnerships with successful companies; too much success is addressed in negotiations		✓	✓
A2	Financial stability important; not necessarily connected with reputation	✓	✓	
B1	Difficult			

Participant	Financial performance	Continuity	Long-term orientation	Strong partner
B2	Minor role; being in the black is OK; too much success is not advantageous for hospitals	✓		
C1	Positive for awareness			✓
C2	Being in the black is OK; no exaggerated profit or cost efficiency			✓

Table 50: Summary table of financial performance statements by first phase interviewees. Source: Own compilation.

Table 50 summarizes the interviewees' statements about financial performance. It provides a uniform barometer of their mood: Good financial performance is acceptable when it does not indicate too high a profit. And being in the black indicates that the company is strong enough to be a good partner. Interviewee B2 framed it like this:

> 'The financial performance does not play a big role here. It is enough for me when the company is in the black. I gain nothing if they make billions. Or, more precisely: What's in it for me if they make billions in profit, and I pay too high a price?' (B2)

The general cost sensitivity in the health sector (Beeres, 2019) encourages quotes like that. Since hospitals need to streamline processes, to offer efficient treatment paths and to invest carefully, their procurement managers expect the same behaviour from suppliers (Asiago, 2017; Graves, 2011). In this respect, the attribute financial performance should be rephrased as *financial stability*, as suggested by interviewee A2. This could

solve the problem of causing a too-negative perception by procurement managers.

Also, the aspects need to be transformed, from growth prospects, profitability, continuity and company value to continuity, economic long-term orientation and strong partner. Table 50 illustrates what interviewees mentioned about the three new aspects, and A1 explained why financial stability is important for a reputation assessment:

> 'When we enter long-term partnerships, then we want to do this with companies that are financially successful. When we know that a company already went bankrupt, we do not sign a long-term contract. It [financial performance] is a big issue and often a part of my hard negotiations with companies.' (A1)

The lively discussion about financial performance in the interviews was the reason that this attribute was sorted to this transformation section and not to the section with the doubtful cases. Five out of seven interview partners agreed on its importance for reputation assessment and their decision-making. The rephrasing to financial stability could lead to a better rating of this attribute in the second phase interviews.

5.3.4. How the tradition attribute turns into a company aspect

In sub-section 4.3.4., the tradition attribute was introduced as experiment with indications that it could be relevant for hospital procurement managers. This experiment failed, because the hospital procurement managers gave the worst ratings of all attributes to tradition. Table 51 demonstrates that their average rating is 3.0, and only interviewee C2 rated the attribute above the level of 4. With such a weak rating, it should be removed from the reputation attribute list.

Reputation attribute	P	A1	A2	B1	B2	C1	C2	Average
Tradition	3	4	1	2	3	2	6	**3.0**

Table 51: The tradition attribute evaluated by the first phase interviewees. Source: Own compilation.

When analysing the statements of the interview participants, the reasons for the low rating can be specified. First of all, the aspects German origin and *Made in Germany* should be separated from family-owned company and company age, as suggested by interviewee B1. Even though tradition and a family-owned business could be an advantage (C1, P), the majority of interviewees did not reflect this or even doubted that this advantage is significant:

> 'In my opinion, tradition plays only a marginal role. It is a good approach for trust and quality, but tradition is nowhere near a knock out criterion. There are a lot of start-ups which were freshly founded in Berlin ..., Leipzig and Hamburg and which have no tradition. Nevertheless, they have a reputation, an emotional value, even by now, rapidly grown. This is why tradition and values grown over years are difficult. I think, in these contemporary ... cycles – and with the digitalization they will get faster and faster – it [tradition] will not play a primary role.' (B1)

In this quote, interviewee B1 almost turned the attribute tradition from a reputation driver to a reputation blocker, at least he saw it as not at all relevant. Company age and traditional family-owned business seem to be less connected with reputation in the perception of hospital procurement managers than assumed in the initial concept.

However, the country of origin and *Made in Germany* aspects lead to inconsistent interview answers. Whereas the majority deny paying attention to the origin or production location of a company, some

interviewees gave examples in their interviews which indicate that the origin is more relevant than they would like to admit. Table 52 shows the opinions of four interviewees and reveals their discrepancies.

Hospital procurement managers are reluctant to be committed to German companies and the label *Made in Germany*. Interviewee A2 explained this with professionalism, and this implies there is a fear of making decisions that are emotionally based because of the German variable. Another argument is the uncertainty if a *Made in Germany* label really reflects that the medical product was manufactured in Germany (B2).

Participant	Against German origin (often answered when discussing tradition)	Pro origin (often answered when discussing other constituents)
A1	German products are too expensive; *Germany first* does not exist; *Made in Germany* lower in priority; no knowledge about where production site is located	Cannot show consideration for Korean or Indian manufacturers; when a Korean manufacturer is in a pitch, origin is influencing
A2	We must be professional; in private life it is interesting, in business not possible	The driver of financial performance is important; should not be driven by the North American stock market
B2	German origin is less relevant; No knowledge about whether the company will be sold to another one within the next six months	Impressed that a company is committed to its German employees
C1	German focus does not fit; Suggestion to change it to Europe	*Made in Germany* is often good quality; examples of German companies; negative opinion about production sites in China, Turkey, Asia and America

Table 52: Summary table of statements about the company's origin by first phase interviewees. Source: Own compilation.

On the other hand, the same hospital procurement managers gave statements that describe the role of origin in their reputation perception or purchase decision. This was not always connected to Germany, but the statements excluded suppliers from defined countries or even continents. Reasons given are a perceived lower quality of medical products from special countries or their profit-oriented business model, as mentioned by A2 for North America.

Within all these contradictions, there are answers from hospital procurement managers that indicate the relevance of the origin up to a certain degree:

> 'The reference to the fact that the company comes from Germany, ... plays a role. Although you never always know where individual parts of sets come from. ... Basically, I am willing to accept a higher price for products which are produced in the region.' (B1)

> '[I accept a German origin] until a certain pain threshold. By pain threshold, I mean until a certain price level. And this [price level] is set individually and differently, and also depends on our own economic situation. ... It plays a certain role in decision-making." (C2)

These quotes underline the relevance of the company's origin for corporate reputation and decision-making. However, the relevance depends on individual factors that do not justify to upgrading the aspect German origin to a reputation attribute. In the explanations of the hospital procurement managers, origin is seen rather as an original part of the company, just like its values, objectives and strategy. Therefore, the aspect origin is relocated from the removed tradition attribute to the company antecedent. As such, it strengthens the profile of the company antecedent and remains relevant for the hospital procurement managers' assessment of reputation.

5.3.5. The business environment antecedent becomes specific

The hospital procurement managers had difficulties understanding the business environment antecedent. It often had to be explained more than once, and it remained less concrete than other antecedents. The average rating of the antecedent is 5.3, as table 53 shows, which places it in the middle of the relevance continuum. The interviewees gave ratings between level 2 and level 8, and they had a clear understanding of what business environment does not include: actions from rivals, country of origin, the medical device industry's market situation or regional, social and economic aspects. All of the seven interview partners focused on the regulatory aspect, and specified it with examples of standards and governmental approval processes.

Antecedent	P	A1	A2	B1	B2	C1	C2	Average
Business environment	5	6	6	8	4	2	6	**5.3**

Table 53: The business environment antecedent evaluated by the first phase interviewees. Source: Own compilation.

The reason for this concentration is the highly regulated German healthcare market, and these regulations have a deep impact on medical device companies, hospitals, recalls, crises, and therefore, reputation. Interviewee B1, who rated the business environment antecedent at level 8, explained this in more detail:

> 'The business environment is, of course, in a much-regulated market. The German authorities have – in comparison with the American FDA that is probably even stronger – ... tough regulations, especially for CE labels, certifications, standardizations and hygiene management, all that is

> rigorously controlled. We are extremely dependent here. As soon as you fail to comply with these regulations, you are severely affected. And such recalls, product recalls, are discussed again and again, and are made public by the media. Therefore, the business environment is an absolute must-have.' (B1)

The quote emphasizes the regulations, standards and certifications, and equates them with the business environment antecedent for corporate reputation. Medical device companies and hospitals are affected by these regulations, and they have an impact on the product, safety and transparency attributes of corporate reputation. Interviewee C1 argued in the same direction but he assumed that all healthcare market players need to follow these regulations, and because of this he rated the impact as a reputation antecedent very low, at level 2. Interviewee P added legislation requirements and DRG accounting standards.

The substance of all interviewee statements is that the regulations aspect is by far the most important business environment aspect. Interviewee P voluntarily defined the business environment antecedent as 'What are the regulations I can act within?' Because of this common understanding, the former aspect regulations has been upgraded to the antecedent *regulations* and consists of the five aspects standards, rules, approval procedure, certifications and legislation. With this change, the antecedent is named and described more specifically.

5.3.6. New antecedent: Company representative

The role of the relationship between the hospital procurement manager and the representative of the medical device company was truly underestimated in the initial reputation concept. There, the relationship was mentioned only as an aspect in the stakeholder expectation

antecedent, following some reputation studies in healthcare that highlighted its relevance for the healthcare sector (Chao & Cheng, 2012; Hsu et al., 2010; Renner, 2011).

In their descriptions of reputation attributes, the hospital procurement managers reflected on their relationships to sales representatives and outlined numerous personal characteristics of these relationships. Table 54 identifies the aspects hospital procurement managers expect from the salespeople.

Relationship aspect	P	A1	A2	B1	B2	C1	C2
Existence of salesperson		✓			✓	✓	
Length of relationship	✓					✓	
Friendliness	✓	✓				✓	✓
Trust	✓	✓	✓			✓	✓
Competency		✓			✓	✓	✓
Self-assured manner			✓		✓	✓	✓
Identification with company	✓	✓				✓	✓

Table 54: The different aspects of the relationship to the company representative antecedent mentioned by the first phase interviewees. Note: Interviewee B1 was sceptical about salespeople in general and did not contribute to any aspect. Source: Own compilation.

It is beneficial to explain these seven relationship aspects in more detail. First, the existence of a salesperson is the precondition for a relationship. Interviewee C1 has a clear opinion here:

> 'For reputation, the most important thing is to be close to the customer, that the contact between supplier and user is very close. There are companies that do not let salespeople go

> into the clinics, or to the doctors. They are only permitted to enter administration areas. And in my opinion, this is completely wrong.' (C1)

However, other interviewees had different opinions about the access to end users. The interviewee B1 was not convinced that regular contact with a salesperson provides any value to previously established partnerships. And A2 felt his work was interruped by unannounced sales visits to the hospital's medical specialists. However, this does not change his perception that salespeople are necessary to build a relationship.

The length of the relationship can be decisive as well. Interviewee C1 argues that long-term relationships strengthen the self-assurance of the sales representatives and the efficiency in the procurement process. Interview participant P emphasizes the advantages of a long relationship for the medical device company:

> 'There are many companies that have a reputation advantage compared to others because of their sales representative. That's why it's important to avoid constantly changing responsibilities leaving the salesperson in existing customer relationships for the long haul. When a new salesperson comes, it will take time to build trust.' (P)

Friendliness and trust are essential aspects of the customer-salesperson relationship. Interviewee A1 emphasized that procurement managers do not buy from a company, but from a person. Trusting this person or the back office and service staff of the medical device company is decisive to have a reliable long-term relationship. Others, like interviewees C1 and C2, mentioned that positive chemistry between salesperson and procurement manager paves the way for a good corporate reputation that can last, even in critical situations that might occur in future. Interviewee P called this 'empathetic expertise'. On the other hand, interviewee B2 clarified that sympathy is not crucial to the decision-making process, since he buys

products from the company and not from the salesperson. However, even he admitted that a minimum level of empathy could be of help for the company.

The majority of the interview partners also highlighted the role of competencies and a self-assured manner for the sales representative. Interviewee B2 said that he needs a salesperson with a certain level of competency to solve problems onsite. C2 gave an example of a salesperson who only wanted to have a stamp quickly confirming that he had visited him, without having talked about products, services or therapies the company offered. And interviewee A2 recognized that some salespeople lose their self-assured manner when they drink alcohol before their visits.

Finally, the identification with the medical device company is a critical aspect in the salesperson-procurement manager relationship:

> 'This is important for the company and important for me too, because I know, they [salespeople] represent their products with great confidence, almost with passion. They must be really convinced; otherwise they would not be with the company for such a long time.' (C1)

> 'If I get the feeling, he [the sales representative] is just going through the motions he does not really stand behind his company, while someone else really stands behind his company, this implies a better reputation for the company. But it would not significantly change my decision-making.' (C2)

Convincingly, the *relationship to the company representative* plays a decisive role and is one of the major antecedents of corporate reputation. This finding agrees with the academic literature investigating the importance of sales representatives in the medical device sector (O'Connor, Pollner, & Fugh-Berman, 2016; Robinson, 2008). Salespeople can make the difference, especially when the products and services of

different companies are similar [P]. The representatives of a medical device company should take good care of their relationships with hospital procurement managers, building trust over the long-term and developing consulting competencies as well as confidence.

5.3.7. New antecedent: Procurement networks

Procurement networks are networks of hospital procurement professionals who are coordinated by associations such as *femak* or the *BDE* expert group on hospital purchasing, or by group purchasing organizations (GPOs). They regularly organize events and prepare information for their members. Networks also include the personal network of every hospital procurement manager with procurement professionals in his region, the hospital group or others with whom he has contact.

Initially sorted as an aspect in the stakeholder background antecedent, procurement networks were upgraded to a separate antecedent after the first phase interviews because of two factors: First, with the merger of the two stakeholder antecedents to experience, the procurement networks do not fit in this more stringent stakeholder-only perspective. The term networks implies an interaction between two or more procurement managers; the terms expectation and work experience are personal characteristics that primarily cover the perspective of the hospital procurement manager only, and not the perspective of others.

And second, interviewee B1 referred to the strength of the procurement networks in comparison to the stakeholder background, underlining the networks' relevance for service topics:

> 'I put this [my background] under the category of personal network. My own experience as a hospital procurement manager is relatively devalued in my opinion, and the

> reputation of the products does not necessarily increase because of procurement networks. There are other topics at our events. ... We're talking about processes, e-procurement, digitalization, ... about accounting and DRGs. That's why the role of the individual procurement manager has been reduced here.' (B1)

This statement separates networks into procurement networks and medical professional networks that focus more on products, their advantages and usage. However, it mentions service topics that are discussed regularly and that are an attribute of reputation. With this statement, interviewee B1 clarified the role of the procurement network and sees his own background as being of secondary importance.

Hospital procurement managers are active in networks; they go to network events (A2, B1, C1), get information from networks (C2), call members of their personal network (A2, B2, C2), and interviewee P, as manager of a GPO, even organizes network events. The networks are used to share experience about medical device companies (A2, B2, C2) and cost estimates (A2), for getting advice to prepare for critical decisions (B2) and for receiving market analysis information when purchasing something for the first time (C2). The second phase interviews will provide ratings of the networks' relevance as an antecedent for medical device company reputation.

5.4. Doubtful cases

After conducting and analysing the first phase interviews, a few constituents of the corporate reputation structure were identified as doubtful cases. Figure 36 presents these three constituents. The reputation attribute citizenship prompted unclear statements from the hospital procurement managers, and the relatively poor average rating suggests

sharpening the research direction in the second phase interviews. The company performance consequence received a better rating, although feedbacks from the interviewees implied that it should be more precisely evaluated.

Finally, the business environment outcome consequence caused major comprehension problems in the interviews. For most of the interviewees, it was unclear what was exactly meant by this consequence. Therefore, it was removed from the reputation concept. In the third sub-section, the reasons for this removal are given in more detail.

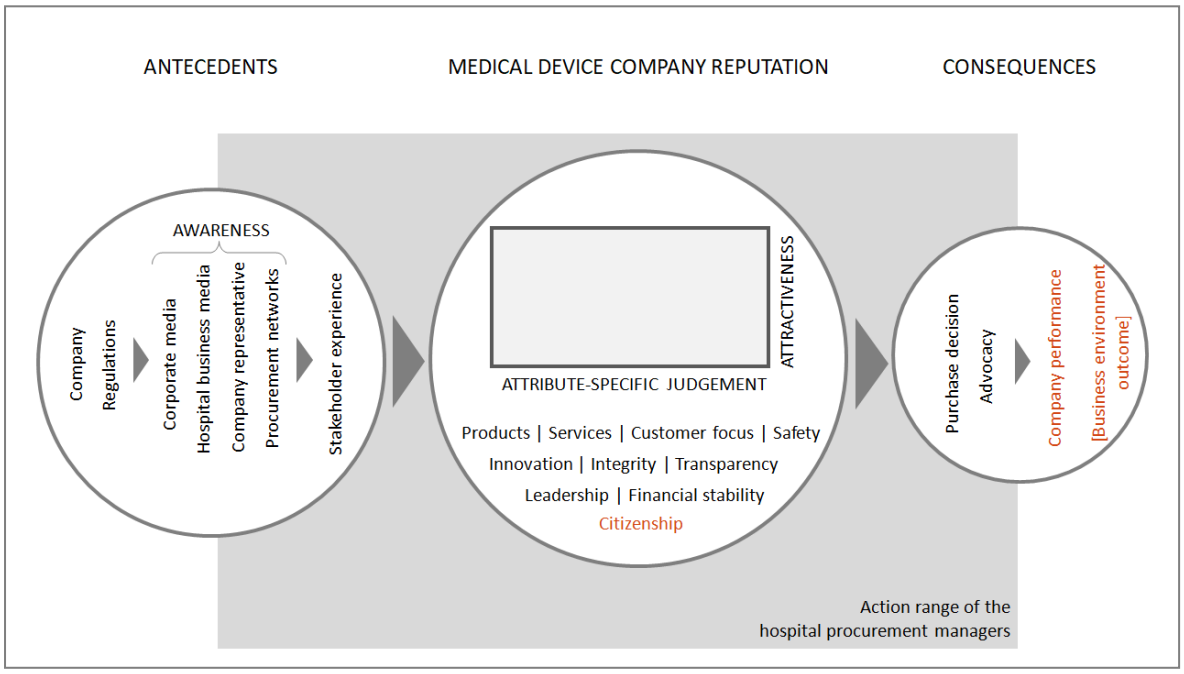

Figure 36: The constituents that are doubtful cases in the medical device reputation concept after the first interview phase. Note: The constituents discussed in this section are marked red. Source: Own compilation.

5.4.1. Citizenship: An attribute of medical device company reputation?

Citizenship is not a key reputation attribute for the hospital procurement managers who were interviewed. Table 55 shows an average rating of 4.8 for social and environmental responsibility, meaning that it is less relevant for reputation. Moreover, the average rating was only that high due to two favourable ratings at 8 and 10; the other five interview participants gave ratings between 1 and 4. These results are dramatic, since citizenship is described as major reputation attribute by academics (Baldarelli & Gigli, 2014; Lange et al., 2011).

An inventory of the interviewees' opinions underlines the low relevance of social and environmental responsibility: A1 expressed that social responsibility has only 'very very little' to do with reputation, and that he can hardly considerate it in his evaluation – it was on a similar level to tradition. Interviewee A2 recognized that social responsibility is included in official tenders, but it plays a rather minor role. For interviewee B1, many other attributes are far more interesting than citizenship. Interviewee P was convinced that medical device companies only partially implement their social responsibility strategies. And even C1, who rated it at level 10, had to admit that citizenship is not included in any form of procurement process.

Reputation attribute	P	A1	A2	B1	B2	C1	C2	Average
Citizenship	4	3.5	4	1	3	10	8	**4.8**

Table 55: The citizenship attribute evaluated by the first phase interviewees. Source: Own compilation.

The reason mentioned most often was the unavailability of information about corporate social responsibility. Some of the procurement managers were interested in the CSR strategies of medical device companies, but failed to get any information (B1, C1). Interviewee B1 sees the responsibility for this in the company structure and the unclear information on labels and certificates:

> 'Companies should be able to supplement their products, not only with services, but with social responsibility. In the medical device sector, we are often talking about big, complicated companies. This makes it difficult to judge their social responsibility. They have different components and different conditions at their production sites. Therefore, I do not like to evaluate this. ... I believe that this is a topic everyone is aware of, but it is also connected to environmental labels and certifications. I find it difficult to discuss this, because a company with tradition and good leadership should have social responsibility as well. ... To me, this is standard and should not be overrated.' (B1)

The quote illuminates two positive aspects: the generalized commitment, social responsibility is something companies should think of, leading to the assumption that this is connected to a certain standard. The generalized commitment to citizenship was shared by interviewees C1 and C2, but driven personally. The position that the medical device business is highly standardized, in particular when it comes to environmental aspects, was also mentioned by interviewees A2 and C2. But they included other perspectives:

> '... safety is written in capital letters here. Very often, this also means that reusable packages, as a more environmentally-friendly solution, cannot be used. They say, disposable packaging will be thrown away, so nothing can happen.' (A2)

> ‘Meanwhile, packaging is legally regulated. The company ... has to pay in some [environmental] accounts. Disposable packaging can be collected [by the supplier], [but] this has not been carried through yet, because every hospital has its own waste disposal concept, which resolves this.’ (C2)

Whereas interviewee A2 focuses on safety, C2 highlights legal requirements and the waste disposal concepts at hospitals. Both ideas are situated in the reputation concept, and causal connections are imaginable here. It is because of these connections that some of the procurement managers have a low awareness of environmental responsibility. Even if there are long shipping routes for procured products (A1, A2), they are nevertheless focused more on the price. Interviewee A2 suggested that ecological behaviour should be enforced by a governmental penalty system that is calculated in the product price. With this implementation, the environmental aspect could be better evaluated in the procurement process; but the same interviewee was sceptical about whether American companies will participate in such a *polluter-pays-principle* (Khan, 2015).

In conclusion, the reasons for the low rating of corporate social responsibility are diverse. However, it should remain a reputation attribute and be discussed in the second phase interviews. This decision follows interviewees C1 and C2, who emphasized the importance of this attribute, and also set their colleagues’ answers in context: It is possible to receive information about social responsibility in the media and in the sustainability reports of the companies (C1). Suppliers are sometimes, when possible, chosen from the region to avoid long shipping routes (C2). And, a focus on sustainability is long-term oriented and demonstrates a responsibility to future generations (C1).

The second phase interviews should clarify if citizenship can remain a reputation attribute in the refined concept. It will be more closely

evaluated than in the first phase interviews. An alternative would be to merge social and environmental responsibility with the attribute integrity. This was suggested by C1, who supported citizenship and saw some similarities between the two attributes. This is an approach that can be discussed with the interviewees in the second phase, if citizenship keeps on receiving low ratings.

5.4.2. Company performance: A consequence to be discussed

At first glance, the company performance consequence was accepted by the hospital procurement managers. Table 56 shows a fairly average rating of 6.1, with five ratings at level 5 and above. Moreover, interviewee B1, one of the positive raters, concluded:

> 'Company performance is actually at par [with purchase decision], because clearly, increasing revenues make the competitive advantage possible. This means planning capability and could even mean an extension of the portfolio.' (B1)

This connection was repeatedly confirmed by academics: positive purchase decisions lead to a competitive advantage, higher revenues and profits enable companies to invest more in their long-term development (Dowling, 2006; Lange et al., 2011).

However, the rest of the explanations in the interviews were not positive, and this should be considered as well. Interviewee A1 refused to contribute to a medical device company's success and underlined this with a rating of only 3. He added that he does not care about the company's success, and that a company performance perspective of procurement managers could lead to a monopoly in the market.

Consequence	P	A1	A2	B1	B2	C1	C2	Average
Company performance	8	3	4	8	8	5	7	**6.1**

Table 56: The company performance consequence evaluated by the first phase interviewees. Source: Own compilation.

Interviewees C2 and P found it difficult to contribute to a medical device company's success or to increased price levels, but they accepted that it could be like that because of the connection with the purchase decision. Interviewee A2 generally denied that the company's performance is a natural consequence of reputation. He explained his view using examples:

> 'There are numerous ... companies that are successful. But I don't think they have a good reputation, such as American companies. And a very successful company like VW ... has a good company performance, but not necessarily a good reputation.' (A2)

His argument reflects reputation from the back of the causal chain: It is possible for a company to be successful without having a good reputation. This is remarkable in itself, as he actually asked whether financial performance leads to reputation and not if a favourable reputation leads to a positive company performance. Since financial stability is only one attribute of corporate reputation, it is not recommendable to generalize this view. But the same interviewee also described an opposite example:

> 'Now, if you think about B. Braun, it is a company that has a quite good corporate reputation in the market, with good products and a good sales force. But because of the pricing policy we do not agree with each other. ... Our volume is actually decreasing.' (A2)

Although this quote illustrates his personal purchasing view, it was stated in the course of the company performance discussion. There are concerns about the connection between reputation and company performance, and

they need to be addressed in the second phase interviews. Considering the discussion about too large profits, company performance should include the aspect long-term stability rather than the aspect premium pricing, as this is obviously perceived by the customers as being too aggressive.

To conclude, the company performance consequence will be kept in the reputation concept. It is more an unclear case than a doubtful case. The second phase interviews should closely examine the perspective of hospital procurement managers on the reputation role of company performance.

5.4.3. The death of the business environment consequence

The business environment consequence does not deserve a place in the reputation concept. Although table 57 shows some competitive ratings at level 5 and above, the interviews showed that the respondents did not grasp the reputation effects that could be in the business environment of medical device companies.

Consequence	P	A1	A2	B1	B2	C1	C2	Average
Business environment outcome	2	5	1	6	7	7	5	**4.7**

Table 57: The business environment outcome consequence evaluated by the first phase interviewees. Source: Own compilation.

Interviewee C2 said bluntly that he does not know anything about it, but gave a rating of 5, which illustrates his uncertainty about where to sort it. Interviewee B1 explained that there would be hardly any business environment consequences for a single company's reputation but rated it at level 6. And interviewee P did not believe that business environment aspects are recognizably influenced by reputation.

The other hospital procurement managers mentioned the example of Tuttlingen, a small city in the south of Germany. The interviewer explained that many surgical instrument companies are based in this *surgical valley* (Halder, 2002), and they could be affected if one of them wins on reputation. The interviewees were undecided, ranging from a large-scale effect (B2) to less-positive effects (C1). It was problematic to have only this example, and in the interviews, no one could think of any other example.

Business environment outcome was only included in the initial reputation concept because it mirrored the business environment antecedent. It was not satisfactorily supported by the literature, and the related antecedent was developed to regulations. Furthermore, the interviewees had difficulties understanding its meaning and were unsure how to evaluate it. Because of these reasons, business environment outcome is removed from the reputation concept.

5.5. Major triggers of causal mechanisms

After clarifying the single constituents and their structure in the reputation concept, this section offers an overview of the causal mechanisms that were mentioned by at least three first-phase interviewees. The connections between the constituents were described spontaneously by the interview participants, without explicitly being queried.

The basic sequence of reputational antecedents, reputation itself and its consequences was generally appreciated by the interviewees. There was a broad agreement that there are attributes that make up corporate reputation, but also something that leads to reputation and something that follows reputation. This quote from P is representative of all interviewee statements:

> ‘This is a very clear causal connection with a lot of things that decide at the end of the day, if the company is successful or not, or if something in its chain breaks, and does not work well. When I think about it, I find it [the concept] generally fascinating, how it is constructed.’ (P)

The causal mechanisms in the reputation construct itself are complex, and according to the first phase interviewees, almost all constituents are connected with each other. A visualization of this would be confusing, since most of these connections were only mentioned by a single interviewee.

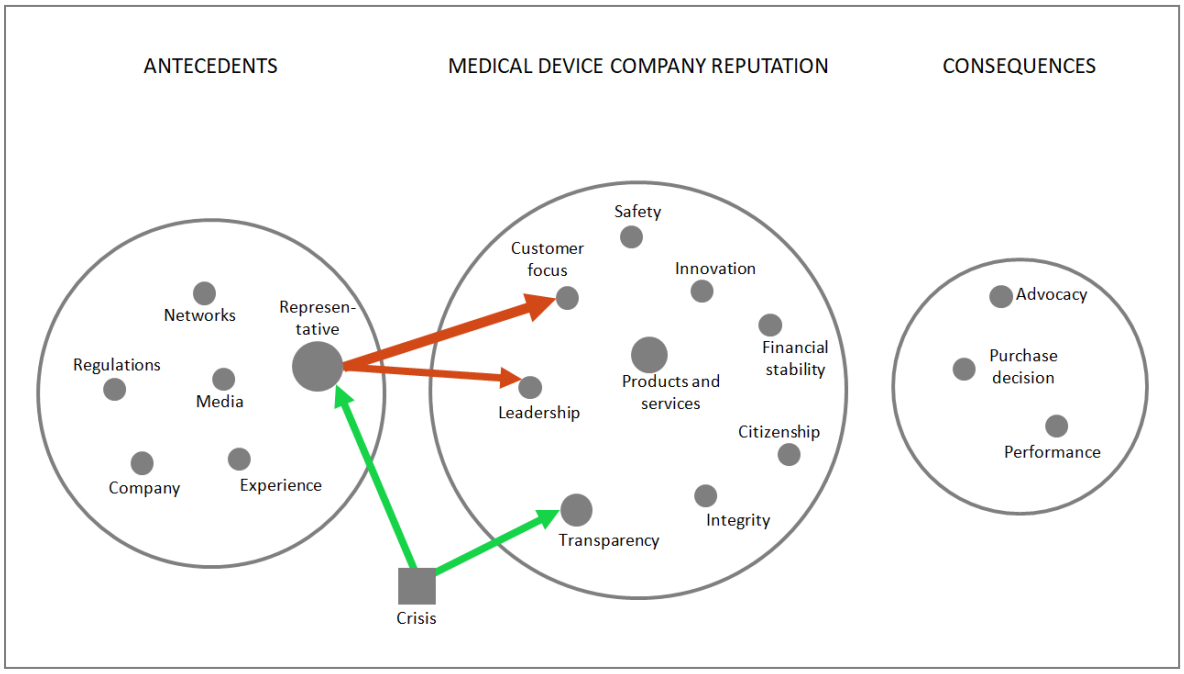

Figure 37: Overview of the four strongest causal mechanisms in the reputation concept resulting from first phase interviews. Notes: The stronger the arrow, the stronger the mechanism. The larger a circle or square is, the more mechanisms have their source or goal there. Source: Own compilation.

To analyse the major individual mechanisms, the number of first phase interviewees who have mentioned a connection was counted. The maximum strength of a connection was seven, independent of the number of times an interviewee mentioned the connection. Using this scheme, figure 37 shows the two strongest causal mechanisms from inside (red) and

outside (green) that were identified by at least three interviewees. Company representative and crisis are the two biggest circles, meaning that they have the most influence on the mechanisms in the reputation construct. In the next sub-sections, the four major relationships will be explained further. They will be visualized in figures and evaluated, meaning that the effects of the mechanisms will be described in the actual or – where available – even in the empirical domain with quotes or feedback from the hospital procurement managers.

5.5.1. The company representative as reputation agent

Sub-section 5.3.6. introduced the company representative as a new reputation antecedent. There is evidence that not only their relationships to hospital procurement managers are important for corporate reputation, but also their role as reputation agents: They especially influence the procurement manager's perceptions of leadership and customer focus. Figure 38 visualizes these strong connections with red arrows and adds all the other ones that are caused by company representatives.

The relationship with the medical device company representative determines the experiences of the hospital procurement manager. The salesperson needs to know about the expectations of the procurement manager (B1). For interviewee C2, the chemistry of this relationship results in his perceived experience with the company. A negative or positive perception of the relationship is reflected in his experience and can impact any future reputation considerations.

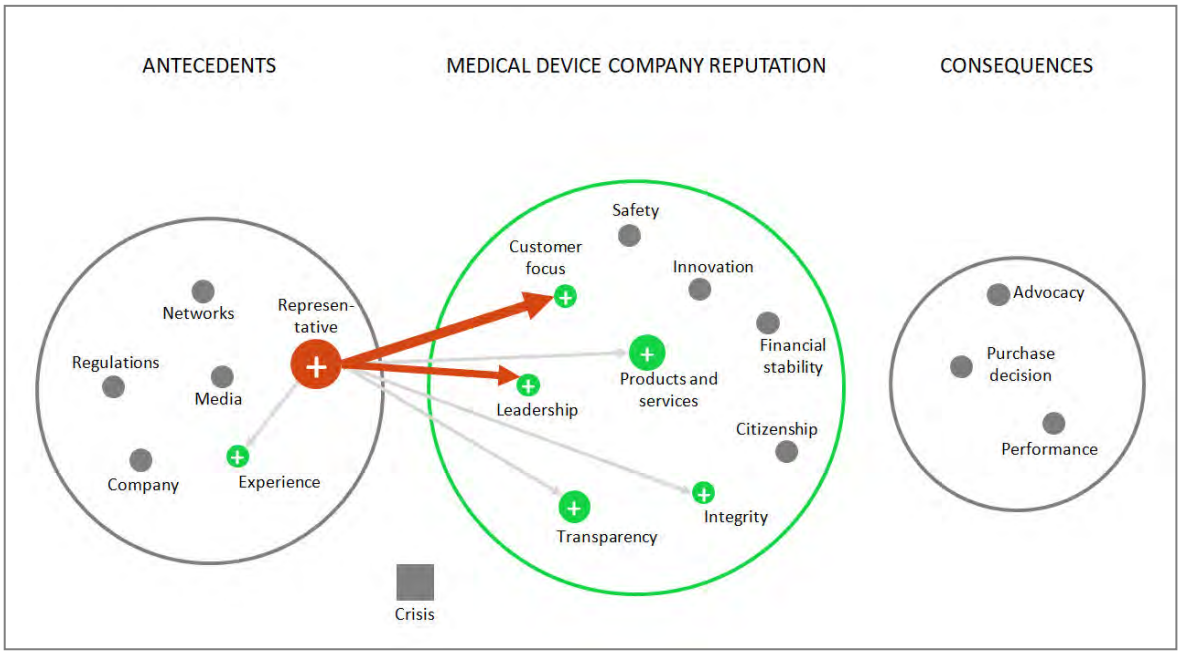

Figure 38: The causal mechanisms indicated by the company representative after the first phase interviews. Notes: The stronger the arrow, the stronger the mechanism. The larger a circle or square is, the more mechanisms have their source or goal there. Source: Own compilation.

Numerous reputation attributes start with the company representative. The salesperson's performance can tell the procurement managers about the leadership in the company. When the relationship is closer, interviewee A1 can differentiate whether the salesperson is just playing a role or is convinced about what he says about his company, products, and managers. Interviewees C1 and C2 can recognize stressed salespeople who are under pressure to perform, and they perceived this negatively in the leadership attribute. Conversely, a salesperson who continuously gives the impression of being dedicated to his company contributes to a positive perception of leadership:

> 'And I notice this, because there are really long-standing sales representatives, that are with certain companies for 25 years or more, who are still full of enthusiasm. This is important for the company and also for me because I know that they represent their products with a great assurance, even with dedication. They are really convinced about this;

> otherwise they would not have been with the company for so long.' (C1)

Leadership is even more convincing when the managers of the salespeople are known personally, whether they are inspired by the direct managers (B2) or the company's executives (B2, C1). There was a strong agreement among the interviewees that the leadership attribute is openly reflected by the way the company representatives behave (A1, B2, C1, C2, P).

The behaviour of the salespeople is also decisive for the perception of the medical device company's integrity and transparency. When they act and communicate in line with the company's code of conduct, the ethical requirements are usually fulfilled (A1). However, credibility, fairness, reliability, truthfulness, openness and authenticity include behavioural and communicative skills that are the pillars of a successful long-term partnership (B1, C1). These skills are decisive when it comes to crises in which the sales representative is expected to act and communicate ethically and transparently (A1).

This leads to the salesperson's role for customer focus. For all the customer-centric aspects, such as benefit-based consulting, flexibility, problem-solving competency and customer proximity, a company representative is needed who can deliver all these requirements. Considering that customer focus is one of the most important reputation attributes, representatives should carefully analyse their relationships to the customers and act accordingly (A1, B2, C1). Moreover, mostly it is the salespeople who offer services such as training for the medical staff, and they are responsible for the fulfilment of other services the medical device company offers (A1, C1).

With all the strong causal mechanisms the company representatives trigger, their role as reputation agents cannot be emphasized enough. This

is another reason why they were included in the reputation construct after the first phase interviews. It is expected that the second phase interviews will confirm this primary role.

5.5.2. Crises influence reputation from outside

The first phase interview outcome confirmed that medical device company reputation is not a closed system, it is influenced by at least one major influencer from outside the concept. Crises happen regularly in the medical device business, and they appear often after a lawsuit, in the form of a product recall (Arndt, 2017; Ball et al., 2018; Walter, 2018).

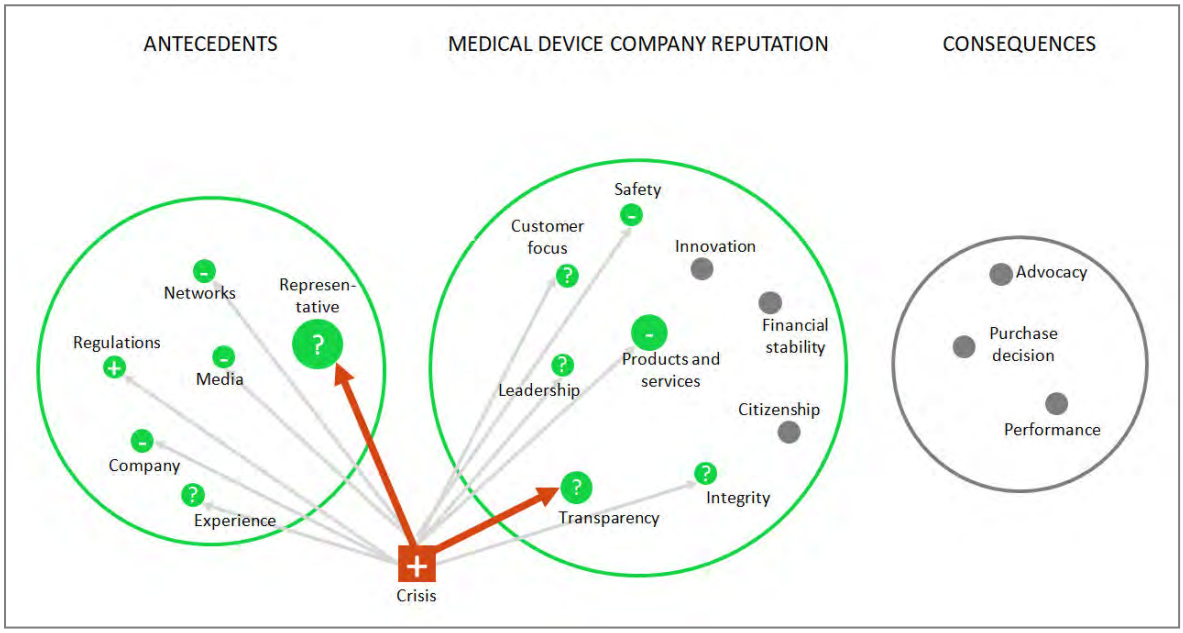

Figure 39: The causal mechanisms initiated by a product recall crisis identified after the first phase interviews. Notes: The stronger the arrow, the stronger the mechanism. The larger a circle or square is, the more mechanisms have their source or goal there. Source: Own compilation.

Figure 39 represents the recall scenario, which demonstrates the statements of the first phase interviewees as accurately as possible. The fact that not all constituents of the reputation concept turned into a

negative direction is probably surprising. Especially during product recalls, the necessity and power of regulatory agencies is appreciated by the hospital procurement managers (A1, B1).

This positive impression cannot gloss over the fact that the interviewees recognized a product recall has negative impacts on reputation constituents, such as for the company antecedent (C1), for products and services (P) and the perception of safety (B2). However, due to the frequency and normality of product recalls (B2, C1, P), all hospital procurement managers saw crises as chance for the suppliers to perform under close scrutiny. B2 put this expectant attitude in a nutshell, as already cited in sub-section 5.1.4.:

> 'We do not fire a supplier just because something went wrong once. On the contrary: If the company proves that it does anything for a solution and is willing to do something extraordinary, then we will stay with this supplier – because everyone makes mistakes. But how you deal with them is important.' (B2)

This principle of customer focus, acting with integrity and in particular transparent communication has also implications for leadership (P). Altogether, the crisis is a chance to defend the company's reputation while knowing about the requirements of the customers in crisis management. Therefore, the company representative can turn the negative crisis perception into a positive customer care perception (A1, A2, C1, C2), by giving a quick response (C1, P) which is clear and leaves no room for alternative interpretations (A1). The goodwill of companies in crises is particularly important for interviewee C2.

In addition, the reputation consequences of a crisis remain unclear, whether the company acts and communicates proactively or not. A direct causal relation does not exist. But with professional crisis management, the

situation could even lead to an increased and long-lasting customer satisfaction, more purchases and more recommendations followed by an increased company performance (B2, C1).

5.6. Summary: Why only one interview phase is not enough

This second results chapter revised the theoretical assumptions derived from the literature with the practitioners' knowledge from seven interviews. As such, it represents typical stages of the DREIC scheme, retroducing the reputation construct, elimating some constituents and adding others. The outcome of the first phase interviews, which contributed to knowledge in the empirical domain of critical realism, led to considerable changes in the reputation concept and provided some insights in causal mechanisms and scenarios that were identified to be in the actual domain of the medical device company reputation environment.

The resulting reputation concept in the real domain of critical realism was already visualized above at the beginning of chapter 5, in figure 32. Medical device company reputation at this stage is determined by the categories attractiveness and attribute-specific judgement. The attributes are products, services, safety, customer focus, transparency, innovation, integrity, leadership, citizenship and financial stability. In the antecedent circle, company characteristics and regulations lead to corporate media, hospital business media, company representative and procurement networks that contribute to the awareness of the company and influence the experience of the procurement managers. Reputation consequences are purchase decision and advocacy on the side of the procurement managers, and company performance on the side of medical device

suppliers. A table of all updated reputation constituents including their aspects is provided in appendix 26.

Constituents	Open question(s)
Categories	Is awareness accepted as an antecedent category? What is the ratio between attractiveness and attribute-based judgement?
Antecedents	Is advertisement an aspect of corporate media? How is hospital business media used by procurement managers? Which additional procurement networks exist? Can the focus of the individual networks be specified?
Reputation	Can the service aspects be confirmed? Are cybersecurity and delivery security aspects of safety? Is the innovation aspect avoidance of fake innovations accepted? How can the gap between rating and appreciation of leadership be explained? Does financial stability receive more stable reputation ratings than financial performance? Are there convincing reasons to keep citizenship as a reputation attribute?
Consequences	Can the relevance of reputation for the purchase decision be confirmed at 29%? Does medical device company reputation lead to company performance?
Causal mechanisms	Is cost sensitivity a strong influencer from outside? Can the causal mechanisms of crises be more specified?

Table 58: Open questions collected after the analysis of the first phase interviews. Source: Own compilation.

The extensive discussions in this chapter also showed that some of these constituents and aspects are not clarified completely, which implies that a second interview phase needs to be conducted. This also follows the retroductive approach of critical realism, shaping and reshaping a concept,

until there is no more room for questions. And specific questions do still exist at this research stage; they can be seen in table 58.

In addition to these questions about the positions, shape and aspects of reputation constituents, the second interview phase is important to confirm the ratings of the first phase interviewees, resulting in a more stable impression about the relevance of the individual categories, antecedents, attributes and consequences of corporate reputation. The refined concept should determine to what extent the individual constituents contribute to the concept, and foster the major causal mechanisms identified in this chapter.

It should also include group comparisons between procurement managers from different hospital types, different work experience and different reputation perceptions. These analyses will be presented in chapter 6, recognizing the results of all interviews with a particular focus on the second phase interviews.

6. Refined concept

> ‘I am glad that reputation is observed
> from an academic perspective. ...
> Meanwhile, we place great emphasis on reputation
> and need to consider it in all of our future purchase decisions.’
>
> Interview participant A4
>
> ---------- ----- ----------

This chapter is the third chapter presenting and discussing results. Whereas chapter 4 introduced a reputation concept derived from the literature, and chapter 5 modified this after analysing interviews with one GPO manager and six procurement managers, this chapter refines the concept by using the insights of five more procurement managers representing different hospitals. The insights were generated by personal qualitative interviews, which will be identified as second phase interviews throughout this chapter in comparison to the first phase interviews presented in chapter 5.

The second phase interviews included the same topics as the first phase interviews, though the questions asked were more specific in order to clarify the open issues collected in chapter 5. In critical realist research, this intervention is permitted and even recommended to explain constituents and causal mechanisms in the concept (Pawson & Tilley, 1997; Smith & Elger, 2014). Moreover, the DREIC scheme, introduced in section 3.1.3., needs to retroduce the concept in more than one phase, identifying which constituents in the construct could be added or eliminated to reach a final concept.

The objective of this chapter is to present and explain this final concept, but using the term 'final' is avoided, 'refined' concept is used instead. As defined in section 2.2.1., reputation is a construct that is in continuous change, even in the same stakeholder group evaluating the same industry. Therefore, a reputation concept can never be final, and in this chapter the reader should not get the impression of reading about a final concept. It is a refined one, as is illustrated in figure 40.

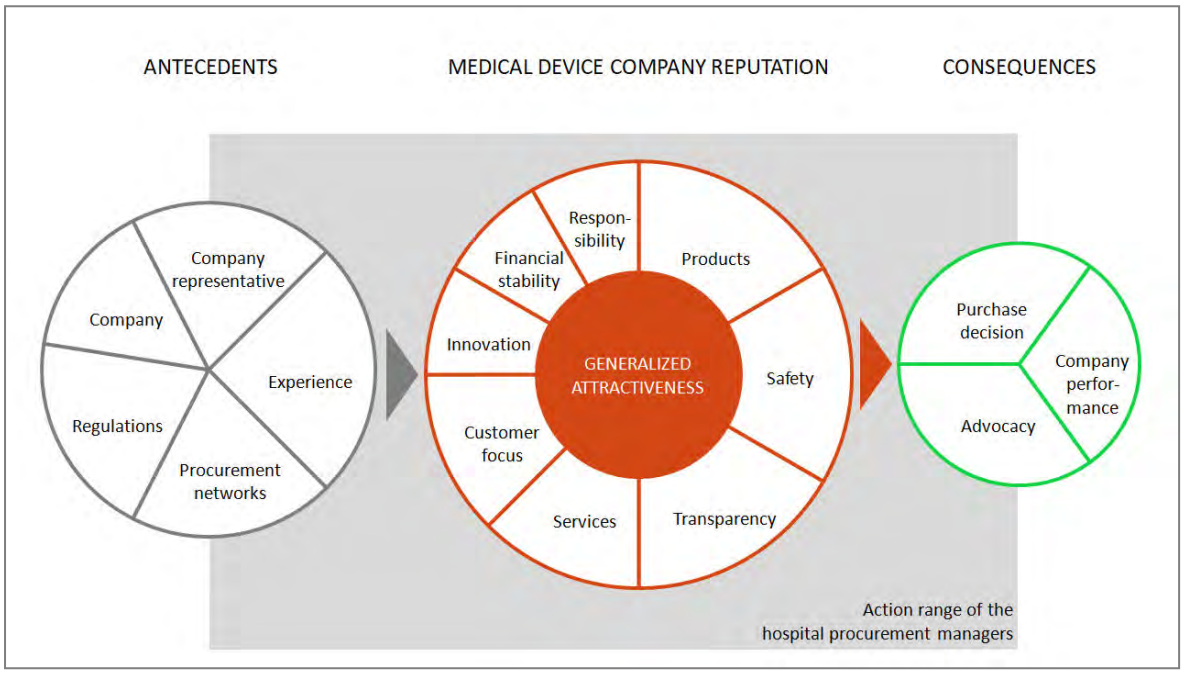

Figure 40: The refined concept of medical device company reputation after the second phase interviews. Note: The size of the segments represents the weighting of the constituents for reputation (middle), its antecedents (left) and its consequences (right). Source: Own compilation.

This concept consists of many constituents that were already in the one in chapter 5. However, is not identical, due to the answers from the second phase interviewees. The causal model of antecedents, reputation and consequences was broadly confirmed by the interviewees, and the general impression from the academic literature that reputation is something that is perceived by the respondents, and thus lies in their action range.

Changes were not made for model design purposes only, but to reflect the respondents' answers more accurately.

In this chapter, all the confirmations, refinements and changes will be explained. The confirmations will not be discussed in-depth like in chapter 5, changes will be discussed to provide reasons and show the different views of the respondents. Refining the concept also means to specify the weights of constituents. Particularly in reputation constructs used for business research, it is common to weight different constituents by percentage to underline which constituents are most important (Wegmann, 2017). Therefore, this chapter also suggests a percentage weighting at the end of the discussion by using the respondents' ratings of the constituents with the Q-sort method, as explained in section 3.2.4., and by using the respondents' reasons for their ratings.

In section 6.1., reputation categories and attributes are the focus. Section 6.2. concentrates on reputation antecedents, section 6.3. on reputation consequences. This is followed by a discussion of causal mechanisms inside and outside the construct in section 6.4. In section 6.5., group comparisons are introduced, knowing that a total respondent number of twelve is far from significant. However, there are some notable trends that lead to considerable insights related to the respondents' background and their reputation perceptions. Section 6.6. summarizes the findings in this chapter.

Throughout this chapter, the outcomes will be presented with the already introduced Q-sort ratings (see also appendix 27), summary tables of opinions and quotes. All second phase respondents were highly interested in the study results, because they considered developments in the medical device market in 2018 in their reputation perception, such as the preparation for the new European Medical Device Regulation which will

start in May 2021 (Beeres, 2019) and the latest product scandals (Arndt, 2017; Walter, 2018).

6.1. Reputation categories and attributes

The reputation concept consists of reputation, its antecedents and consequences. This section specifies the results of reputation itself, meaning its categories and attributes. Figure 41 shows this part of the refined concept. In comparison to the concept after the first phase interviews, the numbers of attributes were reduced from ten to eight. In the outer circle, they represent the category of attribute-based judgement, which no longer appears as a term in the construct.

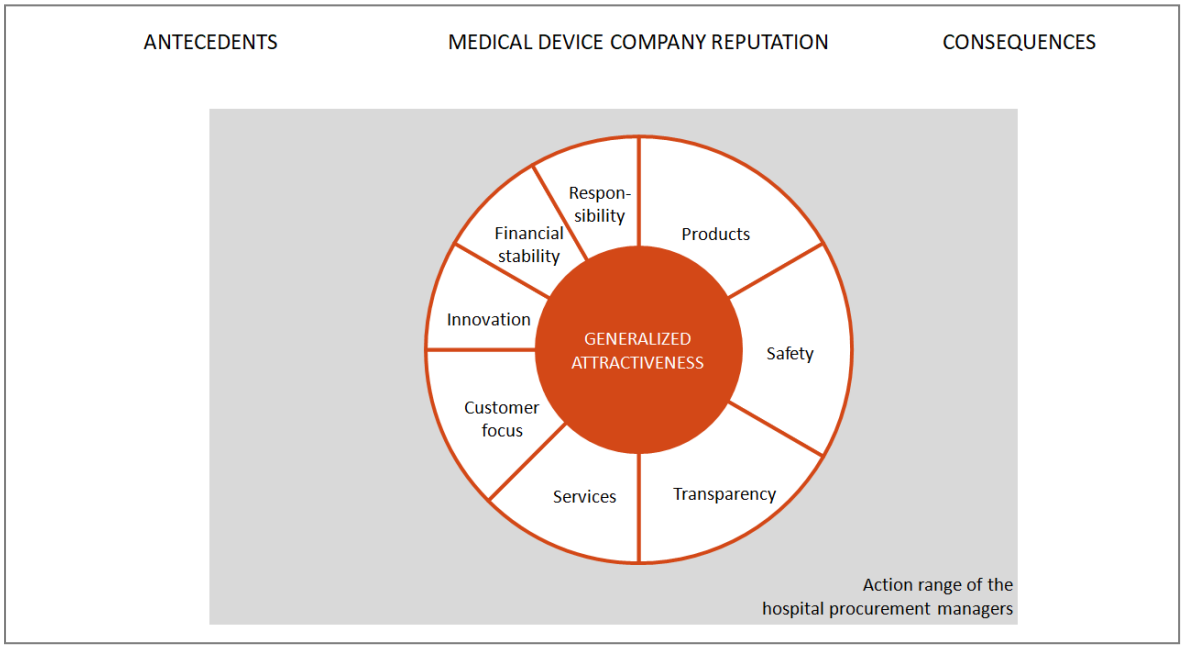

Figure 41: Categories and attributes of medical device company reputation after the second phase interviews. Note: The segments of the chart represent the weighting of the constituents for reputation. Source: Own compilation.

The generalized attractiveness category is shown in the inner circle. And the attribute share of the reputation construct is grouped into three sizes:

Products, safety and transparency are large; services and customer focus medium; innovation, financial stability and responsibility are small.

This concept will be explained in this section, starting with the categories in the first sub-section, followed by confirmed attributes in the second and changed attributes in the third. The fourth sub-section describes the weighting of the attributes of medical device company reputation, making the central circle of the reputation concept complete.

6.1.1. Reputation categories reflect emotion and rationality

The first phase interviews revealed that awareness is not a reputation category for hospital procurement managers. The remaining two categories, attribute-specific judgement and generalized attractiveness, were rated similarly at 8.4 and 7.3, leading to the question whether this relative similarity will continue when offering only those to the interviewees.

Category	1st phase interviews	A3	A4	A5	B3	C3	2nd phase interviews
Attribute-specific judgement	8.4	8	7	9	10	6	**8.0**
Generalized attractiveness	7.3	2	8	3	4	8	**5.0**

Table 59: Rating of reputation categories by the second phase interviewees. Source: Own compilation.

Table 59 shows the outcome: Whereas attribute-specific judgement was confirmed with an 8.0 average rating by the second phase interviewees, generalized attractiveness was rated at 5.0, considerably weaker than in the first phase interviews. Moreover, all ratings of attribute-specific judgement exceeded 5, whereas generalized attractiveness was

inconsistently rated lower than 5 by three respondents. In the following paragraphs whether generalized attractiveness should be kept in the reputation concept or not is explained and clarified.

Screening the reasoning for their choices, the fundamental outcome reflects the procurement managers' perception that attribute-specific judgement is a collection of rational 'real activities' (A3) and 'hard facts' (C3). Generalized attractiveness is seen as an emotional approach to reputation that 'certainly plays a role' (A3, A5, B3), but is 'less tangible' (C3) than defined attributes.

Nevertheless, generalized attractiveness was appreciated, even by the respondents who rated it low (A3, A5, B3), in particular when it comes to private reputation evaluation (A5). In the business context, in their roles as procurement managers, they needed to rely on facts that are measurable (C3). Interviewee B3 described a development in the procurement business over the years:

> 'I think that the purchasing job today is not the same as ten or 20 years ago, when orders were placed because of sympathy. Rather, today the business is covered by the framework contracts from the GPOs, and emotions … do not play a huge role in the decision-making for suppliers. Therefore, I believe that it belongs to the lower half of the reputation scale, but still plays a role.' (B3)

Respondents A4 and C3, who were in favour of generalized attractiveness over a rational attribute-based judgement, argued with their experience (A4) and the personal impression of trust (C3) given to a company and its representatives (A4). Both interviewees were aware that this implies a gut decision and a good chemistry between suppliers and purchasers. They do not deny that hard facts reflect their reputation perception, but they rated generalized attractiveness a little higher. One consequence of this would

be that companies have better access to these hospital procurement managers if they address them emotionally rather than rationally.

Summing up, generalized attractiveness should remain a reputation category, despite its average rating of 5. Understanding its role in gut decisions, it is recommended to place it between one fourth and one third of reputation. Figure 42 shows an estimated ratio of 28 percent of generalized attractiveness in comparison to 72 percent of attribute-specific judgement. Appendix 28 explains how these values were calculated.

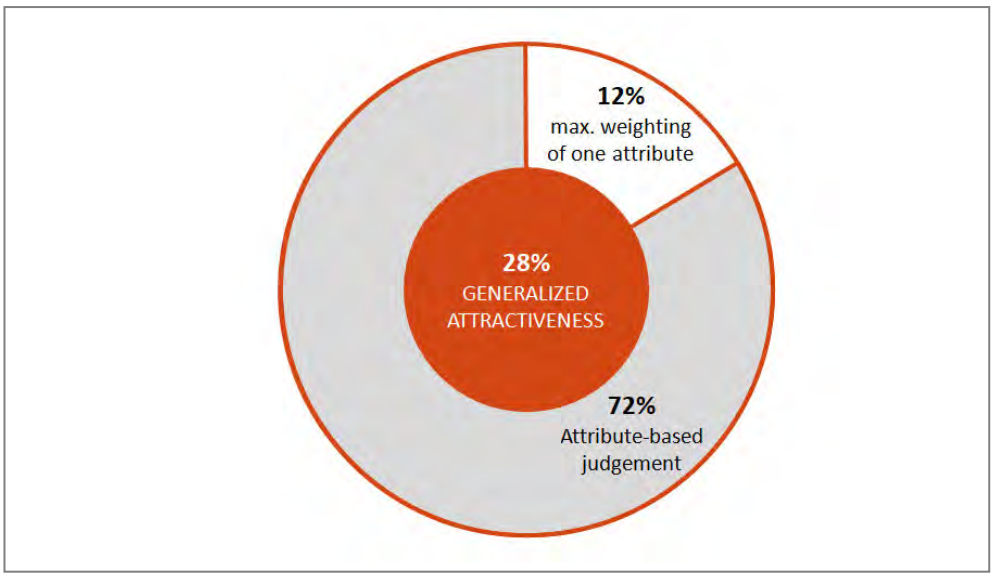

Figure 42: Category and attribute weighting of medical device company reputation after the second phase interviews. Source: Own compilation.

This ratio also reflects two statements about the categories: First, the more emotional generalized attractiveness is much lower weighted than the more rational attribute-based judgement, which represents the reputation perception of hospital procurement managers in the first place. Second, the weighting of 28 percent is high enough to overrule single reputation attributes that do not exceed 12 percent, showing that generalized attractiveness is far more than just another attribute in the reputation judgement, but a major driver of reputation perception. Additionally, the

positioning in the heart of the reputation concept highlights its relevance and its emotional approach.

However, attribute-based judgement remains the most important reputation category of medical device company reputation, representing different rational attributes that are positioned in the outer circle. These attributes will be considered further in the next three sub-sections.

6.1.2. Expected attribute confirmations

This section includes short discussions about six of ten reputation attributes that were constituents of the concept after the first phase interviews: Products, safety, services, customer focus, innovation and financial stability. All of them were plainly confirmed by the second phase respondents. Table 60 gives an overview of the attributes' ratings in comparison to the first phase ratings.

Reputation attributes	1st phase interviews	A3	A4	A5	B3	C3	2nd phase interviews
Products	8.9	10	9	8	10	7	**8.8**
Safety	8.6	9	10	7	10	7	**8.6**
Services	8.9	9	7	7.5	8	8	**7.9**
Customer focus	8.4	5	10	7	10	5	**7.4**
Innovation	7.2	7	7	7	9	5	**7.0**
Financial stability	4.4	5	7	8	8	7	**7.0**

Table 60: Confirmed reputation attributes by the second phase interviewees. Source: Own compilation.

The attribute products reached the top position of all attributes with high ratings of 7 and more by all the second phase interviewees. Aspects such as

high product quality, product benefit, competitiveness and strategic product positioning were confirmed. A remarkable statement related to the role of products came from respondent A5:

> ‘We cannot afford apparently cheap products with poor quality. … You know yourself that you have to strive long and hard for a good reputation. … In my opinion, we as a hospital must … position ourselves with products that we have used continuously and that can be said to have consistent quality. And that we have years of experience with them and can guarantee this [quality].‘ (A5)

Respondent A5 defines product quality here using descriptions that point to product longevity, accuracy and reliability. He emphasizes the product quality aspect to describe the reputational transfer to the hospital. As such, the product attribute including its aspects is a strong reputation source for the hospital that understands its reputation is earned offering high-quality health service, which is not possible without high-quality products.

A high rating like the products attribute was reached by the safety attribute. Beside the aspects patient safety, medical staff safety and data protection, the newly defined cybersecurity and delivery security aspects were broadly confirmed. The respondents mentioned that hospitals do invest substantial resources in avoiding cyber-attacks (A3, A5), that can hardly be defended against in the long-term due to rapid technological development (A5). Therefore, they expect large investments in security by suppliers in their products and services as well, to minimize the cybersecurity risks.

Delivery security was identified as lacking. All five respondents reported that they experienced late deliveries or backorders in recent months, with an increasing tendency, as interviewee A4 reported:

> ‘There are more and more delivery problems with the companies, and this pushes the hospitals to our limits. … When I started in hospital purchasing, we had one, maximum two delivery delays per year. Last month, we had our hands full for whole two weeks looking for alternatives for products that were not available. And this is not our primary task in purchasing.‘ (A4)

Respondent A4 sees cost pressure on suppliers, caused by the German hospitals and GPOs as the cause. Medical device companies responded to this pressure by changing logistic strategies and reducing stock in warehouses (Lienland et al., 2013). Also, the relatively low margins for medical devices in Germany led to decisions by medical device companies to deliver to countries with higher margins first (A4). The relevance of delivery safety was phrased by respondent A3:

> ‘Products that are perfect but not available are as bad for a patient as products that are available but not perfect.’ (A3)

This quote positions delivery security in similar relevance regions like product quality. In the interviews, it was also discussed whether delivery security should be excluded from safety in a separate reputation attribute. Although it was perceived as major challenge in today’s procurement business, all respondents agreed that delivery security is a safety aspect due to its connections to patients’ safety.

The service attribute received different ratings than the product attribute, and all of the second phase respondents liked that it is now separate due to new developments in health market relationships. Service is perceived as an attribute that had been ignored for a long time and that is relevant once the product price cannot be reduced anymore (A3, A4, B3). All service aspects such as system partnership, e-procurement, process consulting and trainings were strongly confirmed and explained as future investments in supplier-buyer-relationships. For respondent A5, service makes the

difference between an industry partner of a hospital and a trader who just sends products without explanation.

The second phase interviewees rated the attribute customer focus with an average of 7.4, lower than the first phase interviewees (8.4). Respondents A3 and C3 rated customer focus at only 5, which demonstrates uncertainty about this attribute. Both explained their rating, highlighting that tailored solutions are not always a good choice for hospitals that look for standardization to benchmark companies and compare their own hospital with others (A3). Respondent C3 also prefers standardized solutions:

> 'I like to use a lot of standard products and not custom solutions, solutions that have been already well-tested in a best practice. [I want] 95 percent standardized solutions and do not focus on special solutions. Certainly, there are different power plugs, but we have a standardized plug already. That's why I am not a friend of individual solutions.' (C3)

The other respondents, who rated customer focus at 7 and 10, were sceptical about the aspect of individual solutions and explained their positive evaluation with the other aspects of customer focus (A4, A5). Interviewee A4 described situations when flexibility is helpful, for example when process-related challenges in the hospital need to be solved, and sets can be packed in a customized fashion at the right time. Interviewee A5 also highlighted the role of flexibility, which is needed throughout the year to meet ups and downs in product demands. Besides flexibility, the aspects benefit-based consulting, problem-solving competency and customer proximity were confirmed by the respondents, tailored solutions and focus on medical staff and patients were seen sceptically and should play – just a minor role in customer focus – if any.

With 7.0, the innovation attribute received almost the same rating from the second phase interviewees as in the first interviews (7.2). This confirmation was based on a wider perception of innovation, focusing not only on products, but on services and collaboration with the customer (A4). However, innovation was also critically discussed in the interviews when it comes to research and development. Interviewee C3 verbalized the threat that new products are just sold as innovations or that they are less reliable. Thus, he strongly agreed with the results of the first phase interviewees that fake innovations should be avoided – he would prefer a positive expression of the aspect like 'real innovations'.

Most of the procurement managers (A3, A4, A5, C3) made it clear that innovation was not the first attribute they thought of when it comes to reputation. However, none of them really denied it, because continuous developments in the medical device industry and hospital processes are necessary. Innovation remains a reputation attribute, along with the aspects product development, service development and real innovations.

That is what a single word change can do: After the discussions in the first phase interviews, financial performance was renamed as financial stability. And the second phase interviewees appreciated this change in terms, the rating increased from 4.4 to 7.0, and their discussions after giving the ratings confirmed their recognition of the financial stability wording. Continuity, long-term orientation and being a strong medical device partner were seen as necessary for creating a positive reputation and successful supplier-buyer relationships, as the summary in table 61 shows.

Only interviewee A3 questioned the role of financial stability and was also the one who rated it at only 5. He did not give any reason for his scepticism but recognized that medical device companies are essential for the health system and this is why their financial stability would be important to

guarantee adequate healthcare. The others provided arguments about why they need medical device suppliers with financial stability and that this would be included in their reputation perception. Therefore, this attribute with all of its aspects should be kept included in the reputation concept.

Participant	Relevance of financial stability
A3	There are some medical companies that are inherent in the system. It [financial stability] is nice but it is not that important.
A4	I do not want to think constantly about the existence of my suppliers. I could not sleep well with that. We are somehow dependent on our suppliers.
A5	We have a yearly fiscal plan, and the financial stability of the suppliers is based on that. ... That is why we look for companies you can work together with for the middle- or long-term.
B3	A company that has no financial stability cannot secure other points like supply chain, a talented workforce and collaboration. Financial stability does not mean unacceptably high profitability but a healthy financial basis.
C3	A strong partner is important for reputation, as well as long-term orientation. An insolvent partner is no use.

Table 61: Statements about financial stability of second phase interviewees. Source: Own compilation.

Overall, the attributes products, safety, services, customer focus, innovation and financial stability were confirmed by the second phase interviewees. However, the interviewees did not agree to all the suggestions. Other attributes were strongly discussed and echoed the business experience of the interviewees. These attributes will be presented in the next sub-section.

6.1.3. The corporate responsibility merger

Transparency and integrity were identified as two attributes after the first phase interviews. When comparing the ratings of the second phase interviewees, as done in table 62, the observer recognizes that they have almost identical values. This overlapping was brought up in the interviews, and the answers confirmed the impression that both attributes have aspects in common. The statements of the hospital procurement managers can be clustered into two main opinions.

Reputation attributes	1st phase interviews	A3	A4	A5	B3	C3	2nd phase interviews
Integrity	7.2	6	10	7	10	9	**8.4**
Transparency	7.4	6	9	7.5	10	9	**8.3**

Table 62: Ratings of integrity and transparency by the second phase interviewees. Source: Own compilation.

First, all second phase interviewees recommended to merge transparency and integrity in the concept. Respondent B3 was convinced that the terms openness, fairness and credibility belong together, and had difficulties with the separation into two different attributes. Integrity was perceived by B3 as the internal concept of the company, whereas transparency was expressed in actions that are often connected with communication. This position was shared by interviewee A5, who felt that integrity and honest behaviour is made visible through transparent and reliable communication.

Second, because of this connection between integrity and transparency, interviewees A3, A5, B3 and C3 preferred to include integrity aspects into the transparency attributes and not the other way around. In reference to the discussions about the aspects communication ability, truthfulness, honesty, openness, authenticity, credibility, fairness and reliability and

their intersections, they were summed up as the transparency aspects communication ability, honesty, authenticity and reliability.

Realizing this merger, the integrity attribute has only one aspect left, namely ethical behaviour, which can be hardly included in the communication-based transparency attribute. Interviewee C3 suggested moving ethical behaviour to the citizenship attribute, because it reflects the inner approach of responsible actions. Citizenship did not reach convincing ratings after the second phase interviews, an average of 5.4 after scoring 4.8 in the first interviews. In addition, three of the five second phase interviewees were uncertain if leadership belongs to reputation or not, interviewee B3 thought about to sort this attribute to the responsible actions of a company.

These outcomes led to the idea to merge the aspect ethical behaviour with citizenship and leadership aspects to the new attribute *responsibility*, which is also recommended by the latest CSR literature (Gazzola, 2018; Meynhardt & Gomez, 2019). Table 63 presents the ratings of integrity, citizenship and leadership, and the ratings' merger. This fusion into the responsibility attribute has two major advantages: A more practical reflection of corporate responsibility and the rescue of the constituents leadership, workplace, citizenship and integrity aspects in the reputation concept.

Corporate responsibility or just responsibility is a common term used in the business-related sustainability context in Germany (Katzmann, 2019; Schneider & Schmidpeter, 2012). It is a short form of CSR, corporate social responsibility, which was mistakenly seen as merely societal activities in practical use by Germans (BMAS, 2019). CSR includes not only external ecological and social responsibility of a company, but also economic responsibility, ethical values and internal social aspects such as treatment

of employees (Katzmann, 2019; Schneider & Schmidpeter, 2012). With this background, the merger seems to be consistent with current notions in Germany.

Reputation attributes	1st phase interviews	A3	A4	A5	B3	C3	2nd phase interviews
Integrity	7.2	6	10	7	10	9	**8.4**
Leadership	4.8	5	8	5	5	7	**6.0**
Citizenship	4.8	2	8	6	7	4	**5.4**
Merge?	C1✓	✓		✓	✓	✓	✓
Merged attribute: Responsibility	5.6	4.3	8.7	6.0	7.3	6.7	**6.6**

Table 63: Ratings of integrity, leadership and citizenship and their fusion to responsibility. Source: Own compilation.

Aspects of the integrity, leadership and citizenship attributes should be rescued for the reputation concept, because these attributes were indeed perceived as important for reputation, but not in the business context yet. The attribute leadership received relatively low ratings because CEOs and workplaces are hardly accessible for hospital procurement managers. However, leadership is connected with the company's culture (A3), CEO decisions (A4) and trust in employees (C3), and therefore an important aspect for responsibility (A5). Citizenship, on the other hand, was perceived as important for private life by the second phase interviewees, though this importance is not reflected in the professional role of hospital procurement (A3, C3). However, interviewee B3 realized a stronger impact of social and ecological activities in media, and interviewee A5 explained citizenship as a driver of reputation:

> ‘Environment concerns me in both the professional and private worlds. Therefore, I would not rate it at the end oft he scale at 0, 1 or 2. And when companies do not have social responsibility, but only work for the elites, then the balance will be destroyed sometime, and it [the business] will not work anymore.’ (A5)

So, the new responsibility attribute will include the aspects leadership, ethical behaviour, environmental responsibility, workplace and social responsibility. It combines many future-oriented topics that are not perceived as robust as individual attributes yet, but are discussed as part of the reputational perception by the interviewees.

6.1.4. Attribute weighting

In practice, reputation concepts used for company rankings usually include weighting between the attributes (Wegmann, 2017). Since this thesis represents a professional doctorate, a weighting is promising for further reputation research among medical device companies. Because general attractiveness has been already placed in the concept with 28 percent, these attributes will make up 72 percent of overall reputation.

The discussion in this section demonstrated that not all attributes have the same value within the reputation concept. An identical weighting of the eight attributes, each at nine percent, would not reflect the ratings of the hospital procurement managers and their statements about reputation. And twelve interviews are not anywhere near enough to present a sophisticated weighting that meets statistical requirements. Moreover, only the five interviews of the second phase can be used as a basis, since in the first phase interviews different attributes and aspects were part of the discussion. However, from the critical realist perspective the goal should be

to come as close as possible to a concept in the real domain. Estimation can offer practitioners and academics orientation for further research.

Table 64 shows the average reputation attribute ratings of the second phase interviewees and the estimated weighting. The weightings of 12 percent, 9 percent and 6 percent represent three clusters of the attributes' reputational importance: Products, safety and transparency reached an average rating of above 8 and are therefore highly relevant. Moreover, the interviewees emphasized in their statements that these three attributes make up a large share of their reputational understanding.

Reputation attributes	Rating 2nd phase interviews	Weighting
Products	8.8	12 %
Safety	8.6	12 %
Transparency	8.3	12 %
Services	7.9	9 %
Customer focus	7.4	9 %
Innovation	7.0	6 %
Financial stability	7.0	6 %
Responsibility	6.6	6 %

Table 64: Overview of average ratings in the second phase interviews and their weightings in the refined concept. Source: Own compilation.

The attributes services and customer focus build the second cluster. Although the service attribute is very close to a rating of 8, it was clearly distanced from the product attribute by the hospital procurement managers. Therefore, a lower weighting was chosen. The customer focus attribute is in this cluster because the first phase interviewees rated it higher than 7.4, and although customer focus was somewhat critically

perceived by the second phase interviewees, it was accepted to be an elementary attribute of medical device company reputation.

The third attribute cluster includes innovation, financial stability and responsibility. Although these were widely accepted as reputation attributes by the interviewees, they received the weakest ratings. In the interviews, their relevance for a professional reputation evaluation was discussed the most, and particularly the responsibility attribute needs to be verified and developed in future research.

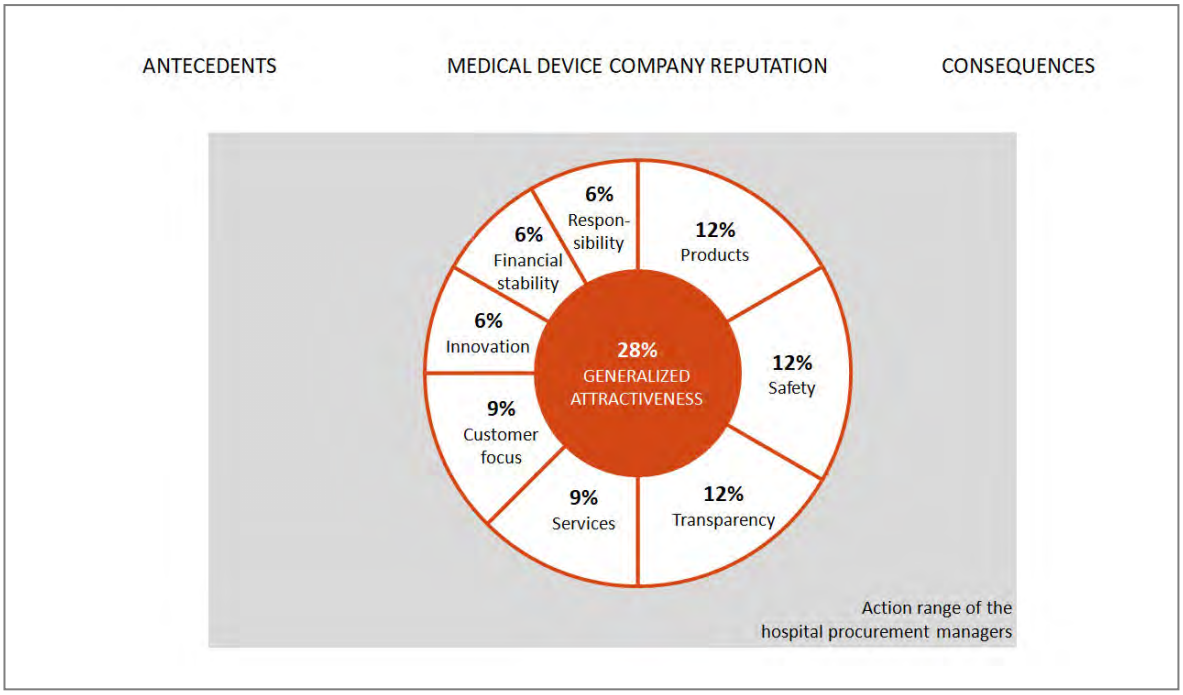

Figure 43: Generalized attractiveness and attributes of medical device company reputation including their weighting after the second phase interviews. Source: Own compilation.

Putting it all together, figure 43 shows the refined concept of the reputation construct, including the weightings of the generalized attractiveness category and the attributes. The figure demonstrates that products, safety and transparency as the three most important attributes make up the half of the overall attribute weighting, whereas the other five

build the other half. Generalized attractiveness is placed as an emotional centre, or the heart of reputation covering the expressions of the interviewees, that an attribute-based judgement of medical device company reputation would not be enough to meet their perception.

6.2. Reputation antecedents

After explaining categories and attributes of the refined concept, this section aims to shed light on the antecedents of medical device company reputation. Figure 44 illustrates them; in comparison to the proof of concept their number has decreased from eight to five.

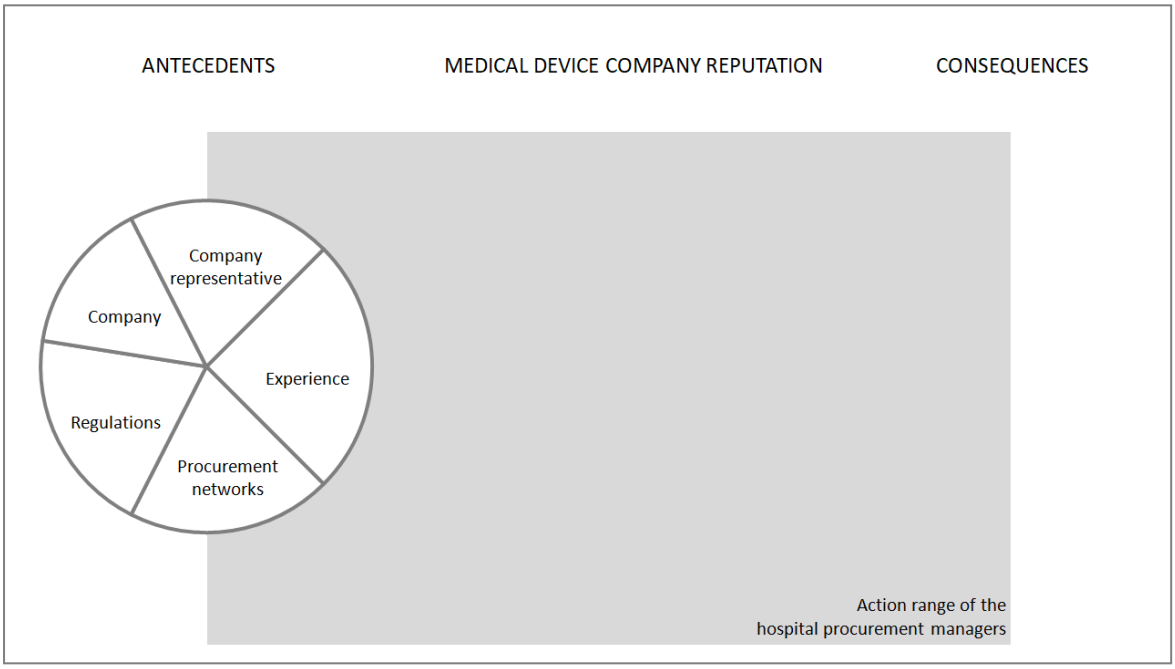

Figure 44: Antecedents of medical device company reputation after the second phase interviews. Source: Own compilation.

The figure shows that the antecedent experience is included in the action range of hospital procurement managers, the antecedents company representative and procurement networks are partly included and the company and regulations antecedents are not included. This replaces the

former antecedent representation that described a sub-process in the antecedent circle. Antecedents which are next to each other have a processual influence on each other: The character of a company leads to the company representative, who adds an impression to the hospital procurement manager's experience. And regulations are perceived in the procurement networks that influence the experience as well. And in the beginning of the process, medical device companies and their regulations are strongly interconnected.

In this section, the second phase interview outcomes regarding the antecedents are presented and explained, starting with the unsurprising confirmations from the existing concept, followed by the extensively discussed media and awareness antecedents, and completed by the weighting of the antecedents.

6.2.1. Unsurprising antecedent confirmations

This section explains the agreements of the second phase interviewees to five antecedents: stakeholder experience, procurement networks, company representatives, regulations and company. Table 65 shows the ratings of the individual interviewees and the average values of the antecedents. All average ratings reach values above 6 and justify an inclusion of the antecedents in the refined concept.

The high rating of 8.6 for experience from the second phase interviewees surpassed the strong rating in the first phase interviews (8.0). The reason can be found in the fusion of the stakeholder expectations and stakeholder background attributes into experience after the first phase interviews. Experience is a term that was self-explanatory to all the respondents, and the only uncertainty was the question about what a high rating would reveal about the personality of the person giving the rating (A3, C3). The

aspects work experience, hospital positioning, knowledge and expectations were broadly confirmed. Interviewee C3's careful rating at 6 was the only exception, but this just reflected his own work experience and his hospital procurement knowledge, which was under ten years. With this justification, participant C3 confirmed that the difference in the experience of different hospital procurement managers is important.

Antecedent	1st phase interviews	A3	A4	A5	B3	C3	2nd phase interviews
Experience	8.0	9	10	8	10	6	**8.6**
Procurement networks	-	9	9	7	8	8	**8.2**
Company representative	-	9	10	8	5	8	**8.0**
Regulations	5.3	9	9	7	7	7	**7.8**
Company	6.8	7	8	6	5	5	**6.2**

Table 65: Confirmed reputation antecedents by the second phase interviewees. Source: Own compilation.

Procurement networks were established as an attribute after the first phase interviews because of their relevance for the development of reputation. This relevance was convincingly confirmed by the second phase interviewees who gave an average value of 8.2 in the Q-sort rating. Communication with other procurement managers, sharing experiences about medical device companies or more buying power – the reasons for being part of networks were manifold. Table 66 summarizes which aspects were relevant for the second phase interviewees.

Procurement associations like *femak* and *BME* were mentioned, and their relevance is based on seminars about current procurement topics and a

yearly community event (A5, B3). Their purpose is professionalising the expertise of hospital procurement managers. The business-related GPOs that organize group purchasing for hospitals have extended their offers to community events and workshops in recent years and increased the strength of their customer relationships (P). Because almost every hospital is part of a GPO, their community networking offers are well accepted (A4, C3).

Procurement networks	A3	A4	A5	B3	C3
Procurement associations			✓	✓	
GPOs		✓	✓		✓
Trade shows and congresses	✓	✓	✓		
Personal networks	✓		✓		✓

Table 66: Procurement networks mentioned by the second phase interviewees. Source: Own compilation.

But there are more professional events, and the second phase interviewees gave some examples, such as symposia on medical congresses (A3), the large medical tradeshow Medica (A4) or a logistics tradeshow, because of its relevance for hospital processes (A5). Personal networks are important and often a result of community events. Social media plays only a minor role in managing the personal networks (A5, B3), as already stated by the first phase interviewees in sub-section 5.3.7.

Interviewee B3 particularly appreciated networks when big tenders for medical devices are being prepared, products need to be changed or services need to be implemented:

> ‘And then you talk with colleagues in the network about their experiences. … If you haven’t had experience with the company in the past, you ask if they know the company and if they had a good or bad experience with it. … This is important and will gain even more importance because it is easier to communicate today. … The methods of communication have become simpler; it is going faster. You do not need to meet or call to get information.’ (B3)

Considering this major role of the antecedent procurement networks, it will be kept in the reputation concept. The aspects procurement associations, GPOs, trade shows and congresses and personal networks provide a broad coverage of all types of networking possibilities for hospital procurement managers, without presenting the names of individual events or groups which could overemphasize specific brands.

Another new antecedent, which was suggested by the first phase interviewees, is the company representative, which was also supported by the second phase interviewees. The average rating of 8.0 makes the relevance of sales staff and their managers for medical device company reputation visible. The second phase interviewees promoted some defined characteristics of company representatives, starting with the existence of a sales representative and mentioning competency, trust and identification with the company. The aspects friendliness, length of the relationship and self-assured manner were not explicitly discussed. Since some of the respondents (A3, A5, B3) highlighted the professional role of salespeople and evoked the compliance discussion in supplier-buyer-relationships, these aspects will be removed.

There were three statements that illustrate the perception of company representatives by the interviewees and they mirror the academic literature about supplier-buyer relationships (Bendixen & Abratt, 2007;

Chao & Cheng, 2012; Hsu et al., 2010). The first one comes from respondent A5 who gives an example for the sales staff's relevance:

> 'It is still important – and here I'm talking about the good old salesperson – that you get advised accordingly and that your medical staff gets product trainings. You cannot ignore this. This is the difference between an industry partner and a seller, who buys something in Asia, puts down the container on the ground and says: Here, you get everything for half of the price, but you need to adjust everything by yourself.' (A5)

This quote highlights the existence of sales staff and their competence because of their ability to train doctors and nurses on the products. As such, the company representative builds reputation, and many of the representative's activities lead to reputation attributes like product quality, safety, service or transparency. To this competency aspect, interviewee C3 adds motivation and identification with the company:

> 'The company performance has something to do with reputation. If you have good salespeople, and they have a good reputation in the market, then you can definitely influence company performance. Good people sell good products even better.' (C3)

With good reputation of salespeople, respondent C3 means the characteristics mentioned above, identification with the company. This is also supported by interviewee A3, who often observed confusion between different salespeople from one company who are not coordinated and only sell their products, without thinking as a team:

> 'The world is getting more complex, and there are huge market players that present themselves as heterogeneous to the customer. You realize that if you get visits from many salespeople, not just the one key account manager who represents the company. Nowadays you have five, six salespeople for their special product areas, and all of them

> present themselves differently and have a different level of market penetration. Thus, it is hard to measure one company reputation.' (A3)

This quote reflects the negative impact company representatives can have on the reputation of a medical device company. This cacophony in their sales and service approaches jeopardizes a clear company perception, and the valuable personal communication channel is blocked by unclear, ambiguous or even contradictory messages. More than ever, company representatives are essential for creating a positive medical device company reputation.

From business environment to regulations: Once more, the renaming and sharpening of a term has augmented its understanding. The regulations antecedent was not only crystal clear to all of the second phase interviewees, it was also rated at 7.8, after earning 5.3 in the first phase interviews. Interviewee B3 referred to the current market development with the new *EU Medical Device Regulation* (EU MDR) that will extend the approval process of medical devices as of May 2021. This is in line with respondent C3, who emphasized the role of certifications that communicate a certain quality standard. And interviewee A3 admitted that you cannot escape from regulations, and regulatory administration by medical device companies inevitably influences their reputation.

Unlike these four reputation antecedents, the fifth one, named company, only achieved a rating of 6.2 instead of around 8. However, there are good reasons to include it as an antecedent, because the explanations from the second phase interviewees were better than the rating. They concentrated on values (A3, A4), strategy (A4) and origin (A3, B3). Particularly the latter was a minor surprise, acknowledging that origin was transformed from an individual reputation attribute to a company antecedent aspect. Obviously,

it fits well as an aspect here, because it was connected with statements about values, like this one from interviewee B3:

> 'The perception of a company that is geographically closer to you, a growing company, which creates jobs and values, is in my feeling better than that of a company listed on the DAX. There is just another connection. When you see that this company started small, maybe … as a family-owned business in Germany and has grown healthily ever since, then it is plausible that this has more weight than a 10 percent increase in the stock price, I would say.' (B3)

This quote combines all the aspects of the company antecedent: The values are clearly stated and interwoven with the objectives of continuous growth and job creation. The strategy is to grow healthily and remain a family business, and the actions are performed accordingly. The origin indicates that all this is happening in Germany, which indicates a close connection to the German hospital market. All company aspects accumulate in the company antecedent which is by itself the prerequisite that a hospital procurement manager can perceive a company's reputation. Therefore, it will be kept in the refined model with the other four antecedents.

6.2.2. A surprising perspective on media antecedents

Probably the biggest surprise in the analysis of the second phase interviews is the respondents' perspective on the two reputation antecedents corporate media and hospital business media. Having separated them after the first phase interviews, their aspects were presented more concisely, naming the company's annual report or neutral hospital business media brands like *Management & Krankenhaus*, *MTD* and *kma*. This clarity resulted in lower ratings of media as antecedent, as table 67 shows.

Antecedent	1st phase interviews	A3	A4	A5	B3	C3	2nd phase interviews
Corporate media	6.3	7	7	5	3	7	**5.8**
Hospital business media	6.3	5	7	5	4	2	**4.6**

Table 67: The ratings of corporate media and hospital business media by the second phase interviewees. Source: Own compilation.

The low rating of hospital business media is surprising, assuming that these media brands are usually perceived as more neutral than corporate media (A5). The reasons for the low rating were intensively investigated in the second phase interviewees. First, the second phase interviewees confirmed that the three hospital business media brands are the only ones that are relevant, and all of the hospital procurement managers knew them. However, their perceptions were mainly negative, as table 68 illustrates.

The interviewees' statements draw a clear picture. Hospital business media are occasionally used, but widely unaccepted in the peer group of hospital procurement managers. The term advertisement was often mentioned to describe editorial content, and instead of reading the articles, the interviewees virtually analyse the content and observe the publishing for the sake of the magazine brand. Furthermore, interviewees A4 and C3 even postulated that corporate media would be more neutral than hospital business media due to regulations regarding company information. With this opinion, it is no surprise that corporate media (5.8) got a better average rating than hospital business media (4.6). Based on the evidence presented, it is doubtful if hospital business media can add anything to a reputation perception of a medical device company. Therefore, this attribute has been removed from the refined concept.

	Usage	Opinion about hospital business media
A3	This is not the media I get information from.	I have the feeling that some articles are sponsored. Professor XY from Z says something about great new software modules successfully implemented in his clinic. ... I do not need that media noise.
A4	Occasionally.	Business media is pure advertisement. A product can be promoted as the company likes, while in corporate media they are bound to legal requirements.
A5	Selective, often content overview only. Because I don't have time.	Who reads them, or even opens them? Online research directly on the companies' websites is more important.
B3	I do not use printed hospital business media, I read their digital publications.	They are not really neutral, because the articles cover companies that advertise. The media brands would die if they would report negatively about the companies.
C3	Not relevant.	Not really neutral. I know how these articles are written. They partly come from the companies directly. This is as informative as advertisement.

Table 68: Statements about hospital business media by second phase interviewees. Source: Own compilation.

The interviewees' signals about corporate media were ambiguous, and an average rating of 5.8 is not really convincing to place it in the concept as reputation antecedent. There was a great agreement among the respondents that product and therapy information is credible when coming directly from the company. Table 69 gives an overview about the usage of the three corporate media channels annual report, website and advertisements by the second phase interviewees.

One question resulting from the analysis of the first phase interviews was whether advertisement is a recognized aspect of the corporate media attribute. The table clearly shows that this cannot be determined after the

second phase interviews. Apparently, only interviewee C3 noted a reputational value of advertisements, all the others ignored advertising intentionally.

Corporate media channels	A3	A4	A5	B3	C3
Annual report		(✓)		(✓)	(✓)
Website	✓	✓	✓	(✓)	✓
Advertisements					(✓)

Table 69: Media channels used by the second phase interviewees. Note: (✓) means occasional use. Source: Own compilation.

All the second phase interviewees use the internet as the primary information source and trust the companies' websites most. Annual reports are occasionally read, but their use is only one time per year, not a regular source when information about products and services is needed. Interviewee A5 mentioned printed product information as being helpful after first doing research online. However, printed information often comes with the company representative's visit, and is therefore additional information for the personal supplier-buyer discussion. Summing up, the regularly used and trusted media channel for the hospital procurement managers are the websites of medical device companies, which provide more information than the annual report or detailed printed product information. Interviewee A3 specified the use of the websites:

> 'Relevant and interesting media can be found in the internet on the company websites. There, I can focus on information that is important to me. This includes ordering information, downloads of product catalogues, detailed product names and descriptions including advantages and disadvantages. This is important to me. And is where procurement managers get their information.' (A3)

This emphasis on the companies' websites was generally shared by the other respondents, and this results in the assumption that corporate media is expressed too generally. On the contrary, a company website can be hardly built as an antecedent by itself, as it is only one company activity for communication. As such, it is obvious to include it as aspect in the company antecedent, because this antecedent contains company actions anyway. Positioning the website as its own aspect here, would value its relevance for reputation building, and will upgrade the company antecedent.

However, this regrouping of the last media aspect after starting with a relatively large media antecedent could be disappointing for both media management academics and professionals. But one should keep in mind that hospital procurement managers are not addressed by the usual consumer communication channels. As shown above, there are communication channels like company representatives and procurement networks that give them, together with the companies' websites, enough information to perceive reputation.

6.2.3. The ambiguity of awareness

After the first phase interviews, awareness was moved from a reputation category to an antecedent category because of its weak ratings. As such, it combined communication antecedents, two of which have already been removed in the previous section. Considering these results so far, it would stand for the remaining channels of company representatives and procurement networks, which surely could increase the awareness of a medical device company.

By contrast, awareness as antecedent category was not accepted by the second phase interviewees. An example of this poor perception is a quote

from respondent A3, who even denied that awareness in any form would be an antecedent of reputation:

> 'No way. Awareness is not about facts. Awareness is something that works well in media and in various communication channels. And everyone is aware of a company, but no one really knows what is hidden behind it. But above all, this does not mean that a famous company has a good reputation for a procurement manager.' (A3)

Admittedly, this is the most drastic statement about the relevance of awareness. But it points at a weak spot of the awareness concept: If awareness is just a representation of being popular, it would have only limited meaningfulness to hospital procurement managers. Interviewee A3 underlined this with the phrase 'no one really knows what is hidden behind it'. However, the term awareness is itself ambiguous, because it could also mean 'to be known for'. This ambiguity exists in both English and German. Interviewee A4, who has the most positive perception of awareness, agrees to its relevance for reputation to 100 percent:

> 'We can see this in our personal lives. There are a lot of brand names that we associate with everyday products. If someone says Nutella, the other person knows what we mean. Same with tissues, almost everyone thinks about the brand name Tempo first. At first it is not important which company is behind it, but the brand name and the brand awareness mirror the reputation.' (A4)

This quote includes both notions of awareness: the prominence and publicity of a company or a product, and the brand awareness to stand for something, such as a product category or a quality. However, the quote also reveals, that this part of awareness is a consequence of reputation, it ‚mirrors the reputation', and as such the reputation attribute products and its positive consequence. Overall, the impressions on awareness were

mixed, and table 70 summarizes the ratings and positions of the second phase interviewees:

	Rating	Opinion
A3	2	Awareness is not about facts. ... And everyone is aware of a company, but no one really knows what is hidden behind it. But above all, this does not mean that a famous company has a good reputation for a procurement manager.
A4	8	There are a lot of brand names that we associate with everyday products. ... At first, it's not important which company is behind it, but the brand name and the brand awareness mirrors the reputation.
A5	4	This is hard to evaluate. This is why I hesitated. Under awareness I understand how I am aware of a company.
B3	6	I did not know where to sort awareness.
C3	5	Ok, awareness. ... One could ask a thousand questions about that. ... Awareness is too general as an antecedent. ... I ask myself for whom awareness could be relevant and what is included in that. Single products or a gold standard in the market? ... Awareness is not concrete enough.

Table 70: Awareness ratings and opinions of second phase interviewees. Source: Own compilation.

The table reveals a lack of agreement between procurement managers with the term awareness, and the average rating of 5.0 demonstrates this ambiguity. Unlike interviewees A3 and A4, the other respondents had difficulty evaluating awareness. Interviewees A5 and B3 verbalized this, and C3 looked for a more concrete equivalent to awareness. The big picture of responses shows insecurity with the term awareness, and with the definition as a reputation antecedent category.

As a result, the term awareness has been removed from the refined reputation concept. The ambiguity of the term awareness blurs the reputation concept with unclear meanings. Additionally, it seems

questionable if awareness as a term is needed in the model at all: Its first meaning of being popular is of less relevance for procurement managers, following the low ratings (3.6) in the first phase interviews. And its second meaning of known for something is represented in the reputation attributes and does not need to be communicated further.

6.2.4. Antecedent weighting

In this section, the refined concept of antecedents was discussed, which consists of the five antecedents: company, regulations, company representative, procurement networks and experience. Since not all the antecedents were rated at the same relevance by the second phase interviewees, table 71 suggests a weighting, adding up to 100 percent.

Reputation antecedents	Rating 2nd phase interviews	Weighting
Experience	8.6	25 %
Procurement networks	8.2	20 %
Company representative	8.0	20 %
Regulations	7.8	20 %
Company	6.2	15 %

Table 71: Overview of average antecedent ratings in the second phase interviews and their weightings in the refined concept. Source: Own compilation.

Procurement networks, company representative and regulations were assigned at a 20 percent average weighting. All three antecedents reached ratings of 8 or close to 8 from the second phase interviewees, and a different weighting for them would hardly be explicable. The experience antecedent was upgraded by five percent in the weighting, and the company antecedent was downgraded by five percent. This represents the

focus of the interviewees. Experience reached by far the best rating at 8.6, and this demonstrates its high relevance for the reputation-building process. The antecedent company received the lowest rating of 6.2 and should have an even lower weighting than 15 percent. The inclusion of the media aspect of the company's website strengthened the weighting here.

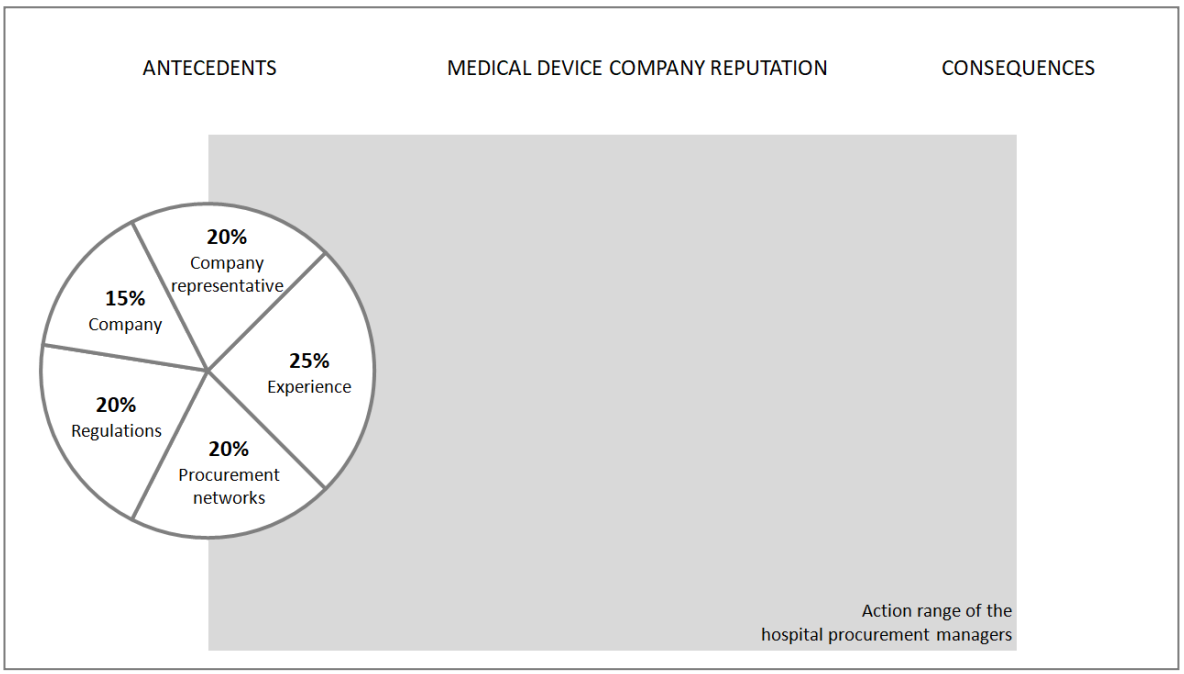

Figure 45: Antecedents of medical device company reputation after the second phase interviews including their weighting. Source: Own compilation.

Figure 45 illustrates the antecedent weighting in the refined concept, which was introduced at the beginning of this section. Of course, these ratings are estimates, just like those of the attributes, but they contribute an idea about the relevance of each of the antecedents. And from a perspective of a critical realist, they are an attempt to present the antecedents of medical device reputation in the real domain, unless they are challenged by another, more concise model.

6.3. Reputation consequences

Only one part of the refined reputation concept is left: the impression of the second phase interviewees about the reputation consequences will be described in this section. All three reputation consequences were confirmed and none of them led to major discussions during the interviews. Table 72 presents the ratings in comparison to the first phase interviews.

Consequence	1st phase interviews	A3	A4	A5	B3	C3	2nd phase interviews
Advocacy	6.9	9	9	7	8	7	**8.0**
Purchase decision	8.1	7	10	8	5	8	**7.6**
Company performance	6.1	8	8	8	6	6	**7.2**

Table 72: Confirmed reputation consequences by the second phase interviewees. Source: Own compilation.

Advocacy as a reputation consequence earned broad consensus among the second phase interviewees. All of them were open to recommend medical device companies with a good reputation, and the rating of 8.0 even exceeded the one in the first phase interviews (6.9). Interviewee B3 emphasized the role of word of mouth:

> 'And you pass these experiences to others. When I get asked about a company that someone else had no contact with, then I would pass information from my perspective. This is important and will even gain importance because it gets easier to communicate.' (B3)

Beside this personal recommendation, three of the five hospital procurement managers interviewed have already given written references

about medical device companies. Here again, participant B3 thought about the conditions of the reference:

> ‘Then I think: Do I just do this so that I can get it off my desk, or is it right from my hospital’s point of view? Are the products good, the service, the whole package? Can we give our name in a reference for someone else‘s tender? This is something I can directly influence.’ (B3)

The last sentence points out the direct scope of action for hospital procurement managers perceiving reputation. Giving an oral recommendation or a written reference is something the managers can decide on their own, implying that the other two consequences cannot be decided on their own (completely). The purchase decision must be shared with others like the GPO, the hospital management or medical staff, at least. And the supplier performance is a result of the procurement managers‘ actions as a group, and definitely out of an individual manager’s reach. Advocacy can be executed directly instead, with a little limitation in practice: A written reference usually needs to be in general agreement with the hospital’s policy (B3).

The second reputation consequence is the purchase decision, which was confirmed with an average rating of 7.6, slightly lower than in the first phase interviews (8.1). Interviewee A4, who gave the highest rating at 10, defended it with the following statement:

> ‘The purchase decision is the result of all the factors that you have predetermined and thrown into the scales, and you make a decision at some point afterwards. And when the decision has been made – whether positive or negative – it reflects the reputation. … But I can rationalize whether my gut feeling or the feeling I had when making my decision will also show up on the market. And when the decision is finally made, this builds the reputation during the actual purchasing process.’ (A4)

These are remarkable reflections about the purchasing process, which includes reputation perception. The values in the first sentence can be substituted by reputation attributes. Participant A4 also observed that companies can have positive and negative reputations, and described the gut feeling which can be translated to generalized attractiveness. And the end of the statement zooms to the very purchasing moment and the role has reputation for it. Interviewee C3 defines the purchasing moment a bit more soberly:

> 'I am generally analytic and compare the hard facts. And usually, there are no big differences among the products … What is decisive is that a product works, if there are problems with the salespeople, and so on. These are really the soft skills, and these let speak to the reputation in my opinion.' (C3)

Interviewee C3 restricts the reputation power of a decision to soft facts, but also admits that hard facts are usually the same. The ‚decisive' facts in the quote are a reputation antecedent (salespeople) and a reputation attribute (product characteristics). In the course of the interview, the interviewee also mentioned services, another reputation attribute.

A major reason why purchase decision is not as highly rated as advocacy is a low rating of 5 by respondent B3, who mentioned some external influences on the purchase decision, such as GPO framework contracts and price, which pushed down reputation. Interviewee A3 mentioned routine daily decisions as circumventing the influence of reputation; A5 mentioned the framework contracts again. However, it is surprising that the second phase interviewees rated the relevance of reputation for purchase decision higher than the first phase interviewees, as table 73 shows.

in %	1st phase interviews	A3	A4	A5	B3	C3	2nd phase interviews
Relevance of reputation for purchase decision	29.1	15	70	60	10	20	**35.0**

Table 73: Estimated relevance of reputation for purchase decision by the second phase interviewees. Source: Own compilation.

The average relevance of 35 percent should not hide the fact that the average value was reinforced by two very high ratings from interviewees A4 and A5 who are obviously reputation fans. The other three had lower estimations, along with interviewee C3, whose hard facts makes 80 percent of the purchasing decision. All twelve interview participants estimated the role of reputation for the purchasing decision at 31.6 percent averagely.

The defined consequence purchase decision had eight aspects after the first phase interviews, and some of them were challenged by the second phase interviewees: Loyalty, re-purchase, cross-purchase and long-term customer retention have significant overlapping. Identification with the medical device company was perceived as too marketing-driven. Subsequently, only the aspects satisfaction, buying intention, purchase and loyalty were included in purchase decision.

Company performance was also confirmed as a reputation consequence and reached an average rating of 7.2 after earning 6.1 in the first phase interviews. One reason for this positive change could be the renaming of the financial performance attribute to financial stability, which absorbed the discussion about revenues and profit in general. Financial performance was perceived as a guarantee for the long-term stability of medical device companies, and therefore appreciated by second phase interviewees (A3, A4, A5).

Interviewees A3, A5 and B3 were also convinced that long-term stability relates to the other aspects competitive advantage, revenues and profit. Only respondent A4 denied this connection and flagged the other aspects as irrelevant for hospital procurement managers. However, his explanation came with an example of a medical device supplier that focused so much on revenues and profit that the company lost its competitive advantage after a market adjustment.

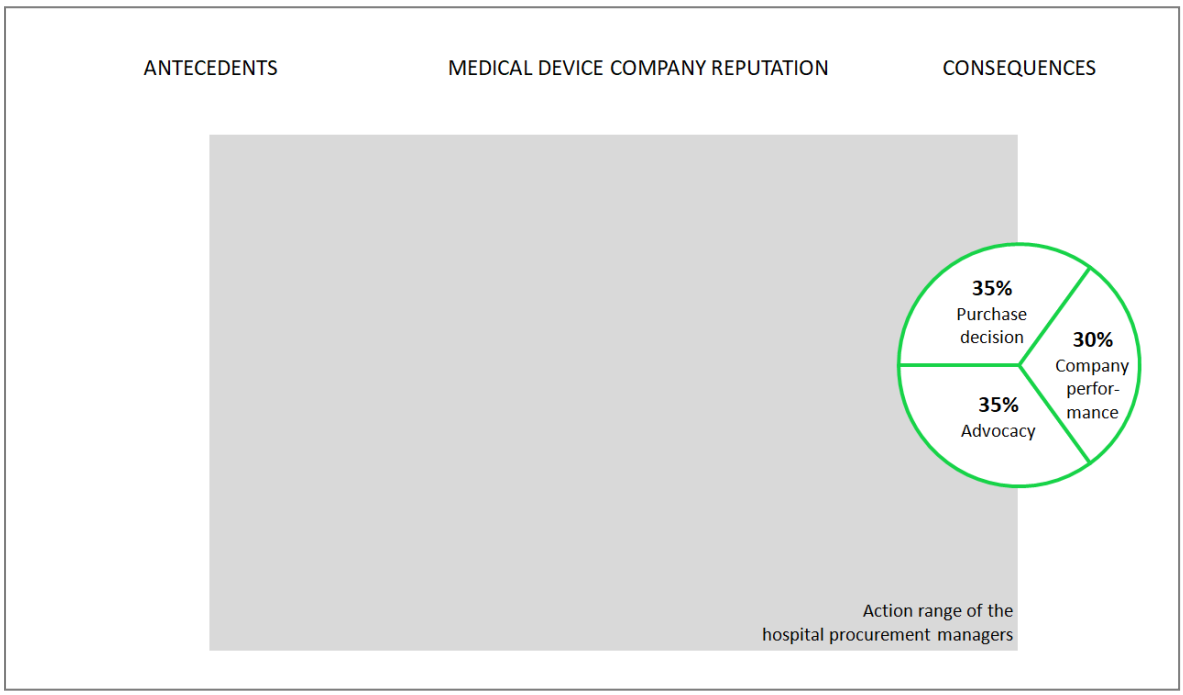

Figure 46: Consequences of medical device company reputation after the second phase interviews including their weighting. Source: Own compilation.

In conclusion, all three reputation consequences were confirmed by the second phase interviewees. Because of their good ratings (8.0, 7.6 and 7.2), all consequences could be equally rated at 33 percent. However, since company performance received the lowest rating (7.2) and purchase decision (7.6) was broadly supported by the participants in their statements, the weighting was slightly adapted to 35 percent advocacy,

35 percent purchase decision and 30 percent company performance, as illustrated in figure 46.

The figure also illustrates that purchase decision and advocacy are located almost completely in the action range of the hospital procurement manager, whereas company performance is placed outside this range. As such, it can be seen as a consequence of purchases and advocacy, and as an endpoint in a processual chain in the reputation concept.

6.4. Causal mechanisms

Explaining mechanisms in a concept is one of the foremost interests of critical realist researchers. This section will focus on the strings between antecedents, attributes, consequences and influences from outside the reputation construct. As such, it specifies and completes the analysis done after the first phase interviews in section 5.5, which introduced the company representative and crisis as the two major causal influencers in the reputation construct.

Just like in the previous analysis, the refined analysis started with counting the number of interviewees in both interview phases who have mentioned individual causal mechanisms. The maximum strength of a causal connection can be twelve, independent of the times an interviewee mentioned the connection. Using this scheme, figure 47 shows the ten strongest causal mechanisms that were identified by at least three interviewees. Other 17 causal mechanisms, which were mentioned by two interviewees, are presented in appendix 29.

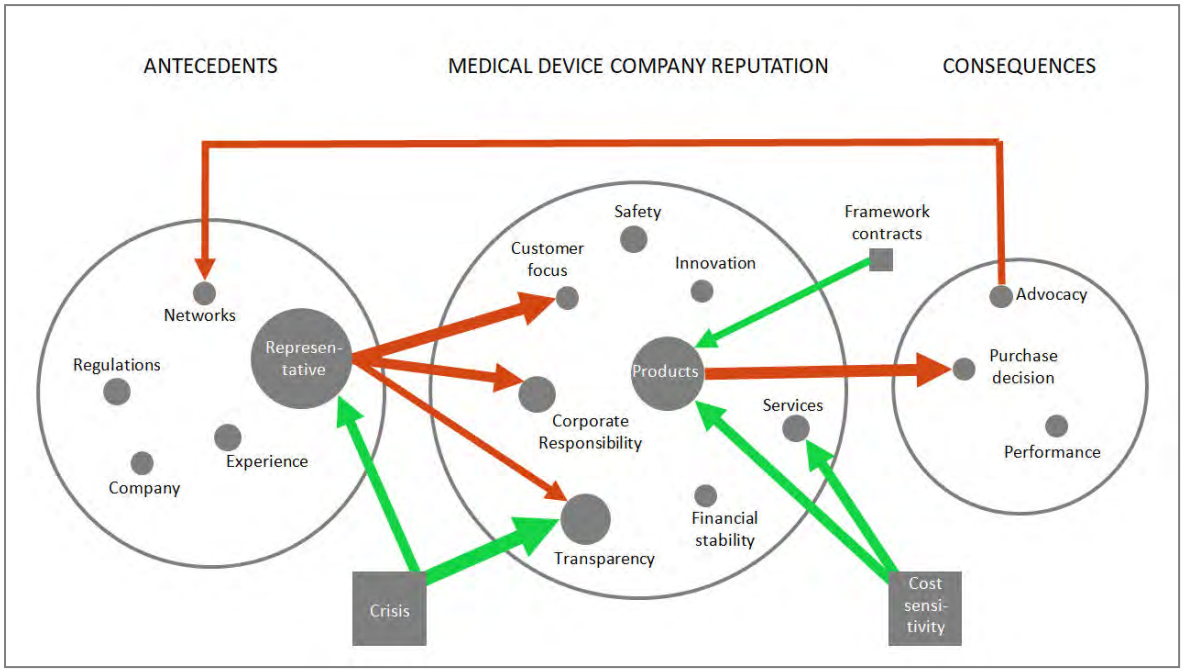

Figure 47: Overview of the ten strongest causal mechanisms in the reputation concept resulting from first and second phase interviews. Notes: The stronger the arrow, the stronger the mechanism. The larger a circle or square is, the more mechanisms have their source or goal there. Source: Own compilation.

At first sight, company representatives, products and transparency are the three largest nodes in the reputation construct. Crisis and price are the two main external influences that determine antecedents and attributes of medical device company reputation. In the next section, the top five internal causal mechanisms (red in figure 47) will be explained; the following section focuses on the five mechanisms driven by outside influences (green).

6.4.1. Internal reputation drivers

All five mechanisms identified in the refined concept have partly been found in the analysis of the first phase interviews. Table 74 shows the source and the ending of the mechanisms as well as the number of interview partners mentioning them.

Mechanism source	Mechanism ending	Number of interviewees mentioning mechanism
Products	Purchase decision	5
Company representative	Customer focus	5
Company representative	Responsibility	4
Company representative	Transparency	4
Advocacy	Procurement networks	3

Table 74: Regularly mentioned mechanisms within the reputation construct. Source: Own compilation.

Why the product attribute has interdependencies with a range of other attributes, such as safety and innovation, is explained in the previous chapter. In addition, it has been shown that a good reputation leads to purchase decisions. The combination of these two observations represents one of the strongest causal relationships in the reputation construct: Products, the most important reputation attribute, influences the purchase decision.

This relationship does not merely rely on the product quality (B3), but the product characteristics, as well (A2, A5, C2, C3). As introduced in section 1.2.1., medical devices include a wide range of products, from single-use products like plasters, cannulas or infusion containers to highly technological products like computer tomography scanners. While the purchasing of the former is standardized and reputation plays a role in the annual negotiations, the purchasing of the latter is a multistage process for one unit with more parties participating.

In addition to this difference in product type, patient impact is decisive in this causal relationship (A2). An artificial hip or a stent is implanted directly in the patient's body, therefore the producer needs to have a good

reputation to sell it to hospitals. This aspect in the connection between products and purchase decisions is evident, but there is no general formula like 'the higher the product relevance for patients the higher the chance of a purchase'. When hospital procurement managers make a purchase decision, using their reputation perception in the purchasing process, they often consider the combination of product characteristics before they buy, and the important ones are the patient impact and the product type.

The refined analysis of the reputation mechanisms confirmed strongly that company representatives are reputation agents in many aspects. In particular, they influence the reputation attributes customer focus, responsibility and transparency. Five procurement managers highlighted the salesperson's role in customer focus. This includes the health of the customer relationship (A1, B2, C1) as well as customer centricity which includes the knowledge about the customer's situation and processes (A1, B1). Interviewee A4 emphasized the role of company representatives:

> 'I understand the salespeople not only as sellers in the market, but service providers for the customers. This is decisive for us because the salesperson is the gateway to the customer. And when everything goes well, they are obviously positive points of contact. The same good points of contact are needed if things go badly for the company.' (A4)

The quote implies the demand for an individual approach in customer management and strengthens the responsibility of company representatives – in good and bad times. And particularly in bad times, the transparency of a medical device company is represented by the way a salesperson acts and communicates (A3). Honesty and openness are important aspects, even in risky situations, because the company representatives are often the only source of information for customers (A3, A5). Interviewee C3 added that in good times the company representatives

also need the mandate to communicate and negotiate sovereignly, otherwise the credibility of a company will be reduced.

This requires an appreciative leadership in companies, one with trust in the employees‘ abilities (A1, C2, C3). For interviewee C3, leadership as an aspect of corporate responsibility demonstrates a kind of internal reputation for a medical device company. Without moral behaviour in the company, the representatives cannot convince others of the positive corporate reputation. As such, company representatives have a prominent role in influencing the buyers‘ perceptions about the company’s responsibility.

In the analysis of the first phase interviews, the causal mechanism between the reputation consequence advocacy and the reputation antecedent procurement networks was not as prominent as in the second phase interviews. In general, procurement networks and advocacy were inseparably associated by most of the interviewees. Three of them (B2, B3, P) even promoted their own active role in recommending medical device suppliers to others. Notably, giving and getting recommendations are two separate actions and are placed in two different positions in the reputation concept, but they are often acted in one arena with flowing transitions.

Overall, the analysis of the regularly mentioned causal mechanisms inside the reputation construct has shown that the unmanageable variety of mechanisms can be sorted and qualified. Nevertheless, there are many more mechanisms which were only mentioned by one or two interviewees. In a more extensive set of interviews, more regular interdependencies between reputation antecedents, attributes and consequences might be identified.

6.4.2. External reputation influences

The concept of medical device reputation is an open system, and the best evidence is that five of the ten most-mentioned causal mechanisms are influenced from outside. Once again, the second phase interviewees confirmed the outcome of the first interviews, highlighting crisis as the most critical external reputation changer. Moreover, cost sensitivity and framework contracts are also identified influencers, as table 75 demonstrates.

Mechanism source	Mechanism ending	Number of interviewees mentioning mechanism
Crisis	Transparency	6
Cost sensitivity	Products	4
Price	Services	4
Cost sensitivity	Company representative	4
Framework contracts	Products	3

Table 75: Regularly mentioned mechanisms influenced from outside the reputation construct. Source: Own compilation.

Whereas a crisis like a product recall has multiple impacts as shown in sub-section 5.5.2., this sub-section concentrates on the most frequent ones, namely the causalities towards transparency and the company representative. Six procurement managers emphasized how important transparency is in crises, making this causal mechanism the strongest in the entire reputation construct. The aspect honesty was reflected by the interviewees, such as by A5:

> ‘We have to deal with crises together. … And a company should be honest and communicate reasonably, should talk openly [about problems] and should ask how we can solve them together. When a company is not only active but proactive in crisis situations, I appreciate that.’ (A5)

This is a clear statement that honesty works better than embellishing the facts of the crisis. Interviewee A5 expressed the feeling that medical device companies are not perceived as being open and would only give information when absolutely necessary. Procurement manager A3 went one step further, suggesting that a crisis could be also a chance for the medical device company if its representatives explain the reasons for the crisis. This radical openness would lead to more tolerance from procurement managers (A3, B2).

The role in crises already indicates the important role of company representatives: They should actively talk about the company’s issues, manage them and provide solutions together with the customer (A1). Interviewee A4 highlighted that is it not decisive that a recall be managed, how it is managed is crucial, and this requires company representatives who are confident and convincing.

An external reputation influencer is the cost sensitivity in the hospital sector. The cost sensitivity of hospital procurement managers influences the reputation attributes products and services. In the hospital sector, offering products for premium prices does not automatically mean that the reputation increases. Also, a good reputation should not lead to exaggerated price models (A2, A3, A4). But there is a common logic among the interviewees, that high-quality products in combination with a good reputation lead to a wider acceptance of above-average prices (A4, B2, C3). However, most of the procurement managers need more reputation attributes to observe the appropriateness of the price (A2, A4).

One of these attributes is service: When medical device companies offer service aspects like system partnerships, process consulting, digitized processes and product trainings, then the procurement managers can see the added value included in the price (A3, A4, B3, C3). Interviewee A4 posited that service will further determine the price in future, and interviewee A3 concluded that price is no longer everything. Product and service quality as a tandem had more value than hard negotiations for the cheapest price (B3, C3). The price certainly remains dominating and cost sensitivity remains one of the biggest outside reputation influencers. But it can be balanced with product and service quality to break through the hospital procurement formula *The lower the price, the better my negotiation*.

Framework contracts make the perception of reputation by hospital procurement managers even more complex. The purchase of many medical devices is usually included in framework contracts, managed by GPOs the hospital is a member of. The procurement managers are bound to the contracts and cannot buy another medical device, even if they want to (A5, C1, C3). This does not automatically mean that the reputation cannot be built at all (A5), but the perception of the attribute products is interfered, because it has limited relevance to the buying process. However, interviewees A5 and C3 admitted that there are options to review the contracts regularly, and thus a reputation perspective can be included.

The refined concept of medical device company reputation reacts to external influences. Although the structure of antecedents, attributes and consequences remains relatively stable, mechanisms related to the concept are altered by these external reputation influences and then lead to other consequences. However, knowing these influences could help to

neutralize them, such as recognizing cost sensitivity or being transparent and avoiding whitewash during crises.

6.5. Comparisons between interviewee groups

This section is introduced in the thesis to describe differences between the twelve interview respondents. It is valuable to demonstrate the variance of the hospital procurement managers interviewed, and this adds to the discussion about the validity of the research.

Three different group clusters were built. The first included public, non-profit and private hospitals. This cluster represents the German hospital market, aiming to explain possible differences between hospital procurement managers from the different hospital types. The second cluster compares length of work experience of the hospital procurement managers. In this thesis, short is defined as 10 years and less; long is 15 years or longer. As shown in table 19 in sub-section 3.2.3., there was no respondent who had between 10 and 15 years of work experience. The third cluster compares reputation fans and reputation sceptics. Reputation fans estimated the role of reputation for their decision-making at 30 percent and higher, the sceptics at 20 percent and lower. There was no respondent who rated between 20 and 30 percent. Table 76 sorts the individual interviewees into groups.

The table reflects that the three group clusters are made up of different interviewees; not all interviewees from public hospitals are reputations fans or have long work experience. The following three sub-sections will present the differences in the three group clusters. Difference means that there are at least 2.0 points deviation between the Q-Sort ratings by the managers of the hospital types (three groups) and at least 1.0 point deviation between their work experience and reputation attitude types

(two groups each). Constituents were only compared if they received ratings in both interview phases.

Interviewee	Hospital type	Work experience	Reputation attitude
A1	Public	Short	Sceptic
A2	Public	Long	Sceptic
A3	Public	Long	Sceptic
A4	Public	Short	Fan
A5	Public	Long	Fan
B1	Non-profit	Short	Sceptic
B2	Non-profit	Long	Fan
B3	Non-profit	Short	Sceptic
C1	Private	Long	Fan
C2	Private	Short	Fan
C3	Private	Short	Sceptic
P	--	--	Fan

Table 76: Interviewees sorted in interviewee groups. Source: Own compilation.

6.5.1. Public vs. non-profit vs. private hospitals

The ratings of the interview participants from public, non-profit and private hospitals are similar in most of the reputation constituents. There are three exceptions, and they are listed in table 77: The reputation attributes responsibility and financial stability, which are rated low by interviewees from non-profit hospitals and high by the ones from private hospitals, and the reputation antecedent regulations that received high ratings by public hospital managers and low ratings by private hospital managers.

Reputation constituent	Public hospitals	Non-profit hospitals	Private hospitals
Responsibility	5.9	5.1	7.7
Financial stability	5.9	4.7	6.7
Regulations	7.4	6.3	5.0

Table 77: Differences in the ratings of interviewees from public, non-profit and private hospitals. Source: Own compilation.

Since the hospital procurement managers explained their ratings in the interviews, these differences can be investigated. The attribute responsibility is a merger of ethical behaviour, leadership and the responsibility towards employees, environment and society. Non-profit hospitals are, by definition, companies that play a role for society (B1). As such, interviewees B1 and B2 postulated responsibility is standard, not necessarily included in their reputation perception, it signifies the legitimacy to do business with non-profit hospitals. In contrast, all procurement managers from private hospitals highlighted how important the aspects listed under responsibility are. Private hospitals are businesses and usually define their purpose for society with a great deal of care. Interviewees C1, C2 and C3 gave examples of companies with a poor sense of responsibility towards their employees, ethical behaviour and corporate citizenship. Because of the need to position private hospitals from the perspective of responsibility, their awareness of doing business responsibly is established stronger in private hospitals than in public and non-profit hospitals.

The differences in the financial stability attribute can be based on a similar assumption. Private hospitals are business-driven companies and depend on their sales and profits. As such, their structure is closer to that of the medical device companies than the structures of public and non-profit

hospitals; therefore, the role of financial performance or financial stability for reputation is perceived higher than by procurement managers from other hospital types. Managers of non-profit hospitals were the most sceptical about profits that come with financial performance or financial stability (B2). Their objectives do not include exceptional financial performance, and financial objectives for their suppliers contradict with their objective to manage healthcare as a non-profit (B1).

The variance in the opinion about regulations is connected with the special requirements public hospitals have to comply with when looking for suppliers (A2, C2). Their procurement is highly regulated, and the managers expect that the role of regulations for medical device companies is similarly high (A1, A2). Interviewee C2 reflected that managers in private hospitals are quite relieved to not be as extremely regulated as the ones from public hospitals when searching for suppliers.

Of course, the comparison of these small groups is not intented to generalize these differences. Nevertheless, they could add thought-provoking impulses to both academic researchers and corporate practitioners.

6.5.2. Long vs. short work experience

When comparing the participants by their work experience, six differences are noticeable; all of them are presented in table 78. The interviewees with long work experience rated attribute-specific judgement, products and services particularly high. The interviewees with short work experience were more in favour of generalized attractiveness, responsibility and regulations.

Reputation constituent	Short work experience (10 years and under)	Long work experience (15 years and over)
Attribute-specific judgement	7.8	8.8
Generalized attractiveness	6.8	5.8
Products	8.5	9.6
Services	8.0	9.3
Responsibility	6.6	5.6
Regulations	7.2	5.6

Table 78: The differences in the ratings of interviewees with short and long work experience. Source: Own compilation.

The differences indicate that hospital procurement managers with long work experience rely more on hard facts when they evaluate reputation. The extraordinarily high ratings of products and services, which can be assessed by comparing hard facts, are in alignment with the average high rating of the attribute-based judgement category.

The ratings of the interviewees with short work experience are not particularly low, but clearly behind the ones of the other group. They rated generalized attractiveness and responsibility higher; both are more emotional-driven constituents of reputation. Interviewees A4, B3 and C2 rated responsibility higher than 7. Interviewee A4 argued with the responsibility for society and the need for companies to contribute to the planet's future. Participants B3 and C2 emphasized the leadership and responsibility for employees which are important reputation drivers to them. In addition, four of the six interviewees with short work experience rated generalized attractiveness equally or higher than attribute-specific judgement, but none of the managers with long-term experience did so.

Hospital procurement managers who are new look for personal contact (A4, B3) and let themselves be led by general impressions (A4, B1).

Focusing more on regulations might express the desire that the market requirements will set a common standard for medical devices (A1, A4, B1). Managers with more work experience had more years in the business to reflect prior developments in regulations and they articulated a greater independence when making their own judgements (B2, C1). Overall, the comparison identifies the trend that hospital procurement managers with up to ten years work experience are more open to an emotional reputation perception.

6.5.3. Reputation fans vs. reputation sceptics

The average relevance of reputation for their purchase decision is 15.1 percent among reputation sceptics and 48.1 percent among reputation fans. Comparing the perception of reputation constituents, there are six items that differ between the two groups. Table 79 shows that reputation fans rated customer focus, responsibility and all reputation consequences high; reputation sceptics had a stronger focus on regulations.

Reputation fans rated the soft attributes customer focus and responsibility higher than reputations sceptics. Moreover, customer focus was even the highest rated item by reputation fans, even higher than products. Customer focus and responsibility are influenced by the company representative and this leads to the assumption that reputation fans are more relationship-based than reputation sceptics. In the interviews, participants A4, B2 and C1, who rated customer focus at 10, highlighted the role of the company representative for fulfilling the customer needs and for developing solutions together. In contrast, the regulation

antecedent, which is a given standard without any personal interaction, reached an above-average level in the group of reputation sceptics.

Reputation constituent	Reputation sceptics (20% and under)	Reputation fans (30% and higher)
Customer focus	7.2	8.8
Responsibility	5.2	6.8
Regulations	7.2	5.5
Advocacy	6.5	8.2
Purchase decision	7.3	8.5
Company performance	5.8	7.3

Table 79: The differences in the ratings of interviewees that are reputation sceptics and reputation fans. Source: Own compilation.

The high ratings of the three reputation consequences advocacy, purchase decision and company performance by reputation fans certainly warrant attention. Everyone rated the consequences before they estimated the relevance of reputation for the buying process. With these ratings, they unintentionally anticipated their positive attitude towards reputation. Additionally, they strongly confirmed that company performance is an ultimate consequence of reputation; the reputation sceptics, with a rating of 5.8, are not as sure about it.

These interesting results can hardly be acted upon in a practical sense, because medical device companies do not usually know whether a hospital procurement manager is a reputation fan or not. Knowing their attentiveness or scepticism of reputation could help medical device companies how to address procurement managers individually by communication and activities that include or exclude reputational constituents. However, the comparison of reputation fans and sceptics

does convey the message that even in a complex business environment with a focus on prices and framework contracts, medical device buyers are open to considering reputation as a decision criterion.

The differences between the groups in the previous sub-sections are effects that result from causal mechanisms influencing the reputation concept. They are located in the actual domain, because they were not intentionally expressed by the interviewees in the empirical fieldwork. The differences are an interesting example that causal mechanisms also depend on the different types of reputation perceivers within one stakeholder group.

6.6. Summary: A refined concept of medical device company reputation

This third result chapter shaped the concept after the first phase interviews together with the outcomes of the second phase interviews. It represents an integral portion of the DREIC scheme, retroducing the constituents and structure of medical device company reputation, eliminating and moving reputation attributes and antecedents as well as their aspects until a refined concept was identified. In the second phase interviews, the respondents expressed a common sense of the reputation construct. Thus, a third interview phase was not necessary, and the refined concept after the second phase interviews, which is shown in figure 48, is the final concept in this thesis.

Medical device company reputation is thus identified by generalized attractiveness in the centre of the construct, surrounded by the eight reputation attributes products, safety, transparency, services, customer focus, innovation, financial stability and responsibility. All of them are

weighted in accordance with their relevance as extracted from the ratings and explanations of the second phase interviewees. An individual representation of the reputation categories generalized attractiveness and attribute-specific judgement is not needed anymore, because attractiveness is placed with a high weighting in the reputation structure, and the eight attributes describe the attribute-specific judgement.

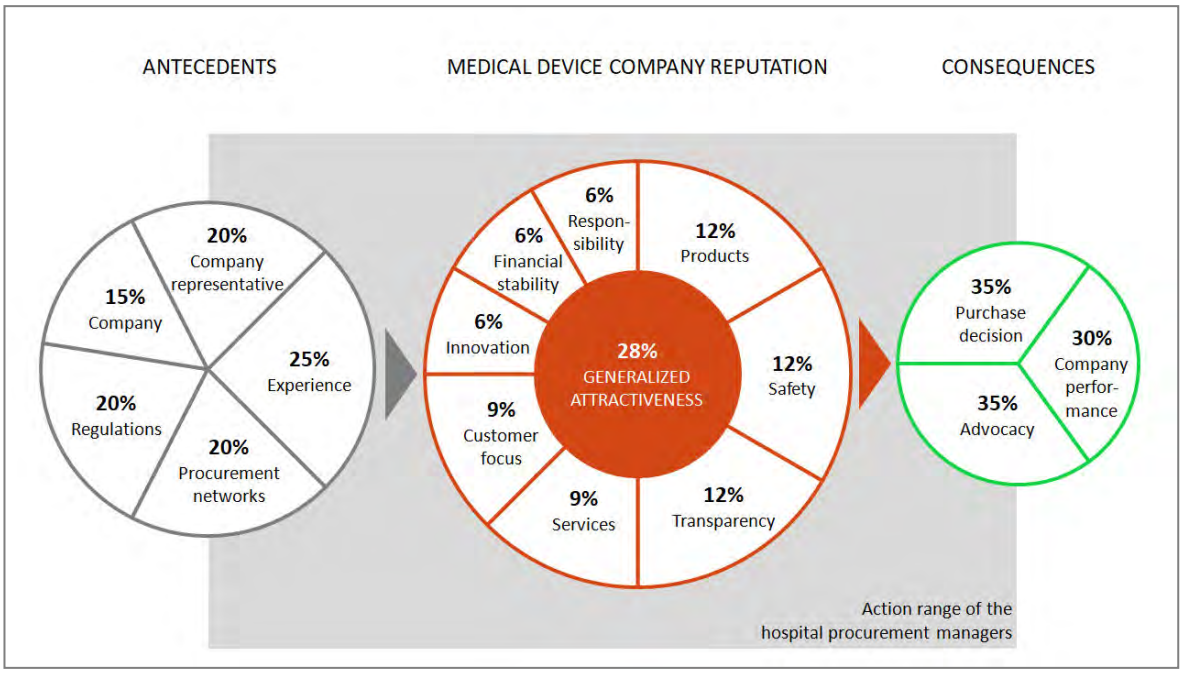

Figure 48: The refined concept of medical device company reputation after the second phase interviews including the weighting of the constituents. Source: Own compilation.

The reputation antecedents were reduced to company, regulations, company representative, procurement networks and experience. Their weighting illustrates their relevance for the hospital procurement managers who were interviewed for this research. Adjoining antecedents interact with each other in a causal process; the company influences the company representative who impacts on the experience of the hospital procurement manager. Regulations define a business environment discussed in procurement networks which influence the experience as well.

The reputation consequences in the previous concept, namely advocacy, purchase decision and company performance, were confirmed by the second phase interviewees. They were weighted as well, and their positioning demonstrates that company performance is an ultimate consequence of both advocacy and purchase decision. A table of all updated reputation constituents including their aspects is provided in appendix 30.

This chapter also included discussions about the main causal mechanisms within the reputation concept and the ones from outside. The external influences crisis, cost sensitivity and framework contracts disturb the structure's balance and require in particular attention at a special position in the concept, such as at the company representative, transparency, products and services. This chapter concluded with an overview of the differences between interviewee groups and revealed that these differences are also results of causal mechanisms between the hospital procurement managers as perceivers and the perceived reputation constituents.

Chapter 6 also answered the questions which were raised in chapter 5. However, the identification of a refined model of medical device company reputation is not the last step in a critical realist research, that step is contextualization. For individual constituents of the reputation construct, some contexts have been already explained in this chapter. But the wider context of the concept outcome in comparison to the existing literature and its practical and academic implications are focused on in the final chapter.

7. Contextualization and conclusion

> 'A positive reputation is like a healthy immune system.
> If a reputational virus invades, you will have the
> strength to fend it off.'
>
> Kevin T. Jackson, Professor at Gabelli School of Business,
> Fordham University (Jackson, 2004)
>
> ---------- ----- ----------

This last chapter of the thesis draws conclusions based on the evidence presented: It starts with the discussion of the identified reputational landscape of medical device companies by comparing it with the initial considerations derived from the literature. The concept discussion is followed by a section about the academic and professional contribution to knowledge presented by this thesis, including reflections about the research process. Subsequently, an outlook for which steps can be further undertaken by academics and practitioners based on this research are offered. The chapter ends with a summary of the four major results of this doctoral thesis.

7.1. Reputation of medical device companies

This section provides a conclusion about the findings of this doctoral thesis. It condenses the results of the fieldwork (Brinkmann, 2013) and aims to bring them into a wider, holistic context. Following this, the next sub-sections expand on the arguments of chapters 5 and 6, and the main

arguments are discussed in light of existing studies and literature about corporate reputation and its constituents.

The four research questions asked in sub-section 1.3.2. were fully addressed in the doctoral thesis. First, research question 2 about the underlying structure of medical device reputation will be answered, introducing the term *reputational landscape*. The following sub-section about *landmarks* in this landscape answers research question 1 about reputation attributes. This is followed by the sub-section about the formation and impact of these landmarks, which answers research question 3 about antecedents and consequences.

The last two sub-sections describe the *dangers* and *rangers* of medical device company reputation, two catchy terms, which represent drivers that govern mechanisms in the reputation construct: *Dangers* are constituents from outside that negatively influence the concept of medical device company reputation, and *rangers* are inner constituents improving the reputational perception of hospital procurement managers. The discussions about the main mechanisms answer research question 4.

7.1.1. The reputational landscape

Describing corporate reputation in a landscape context has a tradition among corporate reputation researchers (Barnett et al., 2006; Barnett & Pollock, 2012; Fombrun & van Riel, 1997; Wiedmann, 2002). This doctoral thesis has been written in the tradition of this metaphor, its title, *The reputational landscape of medical device companies* points in this direction.

In the inaugural issue of the Corporate Reputation Review, Fombrun and van Riel (1997) introduced the term *reputational landscape*. They

compared ideas of reputation researchers with trees in the *reputational forest*. As such, the landscape metaphor represented findings in the new research *field* of corporate reputation. Barnett et al. (2006) transferred the metaphor to the many definitions of corporate reputation representing a *rugged terrain* and *self-contained islands* but not a *barren landscape*. And Barnett and Pollock (2012) used the term *charting* the reputational landscape, which was the approach in their Oxford handbook for corporate reputation.

This doctoral thesis contributes to this traditional metaphor: In figure 10, sub-section 2.2.2., the borders of medical device company reputation perceived by hospital procurement managers were illustrated, and as such the frontier of the landscape defined. Figure 49 illustrates the reputational landscape of medical device companies in detail. It is therefore the first reputational landscape that is mapped in an illustration, and it consists of all the constituents und influencers which shape it: Antecedents, attributes, consequences and their weighting as well as influencers from outside.

This map of medical device company reputation explains its structure: Antecedents such as company, regulations, company representative, procurement networks and experience are required for hospital procurement managers to get information and impressions about suppliers in the medical device sector. Based on the generalized attractiveness of the supplier and attributes such as products, safety, transparency, services, customer focus, innovation, financial stability and responsibility, procurement managers are able to evaluate the suppliers' reputation. The consequences of their reputation perception are their purchase decision, advocacy for the supplier and the perception of the supplier's performance.

Figure 49: The reputational landscape of medical device companies from the perspective of hospital procurement managers. Note: The illustration is a 1:1 representation of the refined concept in section 6.6., plus external influences. The icons represent the individual attributes. Antecedents: Office building with telescope = company, legal paragraph symbol = regulations, person with suitcase = company representative, atomium = procurement networks, mind cloud = experience.

Reputation: Lighthouse with heart = generalized attractiveness, infusion pump = products, shield = safety, speech bubbles = transparency, gear wheels = services, one person plus one person with crown = customer focus, light bulb = innovation, euro symbol = financial stability, earth plus people = responsibility. Consequences: shopping trolley = purchase decision, upturned thumb = advocacy, trophy with money = company performance. Dangers: Earthquake crack = crisis, piggy bank = cost sensitivity, contract = framework contract. Source: Illustrator Hemma Glos on behalf of the author.

The causal relationship between reputation, its antecedents and consequences is based on the ideas of corporate reputation academics (Fombrun, 2012; Money & Hillenbrand, 2006; Rindova et al., 2005; Walsh et al., 2009) and was uniformly confirmed by the hospital procurement managers interviewed in this research project. They followed a logical inference: When corporate reputation is a perception (attributes), the perception needs to be created on the basis of information and impressions (antecedents) and ideally leads to impactful actions (consequences).

The conclusion of this context is that medical device company reputation cannot be stable when antecedents are not stable. The antecedents described in this study, such as regulations that can change with a new law or company representatives who will retire, are not stable. The reputational landscape is changing, like a real landscape with mountains and rivers: Usually it does not change rapidly, but slowly, over time. But there can be also a natural disaster or other radical disturbances – in figure 49 this is the dark cloud – that can cause an immediate change.

For medical device companies, this means that their reputation can be built, damaged, and re-built over time. A good reputation will not inevitably last, and a bad reputation can be improved (Dowling, 2006). The developed concept is a *snapshot* at a specific point in time. Hospital procurement managers are constantly confronted with information and impressions which could change their reputation perception. This is barely recognizable in the short-term, but operative on reputation attributes over the long-term (Walker, 2010). Attributes can change their weighting, some of them can vanish and others are created (Fombrun et al., 2015; Kim et al., 2015).

Moreover, some mechanisms that are triggered from outside change the reputational perception. In the medical device company context, the major external influences are crises, cost sensitivity and framework contracts. Together with internal mechanisms stemming from reputation constituents, they intervene in the reputation structure, leading to positive and negative interpretations by hospital procurement managers, and they have an impact on consequences of reputation.

Reputation attributes are the landmarks in the reputational landscape of medical device companies. They are a result of a literature review and two phases of interviews with hospital procurement managers, and some of them differ from components of well-known reputation measurement scales. This is explained in the next sub-section.

7.1.2. The landmarks

The most important landmark in the reputation map above is *generalized attractiveness*, and its role for medical device company reputation is certainly noteworthy. Generalized attractiveness is the only remaining visible reputation category from the cubic model of Lange et al. (2011), which consisted of awareness, attribute-specific judgement and generalized attractiveness. Figure 50 shows the metamorphosis of the three categories from the initial to the refined concept.

The term *awareness* was rejected by the hospital procurement managers when used as reputation category or antecedent category. Awareness was not recognized as being known by the interviewees, but as being popular or being known for something. Popularity was not considered relevant in a reputation evaluation (A3, B3, C3), and being known for something is already represented by the category attribute-specific judgement, which offers normative attributes to rate. For the hospital procurement

managers, the term awareness was too ambiguous (A3) and too general (C3) to have a common understanding of it.

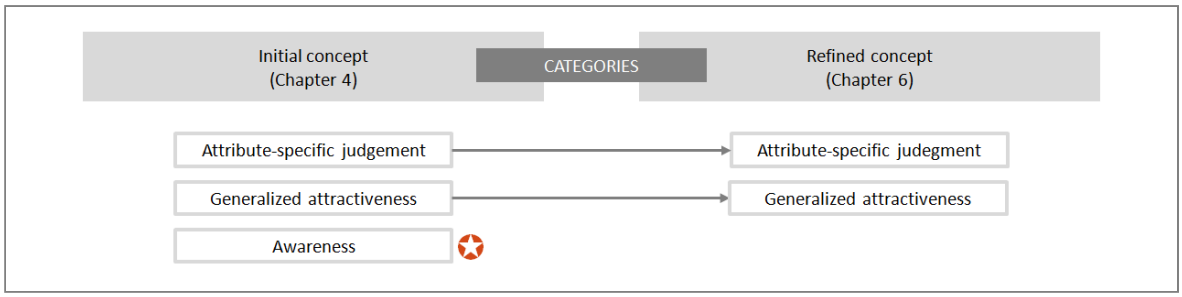

Figure 50: Metamorphosis of categories of medical device company reputation during the research project. Note: Grey arrows indicate no relevance change. A red star means a removed constituent. Source: Own compilation.

In contrast, *attribute-specific judgement* represents the easiest way for hospital procurement managers to perceive reputation. With enthusiasm and passion, they sought to learn about the different attributes to be evaluated, and the rating process was thoughtful, transparent, and fast. Making judgements is the day-to-day business of procurement managers, so the high acceptance of attribute-specific judgement was not a surprise. Because the term attribute-specific judgement is represented by the attributes themselves, it does not appear in the reputational map.

Generalized attractiveness remains a reputation category, representing the 'gut feeling' of hospital procurement managers. In the course of the research project, it was weighted in comparison to attribute-specific judgement at a ratio of 28 to 72 percent. Generalized attractiveness represents the heart of the developed reputation concept; it is based in the centre. It belongs to the inner reputation structure but is not an attribute. Moreover, with its weighting, it can outperform two strong reputation attributes (each at 12 percent).

The inclusion in the inner reputation construct contradicts established models in the literature (Lange et al., 2011; Ponzi et al., 2011), which measure it separately (Ponzi et al., 2011; Reputation-Institute, 2015). However, in the customer-based reputation models, the integration of the emotional perspective is common among researchers (Terblanche, 2014; Walsh & Beatty, 2007; Walsh & Wiedmann, 2004). This research project follows this approach and mirrors the perceptions of hospital procurement managers as customers of medical device companies. As such, attribute-specific judgement primarily represents their understanding of reputation. Figure 51 illustrates the metamorphosis of the reputation attributes from the initial to the refined concept.

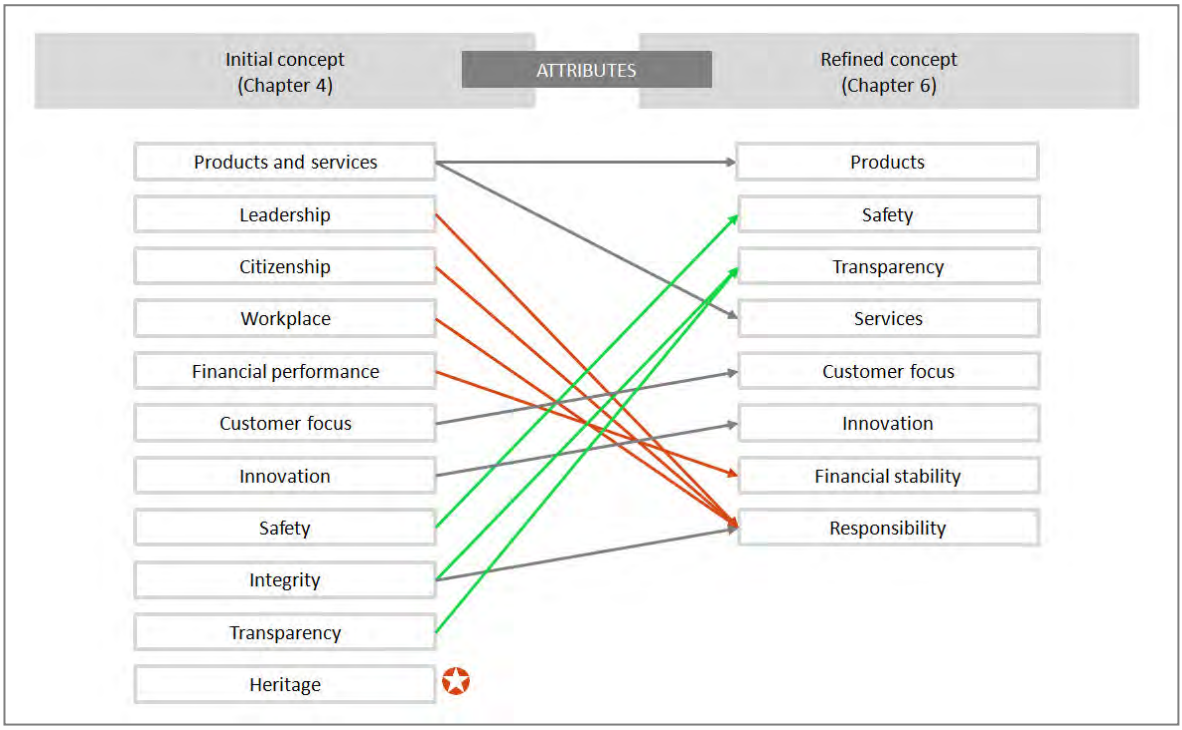

Figure 51: Metamorphosis of attributes of medical device company reputation during the research project. Note: Green arrows indicate an increased relevance during the research project, red arrows decreased relevance, grey arrows no relevance change. A red star means a removed constituent. Source: Own compilation.

The number of attributes decreased from eleven to eight, and their relevance also changed. From a researcher's point of view, five developments are particularly noticeable, and worthy of debate in a wider context.

First, four of the final eight attributes were found initially in the literature and confirmed by the hospital procurement managers: The attributes products, services, customer focus and innovation did not cause any surprise during the research project. The *products* attribute, with the aspects product quality, product benefit, competitiveness and strategic product positioning reached the highest ratings in reputation relevance. The *services* attribute, with its aspects system partnership, e-procurement, process consulting and trainings earned a similarly high rating. This confirms the reputation scale findings which treat products and services as the dominant building block of corporate reputation (Baldarelli & Gigli, 2014; Shamma & Hassan, 2009).

The hospital procurement managers (A3, A5, B1, C1) also agreed with the assumption that they know medical device companies mainly by their product brands (Fombrun et al., 2015). Furthermore, an adverse event related to a product has an impact on patients' lives and consequently on the hospital's reputation (B2, A3, C1). Thus, the attribute product belongs to the group of the most important attributes of medical device company reputation.

The attribute product was separated from services after the first phase interviews, because services were perceived as advantages for the hospital that add something to the supplier-buyer relationship (A1, A2, B1), often free of charge. They represent an additional value and investment in a successful collaboration, a special connotation in the medical supplier-buyer relationship, which is usually not included in the product and

services descriptions in the literature (Walsh & Beatty, 2007). The second phase interviewees were able to clearly separate products and services from each other. This is also the reason why services rank slightly below products in the refined concept.

The *customer focus* attribute, meaning flexibility, benefit-based consulting, problem-solving competency and customer proximity, was confirmed by the interviewees. They emphasized that medical device companies should fulfil the hospital's needs and follow the customer-based reputation literature (PatientView, 2017; Renner, 2011; Terblanche, 2014; Walsh & Beatty, 2007). They do not agree with a strict approach for tailor-made solutions (A3, A4, A5, C3), if these will tie up resources in the hospital. Customer focus here needs to be understood literally, as focus on the hospital procurement managers as decision makers, and how they would like to be addressed and how they anticipate the needs of the other customers of medical device companies, namely the medical staff and the patients (A4, B1, C3).

The *innovation* attribute, with its aspects product development, service development and real innovations met the expectations drawn from the literature. It combines positive ideas such as newness, uniqueness, improvement and development (Courtright & Smudde, 2009; Ganesan & Sridhar, 2016) and reflects the technological and digital innovations in the health market (Boyle, 2013; Weeks, 2016). Some hospital procurement managers expressed their concerns about fake innovations, which do not include relevant new features, have quality risks and a higher price (B2, C3). Furthermore, innovation was not an attribute the interviewees thought of being relevant for reputation at first sight (A3, A4, A5, C3). It was sorted in the attribute group with the lowest relevance overall, which

mirrors existing reputation scales that have similar weightings (Reputation-Institute, 2015).

Second, the *financial stability* attribute, with its aspects continuity, long-term orientation and being a strong partner has taken a rollercoaster ride during this research project. There were indications that the initial attribute financial performance could cause negative perceptions, because of its former dominance in older reputation scales (Fombrun, 2001; Fryxell & Wang, 1994; Laskin, 2013) and the scepticism about this attribute in reputation research with customers (Dowling & Moran, 2012; Porritt, 2005). The first phase interviewees confirmed this scepticism with low ratings and a negative perception of this attribute (P, A1, A2, B1, B2, C2), even expressing additional hostility towards companies making large profits (A2).

Instead of removing the attribute, the interviewees recommended to concentrate on positive effects of financial performance and highlighted the importance of financial stability and soundness of medical device companies (P, A1, A2, B2); interviewee A2 suggested renaming it financial stability. After following this recommendation, the ratings by the second phase interviewees were higher, and the role of financial stability was appreciated. This expresses the fear of uncertainty among hospital procurement managers, which can be attributed to existing weak or even insolvent partners (A4). In conclusion, financial stability remains a reputation attribute within two negative extremes: Medical device companies are asked to navigate their financial success between the impression of being strong enough for a partnership, and the impression of being too aggressive, and only interested in making high profits.

Third, safety and transparency are the two attributes which gained the most relevance in the course of the research project. *Safety*, meaning

medical staff safety, patient safety, data protection, cybersecurity and delivery security, was the rising star among the attributes of medical device company reputation. Usually not included in general reputation scales, the literature indicated that it has potential to be connected with corporate reputation (Allen-Back, 2015; Engler Modic, 2016; Hirsch, 2013; PatientView, 2017; Puncheva-Michelotti & Michelotti, 2010; Sherson, 2017).

During the research, the aspect of delivery security was added, reflecting the insights of interviewees C1 and C2, who gave examples about a delayed delivery for an implant and a company that closed down production and did not offer an alternative option for procuring the medical product. This aspect was broadly confirmed by the second phase interviewees, who identified it as consequence of the continuous cost pressure of medical device suppliers, as they are forced to cut warehouse capacities (A4). Overall, the high relevance of safety is not surprising in the health service industry, since hospitals rely on safe products and services because they are saving lives every day.

The *transparency* attribute includes the aspects communication ability, honesty, authenticity and reliability, and belongs to the three most important reputation attributes in the medical device context, next to products and safety. Only a few reputation scales in the literature included transparency as own attribute (Gardberg, 2006; PatientView, 2017; Plotnick, 2010; Renner, 2011; Walsh & Beatty, 2007). An inclusion of transparency in the initial model was considered because it represents the perspective of corporate communication scholars on reputation (Brønn, 2013; Van Riel & Fombrun, 2007). In addition, it is part of previous healthcare reputation research (PatientView, 2017; Renner, 2011) and the

extraordinary desire of Germans for transparency in order to avoid risks (Walsh & Wiedmann, 2004).

Transparency was assessed and explained by procurement managers as an important attribute. The search for reasons leads to uncertain situations like crises or crisis-like situations, in which transparency is seen as openness and a problem-solving competency (P, B2, C1). However, the strongest reason for the relevance of transparency was apparent in the subtext of many interviews. Medical device companies have a lack of transparency, giving procurement managers the feeling, 'they are hiding something' (A2, B3, C1, C3), even during the selection process for new suppliers (B2), resulting in a state of incomplete information, scepticism and caution when purchase decisions are impending (B3, C1).

Fourth, this lack of transparency caused a limited awareness of the reputation attributes leadership, workplace, citizenship and integrity. Leadership, workplace and citizenship are often prominently positioned in reputation scales (Baldarelli & Gigli, 2014; Fombrun, 2007; Fombrun et al., 2015; Lange et al., 2011; Walsh et al., 2009). In spite of these scales, hospital procurement managers questioned whether these attributes are suitable for their reputation perception. The main argument was the limited knowledge of these attributes due to the reticence of medical device companies (A2, A3, B3, C1, C2). Most of the aspects of the attribute integrity were transformed to transparency due to overlapping; one aspect was transformed to responsibility.

The uncertain role of the attributes leadership, workplace, citizenship and the ethical behaviour aspect resulted in a merger to a new combined *responsibility* attribute, which is often used in a sustainability context in Germany (Schneider & Schmidpeter, 2012). It covers ethical behaviour and leadership in its economic dimension, citizenship in its ecological and social

dimension and workplace in its social dimension. As such, the uncertain reputation attributes were unified in the attribute responsibility with the aspects leadership, ethical behaviour, environmental responsibility, workplace and social responsibility.

This does not mean that these topics were not mentioned at all by the respondents. They just evaluated them as less important and even recommended merging them to increase relevance of these aspects (B3, C3). Academic literature indicates that the aspects of responsibility will grow in awareness and accountability in the near future (Baldarelli & Gigli, 2014; Hasan & Yun, 2017). The current reputational landscape only includes responsibility as a minor landmark.

And fifth, the inclusion of the *tradition* attribute in the initial reputation concept was an experiment due to the specific *Mittelstand* structure of German companies (Walsh & Wiedmann, 2004; Wiedmann, 2002). Although German origin and business structure was accepted as somehow relevant by some interviewees (A1, A2, B2, C1), it was not considered as its own attribute, rather as a characteristic of the medical device company under consideration. As such, it was moved to the company antecedent as aspect origin.

The eight reputation landmarks are situated clearly in the centre of the medical device company reputation map. How they arise and what will result from them, is presented in the next sub-section about their formation and impact.

7.1.3. Formation and impact of landmarks

Comparing the antecedents of medical device company reputation in the initial and refined concept, their number has not changed. Figure 52 shows

that there are five antecedents in both concept stages. However, the antecedents have been strongly transformed during the research project, and four developments occurred which need a contextual discussion.

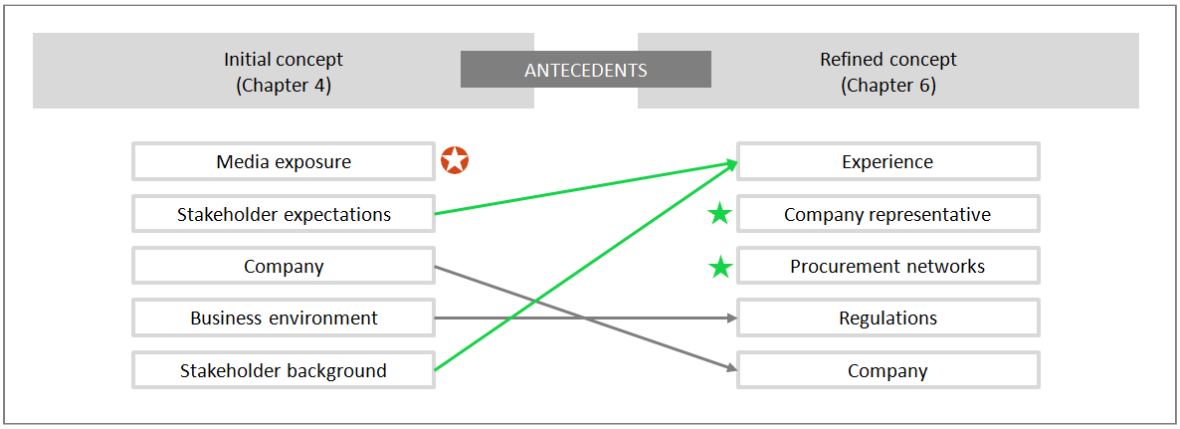

Figure 52: Metamorphosis of antecedents of medical device company reputation during the research project. Note: Green arrows indicate a stable or increased relevance during the research project, grey arrows no relevance change. A green star means a newly identified constituent, a red star a removed constituent. Source: Own compilation.

First, the two initial antecedents stakeholder expectations and stakeholder background were consolidated to the antecedent *experience* with its aspects of work experience, hospital positioning, knowledge and expectations. Both were derived from the marketing perspective of corporate reputation, covering the hospital procurement managers' historical perception of medical device companies and their professional background (Fombrun, 2012; Suh & Houston, 2010; Walsh & Wiedmann, 2004).

The first phase interviewees rated their expectations and background identically or similarly, and three of them suggested merging both antecedents because of their large overlaps and interdependencies (P, B1, C2). The new name for it, experience, was found by analysing the explanations in the first phase interviewees. The interviewees often used the word experience when describing what expectations and background

mean to them. The second phase interviewees confirmed that experience is self-explanatory and rated it prominently on top of the reputation antecedent list. This is not surprising at all, since the respondents felt that the formation of reputation is closely connected to their personality and professional perspective (A3, C3). The high ratings for experience confirm the marketing literature view that positions corporate reputation as an impression the buyers have before considering a buying intention (Lienland et al., 2013; Suh & Houston, 2010).

Second, the new antecedents company representative and procurement networks arose after the first phase interview analysis. The role of the antecedent *company representative* – with its aspects existence, competency, trust and identification with the company – was underestimated in the initial reputation concept. Although the supplier-buyer relationship was explained in healthcare reputation studies (Chao & Cheng, 2012; Hsu et al., 2010; Renner, 2011), it was not included, because the initial concept followed the marketing approach that this relationship is reflected in stakeholder expectations (Suh & Houston, 2010).

This misjudgement was corrected by the first phase interviewees, who pointed out that the relationship to company representatives is a central precondition for their reputational perception. The sales representatives of medical device companies specifically maintain the relationships, organize services and are the first port of call when problems occur. Their managers and board members of the medical device companies are further representatives that could be decisive for procurement managers' perceptions (B2, C1). The second phase interviewees confirmed the new antecedent with a high rating and an emphasis on the trust and competency of sales representatives (A3, A4, A5, B3, C3). This is supported by the academic literature on the role of sales representatives in the

medical device sector (O'Connor et al., 2016; Robinson, 2008), and future reputation research should be partially guided by this.

Procurement networks is another antecedent that was created. With its aspects procurement associations, general purchasing organizations (GPOs), trade shows and congresses as well as personal networks, it refers to a lively exchange between hospital procurement managers, which forms reputational perceptions. Initially sorted as an aspect in the stakeholder background antecedent, it was upgraded to a separate antecedent because of its high relevance for the interviewees. All the hospital procurement managers interviewed consult their networks regularly, notably when they need advice before making critical decisions (B2) or first time purchasing (B3, C2). Networks as reputation antecedents are under the radar of academics thus far, although their use for building opinions is apparent and intensively investigated by healthcare marketing scholars (Jansson, 2011; Pesse, Erat, & Erat, 2006). Because of the group purchasing structure among hospitals, the role of networks also for reputational perceptions and influence is a promising field for further research in the healthcare sector.

Third, all antecedents connected to *media* were not supported by the interviewees in this research project. This contradicts with well-known academic research that has connections between media exposure and corporate reputation (Deephouse, 2000; Einwiller et al., 2010; Gardberg, 2006; Meijer & Kleinnijenhuis, 2006). The reasons are related to the poor performance of hospital business media: Third-party media for hospital procurement was evaluated as biased and advertising-driven by the interviewees, and they had rarely time for reading them (A5, B3).

Surprisingly, corporate media was more accepted due to its recognizable ownership, but it is only consumed when initial information about a

company is sought (A4, B3, C3). The hospital procurement managers prefer the websites of medical device companies as a primary information source (A3, A4, A5, C3). The positive mention of the website did not justify a separate media antecedent and the aspect website was sorted in the company antecedent. This is based on Fombrun (2012), who classified activities of corporate communications, and the website is such an activity, as company actions.

And fourth, the company and business environment antecedents were modified during the research project. The *company* antecedent was promoted by the two new aspects origin and website from other constituents of the reputation concept. The initial aspects values, objectives, strategy and actions were generally confirmed in the interviews, though the whole antecedent was rated lower in comparison to the other antecedents. The interviewees understood the relevance of company characteristics for their reputational perception (P, A3, A4, B1, B3) and went along with the reputational literature that classified values, objectives, strategy and actions as prerequisites of reputation (Basdeo et al., 2006; Fombrun, 2012; Lange et al., 2011).

Based on the evidence, the business environment antecedent needed to be transformed during the research project to a *regulations* antecedent. Because of the dominance of regulations in the medical device market, other economic, social and technological aspects (Dowling & Moran, 2012; Winn et al., 2008) as well as the actions of rivals (Basdeo et al., 2006; Lange et al., 2011) were placed into the background. The interviewees concentrated on political aspects such as standards, approval procedures, certifications and legislation. This perception has been influenced by the *EU Medical Device Regulation* (EU MDR), which will be established in May 2021 and which will continue to change the approval process of medical

devices dramatically. However, this and other regulations are the framework for medical device companies to act within, and regulations are linked with reputation attributes such as products, services, safety, transparency, innovation. Thus, the new antecedent of regulations was fully accepted by the second phase interviewees. In the light of the current regulatory situation in the medical device industry, it is likely that other business environment aspects will regain their importance in future research, once the new regulations have been in place for a while.

The consequences of medical device company reputation have not changed in the research project and as such they were the most constant area in the reputational landscape. The consequences are shown in figure 53, and three of them were confirmed by the interviewees.

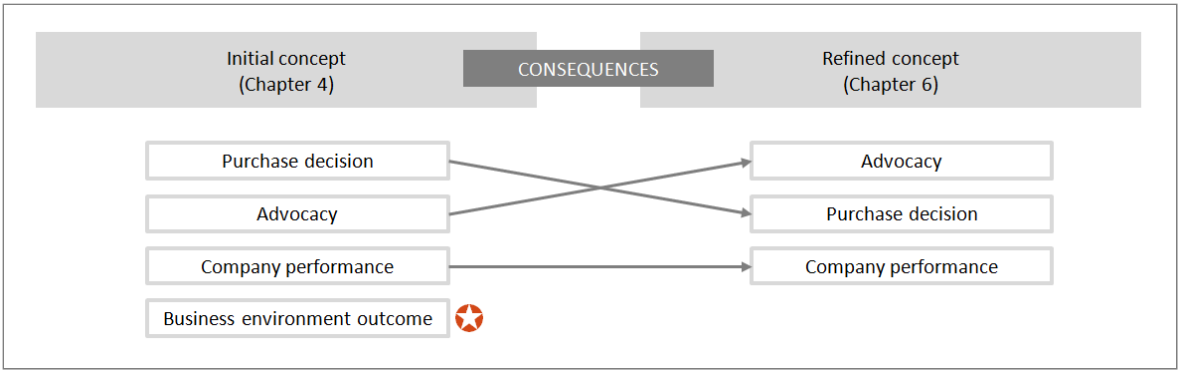

Figure 53: Metamorphosis of consequences of medical device company reputation during the research project. Note: Grey arrows indicate no relevance change. A red star means a removed constituent. Source: Own compilation.

Only the *business environment outcome* consequence, which was marginally suggested by the reputation literature (Kang & Yang, 2010; Michaelis et al., 2008), and initially added to mirror the business environment antecedent, failed to make it in the refined concept. It was already doubted in the initial concept, and the majority of the first phase interviewees either could not grasp what this meant or denied that it

would be a reputation consequence. Only the market leaders, if anyone, could increase or reduce the performance of the whole business environment by a good or bad reputation; the inclusion of this consequence was rather too ambitious.

Advocacy as a consequence with its aspects recommendation, word of mouth and written referencing, was suggested in the reputation literature (Fombrun & van Riel, 1997; Shamma & Hassan, 2009; Walsh et al., 2009). Most of the hospital procurement managers revealed that they do recommend medical device companies to their colleagues based on their reputational perception. That sharing of experience happens automatically and some of them even consider providing written referencing for medical device companies (A3, A4, B3, C1). Thus, a strong reputation can lead to an increase of advocacy by hospital procurement managers. This is particularly important when their colleagues are uncertain or are buying products for the first time, as discussed above in connection with procurement networks.

The reputation consequence *purchase decision* – meaning satisfaction, buying intention, purchase and loyalty – has the most impressive impact from a marketing point of view. It can lead to re-purchases, cross-purchases and long-term customer retention (Fombrun, 2012; Jeng, 2011; Shamma & Hassan, 2009; Walsh & Beatty, 2007). The feedback of the interview respondents showed that their buying criteria vary due to their different perceptions of reputation: One refers to analytic reputation attributes in the purchasing process (A1), others rely on their reputational gut feeling (A4, B2).

However, they commonly agreed that reputation plays a major role in the purchase decision, and they used expressions like ‘definitely’, ‘high influence’, ‘big role’, ‘important’ and ‘in any case’. When asked to quantify

the effect of medical device company reputation for their purchasing decision, the relevance ranged between 10 and 70 percent, with an average of 31.6 percent. Six of them were reputation fans with relevance of 30 percent and above, six of them were reputation sceptics with relevance of 20 percent and under.

The reasons for these differences can be explained by two phenomena: reputation personality and purchasing scope. As shown in sub-section 6.5.3., reputation fans are usually more interested in soft attributes like customer focus and responsibility (A4, C1), whereas reputation sceptics rely more on hard attributes like products and services (A2, B3, C3). And whether a procurement manager buys a single-use product like a needle or a sophisticated medical technology product like a computer tomography scanner also has an impact (A5, B2, C3). The more complicated the decision, the more relevance corporate reputation has.

The *company performance* consequence with the aspects competitive advantage, revenues, profit and long-term stability was posited by many reputation scholars (Chun, 2005; Helm, 2007; Lange et al., 2011; MacMillan et al., 2005); one could say that this consequence is the reason for the amount of interest in corporate reputation research. Some of the first phase interviewees found it difficult to accept this context (A2, C2, P), but the second phase interviewees sympathised more with it. This is explainable by the adding of the aspect long-term stability instead of premium prices after the first phase interviews. It was commonly understood that the company performance is a consequence of medical device company reputation due to its close connection to the purchase decision.

The conclusions about the formation of and impact from the reputational landmarks have shown that medical device reputation is an explicitly

definable reputation with specific antecedents and consequences. It demonstrates that general reputation attributes need to be revised with industry-specific influences and perceptions as well as with precisely recorded mindsets of stakeholder groups and their environments. Additionally, medical device company reputation is a perceived system that is relevant for the recommendations of and the purchase decision by hospital procurement managers, as well as for the performance of medical device companies.

Reputation is not a closed system, but an open one, and external influences cause disruptive mechanisms. Following the metaphor of a reputational landscape, these influences are described as *dangers* from outside the reputation construct.

7.1.4. The dangers

The open medical device company reputation system is influenced by dangers from outside, and figure 54 compares them in the initial and refined concept. Crisis and cost sensitivity are the most important external mechanism sources, and in the course of the research project, framework contracts were added as a third.

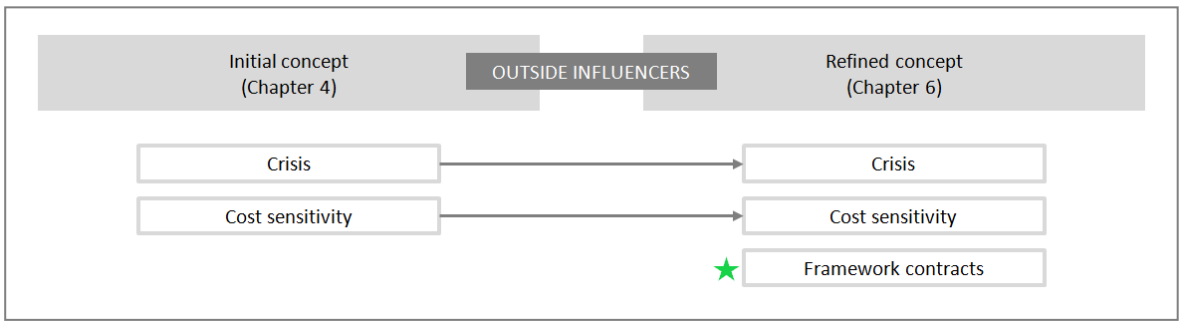

Figure 54: Metamorphosis of outside influencers of medical device company reputation during the research project. Note: Grey arrows indicate no relevance change. A green star means a newly identified constituent. Source: Own compilation.

Their existence alone does not mean that they disturb the reputational landscape. But as soon as they are activated and cause mechanisms that shape constituents of medical device company reputation, these turn in a positive or negative direction.

The literature convincingly describes that *crises* have the potential to threaten reputation and its constituents, when the company is scrutinized by the media and the public (Coombs, 2007). The hospital procurement managers confirmed this view and highlighted the effects of a crisis on the reputation antecedent company representative and the transparency attribute. Besides, crises also influence the attributes products and safety and the antecedent regulations, since the establishment or change of regulations often connected to incidents or lawsuits related to products and safety that conflict with regulations.

The connection between crisis and transparency is the strongest in the whole reputation construct. In crisis situations, honest, open and proactive communication by medical device companies is necessary to maintain their reputation among hospital procurement managers (A1, A3, A4, A5, B2). This can generate a reduction of the crisis impact (Marquina Feldman et al., 2014) and a stronger support for recovery strategies (Keh & Xie, 2009). The focus for companies should be on solving the problems caused by the crisis, which is often a product recall or a delivery problem (A3, B2). The need for transparency is strongly interlinked with the company representative, who is the first port of call for the hospital procurement manager when crises occur (A1, A4).

Interviewee A4 emphasized that simply managing a crisis is not decisive, but how it is managed (Boyschau & Simpson, 2019; Coombs, 2007). This requires company representatives who are confident and convincing. The method of managing the crisis could be even the reason for future

purchases, as interviewee A3 revealed. When procurement managers know that a medical device company and its representatives act professionally and transparently, this has the potential to increase that company's reputation.

Another threat from outside is the *cost sensitivity* of hospital procurement managers due to the challenging economic environment in the German healthcare system (Berg & Burdach, 2012; Sontheimer, 2015). In usual reputation models, a premium price for products and services adds to the reputation of a company (Fombrun & Low, 2011; Lee & Roh, 2012; Rindova et al., 2005). This does not reflect the situation in the medical device market, and the renaming of the financial performance attribute to financial stability, which was explained in sub-section 7.1.2., points to the narrow path medical device companies need to pass.

Thus, the hospital procurement managers who were interviewed are highly alert when they identify exaggerated price models in their professional perspective (A2, A3, A4), although they tend to accept them in a personal perspective (A2, C1). However, there was a common understanding that high-quality products in combination with a good reputation lead to a wider acceptance of above-average prices (A4, B2, C3). The willingness to accept higher prices goes along with other reputation attributes such as services, safety and responsibility.

When medical device companies offer services, procurement managers perceive these as added value and favour this added value instead of hard price negotiations (A3, A4, B3, C3). This view is contradicted by the common idea of a successful hospital procurement manager who always negotiates the lowest price (Berg & Burdach, 2012). The analysis of the interviews showed that this formula has been transformed in the meantime: A successful hospital procurement manager is one who

negotiates for the best long-term value at the best price (Chao & Cheng, 2012). And this means a higher price is acceptable when diverse reputation attributes contribute high values as well (A4, C3).

Framework contracts add complexity to the reputational perception by hospital procurement managers. They are often negotiated by group purchasing organizations (GPOs) for one-year to five-year periods, especially for single-use medical devices which are bought on a large scale. Procurement managers are bound to these contracts no matter what reputation perception they have (A5, C1, C3). This reputation danger is one which needs to be addressed when the framework contracts are created or reviewed (A5, C3). Nevertheless, it remains a danger from outside the reputation construct, because the reputation value of companies primarily selling high volume medical products is frozen until the next negotiation window opens.

This section showed that dangers from outside influence the reputational landscape, and chances were also discussed that can arise from these dangers. The next section concentrates on more chances caused by mechanisms within the reputational landscape. These internal influencers are called the *rangers* of the reputational landscape, and their role cannot be overestimated.

7.1.5. The rangers

The most influential internal rangers of the reputational landscape are *representatives* of medical device companies. They cause strong mechanisms towards the reputation attributes customer focus, responsibility and transparency, and are related to services and the experience of hospital procurement managers. Company representatives, and particularly salespeople, secure the health of the customer

relationship (A1, B2, C1). They know about the customer's situation and processes, and they act accordingly, offering products, services and other information that are compatible with the hospital (A1, B2).

The way salespeople communicate adds to the transparency of medical device companies and gives an impression about the responsibility, especially the ethical behaviour, of their companies (A1, C2, C3). The hospital procurement managers were undecided about if the performance of salespeople is satisfying. However, the regular visits add to their experience, whether they are successful or not. The interviewees reported a great range of impressions, between drunk, unannounced and obviously stressed salespeople and very engaged ones searching together for solutions to improve hospital processes (A2, B2, A5, C1, C2).

Another ranger for the reputational landscape is a positive *product* attribute, leading to increased purchases. This obvious connection was supported by reputation academics (Fombrun, 2012; Lee & Roh, 2012; Lienland et al., 2013) as well as by almost half of the procurement managers, and they mentioned product quality (B3), product benefits (B2) and product positioning (A4, C3). However, these characteristics were not the strongest connectors, the variety of medical products was. As discussed in the previous section, medical products include a wide range of different hardware and software, from bandages, cannulas and infusion containers to highly technological products like computer tomography scanners or products that are implanted in the human body like stents or artificial hips.

The ranking of product influence on reputation is closely linked with the product type. Single-use products, which are often standardized in quality and design, have a weaker reputation potential than products that have large quality differences or that are bought once every five years (A2, A5, B3, C2), this observation is shared by supply chain academics (Lienland et

al., 2013). Moreover, as soon as a product is to be used in a patient's body, hospital procurement managers become more aware of reputational considerations such as the trust in the company representative, experience with the company, safety features, transparency and responsibility (A5, C1).

They even reflected that the reputation of a medical device supplier could be transferred to the reputation of their hospital (A3, A5, B2, C1), which is invisible if no problems with product and services occur. The medical specialists in the hospitals are seismographs for the product's quality, and often they are included in the decision-making for complex products (A2, A3, B1, C1). All these considerations cluster in the impression of hospital procurement managers so that their reputation perception correlates with the importance of the procured product (A4, C1).

Finally, the reputation consequence *advocacy* is strongly connected to the antecedent *procurement networks*. Giving and getting recommendations are two actions and are placed in two different positions in the reputation concept, but they are often occurring in one arena with flowing transitions (B2, B3, P). Both constituents of medical device company reputation are powerful and influence each other, leading to the establishment or correction of reputation perceptions.

The rangers complete the reputational landscape as explained in this section. The concluding remarks about landmarks, their formation and impact as well as dangers from outside and rangers that protect and improve reputation have shown that medical device company reputation is a complex construct. Although it is only a perception in the heads of hospital procurement managers, it needs continuous attention and cultivation.

7.2. Contribution to academic knowledge

This section explains how the research results contribute to theoretical and methodological knowledge. It also provides a sub-section about the critical reflections and limitations of this doctoral study and gives an overview of future research opportunities. Altogether, this section portrays the academic relevance of this doctoral study in the light of this research process.

7.2.1. Closing the research gaps

During the six years of this research (2013-2019) the relevance of the construct corporate reputation has constantly increased, but some *rugged terrain* still exists in the *reputational landscape*. The study addressed several research gaps, which are specified in section 1.3.1. as research directions. They have been discussed by numerous academics from different disciplines (Fombrun, 2012; Lienland et al., 2013; Suh & Houston, 2010) and are again presented in figure 55.

First, the corporate reputation construct should be explained as a phenomenon with causal relations. This postulation, made by experienced reputation scholars like Fombrun (2012) and Money and Hillenbrand (2006) has been addressed here by extracting the antecedents and consequences from the few existing studies that included them. The interviews with hospital procurement managers have shown that they share the idea that reputation needs to have sources, foundations, causal interactions and impacts.

In the course of the literature review and the methodology chapters it became more and more obvious that these causal relations exist: The three perspectives on reputation this study is based on, namely business

strategy, communication, and marketing perspectives, refer to signals as antecedents (information, agenda setting, media, experience) and impacts as consequences (intangible asset, purchase). With this background, it was then categorically clear that reputation does not exist in an empty space, isolated from influences, but is a construct embedded in a process.

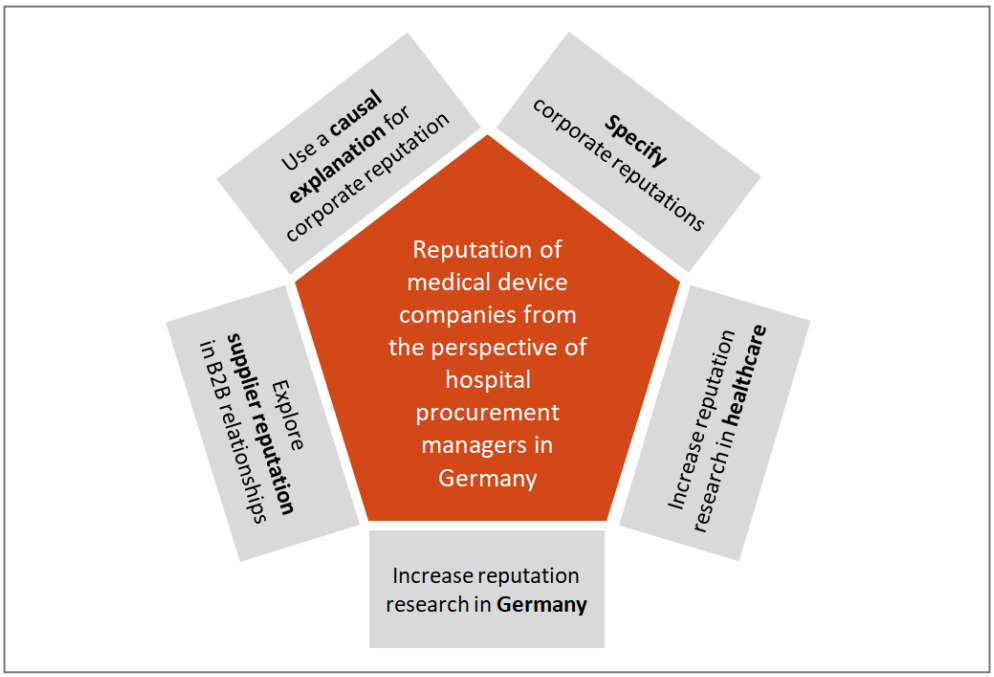

Figure 55: The directions for research being addressed in this doctoral thesis. Source: Own compilation.

The critical realism epistemology was then proven to contextualize the single constituents of the construct. With its concept-driven knowledge building, relationships between antecedents, attributes and consequences were revealed and explained. It was the first reputation study to use this methodology, and because of its manifold results it contributes to academic knowledge. Developing a reputation concept by describing the relationships of its constituents behind the scenes was an exciting and demanding academic experience.

The critical realist methodology helped to avoid the common paths of reputation research and forced the involvement of the study participants in the conceptual development. This was an unusual, though interesting experience for both the researcher and the participants. During the interviews, the critical realist perspective offered the chance to record qualitative explanations instead of only uncommented ratings by the participants. And at the same time, they spoke about their opinions of a concept. Overall, a critical realist philosophy can be regarded as highly beneficial when researching complex constructs like corporate reputation.

Second, the many reputations approach was emphasized throughout this study, as it has been by other scholars (Helm, 2007; Puncheva-Michelotti & Michelotti, 2010; Walsh & Beatty, 2007). The results of the interviews agreed strongly with the concept that reputation has different specifications depending on the industry subject to research, the perceiving stakeholder group and the business environment: The attributes would have changed if pharmaceutical companies were the focus of this research, if the perspective of doctors were covered, or if the study were conducted outside of Germany. However, this does not mean that related reputation constructs are not similar to the result of this research and that they could not benefit from its conceptualization. However, it became clear that specific reputations cannot be as identical, as the one reputation approach claims. Specific reputations can be similar but are never be the same.

And third, the other three research gaps confirmed the need for this specification. The focus on healthcare, Germany and supplier-buyer relationships in reputation research was requested and fully covered in this thesis. The developed concept as a main research result contributes to all three conceptual premises in learning more about these specific

requirements. It goes without saying that this one study cannot fulfil all desired details of the requests made by academics (Lienland et al., 2013; Suh & Houston, 2010; Walsh & Wiedmann, 2004), but an important step into the right direction has been made.

Hsu et al. (2010) identified reputation as one of most influential differentiators for medical device companies to build long-term relationships with hospital procurement managers. Existing studies did not include the perspective of hospital procurement managers yet, and this doctoral thesis aimed to close this research gap. It is the first study to explain the specific reputation attributes, structure, antecedents and consequences of medical device companies from the perspective of hospital procurement managers. It provides a map of the reputational landscape of medical device companies for the first time.

For academics, the results of this research study offer access to the reputational perceptions of a new stakeholder group that has never been included in reputation research. The refined concept and the discussion about its mechanisms provide rich connecting points for further research which will be addressed in sub-section 7.2.4.

7.2.2. Answering research questions

In sub-section 1.3.2., four research questions of this study are introduced, aiming to develop and explain a map of medical device company reputation. Figure 56 illustrates these questions once more, locating them in the different areas of the reputation construct.

Question 1 referred to the attributes that make up medical device company reputation. This question was extensively answered in sub-section 7.1.2., and along with the category generalized attractiveness, the

final attributes are products, safety, transparency, services, customer focus, innovation, financial stability and responsibility. The attributes have undergone a transformation, starting with the extraction from reputation and medical device literature through a revision after seven first-phase interviews and a further refinement after five more interviews. As such, the procedure followed the retroductive logic of inference, using the steps of the DREIC scheme, that is, description, retroduction, elimination, identification and contextualization. The final set of attributes is different from all other attribute sets found in the literature and provides a foundation for measuring medical device company reputation.

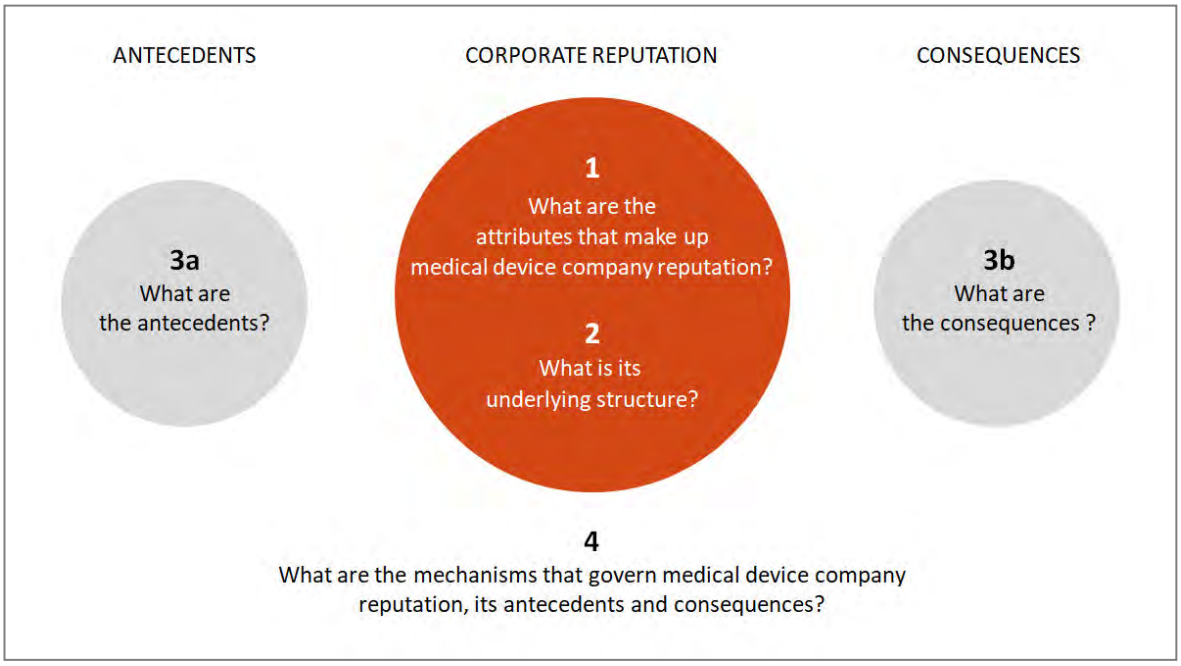

Figure 56: Research questions of this doctoral study. Source: Own compilation.

Question 2 asked for the underlying structure of medical device company reputation. In figure 57, the structure can be found in the centre, consisting of the identified single category in the middle and the eight attributes surrounding it. All constituents have a weighting, and thus make up the structure. The overall concept also shows that medical device company

reputation is embedded in causal relationships with its antecedents and consequences. Additionally, it frames the action scope of hospital procurement managers, who can perceive large parts of the overall reputational construct. Building this comprehensive reputational construct was strongly supported by the concept-driven epistemology of critical realism, and it provides a promising starting point for similar reputation constructs in the healthcare sector.

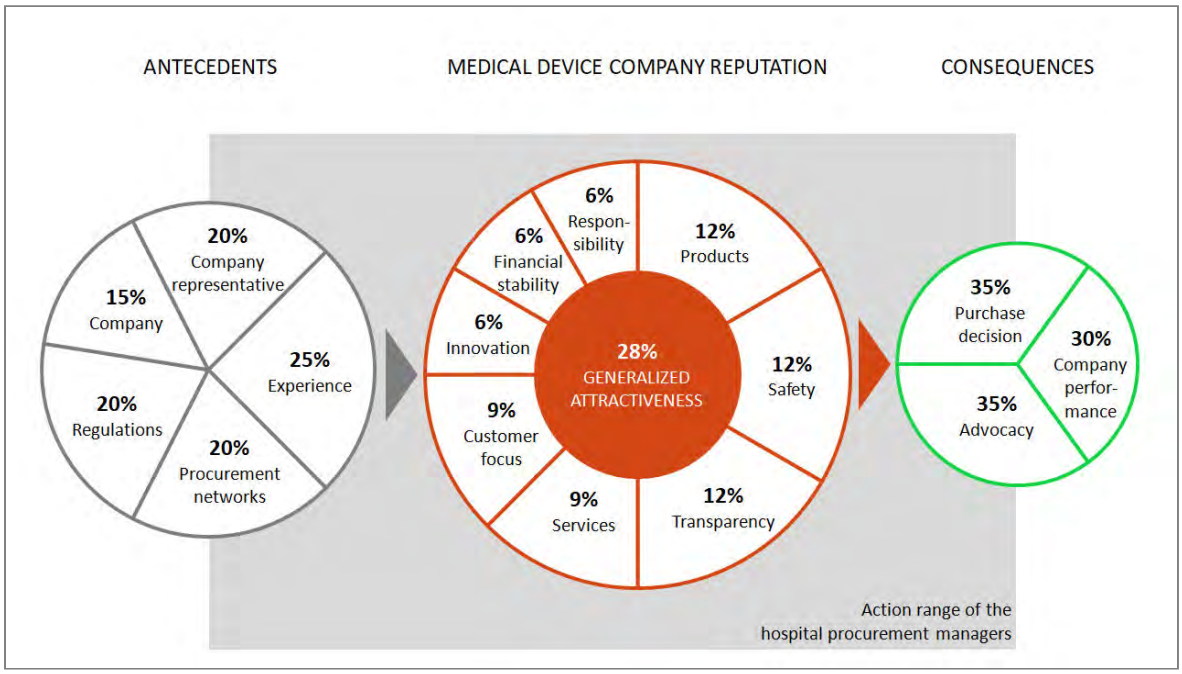

Figure 57: The refined concept of medical device company reputation. Source: Own compilation.

Question 3 asked for the antecedents and consequences of medical device company reputation; both are groups of elements and are clearly stated in the concept. Antecedents include regulatory conditions, the medical device company, its representative, procurement networks and the personal experience of hospital procurement managers. The consequences are purchase decision, advocacy and medical device company performance. With the identification and explanation of antecedents and consequences,

this study is among the very few that value their processual connections to reputation.

Question 4 referred to the mechanisms that govern medical device company reputation, its antecedents and consequences. In the course of the research project, the major mechanisms that are instigated in the reputational construct or by phenomena from outside the construct were revealed. Figure 58 presents these major mechanisms that are explained in detail in section 6.5. and contextualized in sub-sections 7.1.4 and 7.1.5.

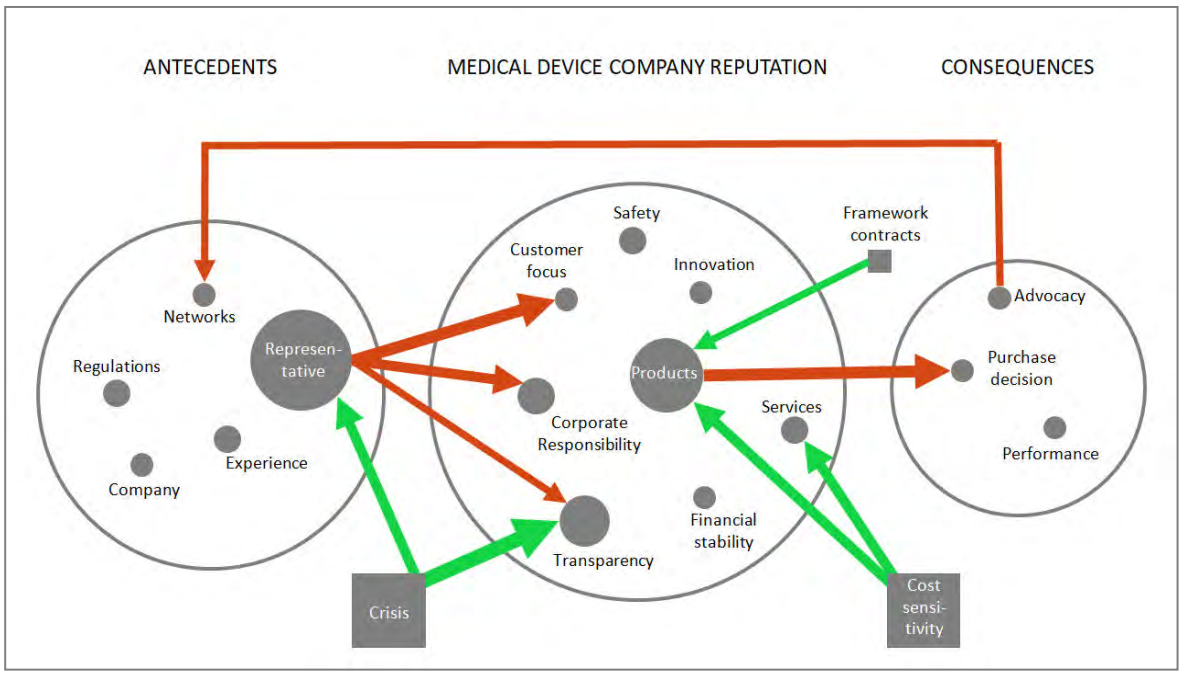

Figure 58: Overview of the ten major causal mechanisms in the reputation concept. Notes: The stronger the arrow, the stronger the mechanism. The larger a circle or square is, the more mechanisms have their source or goal there. Source: Own compilation.

Finding these mechanisms is a major contribution of the critical realist ontology. Elements that send the mechanisms load them with a positive or negative value to the receiving elements. With these mechanisms, neutral elements in the real domain turn into positively or negatively loaded elements in the actual domain of critical realism. A further ontological

feature of critical realism is that concepts are open systems, and the influence of external phenomena such as crisis, cost sensitivity and framework contracts show this exemplarily in the medical device company construct. The detection of these mechanisms is a major contribution of this study, as existing reputation studies have not asked for mechanisms that create the values of reputation constituents. Explaining these mechanisms could help researchers learn more about the causalities that exist in the corporate reputation construct, even making clear why reputation dynamics are so different from company to company. Overall, all research questions were answered by the study, and the multiple results contribute to theoretical and methodological knowledge.

7.2.3. Reflecting on the research process

As Brinkmann (2013) puts it, a qualitative study can never be concluded perfectly. This doctoral thesis is no exception; its limitations and weaknesses go along with the specifications that were put forth in the definitional chapter. Seven of them are addressed in this sub-section.

The first limitation is that this study refers to medical device company reputation only and cannot be automatically transferred to related industries like the pharmaceutical industry or healthcare service industry. It addresses hospital procurement managers and does not provide the same insight into the reputational perception of doctors, nurses, patients or even members of a hospital management board. Moreover, it focuses on reputation perception in Germany, and due to the differences in the national healthcare markets it has limited explanatory power for other markets.

Because of the focus on the medical device industry, the study results could be perceived as creating only limited additional academic knowledge.

And this is partially true, since a direct knowledge transfer to other specific reputations or even a general corporate reputation is not recommendable, and constituents need to be confirmed. However, the means of conceptualization, the detailed explanation of the constituents and the illumination of major mechanisms offer a shortcut to a discussion of specific reputations in the healthcare context. The results gained do offer suggestions for potential outcomes in adjacent contexts. By identifying the differences, the specific concept is extremely powerful for explaining the often-ambiguous reputation concept explicitly.

The second weakness is that it was impossible to define the categories of medical device company reputation before analysing the research results. The cube model of Lange et al. (2011) was promising, because it included all three categories: awareness, attribute-specific judgment and general attractiveness. A decision for one category at an earlier stage would have made it easier to explore the reputation concept. After the interviews, it became clear that awareness was a highly ambiguous construct for hospital procurement managers, while generalized attractiveness was a very highly weighted attribute. With this knowledge, the reputation definition made in the second chapter needs to be changed to ‘a collective and relatively stable representation of a medical device company on the basis of attribute specific judgement perceived by hospital procurement managers in Germany.’ The change is consistent with the refined reputation concept presented in section 7.1.

And third, the methodology and methods also contributed to the limitations of this research. Instead of using critical realism, a positivist would have worked with hypotheses, would have tested the constituents on a quantitative basis and would have even aimed to provide a reputation ranking of medical device companies. A constructivist would have delved

deeper into reputation perception, focusing on one or several medical device companies. Both philosophical stances find legitimacy in reputation research and each would have brought a different kind of knowledge. However, the aim of this doctoral thesis was clearly contoured from the beginning: mapping the reputational landscape of medical device companies without claiming to compare several medical device companies or dissecting some of them.

The fourth weakness lies in the derivation of the initial reputation concept from literature sources. Another researcher would have found some existing reputation scales or reputation trends from which to derive initial assumptions. In critical realism, the researcher is not obliged to be neutral and is permitted to include professional knowledge and experience, and to draw conclusions from them. However, the way of generating knowledge could have been also different, even using a critical realist methodology. And possibly, the interviewees would have answered differently when being presented a different initial concept. This inclusion of the researcher was clear throughout the research project, which was the reason that the interview results were carefully analysed.

Fifth, although the methods have been proven to be efficient, other approaches could have been used, even in a critical realist perspective. The decision for individual interviews is defended in section 3.2.1., but a focus group with four to six hospital procurement managers in the second or even third phase could have brought some more ideas about antecedents, attributes, consequences and mechanisms to light. Also, a testing of the refined concept in a bigger group of hospital procurement managers would have been advisable. These ideas failed because of the limited access to this stakeholder group, who are not used to be included in academic research and therefore are sceptical about it.

Nevertheless, personal interviews had many advantages, from the usage of the Q-sort rating method to the building of trust towards the researcher. Here, it was important to constantly remind the interviewees not to rate the relevance from the perspective of a private person, but from their professional role as hospital procurement manager. Thus, the involvement as an active researcher, who could ensure the accuracy of the statements during the interviews, was necessary and welcomed by the interviewees (A3, A5, B2, C1).

The sixth limitation is exactly this, the active role of the researcher: Interviewing hospital procurement managers as an employee of a leading medical device company can lead to biased answers. While this is not an ideal setting, interview access was often only given *because* they knew beforehand where the researcher comes from. Academic researchers would have only a rare chance to speak to twelve procurement professionals, since the total amount in Germany is only 600, and the managers are sceptical towards individuals outside the medical procurement business. Being employed for almost ten years in the medical device industry does not only grant the researcher access to the interviewees, it also added to a discussion of industry-specific aspects on the same footing. Industry-related wording, company names and abbreviations were used without explanations, which could have interrupted the discussion's flow; healthcare developments were not explained in-depth. This made the interviews efficient and guaranteed acceptance from this sceptical stakeholder group.

However, the researcher did not act as employee but as an academic who aimed to generate new knowledge without actively bringing his employer's name into the interview context. The interview analysis showed that the employer's name was given as example more often than any other

medical device company. This signals that the respondents connected the researcher with the company and were less often open to speak about other companies. Since the aim of the study was to develop a reputation concept for the entire industry and not to create a reputation ranking of medical device companies, this bias was accepted. When this happened too often, the interviewer asks for other examples in the interview. The alternative would have been to to have no interviews at all, which would not have carried any contribution to knowledge. The many examples with the researcher's company also contributed to the understanding of context and added acuity to the analysis.

And the seventh challenge was the separate analysis and result presentation in the different research project stages in chapters 4, 5 and 6. Each of the chapters has its own structure and reflects the research analysis of the respecting stages. However, this was valuable to demonstrate the iterations of the DREIC scheme following the retroductive interference of logic. Again, the active role of the researcher in the analysing process could lead to a biased presentation. Thus, the interview transcripts were thoroughly analysed, and the quotes carefully chosen to avoid a distorted impression.

In conclusion, all these limitations and weaknesses were identified and reflected on during the research project, and none of them was recognized as critical. Some of them even added to the clearness and strategy of the analysis and presentation of the results. When doing the same research another time, these challenges should be identified and considered in advance. Then, the researcher can find strategies to overcome them or, after analysing the scope of their disadvantages, ignore them.

7.2.4. Outlining future research opportunities

The directions for further research directly follow the limitations and weaknesses described above by addressing them. As such, this doctoral thesis provides many indications. Reputation concepts for related industries and stakeholder groups can be researched by using the critical realism ontology and its conceptual epistemology and can be based on medical device company reputation. The regional focus could be widened to other countries worldwide. The method could use focus groups instead of individual interviews. With the research results, a comparative case study between two or more companies could be set up, or a discussion about two or more regional healthcare markets should be academically useful. And, not to forget, with a positivist research design, a reputation ranking survey of medical device companies could be conducted.

But the major implication for further research would be to repeat this study in five years with an identical or similar scope, comparing the reputational landscape over time in the highly dynamic market in the medical device industry. The differences will be relevant for revealing the dynamics within the reputational landscape, proving that reputation is a 'relatively stable' (Walker, 2010), though emerging construct that mirrors the evolution of companies, stakeholders and their environments. Being convinced about the additional knowledge building of such a repetition, the researcher aims to renew the study in five years for academic and professional purposes.

The wider environment of the study, in particular the structure of the German health system and the legal context, influenced the shape of a reputational concept of medical device companies. The current study focused on the overall concept, and future research could illuminate the single mechanisms leading to the constituents in more detail.

A quantitative study could focus on the differences in the perception of procurement managers from public, non-profit and private hospitals. A case study could shed light on the legal and regulatory context of medical device company reputation. These are only two examples of how researchers could contribute knowledge to the mechanisms that lead to reputational perceptions, and could further explore the location of structure, constituents and effects in the real, actual and empirical domains of critical realism.

Because corporate reputation is an advanced and widespread research field today, academics tend to concentrate more and more on its individual constituents. This is advisable in order to learn more about the constituents' nature, aspects and mechanisms. One threat to an integrated corporate reputation research are studies about the reputation of individual aspects, such as CSR reputation (Jung & Seock, 2016; Orlitzky & Swanson, 2012), media reputation (Deephouse, 2000; Zhang, 2018), environmental reputation (Kumar, 2018) or e-reputation (Dutot & Castellano, 2015). These studies undermine the conceptual strength of the corporate reputation construct and open academic discussions that can lead to a definitional variety in corporate reputation, which scholars have tried to unite in the recent years.

To make the results of this study accessible, the researcher's goal is to publish an extract in academic journals that are relevant for reputation scholars and academics that explore B2B supplier-buyer relationships or the healthcare industry. Leading this effort is the researcher's position that more scholars should know about the fruitful use of critical realist methodology in the corporate reputation context. The value of explaining attributes, antecedents, consequences and mechanisms of corporate

reputation cannot be overestimated. It provides so many more findings than simple rankings of randomly listed reputation attributes.

7.3. Contribution to managerial knowledge

Besides its contribution to academic knowledge, the results of this study also give insight to practitioners. This section clarifies why a consideration of corporate reputation is beneficial for managers of medical device companies and hospital procurement managers. It ends with an overview of future actions the researcher can derive from the study results.

7.3.1. For managers in medical device companies

Since this doctoral thesis is the result of a professional doctorate, it does have implications that could be implemented in medical device businesses. The literature research and analysis of interviews resulted in nine recommendations for managers of medical device companies to improve their company's reputation. The recommendations are summarized in table 80.

Managers of medical device companies should analyse their reputation regularly based on the reputation concept provided in this thesis. A survey among hospital procurement managers can shed light on the reputation constituents of the medical device company, and a benchmark analysis including competitors could point to reputational advantages (Hecht, 2016; Van Riel & Baumann, 2015).

The analysis is the foundation of a strategic and proactive reputation management, which aims to enhance the company's reputation. Ideally, reputation management is strategized by a reputation manager (Khan, 2019; Men, 2014), who then coordinates all activities or is an interface for

the participating parties, such as the management board and strategic, legal, marketing, sales, logistics, IT, human resources and communication departments. The departments can only together improve all reputation attributes and the antecedents company and company representatives by anticipating what the individual hospital procurement manager needs and expects. Crucial for the reputational success is the alignment of actions and communication, as suggested by the signaling theorists (Basdeo et al., 2006).

#	Recommendation	Recommended by
1	Analyse your company's reputation.	Hecht (2016); Van Riel and Baumann (2015)
2	Manage your reputation proactively.	Van Riel and Baumann (2015); Wiedmann (2017); Khan (2019)
3	Train your company representatives.	Interviewees A4, A5, B1, C1, C3
4	Make customer benefit clear beyond product quality.	Interviewees A1, A3, B1, B2, B3, C3, P
5	Be transparent in good times.	Interviewees A1, A2, A3, B2, B3, C1, C2, C3, P, Wiedmann (2017)
6	Be even more transparent in bad times.	Interviewees A1, A3, A5, C3, Boyschau and Simpson (2019)
7	Support hospitals in digitalization.	Interviewees A2, B3, Hübner et al. (2019)
8	Make your company an essential long-term partner.	Interviewees A4, B3
9	Repeat your reputation analysis regularly.	Van Riel and Baumann (2015)

Table 80: Nine recommendations for medical device companies to strengthen their reputation. Source: Own compilation.

Other recommendations point to the company representatives and the buyer-supplier relationships. Company representatives should be regularly trained about the relevance of reputation, appropriate communication, crisis management and negotiation. Processes for hospital procurement managers should be implemented to guarantee customer centricity and increase their trust in the company (A4, A5, B1, C1, C3). Moreover, almost all the hospital procurement managers interviewed appreciated benefits that go beyond products and their quality. They know that they cannot cut the price more, but they want their hospital participating in a long-term commitment to the medical device company. Aspects of safety and services were mentioned most often, particularly delivery security and process consulting (A1, A3, B1, B2, B3, C3, P).

Two recommendations highlight the importance of transparency. Almost all interviewees identified a lack of transparency among medical device companies. They would like to know about production costs, the manufacturing origin and safety features of products, the frequency of services and the corporate responsibility activities. If they request information, it should be provided to them quickly (A1, A2, A3, B2, B3, C1, C2, C3, P). As soon as problems occur, company representatives should liaise with the hospital procurement managers who are affected by the problem. They need to know first how the problem will be addressed and how long it will take to solve it. Knowing why the problem occurred and how it could be avoided in future is also beneficial. Professional crisis management is a strong indicator for them to improve their reputation perception about the medical device company (A1, A3, A5, C3).

Furthermore, digitalization is one of the most critical challenges for hospitals, especially in the supply chain, the coordination of processes and the management of different hospital units. When medical device

companies use their digital competency to support hospital procurement managers by managing these challenges, their reputation score will increase. Digitalization, not product development, will shape the reputation attribute innovation (A2, B3).

An eighth recommendation is that hospital procurement managers need partners to reach their goals. Medical device companies should strive for win-win-partnerships that bind hospitals for the long term. This guarantees a continuous collaboration and strengthens the medical device company's reputation and the resilience of the supplier-buyer relationship, in crisis situations (A4, B3).

Finally, medical device companies should repeat the reputation analysis to get an updated status about their reputation, ideally every one to two years (Van Riel & Baumann, 2015). The comparison of reputation antecedents, attributes and consequences will show what has been improved in the meantime and where the reputation manager should focus to improve the medical device company's reputation in the perspective of hospital procurement managers.

7.3.2. For hospital procurement managers

Whenever this research was introduced to managers in the healthcare industry, they asked for an executive summary after the thesis was completed. A concept of medical device reputation with its attributes, antecedents and consequences was regarded as an important instrument to contextualize perceptions and decision-making for hospitals. All twelve interviewees were interested in the study results and requested a summary. None of them have ever taken part in a reputation study before and some were surprised what attributes are connected with corporate reputation by academics (A4, A5, B2, B3, C1).

Their interest is based on two primary reasons: Because they know a certain stage of the reputation concept, they would like to know the refined concept. They expressed a curiosity about the collective perceptions of their colleagues to position their own perception in the collective reputation concept. By knowing the characteristics of the study, they also can sort themselves in the groups of work experience and reputation fans or sceptics and can then reflect on their contribution to the overall concept.

The second reason focuses on the purchasing process. Most of the hospital procurement managers have a set of decision criteria, and some reputation attributes are amongst them. The study results can adjust these criteria and include a more collective perception on some of the attributes or even the whole concept of reputation as important decision-making factor. When price negotiations are no longer possible, the intangible asset of reputation could gain more importance. As such, this doctoral study contributes to position reputation more in the centre of decision-making, and it is planned to present the results to extensive hospital audiences in Germany.

7.3.3. For the researcher

After six years of part-time studying on a doctoral level, the results have had an impact on the researcher and his professional environment. The reflections on academic work and the successful coordination of this long-term project have led to taking on responsibility for large communication projects in the medical device company he works for. These projects have a strategic background and require a substantiated knowledge management to improve the management of international communications.

The attributes of medical device company reputation, its antecedents, consequences and mechanisms are being trained to colleagues in his department, to the company's management and to international communication professionals as well as to colleagues responsible for marketing and sales. There are plans to communicate the study's result in professional medical device or marketing media and to present them in meetings of healthcare associations. The hospital procurement managers who participated in this study had already received a summary of the results before the thesis was finished.

Besides disseminating information about the results, the researcher intends to continue this research on medical device company reputation. The attribute set will be shared with research agencies to determine the reputation of his company regularly, and to subsequently draw conclusions for reputation management. Measuring corporate reputation is already part of communication evaluation and will help to improve further the understanding of how communication, marketing, sales and management can together work on reputation as a major intangible asset.

It is also imaginable that the research will be extended to the largest international markets for medical device companies, such the US market or markets in other European countries, or Brazil, China, India and Russia. Additionally, it is possible that the researcher will conduct a comparative reputation study in the medical device sector, learning about similarities and differences of medical device companies and providing a reputation ranking. Reputation provides rich insights into why companies are successful or not, and it remains an attractive field of interest for the researcher.

7.4. Summary: The key conclusions

In this doctoral thesis, the reputational landscape of medical device companies was mapped from the perspective of hospital procurement managers for the first time. The map provides a clear understanding of the constituents of this special reputation and offers orientation for both academics and practitioners. It illuminates a possible path for the *many reputations* approach for academics, who aim to explain additional reputations in industries perceived by different stakeholders in defined regions by using the same methodology and the same theoretical and conceptual underpinnings. And it decodes the fuzzy, cacophonous meaning of corporate reputation among practitioners in medical device companies by offering a concise concept that can be used for their reputation evaluations.

Above all, hospital procurement managers perceive their supplier's reputation through an attribute-specific judgement. This corresponds with the need to evaluate their suppliers regularly based on parameters such as price, availability and reliability. The interviews revealed that hospital procurement managers do not reflect on corporate reputation as a whole, but on its separate antecedents, attributes and consequences. However, generalized attractiveness was conceived as emotion towards a medical device company and they agreed to include it in the reputation construct.

The most important reputation agents are company representatives as antecedent and the transparency attribute. They are the sources or targets of important mechanisms that influence medical device company reputation. Hospital procurement managers not only posited to retain sales representatives, but also to further improve their competencies, communication and crisis management. Moreover, they addressed a lack

of transparency among medical device companies, which makes it harder for them to evaluate their reputation. These requests should not be underestimated, since corporate reputation makes up approximately 30 percent of their purchase decision and leads to recommendations in their professional network.

And finally, this doctoral thesis confirmed Jackson (2004), cited in the beginning of chapter 7, who compared a positive reputation with a healthy immune system. Reputations and immune systems have something in common: They are managed by their owners, who will need to exert enormous effort over a long period of time to maintain them. But once they are strong, reputations and immune systems are robust against threats. Just like a strong immune system, a favourable corporate reputation has a strategic value, acts as a buffer against external threats and paves the way for a long and healthy life.

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Appendices

Appendix 1:

Relevance of reputational stakeholder groups from the perspective of board-level managers

Rank	Stakeholder group	Mean
1	Customers	4.58
2	Employees	3.92
[3]	[CEO Reputation]	[3.70]
4	Print Media	3.24
5	Shareholders	3.05
6	The Internet	2.90
7	Industry Analysts	2.87
8	Financial Analysts	2.78
9	Regulators / Government	2.64
10	Broadcast Media	2.40
11	Labour Union Leaders	2.29
12	Plaintiff's Lawyers	2.03

Source: Kitchen and Laurence (2003, p. 111).

Notes: Summary of means on a 5-point scale where 5 = 'Extremely influences' and 1 = 'Does not influence at all'. Total: 1,019 respondents. Since 'CEO Reputation' is the only item that does not represent a stakeholder group, it is specially marked.

Appendix 2:

Reputation importance vs. reputation strategy implementation from the managerial perspective

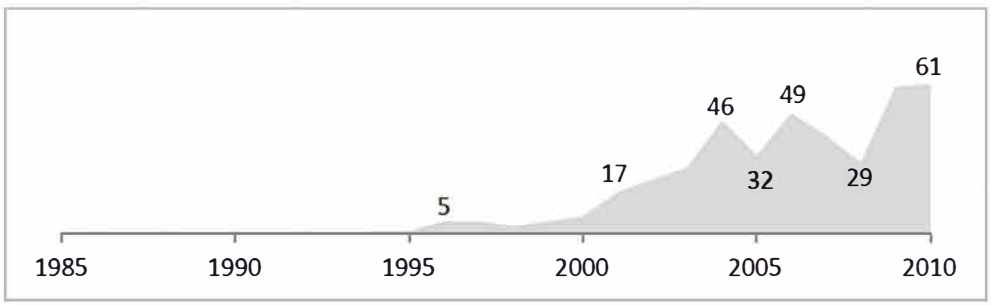
Survey cited in	Survey participants	Country	Reputation importance	Reputation strategy
Hall (1992)	95 CEOs	UK	Rank 1 of 13	N/A
Kitchen and Laurence (2003)	1,016 board-level managers	USA, Canada, European countries	90 %	42 %
Van der Jagt (2005)	25 CEOs	Netherlands	96 %	N/A
Wiedmann and Buxel (2005)	131 CEOs, marketing and communication managers	Germany	69 %	'Only a small number'
Reddiar et al. (2012)	12 directors of one company	South Africa	100 %	N/A
Knight and Ward (2015)	125 managers	UK	79 %	66 %
Stier-Thompson and Stadthoewer (2015)	360 media offices and 153 PR agencies	Germany	99 %	58 %
Vancheswar, Batra, and Gera (2015)	48 corporate executives	India	98 %	N/A

Source: Own compilation.

Appendix 3:

Frequency of academic corporate reputation articles

Frequency distribution of articles 1985-2010



Source: Pieczka and Zorn (2013, p. 518).

Journals with the highest frequency of corporate reputation articles 1986-2010

Journal title	Frequency	Percent
Corporate Reputation Review	64	15.1
Strategic Communication Management	15	3.5
Journal of Communication Management	11	2.6
Public Relations Review	11	2.6
Business & Society	10	2.4
Corporate Communications	10	2.4
Management Decision	9	2.1

Source: Pieczka and Zorn (2013, p. 520).

Appendix 4:

Classifications of medical devices by the GMDN

Code	Classifications	Examples
01	Active implantable technology	Cardiac pacemakers, neurostimulators
02	Anaesthetic and respiratory technology	Oxygen mask, gas delivery unit, anaesthesia breathing circuit
03	Dental technology	Dentistry tools, alloys, resins, floss, brushes
04	Electromechanical medical technology	X-ray machine, laser, scanner
05	Hospital hardware	Hospital bed
06	In-vitro diagnostic technology	Pregnancy test, genetic test, glucose strip
07	Non-active implantable technology	Hip or knee joint replacement, cardiac stent
08	Ophtalmic and optical technology	Spectacles, contact lenses, intraocular lenses, ophtalmoscope
09	Reusable instruments	Surgical instruments, rigid endoscopes, blood pressure cuffs, stethoscopes, skin electrodes
10	Single use technology	Syringes, needles, latex gloves, balloon catheters
11	Technical aids for disabled	Wheelchairs, walking frames, hearing aids
12	Diagnostic and therapeutic radiation technology	Radiotherapy units
13	Complementary therapy devices	

Code	Classifications	Examples
14	Biological-derived devices	
15	Healthcare facility products and adaptations	
16	Laboratory equipment	

Source: Eucomed (2016, pa. 7).

Appendix 5:

Top 20 medical device companies in 2018

Rank	Company	Headquarters in	Founded	Revenues in 2018 (in billion €)
1	Medtronic	Dublin, Ireland	1949	26.7
2	Johnson & Johnson	New Brunswick, NJ, USA	1886	23.6
3	GE Healthcare	Chicago, IL, USA	2004	17.3
4	Abbott Laboratories	Lake Bluff, IL, USA	1888	16.5
5	Philips Healthcare	Amsterdam, Netherlands	1891 (Philips)	14.1
6	Becton Dickinson	Franklin Lakes, NJ, USA	1897	14.0
7	Cardinal Health	Dublin, OH, USA	1971	13.6
7	Siemens Healthineers	Erlangen, Germany	1847	13.6
9	Stryker Corp.	Kalamazoo, MI, USA	1946	11.9
10	Baxter International	Deerfield, IL, USA	1931	9.7
11	Boston Scientific	Marlborough, MA, USA	1979	8.6
12	Danaher Corp.	Washington D.C., USA	1969	7.9

Rank	Company	Headquarters in	Founded	Revenues in 2018 (in billion €)
13	EssilorLuxottica	Charenton-le-Pont, France	1849	7.4
14	Zimmer Biomet	Warsaw, IN, USA	1927	6.9
15	B. Braun	Melsungen, Germany	1839	6.9
16	Alcon (Novartis)	Hünenberg, Switzerland	1945	6.2
17	Fresenius	Bad Homburg, Germany	1912	5.3
18	3M Healthcare	Maplewood, MN, USA	1902	5.3
19	Olympus Medical	Shinjuku, Tokyo, Japan	1919	5.0
20	Terumo	Shibuya-ku, Tokyo, Japan	1921	4.7
	Total			**225.3**

Source: Fenske et al. (2019).

Notes: The US federal states are named with their postal abbreviation. Revenues have been converted from US dollars to euros (as of 31 December 2018: 1 €= 1.145 US$).

Appendix 6:

Selection factors by news media gatekeepers

Number	Attribute	Description
1	Frequency	The more similar the frequency of the event is to the frequency of the news medium, the more probable that it will be recorded as news by that news medium.
2	Threshold / intensity	There is a threshold the event will have to pass before it will be recorded at all.
3	Unambiguity	An event with a clear interpretation, free from ambiguities in its meaning, is preferred to the highly ambiguous event from which many and inconsistent implications can and will be made.
4	Meaningfulness	The event-scanner will pay particular attention [to the relevant,] to the familiar, to the culturally similar, and the culturally distant will be passed by more easily and not be noticed.
5	Consonance	A person predicts that something will happen and this creates a mental matrix for easy reception and registration of the event if it does finally take place.
6	Unexpectedness	The more unexpected have the highest chances of being included as news. It is the unexpected within the meaningful and the consonant that is brought to one's attention.
7	Continuity	Once something has hit the headlines and been defined as 'news', then it will continue to be defined as news for some time even if the amplitude is drastically reduced.

Number	Attribute	Description
8	Composition	Imagine the news editor of a broadcasting station has received only news from abroad and only of a certain type. Some minutes before he is on the air, he gets some insignificant domestic news and some foreign news of a different kind. ... The threshold value for these news items will be much lower than would otherwise have been the case.
9	Reference to elite nations	The more the event concerns elite nations, the more probable that it will become a news item.
10	Reference to elite people	The more the event concerns elite people, the more probable that it will become a news item.
11	Reference to persons / personification	The more the event can be seen in personal terms, as due to the action of specific individuals, the more propable that it will become a news item.
12	Reference to something negative / perceiving something as negative	The more negative the event in its consequences, the more probable that it will become a news item.

Source: Galtung and Ruge (1965, pp. 66-71).

Appendix 7:

Definitions of corporate reputation

Author	Definition
Weigelt and Camerer (1988, p. 443)	A set of attributes ascribed to a firm, inferred from the firm's past actions.
Fombrun and Shanley (1990, p. 234)	The outcome of a competitive process in which firms signal their key characteristics to constituents to maximize their social status.
Fombrun (1996, p. 72)	A perceptual representation of a company's past actions and future prospects that describes the firm's overall appeal to all of its key constituents when compared with other leading rivals.
Fombrun and van Riel (1997, p. 10)	A corporate reputation is a collective representation of a firm's past actions and results that describes the firm's ability to deliver valued outcomes to multiple stakeholders. It gauges a firm's relative standing both internally with employees and externally with its stakeholders, in both its competitive and institutional environment.
Cable and Graham (2000, p. 929)	A public's affective evaluation of a firms' name relative to other firms.
Deephouse (2000, p. 1093)	The evaluation of a firm by its stakeholders in terms of their affect, esteem, and knowledge.
Bromley (2001, p. 316)	... a distribution of opinions (the overt expressions of a collective image) about a person or other entity, in a stakeholder or interest group.
Mahon (2002, p. 417)	Uses Webster's (1983) definition: A reckoning, an estimation, from the Latin reputatus – to reckon, to count over. The estimation in which a person, thing, or action is held by others ... whether favourable or unfavourable.

Author	Definition
Whetten and Mackey (2002, p. 401)	Organizational reputation is a particular type of feedback, received by an organization from its stakeholders, concerning the credibility of the organization's identity claims.
Rindova et al. (2005, p. 1033)	Stakeholders' perceptions about an organization's ability to create value relative to competitors.
Rhee and Haunschild (2006, p. 102)	The consumer's subjective evaluation of the perceived quality of the producer.
Carter (2006, p. 1145)	A set of key characteristics attributed to a firm by various stakeholders.
Barnett et al. (2006, p. 34)	Observer's collective judgements of a corporation based on assessments of the financial, social, and environmental impacts attributed to the corporate over time.

Source: A selection of definitions by Walker (2010, p. 368).

Note: Walker (2010) closely evaluated definitions in 19 academic articles. Because some of the articles referred to definitions by previous authors, most of them to Fombrun (1996), this list contains only 13 different definitions.

Appendix 8:

Reasoning for stakeholder specification

'To illustrate my concerns [about a grand aggregation approach], I created the table below to provide some focus. The table is intended to represent three different companies that are competitors who are interacting with the same five stakeholder groups (i.e., owners, employees, customers, suppliers, and communities). The cells containing numbers are intended to represent each stakeholder's perceptual representation of each company's past actions and future prospects and thus each company's overall appeal as rated from 0 as the lowest to 10 as the highest.

Stakeholders	Company A	Company B	Company C
Owners	6	10	0
Employees	5	2	9
Customers	5	2	10
Suppliers	6	10	0
Community	5	1	7
Reputation rating	**27**	**25**	**26**

Source: Hypothetical reputation rankings for three competing companies (Wartick, 2002, p. 377). Note: 10 = highest possible level of favour; 0 = lowest possible level of favour

Thus, the table reflects hypothetically the grand aggregation approach inherent in the Fombrun (1996) definition of reputation. Now, using the table, Company A has the greatest overall appeal because in the aggregate, based on key constituency views, it has the highest rating. However, if one went to any one of the five stakeholder groups and asked, 'Which of the three companies has the greatest overall appeal?' Company A would not be the answer for any of the five.

Conversely, suppose that one surveyed the owner stakeholder group only (as the Fortune survey tends to do) and found that Company B has the most overall appeal, followed by Company A and Company C. The problem now is that with only a limited number of stakeholders in one's respondent group, the survey results never get to the point of satisfying some 'overall appeal to all of its key constituents' part of the definition. Thus, the grand aggregation approach to defining corporate reputation loses substantial informational content unless multiple, and a nearly exhaustive list of, stakeholder groups could possibly be surveyed.

But even if multiple stakeholder groups are surveyed, the quality of the information may be suspect when the stakeholder perceptions are aggregated. Using the table again, reputation may not be the highest appeal for all; it may simply be a construct that captures the least offensive for many. Company A, for example, reflects an overall rating of 27, which is composed of an 11 from internal stakeholders (i.e., a 6 from owners and a 5 from employees) and a 16 from external stakeholders (i.e., a 5 from customers, a 6 from suppliers, and a 5 from community).

However, Company B scores higher (score = 12) than Company A with internal stakeholders, and Company C scores higher (score = 17) with external stakeholders. With not a single stakeholder group or a single stakeholder type does Company A score the highest. Given the grand aggregation approach to defining reputation, the question again is one of 'What are you really measuring?'

This problem could be addressed through disaggregation. For example, of the two following statements, I believe that the second has far more informational content than the first:

1. As illustrated in the table, Company A has a better reputation than Company B.
2. As illustrated in the table, Company A has a better reputation than Company B as viewed by employees, customers, and communities, but as viewed by suppliers and owners, Company B is more appealing.

But once we start to disaggregate, the grand aggregation attribute of the corporate reputation definition is of no value, and a different definition is needed. Yet another troubling point, which can be illustrated with the hypothetical data in the table, relates to whether the definition of

corporate reputation demands or requires a subject. In other words, the widely used approach quantitatively illustrated in the table suggests that the only thing that the overall rating is addressing is some general nonspecified appeal, that is, 'Who is best?'

But as noted above, the nonspecified appeal could easily vary from stakeholder group to stakeholder group. So community groups could be assessing environmental issues at the same time that customers are assessing product reliability issues and owners are assessing return on equity issues. Applying a subject or topic to corporate reputation would address this, but again, the grand aggregation attribute of corporate reputation would be suspect and a necessary focus for change.'

Source: Wartick (2002, pp. 376-378).

Appendix 9:

A collection of relevant corporate reputation definitions for this research

Source	Definition
Fombrun (1996, p. 72)	*A perceptual representation* of a company's past actions and future prospects that describes the firm's overall appeal to all of its key constituents when compared with other leading rivals.
Barnett et al. (2006, p. 34)	Observers' *collective judgments* of a corporation based on assessments of the financial, social, and environmental impacts attributed to the corporation over time.
Walker (2010, p. 370)	*A relatively stable*, issue specific aggregate perceptual representation of a company 's past actions and future prospects compared against some standard.
Lange et al. (2011, p. 169)	The *three-attributeal representation* of organizational reputation emphasizes how reputation is idiosyncratic to a given set of perceivers, prompts consideration of the *distinctiveness and overlap among the three attributes*, and provides the opportunity to consider organizational reputational as a typology ....
Fombrun (2012, p. 100)	A collective *assessment of a company's attractiveness* to a *specific group of stakeholders* relative to a *reference group of companies* with which the company competes for resources.

Source: Own compilation. Note: Cursive phrases are the cornerstones in discussing the author's reputation definition.

Appendix 10:

Attributes of the Edelman Trust Barometer

Attribute	Attributes per attribute
Integrity	▪ Has ethical business practices ▪ Takes responsible actions to address an issue or crisis ▪ Has transparent and open business practices
Engagement	▪ Listens to customer needs and feedback ▪ Treats employees well ▪ Places customers ahead profits ▪ Communicates frequently and honestly on the state of its business
Products & services	▪ Offers high-quality products or services ▪ Is an innovator of new products, services or ideas
Purpose	▪ Works to protect and improve the environment ▪ Addresses society's needs in its everyday business ▪ Creates programs that positively impact the local community ▪ Partners with NGOs, government and 3rd parties to address societal needs
Operations	▪ Has highly-regarded and widely-admired top leadership ▪ Ranks on a global list of top companies ▪ Delivers consistent financial returns to investors

Source: Tropiano et al. (2019, p. 36).

Appendix 11:

Reasoning of qualitative methods

Method	Reasoning
Observational fieldwork	▪ Initially: study of other cultures ▪ Visual method: Mainly for observing social practices ▪ Not applicable to corporate reputation research because perceptions are the driving factor, not behaviour and actions
Diary	▪ Primarily used for documentation of daily developments ▪ Personal journal includes reflections ▪ Not applicable for practical reasons: Too much effort for hospital procurement managers
Case study	▪ Very small number of cases (one to three) ▪ Not applicable for corporate reputation research because conceptualization needs more perspectives to find weights and regularities
Action research	▪ Researcher is actively involved in organization with the goal to drive change ▪ Not applicable due to conceptual approach and practical reasons
Focus groups	▪ Interview with group of 4-6 participants ▪ Get rich insights from discussions and mutual influence ▪ Practicability: only some appointments ▪ Some weaknesses when applied to corporate reputation research, but possible under certain conditions (see sub-section 3.2.1.)
One-to-one interviews	▪ Individual face-to-face interviews ▪ Preferred method by social researchers ▪ Some advantages in comparison to focus groups (see sub-section 3.2.1.) ▪ Method of choice for this research project

Source: Own compilation, with background from Blaikie (2010, pp. 206-207), and Flick (2008, pp. 111-112).

Appendix 12:

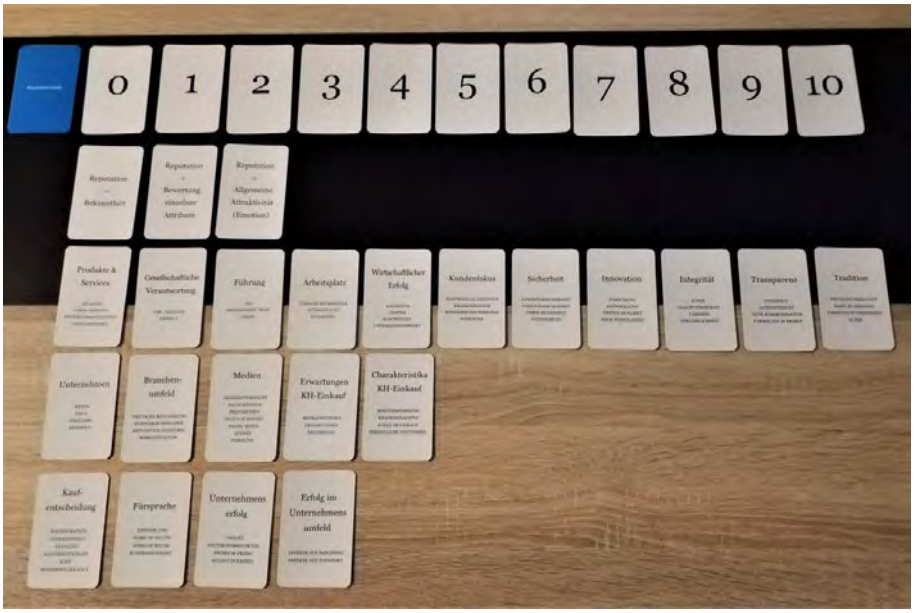
Interview guide for this research (German)

#	Thema
1	Einleitende Fragen zum beruflichen Hintergrund: A. Was ist Ihre genaue Position in diesem Krankenhaus? B. Beschreiben Sie bitte Ihr Jobprofil. Was sind Ihre Haupttätigkeiten? C. Wie lang arbeiten Sie schon als Einkäufer / in diesem Krankenhaus? D. Für wie viele Krankenhausbetten kaufen Sie Medizinprodukte ein?
2	Was verbinden Sie mit dem Begriff „Reputation"?
3	Wie würden Sie die Reputation von Medizinprodukte-Herstellern beschreiben?
4	Vorstellung des Reputationskonzeptes von Medizinprodukte-Herstellern
5	Vorstellung der Q-sort-Interviewtechnik
6	Kategorien von Reputation (Bekanntheit, Bewertung spezifischer Attribute, Attraktivität)
7	Attribute der Reputation von Medizinprodukte-Herstellern
8	Sortieren der Attribute und Begründung
9	Ursachen von Reputation
10	Sortieren der Vorläufer und Begründung
11	Folgen von Reputation
12	Sortieren der Folgen und Begründung
13	Individuelle kausale Verknüpfungen zwischen den Attributen von Reputation, ihren Ursachen und Folgen, die regelmäßig auftreten könnten
14	Empfehlungen Reputationsmanagement für Medizinprodukte-Hersteller
15	Abschließende Frage: Ich habe keine weiteren Fragen. Gibt es von Ihrer Seite etwas, was Sie noch zum Thema erwähnen möchten?

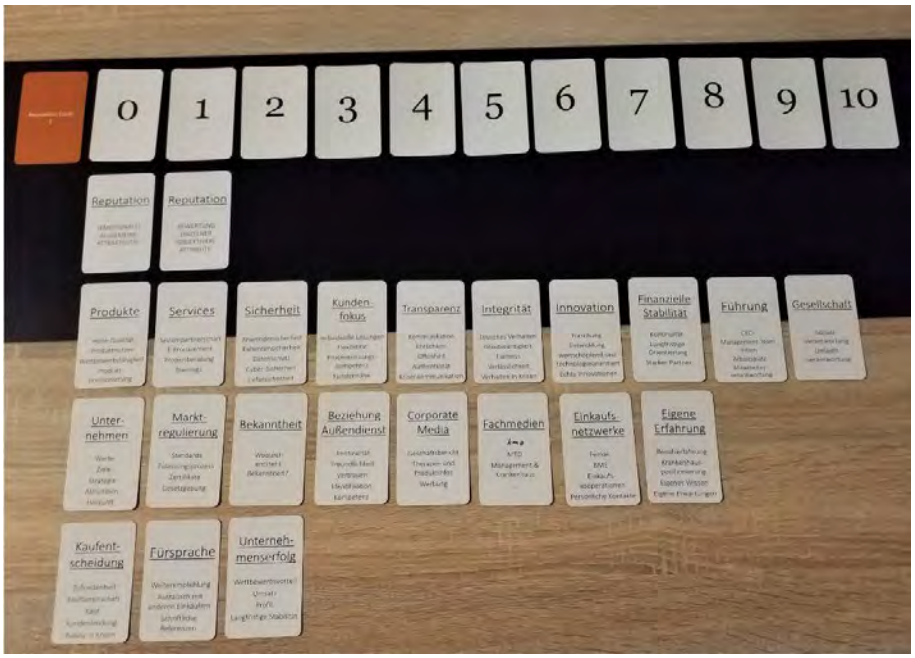
Source: Own compilation.

Appendix 13:

Q-sort cards for the first and second interview phases



Reputation Cards for the first phase interviews. Source: Own photo.



Reputation Cards for the second phase interviews. Source: Own photo.

Appendix 14:

Declaration of the researcher for study participants

Erklärung zur Handhabung der Daten und Vertraulichkeitserklärung

Forschungsprojekt: **Die Reputation von Medizinprodukte-Unternehmen aus der Sicht von Managern im Krankenhauseinkauf**

Erklärung des Doktoranden

Hiermit erklärt der Doktorand, Holger Minning,

- dass alle von Ihnen gemachten Angaben vertraulich behandelt und vollständig anonymisiert werden, sodass ein Rückschluss auf Ihre Person nicht möglich sein wird.
- dass die Transkription vom Doktoranden selbst durchgeführt und anonymisiert wird und nur von den Betreuern der Doktorarbeit, Prüfern und Gremien der University of Gloucestershire eingesehen werden darf.
- dass die Audiodatei, die anonymisierte Transkription und die Einverständniserklärung jeweils getrennt voneinander auf einem nur dem Doktoranden zugänglichen Laufwerk gespeichert werden.
- dass die Audiodatei und Ihre personenbezogenen Daten bis spätestens zum 31.12.2019 gelöscht werden. Die anonymisierten Transkriptionen werden bis spätestens zum 31.12.2021 aufbewahrt.

Das Vorgehen im Forschungsprojekt erfolgt im Einklang mit dem „Handbook of Research Ethics“ der University of Gloucestershire. Das Forschungsprojekt wurde von der University of Gloucestershire genehmigt; die Inhalte und Interpretationen des Forschungsprojektes sind die des Doktoranden und repräsentieren nicht die Meinung der Universität.

_____

(Ort, Datum, Name, Unterschrift)

Kontaktdaten Doktorand
Holger Minning

E-Mail:
Telefon:

Kontaktdaten Hauptbetreuerin
Dr. Elke Pioch
University of Gloucestershire
The Park- Pallas Villa
Cheltenham, GL50 2RH
E-Mail:

Source: Own compilation (German original).

Declaration regarding data usage and confidentiality

Research project:	**The reputational landscape of medical device companies:** **A hospital procurement managers' perspective**

Declaration by doctoral student

The doctoral student, Holger Minning, hereby declares:

- That all information received from you will be treated with the utmost confidentiality and will be anonymized completely so that it cannot be traced back to you.
- That the interview will be transcribed and anonymized by the doctoral student himself and will only be viewed by doctoral supervisors, examiners, and committees of the University of Gloucestershire.
- That the audio file, the anonymized transcription, and the declaration of consent will each be stored separately on a drive that can only be accessed by the doctoral student.
- That the audio file and your personal data will be deleted by 31 December 2019 at the latest. The anonymized transcriptions will be retained until 31 December 2021 at the latest.

The steps taken in the research project comply with the University of Gloucestershire's Handbook of Research Ethics. The research project has been approved by the University of Gloucestershire; the contents and interpretations of the research project are those of the doctoral candidate and do not represent the opinion of the University.

_____

(Place, date, name, signature)

Contact details for doctoral candidate	**Contact details for primary supervisor**
Holger Minning	Dr. Elke Pioch University of Gloucestershire The Park – Pallas Villa
Germany	Cheltenham, GL50 2RH
E-mail:	UK
Telephone:	E-mail:

Source: Own compilation (English translation).

Appendix 15:

Declaration of informed consent

Einverständniserklärung

Interviewpartner:

_____ _____

(Name) (Unternehmen)

Einwilligungserklärung des Interviewten (bitte ankreuzen)

- ☐ Hiermit erkläre ich mich bereit, im Rahmen der vom Doktoranden Holger Minning durchgeführten Studie zur Reputation von Medizinprodukte-Unternehmen ein Interview zu geben.
- ☐ Über die Inhalte und Methoden der Studie wurde ich informiert.

Ich wurde informiert,

- ☐ dass die Teilnahme am Interview freiwillig ist, das Interview jederzeit abgebrochen werden kann und es mir freisteht, einzelne Fragen nicht zu beantworten.
- ☐ dass ich die Teilnahme am Forschungsprojekt nachträglich zurückziehen kann.
- ☐ dass alle erhobenen Daten zu meiner Person vertraulich behandelt, anonymisiert und zu rein wissenschaftlichen Zwecken genutzt werden.

Hiermit erkläre ich mich einverstanden,

- ☐ dass das Interview digital aufgezeichnet und im Nachgang anonymisiert transkribiert wird.
- ☐ dass Teile des Interviews im Rahmen des oben genannten Forschungsprojektes und damit verbundenen Publikationen und Vorträgen genutzt werden können.
- ☐ dass die anonymisierten Transkripte durch die Betreuer der Doktorarbeit, Prüfer und Gremien der University of Gloucestershire eingesehen werden dürfen
- ☐ dass die Verwertungsrechte (Copyright) des Interviews beim Doktoranden liegen, Zitierungen aus dem Interview aber kenntlich gemacht werden.

Ich möchte

- ☐ die Transkription des Interviews zur Prüfung zugesendet bekommen.
- ☐ eine Zusammenfassung der Forschungsergebnisse erhalten, sobald das Forschungsprojekt abgeschlossen und bewertet ist.

_____

(Ort, Datum, Name, Unterschrift)

Source: Own compilation (German original).

Declaration of informed consent

Interviewee:

_____ _____

(Name) (Company)

Declaration of consent by interviewee (please tick)

- ☐ I hereby declare that I am willing to give an interview in connection with the study being conducted by doctoral candidate Holger Minning regarding the reputation of medical device companies.
- ☐ I have been informed about the study content and methodology.

I have been informed:

- ☐ That taking part in the interview is voluntary, that the interview can be terminated at any time, and that I have the right not to answer individual questions.
- ☐ That I can withdraw my participation in the research project at a later stage.
- ☐ That all data collected regarding my person will be dealt with confidentially, anonymized, and used for strictly scientific purposes.

I hereby give my consent:

- ☐ For the interview to be recorded digitally and transcribed in anonymized form afterwards.
- ☐ For parts of the interview to be used in connection with the aforementioned research project and related publications and presentations.
- ☐ For the anonymized transcripts to be viewed by the doctoral supervisors, examiners, and committees of the University of Gloucestershire.
- ☐ For the doctoral candidate to hold the copyright for the interview, while quotations from the interview will be indicated as such.

I would like to:

- ☐ Be sent a copy of the interview transcription for verification.
- ☐ Receive a summary of the research findings as soon as the research project has been completed and evaluated.

_____

(Place, date, name, signature)

Source: Own compilation (English translation).

Appendix 16:

The final coding scheme of the current research project

Software: NVivo

Codes (nodes in NVivo) were defined by the topics and attributes discussed in the interviews. All interviews were coded and all information in one code was analysed (similiarities, differences, patterns, exceptions).

01 Background > 0101 Hospital type, 0102 Hospital size, 0103 Work experience, 0104 Role

02 Unsupported reputation understanding

03 Category > 0301 Attribute-specific judgement, 0302 Attractiveness

04 Reputation attributes > 0401 Products, 0402 Safety, 0403 Transparency, 0404 Services, 0405 Customer focus, 0406 Innovation, 0407 Financial stability, 0408a Integrity, 0408b Citizenship, 0408c Leadership, 0408d Workplace

05 Antecedents > 0501 Experience, 0501a Background, 0502 Procurement networks, 0503 Company representative, 0504 Market regulations, 0505 Company, 0505a Heritage, 0505b Corporate media, 05xx Awareness, 05xx Hospital business media, 05xx Media exposure

06 Consequences > 0601 Purchasing decision, 0602 Advocacy, 0603 Company performance, 06xx Business environment outcome

07 Recommendations

08 Other ideas

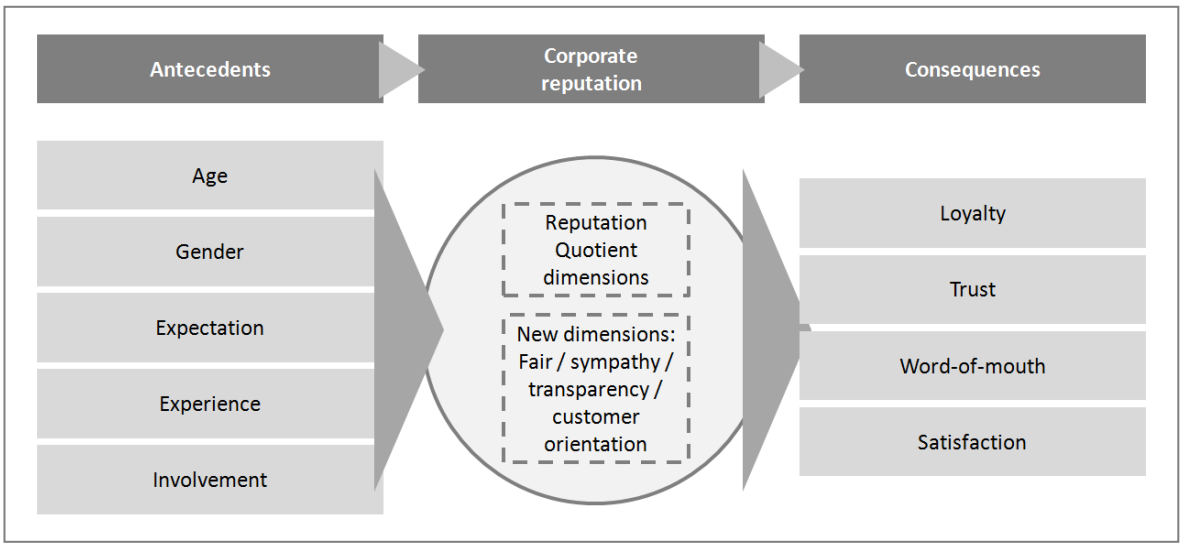
09 External influences > 0901 Price, 0902 Hospital-specific, 0903 Crisis, 0904 Time pressure, 0905 Framework contracts, 0906 Product type

10 Quotation diamonds

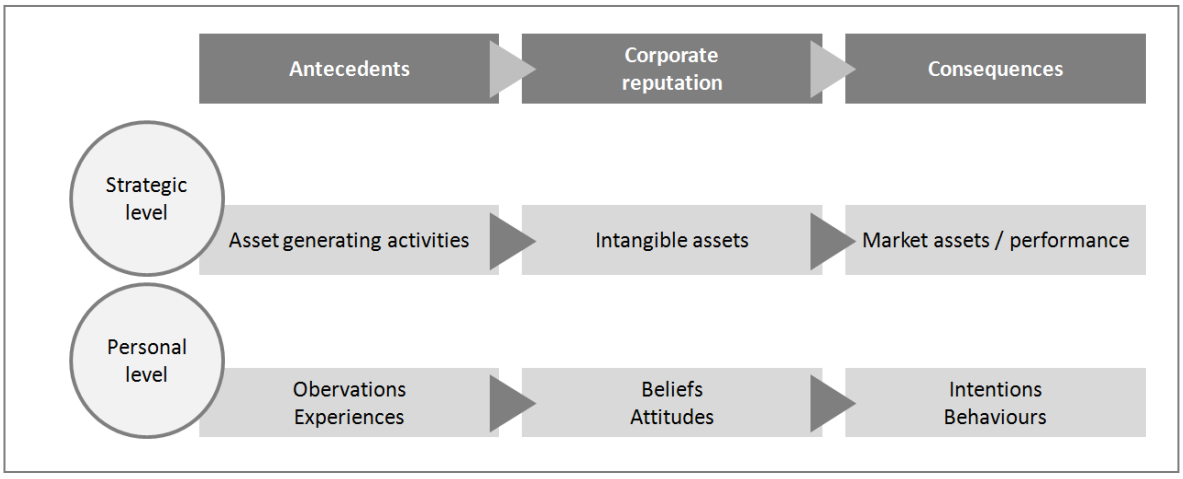
Source: Own compilation

Appendix 17:

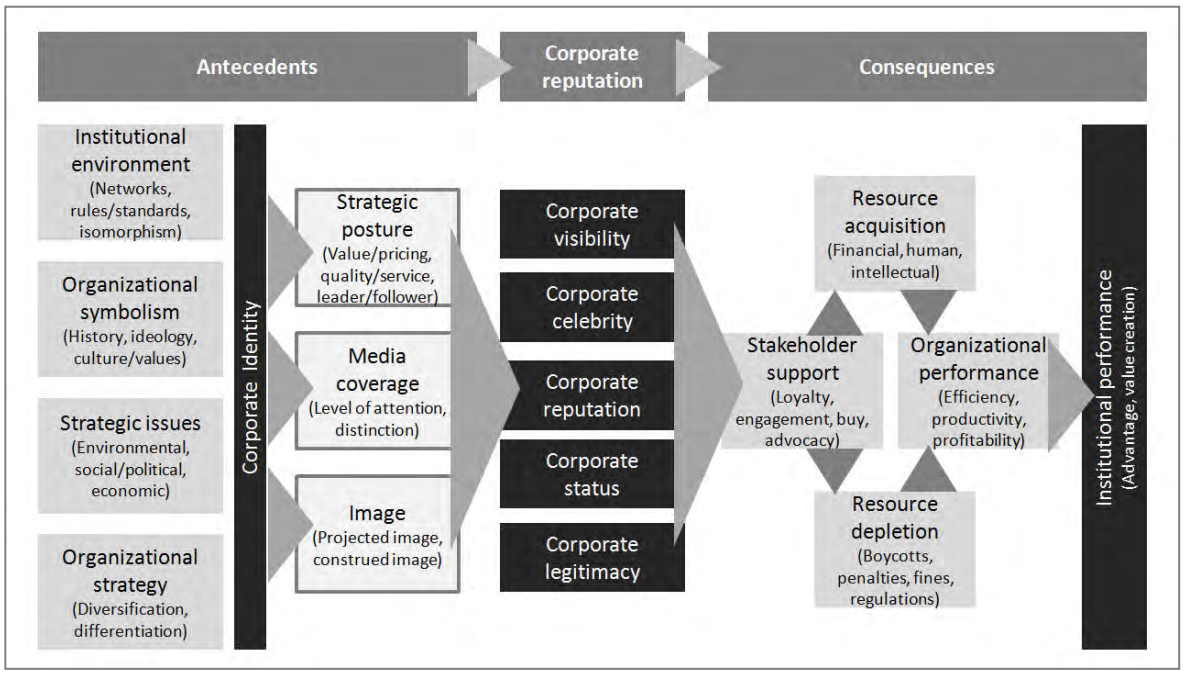
Causal reputation frameworks in the literature



Source: Walsh and Wiedmann (2004, p. 310), adapted.



Source: Money and Hillenbrand (2006, p. 5).



Source: Fombrun (2012, p. 106), adapted.

Appendix 18:

Literature findings of reputation attributes

Author(s)	PS	L	C	FP	W	CF	IV	IN	T	E	S	A	TR
Edelman (Tropiano et al., 2019)	✓	✓	✓			✓		✓		✓			
Boles (2017)	✓		✓	✓	✓	✓	✓	✓					
Heintze (2016)	✓			✓	✓	✓							
Spacey (2016)			✓	✓		✓		✓	✓				
TMO (2016)	✓	✓	✓	✓	✓			✓	✓			✓	
Agarwal et al. (2015)	✓	✓	✓	✓	✓	✓		✓	✓	✓			
Lowe (2015)	✓				✓			✓					
Reptrak® (Fombrun et al., 2015)	✓	✓	✓	✓	✓		✓	✓					
Schwalbach (2015)	✓	✓	✓	✓	✓	✓	✓						
Sequeira et al. (2015)	✓	✓		✓	✓	✓	✓	✓		✓			
Stier-Thompson and Stadthoewer (2015)	✓	✓	✓	✓	✓	✓		✓					
Gaines-Ross (2014)	✓	✓	✓	✓	✓		✓		✓				

Author(s)	PS	L	C	FP	W	CF	IV	IN	T	E	S	A	TR
Marquina Feldman et al. (2014)	✓	✓	✓		✓	✓	✓	✓		✓			
Terblanche (2014)	✓		✓	✓	✓	✓							
Einwiller (2013)	✓	✓	✓	✓	✓	✓							
Lienland et al. (2013)	✓	✓	✓	✓	✓								
Petrokaitė and Stravinskienė (2013)	✓	✓	✓	✓	✓					✓			
FMAC (Dowling & Gardberg, 2012)	✓	✓	✓	✓	✓		✓						
Reddiar et al. (2012)		✓		✓		✓		✓	✓				
Einwiller and Kuhn (2011)	✓	✓	✓	✓	✓		✓			✓			
Jeng (2011)	✓								✓	✓		✓	
Weber Shandwick (Burke, 2011)	✓	✓	✓	✓	✓			✓					
Puncheva-Michelotti and Michelotti (2010)	✓	✓	✓	✓		✓		✓		✓			✓
Walsh et al. (2009)	✓		✓	✓	✓	✓							

Author(s)	PS	L	C	FP	W	CF	IV	IN	T	E	S	A	TR
Fombrun (2007)	✓	✓	✓	✓	✓		✓	✓					
Helm (2007) – general	✓	✓	✓	✓	✓					✓			
Helm (2007) – customers	✓	✓	✓	✓	✓	✓	✓					✓	
Van Riel and Fombrun (2007)	✓		✓	✓		✓		✓		✓		✓	
Walsh and Beatty (2007)	✓		✓	✓	✓	✓							
Brammer and Pavelin (2006)			✓	✓			✓		✓			✓	
Gardberg (2006)		✓	✓	✓	✓								
Helm (2005)	✓	✓	✓	✓	✓	✓		✓					
MacMillan et al. (2005)	✓					✓		✓		✓			
Page and Fearn (2005)	✓	✓	✓	✓	✓	✓	✓			✓			
Van den Bosch et al. (2005)	✓								✓			✓	
Van der Jagt (2005)	✓					✓			✓			✓	
Dowling (2004)	✓	✓			✓			✓		✓			
Dowling (2004)	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	

Author(s)	PS	L	C	FP	W	CF	IV	IN	T	E	S	A	TR
Fombrun and van Riel (2004)	✓								✓			✓	
Jackson (2004)	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Manager Magazin (Schwaiger, 2004)	✓	✓	✓	✓	✓		✓		✓	✓			
Schwaiger (2004)	✓	✓	✓	✓	✓	✓		✓	✓	✓			
Walsh and Wiedmann (2004)	✓	✓	✓	✓	✓	✓		✓		✓			
Carroll and McCombs (2003)	✓	✓	✓	✓				✓		✓		✓	
Cravens et al. (2003)	✓	✓		✓	✓	✓	✓	✓	✓				
Good Reputation Index (Johns, 2003)	✓	✓	✓	✓	✓			✓					
Dowling (2001)	✓	✓	✓	✓		✓	✓	✓		✓			
Schultz, Mouritsen, and Gabrielsen (2001)	✓	✓	✓	✓	✓		✓		✓				
Caruana and Chircop (2000)	✓	✓	✓		✓			✓					

Fombrun et al. (2000)	✓	✓	✓	✓	✓					✓			

Source: Own compilation.

Note: Findings sorted by publishing year. The attribute names vary between the different authors. Similar attribute names were accumulated during the analysis: PS = Products & services, L = Leadership, C = Citizenship, FP = Financial performance, W = Workplace, CF = Customer focus, IV = Innovation, IN = Integrity, T = Transparency, E = Emotional appeal, S = Safety, A = Awareness, TR = Tradition

Appendix 19:

Literature findings of rising reputation topics

Author(s)	PS	L	C	FP	W	CF	IV	IN	T	E	S	A	TR
Griepentrog (2017)		✓											
Sherson (2017)											✓		
Burne James (2016)											✓		
Gaines-Ross (2016)		✓											
Holmes (2016)		✓							✓				
Lackey (2016)									✓				
Larcker and Tayan (2016)		✓											
Preen (2016)											✓		
Allen-Back (2015)									✓		✓		
Fombrun (2015)		✓											
Shayon (2015)		✓											
Hirsch (2013)											✓		
Meng and Berger (2013)		✓											

Author(s)	PS	L	C	FP	W	CF	IV	IN	T	E	S	A	TR
Nassirzadeh, Saei, Salehi, and Varnosfaderani (2013)		✓											
Graffin et al. (2012)		✓											
Newburry (2012)													✓
Reuber and Fischer (2011)													✓
Dickinson-Delaporte et al. (2010)									✓				
Kang and Yang (2010)													✓
Plotnick (2010)									✓				

Source: Own compilation.

Note: Findings sorted by publishing year. The attribute names vary between the different authors. Similar attribute names were accumulated during the analysis: PS = Products & services, L = Leadership, C = Citizenship, FP = Financial performance, W = Workplace, CF = Customer focus, IV = Innovation, IN = Integrity, T = Transparency, E = Emotional appeal, S = Safety, A = Awareness, TR = Tradition

Appendix 20:

Literature findings of reputation attributes in healthcare

Author(s)	PS	L	C	FP	W	CF	IV	IN	T	E	S	A	TR
PatientView (2017)	✓					✓		✓	✓		✓		
Heintze and Forthmann (2016)	✓	✓	✓	✓	✓								
Reputation-Institute (2015)	✓	✓	✓	✓	✓		✓	✓					
Ponzi et al. (2011)										✓			
Renner (2011)	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Srivoravilai et al. (2011)	✓					✓				✓			
Şatir (2006)	✓		✓						✓	✓			
Grupp and Gaines-Ross (2002)	✓	✓				✓	✓						
Wright and Fill (2001)	✓				✓	✓	✓						

Source: Own compilation.

Note: Findings sorted by publishing year. The attribute names vary between the different authors. Please see table 5 for the original attributes. Similar attribute names were accumulated during the analysis: PS = Products & services, L = Leadership, C = Citizenship, FP = Financial performance, W = Workplace, CF = Customer focus, IV = Innovation, IN = Integrity, T = Transparency, E = Emotional appeal, S = Safety, A = Awareness, TR = Tradition

Appendix 21:

Literature findings of rising topics in the medical device industry

Author(s)	PS	L	C	FP	W	CF	IV	IN	T	E	S	A	TR
Beavins Tracy (2017)							✓				✓		
Goldman (2017)											✓		
MPN (2017)											✓		
Sweeney (2017)											✓		
Taylor (2017)											✓		
Buntz (2016)											✓		
Engler Modic (2016)											✓		
Mimeo (2016)						✓	✓						
Newmarker (2016)							✓				✓		
Preston (2016)											✓		
Weeks (2016)							✓				✓		
Zapiain (2016)							✓						
Bernstein (2015)						✓					✓		
Ghaffary (2015)							✓						
Glass (2015)							✓						

Author(s)	PS	L	C	FP	W	CF	IV	IN	T	E	S	A	TR
Orsi (2015)							✓				✓		
Pfahnl (2015)						✓	✓						
Sparrow (2015)						✓	✓						
Weeks (2015)							✓				✓		
Rahman (2014)							✓				✓		
Alemzadeh, Iyer, Kalbarczyk, and Raman (2013)											✓		
Fu and Blum (2013)											✓		
Boyle (2013)						✓	✓						

Source: Own compilation.

Note: Findings sorted by publishing year. The attribute names vary between the different authors. Similar attribute names were accumulated during the analysis. PS = Products & services, L = Leadership, C = Citizenship, FP = Financial performance, W = Workplace, CF = Customer focus, IV = Innovation, IN = Integrity, T = Transparency, E = Emotional appeal, S = Safety, A = Awareness, TR = Tradition

Appendix 22:

Findings of reputation antecedents in the academic literature

Author(s)	Company	Business environment	Media exposure	SH expecta-tions	SH back-ground
Dutot and Castellano (2015)			✓	✓	✓
Dowling and Moran (2012)	✓	✓			
Fombrun (2012)	✓	✓	✓	✓	
Lange et al. (2011)	✓	✓	✓		
Shamma and Hassan (2009)			✓	✓	✓
Walsh et al. (2009)				✓	✓
Winn et al. (2008)	✓	✓		✓	
Coombs (2007)			✓	✓	✓
Walsh and Beatty (2007)				✓	
Basdeo et al. (2006)	✓	✓			
Gardberg (2006)	✓	✓			
Money and Hillenbrand (2006)			✓	✓	
Rindova et al. (2005)	✓		✓		

Author(s)	Company	Business environment	Media exposure	SH expecta-tions	SH back-ground
Walsh and Wiedmann (2004)				✓	✓
Brown (1998)		✓	✓		
Fombrun and Shanley (1990)	✓	✓	✓		

Source: Own compilation.

Note: Findings sorted by publishing year. The attribute names vary between the different authors. Similar attribute names were accumulated during the analysis. SH = Stakeholder

Appendix 23:
Findings of reputation consequences in the academic literature

Author(s)	Purchasing decision	Advo-cacy	Company perfor-mance	Business environ-ment
Terblanche (2014)	✓		✓	
Fombrun (2012)	✓	✓	✓	
Lange et al. (2011)	✓		✓	
Ponzi et al. (2011)	✓	✓		
Shamma and Hassan (2009)	✓	✓		
Walsh et al. (2009)	✓	✓		
Walsh and Beatty (2007)	✓	✓		
Dowling (2006)	✓		✓	
Gardberg (2006)	✓		✓	
Money and Hillenbrand (2006)	✓	✓		
MacMillan et al. (2005)	✓	✓		
Rindova et al. (2005)			✓	
Walsh and Wiedmann (2004)	✓	✓		
Brown (1998)	✓			

Source: Own compilation.

Note: Findings sorted by publishing year. The attribute names vary between the different authors. Similar attribute names were accumulated during the analysis.

Appendix 24:

All attributes and aspects in the initial reputation concept

Causal stage	Attribute	Aspects
Reputation antecedents	Company	Values Objectives Strategy Actions
	Business environment	Actions from rivals Regulations Medical device industry Social aspects Political aspects Economic aspects
	Media exposure	Annual report Corporate stories Therapy and product information Events Advertisements General news media Professional business media Social media
	Stakeholder expectation	Observations Experiences with the company Relationship with representative
	Stakeholder background	Work experience Hospital type and size Responsibilities Length of employment Professional network
Reputation	Products and services	High quality Competitiveness Distinctiveness

Leadership	Management team Vision CEO
Citizenship	Environmental responsibility Social responsibility
Financial performance	Growth prospects Continuity Company value Revenues Profitability
Workplace	Fairness to employees Attractiveness Diversity
Customer focus	Tailored solutions Hospital-focused Medical staff-focused Patient-focused
Innovation	Product development Service development First to market Technology-driven
Safety	Medical staff safety Patient safety Cyber security Data protection
Integrity	Ethical behaviour Credibility Fairness Reliability
Transparency	Communication ability Truthfulness Openness Authenticity
Tradition	German origin Made in Germany Family-owned company Company age

Reputation consequences	Purchasing decision	Satisfaction Loyalty Identification Buying intention Purchase Re-purchase Cross-purchase Long-term customer retention
	Advocacy	Recommendation Word of mouth Written referencing
	Company performance	Competitive advantage Premium pricing Revenues Profit
	Business environment outcome	Effects on industry Effects on country of origin

Source: Own compilation.

Note: The aspects were retrieved from academic and business literature as well as from medical device industry trends. They were then clustered and focused on the customer perspective.

Appendix 25:

Q-sort rating analysis of first phase interviews

Category	P	A1	A2	B1	B2	C1	C2	Ave-rage
Attribute-specific judgement	8	8	10	6	7	10	9.5	**8.4**
Generalized attractiveness	6	8	8	8	9	7	5	**7.3**
Awareness	4	8	-5.5	8	5	3	2.5	**3.6**

Ranking of the reputation categories by the first phase interviewees. Note: A2's choice of 'Not relevant for reputation' was coded as -5.5, as explained in sub-section 3.2.4.

Antecedent	P	A1	A2	B1	B2	C1	C2	Ave-rage
Stakeholder background	9	8.5	8	7	7	8	9	**8.1**
Stakeholder expectations	9	8.5	9	6	7	8	8	**7.9**
Organizational antecedents	7	7.5	3	10	5	10	5	**6.8**
Media exposure	7	4.5	3	9	6	8	6.5	**6.3**
Business environment	5	6	6	8	4	2	6	**5.3**

Ranking of the reputation antecedents by the first phase interviewees.

Reputation attributes	P	A1	A2	B1	B2	C1	C2	Average
Products and services	7	9	10	8	10	10	8	**8.9**
Safety	8	8.5	10	7.5	6	10	10	**8.6**
Customer focus	9	10	7	6	10	10	7	**8.4**
Transparency	5	8	9	5	8	9	8	**7.4**
Innovation	7	6.5	6	9	6	10	6	**7.2**
Integrity	5	8.5	5	4	8	10	10	**7.2**
Workplace	5	7.5	4	3	3	9	5	**5.2**
Citizenship	4	3.5	4	1	3	10	8	**4.8**
Financial performance	2	5.5	4	3	3	9	4	**4.4**
Leadership	5	7.5	1	3	6	2	6	**4.4**
Tradition	3	4	1	2	3	2	6	**3.0**

Ranking of the reputation attributes by the first phase interviewees.

Consequence	P	A1	A2	B1	B2	C1	C2	Average
Stakeholder decision	8	7.5	7	9	9	10	6	**8.1**
Advocacy	8	5	3	7	8	10	7	**6.9**
Organizational performance	8	3	4	8	8	5	7	**6.1**
Business environment outcome	2	5	1	6	7	7	5	**4.7**

Ranking of the reputation consequences by the first phase interviewees.
Source: Own compilation.

Appendix 26:

All attributes and aspects of the revised concept

Causal stage	Attribute	Aspects
Reputation antecedents	Company	Values Objectives Strategy Actions Origin
	Health market regulations	Standards Approval procedure Certifications Legislation
	Corporate media	Annual report Therapy and product information Advertisements
	Hospital business media	*MTD* *Management & Krankenhaus*
	Relationship to company representative	Existence Length Friendliness Trust Self-assured manner Identification with company Competency
	Procurement networks	femak GPOs BME hospital purchasing experts Personal network
	Experience	Work experience Hospital positioning Knowledge Expectations

Reputation	Products	High product quality Product benefit Competitiveness Strategic product positioning
	Services	System partnership E-procurement Process consulting Trainings
	Safety	Medical staff safety Patient safety Data protection Cybersecurity Delivery security
	Customer focus	Focus on procurement managers, medical staff and patients Tailored solutions Benefit-based consulting Flexibility Problem-solving competency Customer proximity
	Transparency	Communication ability Truthfulness Openness Authenticity Crisis communication
	Innovation	Product development Service development Technology-driven Avoidance fake innovations Value-generating innovations
	Integrity	Ethical behaviour Credibility Fairness Reliability Crisis behaviour
	Citizenship	Social responsibility Environmental responsibility

	Leadership	CEO Management team Vision Dealing with employees Attractive workplace Ensuring diversity
	Financial stability	Continuity Long-term orientation Strong partner
Reputation consequences	Purchase decision	Satisfaction Loyalty Identification Buying intention Purchase Re-purchase Cross-purchase Long-term customer retention Buffer in crises
	Advocacy	Recommendation Word of mouth Written references
	Company performance	Competitive advantage Revenues Profit Long-term stability

Source: Own compilation.

Note: After the first phase interviews, awareness is an antecedent category. Attractiveness and attribute-specific judgement remain reputation categories.

Appendix 27:

Q-sort rating analysis of second phase interviews

Category	1st phase interviews	A3	A4	A5	B3	C3	2nd phase interviews
Attribute-specific judgement	8.4	8	7	9	10	6	**8.0**
Generalized attractiveness	7.3	2	8	3	4	8	**5.0**

Ranking of the reputation categories by the second phase interviewees.

Antecedent	1st phase interviews	A3	A4	A5	B3	C3	2nd phase interviews
Stakeholder experience	8.0	9	10	8	10	6	**8.6**
Procurement networks	-	9	9	7	8	8	**8.2**
Company representatives	-	9	10	8	5	8	**8.0**
Regulations	5.3	9	9	7	7	7	**7.8**
Company	6.8	7	8	6	5	5	**6.2**
Corporate media	6.3	7	7	5	3	7	**5.8**
Awareness	3.6	2	8	4	6	5	**5.0**
Hospital procurement media	6.3	5	7	5	4	2	**4.6**

Ranking of the reputation antecedents by the second phase interviewees.

Reputation attributes	1st phase interviews	A3	A4	A5	B3	C3	2nd phase interviews
Products	8.9	10	9	8	10	7	**8.8**
Safety	8.6	9	10	7	10	7	**8.6**
Integrity	7.2	6	10	7	10	9	**8.4**
Transparency	7.4	6	9	7.5	10	9	**8.3**
Services	8.9	9	7	7.5	8	8	**7.9**
Customer focus	8.4	5	10	7	10	5	**7.4**
Innovation	7.2	7	7	7	9	5	**7.0**
Financial stability	4.4	5	7	8	8	7	**7.0**
Leadership	4.8	5	8	5	5	7	**6.0**
Citizenship	4.8	2	8	6	7	4	**5.4**

Ranking of the reputation attributes by the second phase interviewees.

Consequence	1st phase interviews	A3	A4	A5	B3	C3	2nd phase interviews
Advocacy	6.9	9	9	7	8	7	**8.0**
Purchase decision	8.1	7	10	8	5	8	**7.6**
Company performance	6.1	8	8	8	6	6	**7.2**

Ranking of the reputation consequences by the second phase interviewees.
Source: Own compilation.

Appendix 28:

Weighting calculation for reputation categories

(1) Starting point: Q-sort rating by second phase interviewees

Category	1st phase interviews	A3	A4	A5	B3	C3	2nd phase interviews
Attribute-specific judgement	8.4	8	7	9	10	6	**8.0**
Generalized attractiveness	7.3	2	8	3	4	8	**5.0**

(2) Define point of relevance

Usually, a rating of 5.0 expresses the uncertainty of interviewees about whether generalized attractiveness belongs more to reputation or not. Because of the positive rating of the first phase interviewees, this relevance point was moved to 3.0.

(3) Calculation

Category	Rating	Relevance point	Difference	% of difference sum (7.0)	Rounded to
Attribute-specific judgement	8.0	3.0	5.0	71.4%	72%
Generalized attractiveness	5.0	3.0	2.0	28.6%	28%

(4) Explanation for rounding

Rounding: Full nominal numbers were needed. 72 percent for attribute-specific judgement guaranteed that uniform attribute stages with nominal numbers could be build. However, the numbers are an estimation to show an exemplary weighting.

Source: Own compilation.

Appendix 29:

Causal mechanisms mentioned by two interviewees

Source of mechanism	Ending of mechanism	Short description
Innovation	Product	Innovation influences product quality and uniqueness.
Innovation	Financial stability	Investing in real innovations guarantees future financial stability.
Responsibility	Transparency	Only a responsible workforce can communicate transparently.
Company representative	Services	Services are managed by the company representative.
Company representative	Experience	A good relationship to the salesperson adds to the positive experience with the company.
Regulations	Safety	Regulations regularly increase the safety standards.
Regulations	Company	Regulations limit the action range of companies.
Company	Experience	Corporate actions and communications add to the experience with the company.
Company performance	Financial stability	Only successful sales and profit numbers will secure financial stability.
Crisis	Product	Product recalls impact on product perception.
Crisis	Safety	Some crises have an impact on safety aspects.
Crisis	Regulations	Crises have an impact on future regulations.
Price	Safety	Cost pressure will decrease the delivery security.

Source of mechanism	Ending of mechanism	Short description
Price	Responsibility	The cheaper the price the riskier the sense of the company's responsibility (employees, environment).
Price	Company representative	The higher the price, the more reliable the company's salesperson.
Price	Experience	Recent price negotiations add to the experience.
Framework contracts	Procurement networks	Standardized buying processes influence the size of the network (most reduced to the GPO).

Source: Own compilation.

Appendix 30:

All attributes and aspects of the refined concept

Causal stage	Attribute	Aspects
Reputation antecedents	Company	Values Objectives Strategy Actions Website Origin
	Regulations	Standards Approval procedure Certifications Legislation
	Company representative	Existence Competency Trust Identification with company
	Procurement networks	Procurement associations GPOs Trade shows and congresses Personal networks
	Experience	Work experience Hospital positioning Knowledge Expectations
Reputation	Products	High product quality Product benefit Competitiveness Strategic product positioning

	Safety	Medical staff safety Patient safety Data protection Cybersecurity Delivery security
	Transparency	Communication ability Honesty Authenticity Reliability
	Services	System partnership E-procurement Process consulting Trainings
	Customer focus	Flexibility Benefit-based consulting Problem-solving competency Customer proximity
	Innovation	Product development Service development Real innovations
	Financial stability	Continuity Long-term orientation Strong partner
	Responsibility	Leadership Ethical behaviour Environmental responsibility Workplace Social responsibility
Reputation consequences	Advocacy	Recommendation Word of mouth Written references
	Purchase decision	Satisfaction Buying intention Purchase Loyalty

	Company performance	Competitive advantage Revenues Profit Long-term stability

Source: Own compilation.